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The Effects of Peers' Fairness Opinions Regarding Past Treatment and an Authority  
Figure's Subsequent Behavior on Perceptions of Interactional Justice and Retaliation

by

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## Abstract

Organizational justice researchers have concentrated on how perceptions of fairness are formed in the workplace. Missing from this literature, however, is a consideration of the social context in which fairness perceptions are formed; that is, the behaviour of one's peers. The purpose of the present study was to examine the influence of social information from peers about an authority figure's past treatment fairness, and of the fairness of subsequent treatment by that authority figure on perceptions of interactional justice (the fairness of interpersonal treatment) and retaliatory behaviour.

Two variables were manipulated: social cues (unfair, absent, and fair) communicated by research confederates, and subsequent treatment (unfair and fair) from the authority figure. Data from 107 undergraduate participants showed support for the influence of social information on interactional justice, and retaliation (i.e., protest behaviour). The study's limitations were discussed, followed by suggestions for future research, and the theoretical and practical implications.

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## The Effects of Peers' Fairness Opinions Regarding Past Treatment and an Authority Figure's Subsequent Behaviour on Perceptions of Interactional Justice and Retaliation

For over 25 years, organizational justice researchers have examined how people's perceptions of fairness are formed in the workplace, and how perceived fairness is related to several work attitudes and behaviours that may influence organizational effectiveness (e.g., job satisfaction, retaliation, and voluntary turnover). Justice scholars, however, tend to overlook the social context in which an individual's fairness perceptions are formed, that is, the behaviour of one's co-workers. Cappelli and Sherer (1991) argued that to adequately understand people's attitudes, the role of the social context must be considered. For example, fairness-related information from one's peers about past treatment may influence perceptions of fairness and the associated behavioural responses, independent of one's personal experience. Despite the existence of a large body of organizational justice research, few studies have examined how social information can influence perceptions of fairness. This notion may need to be included in future justice theories.

Consider a new employee at work who, for example, enters a lunchroom and encounters a group of co-workers discussing aspects of fair or unfair supervisory treatment. According to several theories (e.g., Social Information Processing Theory), it is plausible that the newcomer may form an impression of fairness about whether a supervisor will engage in future fair treatment based on the social information from his or her peers. This social information may influence the new employee's perceptions of fairness regarding future interactions with that supervisor. Moreover, the fairness-related

social information may impact the new employee's behavioural responses to perceived fairness. For example, a new employee who heard from his or her peers that a supervisor was unfair in the past and then subsequently experiences unfair treatment may be more likely to retaliate (e.g., protest behaviour) than someone who experiences unfair treatment in the absence of fairness-related social information.

This study examined the impact of peers' fairness opinions about an authority figure's past treatment on perceptions of fairness regarding the authority figure's subsequent treatment. Specifically, the purposes of the present study were to explore the role of social information from peers in both justice attitude formation and retaliation as a response to perceived unfairness. First, the organizational justice literature is reviewed with an emphasis on the focus of the present study: interactional justice—the perceived fairness of treatment received by authority figures (Bies, 1987). Next, the theoretical and empirical bases are presented regarding the prediction that fairness-related social information from peers impacts perceptions of interactional justice (i.e., Social Comparison Theory, Social Information Processing Theory, Organizational Climate, Newcomer Socialization, Relational Model of procedural justice, and three empirical justice studies.). Following this, several literatures are reviewed that suggest that social information from one's peers regarding the fairness of an authority figure's past treatment will interact with the authority figure's subsequent behaviour to predict perceptions of interactional justice (i.e., Fairness Heuristic Theory, Expectancies Theory, social-cognitive research on negative information, and the Endowment Effect and Prospect Theory). The remainder of the introduction will explore the links between perceptions of

interactional justice and behaviour. Specifically, retaliation, how one's willingness to express anger may be involved in the relationship between interactional justice and retaliation, and task performance are examined. Hypotheses are presented after each of the relevant literatures are reviewed.

### Organizational Justice Theory

Organizational justice theorists and researchers have concentrated on people's perceived fairness regarding three aspects of organizational life: outcomes (such as pay), procedures that determine outcomes, and interactions with those in authority positions. Distributive justice refers to a person's perceptions of fairness regarding outcomes received such as one's pay or promotion (Homans, 1961). Adams (1965) proposed that individuals determine outcome fairness by comparing their personal ratio of inputs (i.e., contributions to the organization) to outcomes received, to the ratio of a referent other (e.g., a co-worker). Procedural justice is defined as one's perception of the extent to which fair procedures and processes exist and are adhered to that determine outcomes that affect the individual (Leventhal, 1980). A procedure is perceived as fair if it is viewed as: consistent, without self-interest or bias, ethical, based on accurate information, including the representation and voice of all affected parties, and allowing for opportunity for appeal (Leventhal, Karuza, & Fry, 1980).

More recently, scholars have examined interactional justice, which refers to people's perceptions of fair treatment by an organization's leaders (Bies, 1987). Interactional justice is related to the way in which procedures regarding relevant outcomes are implemented by authority figures (Bies & Moag, 1986; Cropanzano &

Greenberg, 1997; Tyler & Bies, 1990). Perceptions of interactional justice are impacted by whether those responsible for implementing decisions treat employees with sensitivity, dignity, and respect (Folger, 1993a; Folger & Bies, 1989; Greenberg, 1993), and whether leaders provide adequate explanations regarding outcomes that affect employees (e.g., Bies, Shapiro, & Cummings, 1988).

In general, perceptions of fairness are important to organizations because a considerable amount of research has shown that justice perceptions are positively related to several employee attitudes and behaviours including: job satisfaction and organizational commitment (e.g., Folger & Konovsky, 1989; McFarlin & Sweeney, 1992), trust in management (Tyler & Lind, 1992; Whitener, Brodt, Korsegaard, & Werner, 1998), obedience of supervisors (Huo, Smith, Tyler, & Lind, 1996), organizational citizenship behaviour—going above and beyond the call of duty (e.g., Moorman, 1991; Skarlicki & Latham, 1996), and employee innovation (Abbey & Dickson, 1983). Moreover, perceptions of fairness have been shown to be negatively related to theft from the organization (e.g., Greenberg, 1993), retaliatory behaviours (e.g., Skarlicki & Folger, 1997), turnover intentions (e.g., Sweeney & McFarlin, 1997), and voluntary turnover (e.g., Aquino, Griffeth, Allen, & Hom, 1997; Hendrix, Robbins, Miller, & Summers, 1999).

Despite the considerable size of the justice literature, few studies have tested the impact of fairness-related social information from peers on people's perceptions of fairness. Justice theorists, however, have suggested that perceptions of fairness can be influenced by information from peers. Brown (1986) proposed that group members

believe that their group deserves fair treatment, and Tyler and Lind (Lind & Tyler, 1988; Tyler & Lind, 1992) argued that a fairness violation to one group member could be perceived by other members as a violation against the group itself. Similarly, James and Cropanzano (1990) proposed that people judge other group members' experiences of fairness in terms of personal impact. Using a different line of reasoning, Lind, Kray, and Thompson (1998) suggested that collective experiences of justice communicated through social information provides people with a higher frequency of unfair and fair actions to consider than do personal experiences of justice. Consistent with this, Folger and Cropanzano (1998) proposed that the knowledge of others' experiences of unfairness can influence both perceptions of fairness and the responses to unfairness. Thus, people may consider social information from peers regarding their past experiences of unfair treatment when evaluating the fairness of a particular individual, and they may negatively react to that individual without personally experiencing unfair treatment.

#### The Present Study: Why Focus on Interactional Justice?

The present study concerns the influence of fairness-related social information on perceptions of interactional justice and retaliation, and it focuses on interactional justice for five reasons. First, leadership researchers have found that an individual's discontent with a leader is influenced by whether fellow group members endorse that view (Michener & Lyons, 1972; Michener & Tausig, 1971). Thus, shared conceptions among peers regarding unfair treatment from a leader may accentuate perceptions of unfair interactional justice and retaliation based on subsequent unfair treatment more so than

when an individual perceives unfairness in the absence of confirming social information from his or her peers.

Second, Folger and Cropanzano (1998) proposed that when perceptions of fair interactional justice are violated, the criteria for its assessment is partly established by the moral community (i.e., the work-group that establishes social norms). This is in contrast to procedural justice, which if perceived as unfair, is likely viewed as flawed by design. Thus, it is possible that interactional justice perceptions are influenced more by the statements made by one's peers that comprise the moral community than are procedural justice perceptions.

Third, researchers (e.g., Kozlowski & Doherty, 1989; Levinson, 1965) have noted that one's immediate supervisor is the most salient representative of management's actions, policies, and of the organization itself. Thus, interactional justice perceptions may influence perceptions of management and the organization as a whole, and hence they may predict responses that are directed towards the organizational level (e.g., turnover, see Aquino et al, 1997) more strongly than the other aspects of fairness.

Fourth, Folger and Cropanzano's (1998) Fairness Theory posited that perceived interactional justice is likely a more powerful moderator of a negative outcome's impact on negative workplace behaviours (e.g., retaliation) than is procedural justice. They proposed that perceptions of unfairness are heightened when people attribute harmful intent to the perceived transgressor. Inferences of harmful intent and ill will may follow more directly from interpersonal conduct (i.e., interactional justice) than from procedures. For example, an employee who perceives a procedure as unfair may have trouble

identifying the offending party who designed the procedure, thus it may be difficult to attribute harmful intent. There is less confusion about who to blame, however, when a manager is perceived as treating employees with a lack of dignity and respect and/or fails to provide explanations for important outcomes. Consistent with the above reasoning, some researchers have found that perceived interactional justice was a stronger predictor of negative behaviour than was procedural or distributive justice (e.g., theft: Greenberg, 1990a).

Fifth, researchers (for a review, see Brockner & Wiesenfeld, 1996) have found that interactive effects among the aspects of justice predict negative workplace behaviour: for example, when both distributive and interactional justice are perceived as low, retaliation is maximized. Thus, Jones and Skarlicki (2000) argued that promoting a single aspect of fairness may be sufficient to minimize negative behaviours (turnover in their study). If an organization wishes to promote a single aspect of fairness, managers' behaviour (interactional justice) may be easier to change than an organization-wide procedure (procedural justice). Moreover, a parent company or head office may not allow an organizational sub-unit to change its procedures or policies. Managers' behaviour may also be less expensive to change than outcomes such as pay or vacation time (distributive justice). Quasi-experimental research (Skarlicki & Latham, 1996; Skarlicki & Jones, 1998) has shown that training organizational leaders in fairness principles can favourably affect organizational member's perceptions of interactional justice. Thus, it is possible to train leaders to promote perceptions of fair interactional



justice, and this may be easier and less expensive than attempting to promote fair perceptions of procedural or distributive justice.

### A Closer Look at Interactional Justice

Interactional justice includes both interpersonal and informational concerns (Colquitt, Conlon, Wesson, Porter, & Ng, in press). Interpersonal concerns refer to whether leaders show sensitivity, dignity, and respect when interacting with employees. A growing body of interactional justice theory and research, however, focuses on informational concerns: the provision of a clear and adequate explanation to parties affected by organizationally derived outcomes (e.g., Bies, 1987b; Bies et al., 1988; Greenberg, 1987; Tyler, 1989). The informational component of interactional justice is the focus of the present study.

People who are negatively impacted by a decision often feel entitled to hear why the decision was made (Bies, 1987a; Greenberg, 1990a; Milkovich & Newman, 1987). When an explanation for a negative outcome is not given, people can experience perceptions of unfairness (e.g., Folger, 1993a). Greenberg (1988, 1990c) proposed that to promote justice in the workplace, it is not enough to “be fair”: Instead, events need to be “perceived as fair” by those who are affected. Explanations are one way to accomplish this because the transgressor who provides an account for his or her actions may appear more justified in having implemented a decision resulting in an unfavourable outcome (Greenberg, 1991). Folger and Skarlicki (1999) proposed that when authority figures provide social accounts for negative outcomes, those affected feel as though a moral obligation was fulfilled: They were treated as worthy recipients of dignity and respect.

Researchers have examined the characteristics of explanations that lead to perceptions of fair and unfair interactional justice. When negative outcomes are experienced, individuals are especially influenced by the presence or absence of information that will help them understand why the event occurred (Brockner, Dewitt, Grover, & Reed, 1990). Researchers have found that attribution processes are invoked in the face of negative or unexpected outcomes (Pyszczynski & Greenberg, 1981; Wong & Weiner, 1981). If the unfavourable event appears intelligible and warranted given the circumstances, the account is more likely to be accepted (Blumstein, 1974), and equilibrium may be restored in the social relationship (Goffman, 1971). In particular, if the negative event appears unintentional, reactions to it will be less hostile (Thomas & Pondy, 1977). Explanations for negative outcomes that refer to causes external to the authority figure have been associated with fairer interactional justice perceptions (e.g., Bies et al., 1988), higher job performance (Baron, 1990a; Konovsky & Cropanzano, 1991), more task cooperation (Baron, 1990a), less organizational conflict (Bies et al.), and less theft (Greenberg, 1999, cited from Greenberg, 2000).

Researchers, however, have found that the mere claim of mitigating circumstances alone does little to improve perceptions of fairness (Baron, 1998a; Bies & Shapiro, 1987; Bies et al., 1988). Rather, the perceived sincerity and adequacy of the reasoning is necessary for the explanation to be effective. The account must also offer a plausible justification for the negative event that is seen as credible (Sitkin & Bies, 1993). To summarize the literature on informational concerns, explanations are most effective when they refer to uncontrollable events, are conducted in person, and are perceived as

adequate -- courteous, timely, clear, thorough, believable, and sincere (Baron, 1988a; Bies, et al., 1988; Brockner et al., 1990; Folger & Bies, 1989; Shapiro, 1991; Shapiro et al., 1994). Perceptions of fair interactional justice are further heightened when explanations are provided in a sensitive and respectful manner (e.g., Greenberg, 1993, 1994; Shapiro, Buttner, & Barry, 1994). Ohbuchi, Kameda, and Agarie (1989) found that people who received an apology from an authority figure for harm done were less likely to display aggression and more likely to have positive emotions. Ohbuchi et al.'s findings are consistent with other research on the influence of apologies for negative outcomes on perceptions of fairness (Baron, 1990a; Greenberg, 1991).

Explanations have been shown to enhance perceptions of fairness during various organizational change initiatives which may have been viewed as unfavourable (e.g., Bies & Shapiro, 1988; Brockner et al., 1990; Greenberg, 1990a; Lind, Kanfer, & Earley, 1990). For example, adequate explanations have effectively enhanced employees' perceptions of fairness during: an employee relocation plan (Daly & Geyer, 1994), a policy change (Parker, Bales, & Christensen, 1997), a smoking ban (Greenberg, 1994), a new electronic control system (Kidwell & Bennett, 1994), a move to affirmative action hiring (Bobocel & Farrell, 1996), a pay freeze (Schaubroeck, May, & Brown, 1994), and employee layoffs (Brockner, & Greenberg, 1990; Brockner, et al., 1994). Experimental research has found that the provision of an account that adequately explains an unfavourable outcome produces more favourable reactions than when no explanation is given (e.g., Bies & Shapiro, 1987; Folger & Martin, 1986; Folger, Rosenfield, & Robinson, 1983; Shapiro, 1991).

### Social Information and Justice Attitudes

For some time, theorists (e.g., Berger & Luckmann, 1967; Schutz, 1967; Weick, 1969, 1977) have conceptually explored the social construction of attitudes. Organizational researchers have noted that to understand attitudes and behaviour, the contexts in which they occur need to be examined (e.g., House et al., 1995; Pfeffer & Salancik, 1978). For example, Salancik and Pfeffer (1978) proposed that social information from peers may influence attitudes by making certain aspects of the job environment particularly salient. Moreover, researchers have noted the importance of linking individual and group levels of analysis, both conceptually and statistically (Cappelli & Sherer, 1991; House et al., 1995; Klein, Dansereau, & Hall, 1994; Pfeffer & Salancik, 1978; Rousseau, 1985). An assumption of these approaches is the potential for reciprocal relationships between the group's characteristics as a whole and individual group members' attitudes and behaviour.

One's attitudes and behaviour do not exist in a vacuum: Instead, they are likely to be influenced by the social context in which other group members communicate their own attitudes and behaviours. Thus, the social context surrounding fairness judgements may be an important predictor of individual judgements and the subsequent behavioural responses. An examination of the impact of social information from peers on interactional justice attitudes is an important step in furthering existing justice theory by considering the social context in which justice judgements are formed. This study aims to provide empirical support for the assertion that social information can directly influence perceptions of interactional justice.

Scholars have suggested that researchers should “fill the theory gaps” through the linking of independent literatures (Pfeffer, 1993; Porter, 1996). The following section reviews several theoretical and research frameworks that are consistent with the notion that peers can influence one's perceptions of fairness: Social Comparison Theory, Social Information Processing Theory, the Organizational Climate and Newcomer Socialization literatures, the Relational Model of procedural justice, and three empirical justice studies that examined the influence of social information gathered from peers.

Social Comparison Theory. Festinger's (1954) Social Comparison Theory has been used to explain the social learning phenomenon (e.g., Bandura, 1986) regarding attitude formation. According to Festinger, the social environment is a source of information about others' opinions. People compare their own attitudes to others' to determine whether their views of reality are similar. As a result, people often change their own attitudes so that they are consistent with those of others. Ross and Nisbett (1991) argued that social information has a powerful impact on others' attitudes because it contains informational aspects that people use to form judgements, and it contains normative information about the way things should or should not be which also influences attitudes. Research has found that attitudes about people can be influenced by direct observation of behaviour (e.g., Venn & Short, 1973), and by hearing others' negative views about individuals (e.g., Maio, Esses, & Bell, 1994).

Social Information Processing Theory. In addition to Social Psychology researchers, organizational scholars have examined the influence of peers' opinions on work attitudes. Salancik and Pfeffer's (1978) Social Information Processing Theory

emphasized the impact of the social context on behaviour and attitudes. The basic premise of this theory is that individuals adapt their attitudes and behaviour to fit their social context. Consistent with Social Comparison Theory, the Social Information Processing Theory posits that people gather information about the acceptability of their existing attitudes by focussing their attention towards cues from the social environment. Salancik and Pfeffer proposed that the impact of social information on attitudes is accentuated when the information is salient, relevant, and pertains to a specific attitude, and when it originates from similar others (e.g., fellow co-workers). A meta-analysis (Thomas & Griffen, 1983) and a literature review (Zalesny & Ford, 1990) have found consistent support for the effect of social information on work attitudes such as job satisfaction.

Organizational Climate. Consistent with the theories of Social Comparison and Social Information Processing, the Organizational Climate literature suggests that employees within a work-group may develop similar perceptions of interactional justice through social interaction among co-workers. Schneider (1990) defined organizational climate as a set of shared perceptions of the procedures and policies that are rewarded, supported, and expected in group interaction. Schneider and Reichers (1983) proposed that work group climates and shared meanings develop among peers through social interactions, similar exposures to policy and practice, and from attraction, selection, and attrition resulting in homogenous attitudes. Likewise, Weick (1992) proposed that people develop shared beliefs through collective sense making within their group. Interactions among co-workers in their employment context provide meaning to events and processes

(Kozlowski & Farr, 1988). Researchers have found that attitude consensus is strong among cohesive groups (House et al., 1995), whose members may suppress their own interests in favour of maintaining group status (Janis & Mann, 1977).

Climate researchers have found that group-level measures of procedural justice can explain variance in individual's work attitudes incremental to individual-level measures, which suggests that interactions among work-group peers contribute to attitude consensus (Miller, Jackson, Mueller, & Schersching, 1987; Mossholder, Bennett, & Martin, 1998). Naumann and Bennett (1997) found that higher work group cohesion contributed to a stronger procedural justice climate. The above research suggests that procedural justice attitudes within a work-group tend to be similar, especially when the group is cohesive. No studies, however, were located that examined a climate of interactional justice, although the reasoning below suggests that one is likely to exist.

Early climate theorists proposed that leadership behaviour is an important determinant of climate perceptions (Blake & Mouton, 1964; Lewin, 1951; Likert, 1967; McGregor, 1960). Kozlowski and Doherty (1989) noted that managers shape employees' perceptions of the meaning of organizational practices because one's immediate supervisor is the most salient representative of the organization's actions and procedures. Organizational leaders act as deliverers of justice because they often design, implement, and enforce procedures and policies. Moreover, Dansereau and Alutto (1990) proposed that supervisors are "climate engineers". Thus, a climate of interactional justice seems plausible, and is likely influenced through employees' interactions with their peers who communicate their experiences regarding interactional

justice. Moreover, there is reason to believe that new employees actively seek interactional justice related information from their peers.

Newcomer Socialization. Newcomer socialization is a process in which new employees learn the behaviours and attitudes necessary for a particular role in an organization (Fisher, 1986; Van Maanen & Schein, 1979). Proactive information seeking is particularly important during organizational entry because employees desire uncertainty reduction (Miller & Jablin, 1991). Thus, new members of an organization actively seek out normative information about attitudinal and behavioural expectations (e.g., Comer, 1991; Louis, 1990). Peers are useful information sources for new employees because peers have experience and are familiar with the jobs and values of the organization (e.g., O'Reilly, 1982). Also, new employees typically report to a single immediate supervisor but more frequently interact with numerous peers (Kram & Isabella, 1985), and peers are perceived by newcomers as more helpful and available than supervisors (Louis, Posner, & Powell, 1983; Posner & Powell, 1985).

Information from co-workers can modify newcomers' attitudes and behaviours (Miller & Jablin, 1991). Salancik and Pfeffer (1978) proposed that newcomers monitor the talk of co-workers, and Ashforth (1985) claimed that newcomers pay attention to co-workers' social constructions of events because these definitions convey attitudes and assumptions of the underlying culture. Miller and Jablin (1991) proposed that the information sought by newcomers includes concerns that are relevant to interactional justice perceptions such as the nature of the relationships among employees and their immediate supervisors. In conclusion, the newcomer socialization literature suggests



that it is reasonable to expect that employees seek attitudinal information from peers about perceptions of fairness regarding managerial practices.

Relational Model of procedural justice. Justice theory has acknowledged social comparisons within the literatures of distributive justice (e.g, Adams, 1965) and Referent Cognitions Theory (e.g., Folger, 1986). Relatively little justice research, however, has considered the influence of peers' fairness opinions, and this theoretical gap is consistent with traditional theories of organizational behaviour that emphasize individual self-interest and not the group as a source of identity and motivation for the individual (Tsui, 1994).

The Group-Value Model of procedural justice (Lind & Tyler, 1988) which was later revised and termed the Relational Model (Tyler & Lind, 1992), provides a theoretical explanation for the impact of procedural and interactional justice in terms of group identification and processes. People value group membership because of its symbols of self-identity, its economic resources, and because the group is used as a source to judge the appropriateness of one's own attitudes, beliefs, and behaviour. Fair treatment norms are communicated within the group, and organizational procedures that support these values are favourably viewed (Lind & Earley, 1992). Individuals are motivated to maintain group membership, thus, perceiving and modeling the group's fairness norms is one way to achieve acceptance and a sense of belonging in the group. Moreover, people observe other group members' experiences with procedures and treatment and they may make inferences about how they may be personally affected in the future (James & Cropanzano, 1990).

The Relational Model and the associated research are consistent with Social Identity Theory which posits that group membership is an important aspect of one's self-concept, and that people strive to maintain or achieve a positive and distinct social identity (e.g., Kramer, 1991; Tajfel, 1982; Tajfel & Turner, 1985). Thus, it is reasonable to propose that an attack on other group members may be perceived as an attack on one's self-identity. For example, after observing or hearing about other group members' experiences with unfair treatment, an individual might think that as a fellow group member, he or she too will not be seen as deserving of fair treatment by that authority figure.

The research that supports the Relational Model often compares the strength of one's control over personal outcomes (i.e., a self-interest or instrumental model) to relational or group concerns that over-ride self-interest (i.e., a non-instrumental model) in predicting justice judgements (e.g., Giacobbe-Miller, 1995; Leung & Li, 1990; Tyler, 1989). Missing, is a body of justice theory and research that directly examines the impact of social information from group members on individual justice perceptions.

Empirical justice research examining social information. Folger, Rosenfield, Grove, and Corkran (1979) examined the impact of voice, bias in outcome allocation, and a peer's written fairness opinion on participants' fairness responses to an inequitable resource distribution decision (i.e., distributive justice). They found that when participants' outcome inequity was confirmed by social information from peers, it reinforced their beliefs that a decision was unfair, and the opportunity for voice did not increase satisfaction with the decision. When social information from peers indicated

that the outcome was fair, participants with opportunity for voice during decision making had greater decision satisfaction.

Steil (1983) examined the impact of social information through peers' written opinions on participants' perceptions of outcome fairness for those who either had an advantage or disadvantage in earning points for prizes. Results showed that disadvantaged participants who read peer opinions of outcome unfairness rated the process (i.e., procedural justice) as less fair than the disadvantaged participants who read no peer opinions. Consistent with Folger et al. (1979), perceptions of inequity were accentuated when confirming social information was present.

One study examined the impact of social information from peers on perceptions of interactional justice (Lind et al., 1998). Injustice was operationalized through the denial of participants' opportunities for voice by an authority figure. Lind et al. found that a single personal experience of injustice communicated by each of three group members affected a group consensus rating on perceptions of interactional justice more than the report of three experiences of injustice by only one member. They also found that participants significantly considered social information and took into account the experiences of their peers when forming their own justice judgments. The authors concluded that people use their own experiences of justice to assess the validity of fellow employees' reports of unfair treatment.

Upon examination of the three articles above, five points that are relevant to the present study are reviewed below. Specifically, these five points suggest that an examination of verbally communicated social information from peers regarding past

examples of authority figure treatment fairness, prior to experienced treatment, is necessary to establish the impact of social information on interactional justice perceptions of subsequent treatment and on the associated behavioural responses.

First, as mentioned earlier, interactional justice is an important aspect of fairness that deserves research attention. It was examined in only one of the above studies (Lind et al., 1998), and it did not include the informational component (i.e., explanations) of interactional justice. Instead, the measure focused on the supervisor's general fairness, politeness, and degree of bias.

Second, in two of the studies (Folger, et al., 1979; Steil, 1983), the social information was presented in writing, which may have impacted participants' acceptance of the social information differently than if communicated verbally. A meta-analysis (Murphy, Herr, Lockhart, & Maguire, 1986) found that the average effect size was larger in 'paper people' studies (e.g., vignettes), than in direct observation research, and the authors argued that 'paper people' convey stronger attitudinal signals relative to irrelevant information as compared to direct observation. Thus, researchers have argued against the use of 'paper people' in attitudinal research (Ilgen & Favero, 1985; Murphy, Herr, Lockhart, & Maguire, 1986).

Third, in all three studies, social information was available after participants experienced treatment or gained knowledge of an outcome. Thus, these studies did not assess the impact of social information presented prior to experience on perceptions of fairness.

Fourth, the social information in all three studies directly pertained to a current event (i.e., the social information was specifically about the experienced injustice), which allowed participants to consider the social information in the same context as their current experience. Alternatively, social information regarding the fairness of past treatment behaviour may commonly be communicated in the workplace, and it may be considered differently because the receiver of social information cannot assess the information in terms of personal experience with that exact event.

Fifth, the impact of fairness-related social information on behaviours, such as retaliation, has yet to be investigated. Thus, as mentioned in the beginning of this section, an examination of verbally communicated social information from peers regarding past examples of authority figure treatment fairness, prior to experienced treatment, is necessary to establish the impact of social information on interactional justice perceptions regarding subsequent treatment and on the associated behavioural responses (i.e., retaliation).

#### The Interaction of Prior Social Information and Subsequent Treatment

There are substantial theoretical and empirical bases to expect that social information can impact individuals' attitudes. Based on predictions from the literatures of Social Comparison, Social Information Processing, Organizational Climate, Newcomer Socialization, the Relational Model of procedural justice, and the findings from three justice studies, it was expected that fairness-related social information from one's peers will impact perceptions of interactional justice. Based on the interactional justice literature, it is expected that the authority figure's subsequent treatment--whether or not

an explanation is given for a negative event—will also impact perceptions of interactional justice. Hypotheses regarding the main effects of social information and subsequent treatment, however, were not made because an interaction between social information and subsequent treatment was expected.

There are theoretical and empirical reasons to believe that the impact of social information from peers indicating whether an authority figure was fair or unfair in the past will interact with the fairness of an authority figure's subsequent treatment behaviour to predict perceptions of interactional justice. The following literatures concerning the expected interaction will be reviewed: Fairness Heuristic Theory, Expectancies, cognitive and social-cognitive research on negative information, and the Endowment Effect and Prospect Theory.

Fairness Heuristic Theory. Folger and Cropanzano (1998) proposed that fairness perceptions can act as stereotypes, schemas, or heuristics that influence the interpretation of new fairness-related information. Van den Bos, Vermunt, and Wilke (1997) argued that fairness perceptions are rapidly formed. Thus, it is plausible that people may use heuristics based on fairness information from peers about an authority figure, and this may impact the interpretation of the authority figure's subsequent behaviour. For example, if an authority figure fails to provide an explanation for a negative outcome, people may utilize a heuristic based on prior social information to interpret the authority figure's behaviour.

Van den Bos and his colleagues proposed a Fairness Heuristic Theory (e.g., Van den Bos, Lind, & Wilke, in press; Van den Bos, 1999). The authors argued that to

explain people's judgments of fairness, it is important to consider what information is and is not available to an individual. Specifically, the order in which justice information is presented impacts overall perceptions of fairness, and the first justice information that an individual perceives is weighted most heavily during the formation of fairness perceptions. Van den Bos et al. (1997) found that when procedural justice information was available before distributive justice information, the former affected fairness judgements stronger than the latter. Results were reversed, however, when distributive justice information was available before procedural justice information. Other fairness research has also found this order effect (Van den Bos, 1996).

Fairness Heuristic Theory suggests that prior social information about an authority figure's fairness will frame and hence impact future attitudes about the authority's subsequent behaviour. This theory is consistent with cognitive and social-cognitive models of information processing which posit that people have limited information-processing capabilities (e.g., DeNisi, Cafferty, & Meglino, 1984; Feldman, 1981; Landy & Farr, 1980). When faced with a bombardment of perceptual stimuli, people take shortcuts and encode only portions of the available information when forming impressions about the traits and behaviors of others.

Researchers have used various terms to denote these cognitive simplifications including schemas, cognitive categories, prototypes, person schemas, perceptual sets, and implicit theories. Researchers have shown that these cognitive simplifications have an impact on future encoding, categorization, recall, and information integration, such that people are biased to interpret and recall information in a manner that is consistent with

their initial impression (e.g., Conway & Ross, 1984). One explanation for this phenomenon is that people are motivated to reduce cognitive dissonance (Festinger, 1957). For example, when information is incongruent with prior impressions, one way to reduce the cognitive dissonance is to alter the interpretation of the new information so that is consistent with prior impressions.

The above reasoning is consistent with the work of Tversky and Kahneman (1974) who proposed that people's attitudes are influenced by an anchoring adjustment heuristic. Typically, people adjust their interpretation of new information so that it is more congruent with their previous attitudinal anchor. Thus, primacy effects can occur; information that is presented first can act as an anchor for the interpretation of subsequent information. A different line of reasoning also suggests that the initial fairness information people receive will influence the interpretation of subsequent fairness information. Kelly's (1967) theory of attribution proposed that people estimate or recall knowledge about how the individual in question acted in the past when confronted with the same situation and how the individual acted in similar situations in order to understand the subsequent actions of an actor.

The above literature predicts that participants may form impressions about an authority figure based on fairness information from their peers, and this may impact the interpretation of the authority figure's subsequent behavior in a manner that is consistent with the initial information people receive. For example, if an authority figure fails to provide an explanation for a negative outcome, people may utilize an impression based



on prior social information to interpret the behavior so that it is consistent with initial impressions.

These theories, however, may not sufficiently discriminate between the impact of different combinations of information that indicate fair and unfair social information, and fair and unfair treatment. The prediction that fairness perceptions will be primarily influenced by the initial information people receive and this information will influence the interpretation of subsequent information may oversimplify the impact of different kinds of information; specifically, whether prior and subsequent information indicates fairness or unfairness. Thus, what follows are summaries of Expectancy Theory, research on negative information, and the Endowment Effect and Prospect Theory, which are used as the primary bases for the hypothesized interaction of prior social information and subsequent treatment on both interactional justice perceptions and retaliation.

Expectancy Theory. Olson, Roese, and Zanna (1996) defined expectancies as probabilistic beliefs about future states of affairs. Parenthetically, expectancy theory (Olson et al.) is unrelated to Vroom's (1964) motivational theory of the same name. Olson et al. proposed that expectancies influence people's attitudes and can be derived from social information. When faced with new information, confirmation of people's expectancies generally results in positive affect because people want the world to be predictable (e.g., Jones, Bentler, & Petry, 1966). Confirmation of expectancies also tends to induce heuristic processing: Individuals feel little need to carefully examine stimuli if it confirms initial impressions. Thus, when people have expectations of fair treatment

based on social information, and these expectations are confirmed by the target's behaviour, positive affect results and people's processing attention is reduced.

When new information disconfirms expectations, careful processing of expectancy relevant information occurs, and it generally produces negative affect over the lack of the predictability of the environment (e.g., Mandler, 1975). Positive reactions to disconfirmation, however, can occur if the new information is favourable to the individual (Olson et al., 1996). To summarize Expectancy Theory as applied to the present study, it suggests that whether prior social information is consistent or inconsistent with subsequent behaviour, the result is different cognitive processing. Moreover, the favourableness of the new information can produce a negative or positive affective reaction.

Cognitive and social-cognitive research on negative information. DeNisi, Cafferty, and Meglino (1984) concluded that in general, people weigh negative information more heavily than other information, and this has been empirically supported (Hollman, 1972; London & Hakel, 1974; London & Poplawski, 1976; Wyer & Hinkle, 1976). Consistent with this, Shiffrin (1988) used the term automatic vigilance to describe people's increased attention paid to negative stimuli compared to neutral and positive stimuli.

One explanation for this phenomenon is that people tend to seek diagnostic information (Hamilton & Huffman, 1971; Trope & Bassok, 1982). Diagnostic information is that which provides substantial certainty when making a decision and lessens the plausibility of a competing decision. Other researchers (e.g., Jones &

Thibaut, 1958) have also proposed that negative information facilitates the greatest reduction of uncertainty. For example, several observations of fair behaviour do not preclude the possibility that an individual can act unfairly. However, a single observation of unfair behaviour is enough for some people to believe that the individual can be unfair. Consistent with this, Taylor's (1991) review concluded that negative events evoke stronger cognitive, emotional, and social responses than do positive and neutral events.

Folger and Cropanzano (1998, also see Gilliland, Benson, & Schepers, 1998) proposed that a negative asymmetry for fairness judgements exists: unfair treatment has more impact on attitudes and behaviour than does fair treatment. They suggested that fair treatment that is viewed as consistent with one's expectations of treatment may not influence behaviour any more than one would congratulate someone who drives on the correct side of the road. Alternatively, when perceived unfairness violates expectations of fair treatment, it has a powerful influence on behaviour, especially when the perceiver has been habituated to fair treatment. Thus, when prior social information prompts an expectation of fairness, perceptions of interactional justice and the reactions to unfairness may be more heavily influenced by unfair treatment than by fair treatment. Moreover, there are other reasons presented below that suggest that unfulfilled expectations of fair treatment have more impact on fairness attitudes than disconfirmation of expectations for unfair treatment.

Endowment Effect and Prospect Theory. The Endowment Effect (Thaler, 1980) refers to people's general reluctance to part from assets that belong to them, whether tangible or intangible. People believe they are entitled to fair treatment (Folger, 1993a),

and Folger and Cropanzano (1998) wrote, “injustice takes something away from a person” (pp. 137), which may be tangible (e.g., a deserved pay raise), or intangible (e.g., one’s dignity). Moreover, fair treatment is desired because it is perceived as an end in itself (Folger & Bies, 1989; Greenberg, 1993; Messick & Sentis, 1979; Thibaut & Walker, 1975; Tyler, Rasinski, & Spodick, 1985; Walster, Bersheid, & Walster, 1973). For example, research has found that people respond strongly to procedural and interactional justice independent of the outcomes they receive (e.g., Lind et al., 1990; Lind, MacCoun, Ebener, Felstiner, Hensler, Resnik, & Tyler, 1990). People desire and expect fair treatment, thus, when unfairness is perceived, it may be seen as a loss of what people expect and to which they feel entitled.

Kahneman and Tversky (1983) proposed Prospect Theory to describe the phenomenon that people tend to be risk averse regarding the potential for gain, and risk seeking when there is potential for loss. Thus, the threat of a loss has more impact on behaviour than the potential for gain. Together, Prospect Theory and the Endowment Effect predict that the loss of one's entitled fair treatment has more impact on perceptions of fairness and the responses to them than does gaining fair treatment.

Based on the review of the literatures regarding Fairness Heuristic Theory, Expectancy Theory, cognitive and social-cognitive research on negative information, the Endowment Effect, and Prospect Theory, an interaction predicting interactional justice between social information regarding the fairness of an authority figures past treatment and the authority figure’s subsequent behaviour is expected. What follows is the rationale for the expected pattern of results.

It is proposed that when prior social information creates an expectation of unfairness that is disconfirmed by subsequent fair treatment, positive affect and perceptions of fair treatment will result because the new information is favourable. This scenario, however, will be perceived as less fair than one in which social information indicates fair treatment in the past and this expectation is confirmed by the authority figure's subsequent fair treatment. In this latter scenario (fair social information, fair treatment), confirmation of expectancies occurred; the world was predictable and the new information was favourable. Regarding the former scenario (unfair social information, fair treatment), recall that increased attention and weighting is given to negative information than to positive information, and heightened processing attention occurs as a result of disconfirmed expectancies. Thus, in this scenario (unfair social information, fair treatment), the social information indicating unfairness may still be considered when judging the fairness of the authority figure's subsequent behaviour.

Alternatively, when unfairness is subsequently perceived, prior social information suggesting either fair or unfair past treatment may have a similar impact on fairness perceptions. When unfairness is expected based on social information, and unfair treatment is received, this negative information will be weighted heavily and perceptions of unfairness will result. Moreover, people may feel more confident in a judgement that an individual is unfair when their experience of unfair treatment is confirmed by peers who also experienced unfair treatment (Folger et al., 1979; Steil, 1983). Likewise, when social information leads to an expectation of fairness, and the expectation is disconfirmed by unfair behaviour, careful processing occurs, and negative affect and perceptions of

unfairness result because of the unpredictability of the world and the unfair treatment is unfavourable. Moreover, when unfairness is experienced and is seen as a loss of one's expected entitlement, it has more impact on attitudes than when expectations of unfairness are disconfirmed by gaining fair treatment. Thus, these two scenarios (prior social information that was either fair or unfair with subsequent unfair treatment) will result in similar levels of perceived interactional justice, although it is expected that unfair social information followed by unfair treatment will result in lower perceptions of interactional justice. Both of these scenarios will be associated with lower perceptions of interactional justice than when subsequent behaviour is perceived as fair.

It was also expected that the absence of social information produces a different pattern of the treatment's effect on interactional justice perceptions than from the above scenarios. In particular, in the absence of social information, expectations of treatment based on social information are not formed, and hence, they cannot be confirmed or disconfirmed. Earlier, it was mentioned that people feel entitled to fair treatment (Folger, 1993a), and this would occur in the absence of social information. A perceived entitlement of fair treatment, however, is different from an expectation of fair treatment. One could feel entitled to fair treatment, but still expect the potential for unfair treatment based on social information from his or her peers. Alternatively, people that feel entitled to fair treatment and hear information from their peers suggesting that an authority figure was fair in the past may expect future fair treatment and may feel more entitled to it because others had received fair treatment in the past.

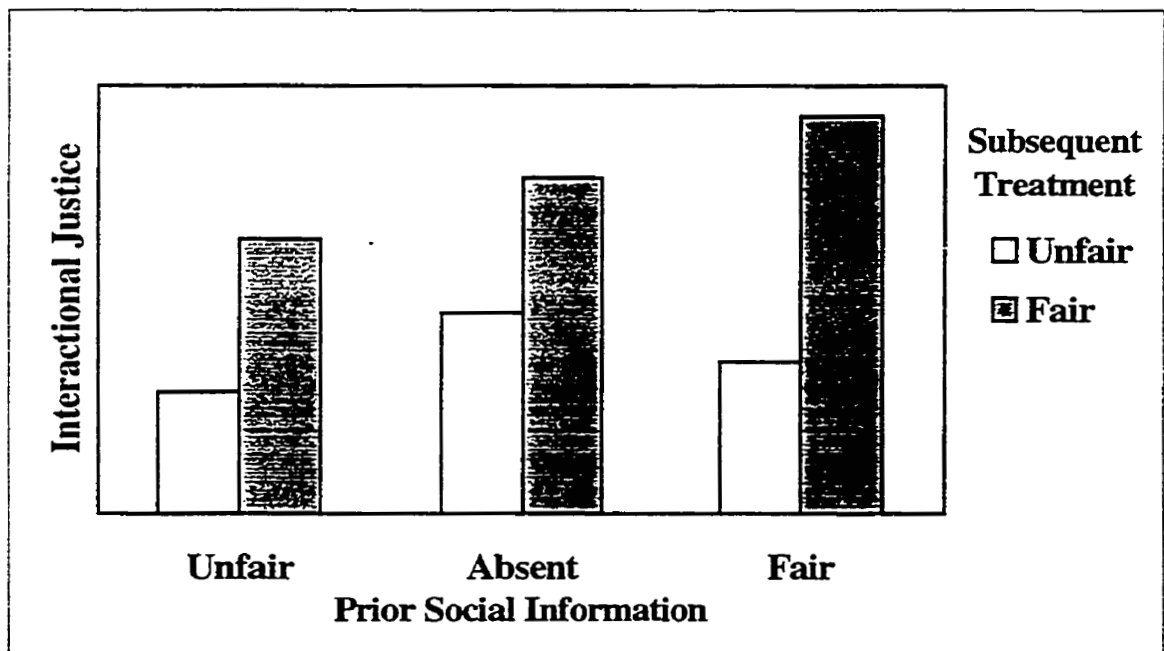
In the absence of social information, the treatment people perceive is the only information from the environment that they have to judge the fairness of the authority figure in question. When fair social information is presented prior to unfair treatment, people's expectations are disconfirmed in an unfavourable manner, and their expected entitlement of fair treatment is lost. Thus, it is expected that unfair treatment with prior social information indicating past fairness will result in lower perceptions of interactional justice than unfair treatment in the absence of social information. Alternatively, when fairness is subsequently experienced, the absence of social information will result in interactional justice perceptions that are in between the scenarios in which prior social information indicated past fair, or unfair treatment.

The interaction then, is expected to show the following pattern. When subsequent treatment is perceived as fair, lower to higher interactional justice perceptions will be associated with social information that indicates either unfair treatment in the past, is absent, or indicates past fair treatment, respectively. Alternatively, when treatment is perceived as unfair, prior social information indicating unfairness will be associated with lower perceptions of interactional justice than when social information indicates past fairness, and both of these scenarios will be associated with lower perceptions of interactional justice than when social information is absent.

Tests of the differences among these cells, however, are dependent upon the nature of the manipulations. The above a priori reasoning assumes that the levels of each manipulation and between the two manipulations (unfair, absent, or fair social information, and unfair or fair treatment) are equivalent both procedurally and

distributionally (see Cooper & Richardson, 1986). Thus, based on the theoretical frameworks presented above, predictions of cell differences are not necessarily warranted in the context of the present study's non-perfectly equivalent manipulations. Instead, an interaction effect is hypothesized, and the expected pattern of cell means is presented in Figure 1.

*Hypothesis 1:* Whether social information from peers indicates that an authority figure's past treatment was fair, unfair, or no information is given will interact with subsequent treatment (fair or unfair) to predict perceptions of interactional justice. See Figure 1 below for a graph of the expected interaction.



Note: Higher interactional justice indicates greater perceived fairness.

**Figure 1.** Expected interaction of social information (unfair, absent, or fair) by treatment (unfair, or fair) on interactional justice.



One purpose of the present study was to explore the role of social information from peers in justice attitude formation. It was predicted that the social cues and subsequent treatment interact to predict perceptions of interactional justice. A second purpose of the present study was to examine whether social information influences retaliatory behaviour. The following section reviews the relationships between perceptions of fairness with retaliatory behaviours and task performance. Specifically, this section outlines Equity Theory, Social Exchange Theory, the Norm of Reciprocity, empirical research on fairness and retaliation, theory and research on interactional justice and retaliation, research regarding one's willingness to express anger as a moderator of the fairness-retaliation link, and research on the relationship between perceived fairness and task performance. The present study contributes to the literature by examining the impact of fairness-related social information on these behaviours.

#### The Impact of Interactional Justice Perceptions on Behaviour

Equity Theory. Equity Theory (Adams, 1965) provides a theoretical basis for relationships between justice perceptions with work behaviours and attitudes. As previously mentioned, Equity Theory proposes that individuals compare themselves to a referent other regarding their ratios of inputs (i.e., contributions to the organization) to outcomes received (e.g., fair treatment, pay). Folger and Bies (1989) proposed that fair treatment is seen as an end in and of itself, and hence fairness can be conceptualized as an outcome. Drawing from Festinger's (1957) cognitive dissonance theory, Adams argued that people will attempt to reduce undesirable tension caused by perceptions of inequity. To illustrate, consider an employee who perceives unfair treatment by an authority figure

as an undesirable outcome, thus resulting in an inequitable input/output ratio. One method of equity restoration is adjusting one's inputs (Adams), for example, through a retaliatory withdrawal of task effort.

Social Exchange Theory and the Norm of Reciprocity. The relationships between fairness and work behaviours are also explained by Gouldner's (1960) Norm of Reciprocity. That is, a mutually contingent exchange occurs between two or more individuals during social interaction, and people tend to reciprocate benefits received. Similarly, Social Exchange Theory (Blau, 1964) posits that people expect future returns for their contributions. Thus, employees expect fair treatment in return for their positive work behaviours and attitudes, which organizations expect in return for their fair treatment of employees. Alternatively, if unfair treatment is perceived, the exchange relationship may be characterized by retaliation in the form of a limitation to contractual obligations (Organ, 1988, 1990).

Perceptions of fairness and retaliatory behaviour. The relationships between justice perceptions and negative workplace behaviours have been a common topic of study (e.g., O'Leary-Kelly, Griffin, & Glew, 1996; Robinson & Bennett, 1995). Specifically, fairness has been shown to be negatively related to retaliatory behaviours, defined as adverse reactions to perceived unfairness by disgruntled organizational members toward the organization or its leaders (Skarlicki & Folger, 1997). Organizational justice theorists have argued that employees who perceive managerial treatment, processes, and/or outcomes as unfair often experience feelings of anger eliciting a desire for some type of retribution (e.g., Folger 1987, 1993b; Greenberg,

1990b; Sheppard, Lewicki, & Minton, 1992). Folger and Cropanzano (1998) suggested that injustice is a perceived loss of what people believe that they deserve. Thus, people seek retribution to restore fairness, and the desire to retaliate is a powerful motivator of behaviour (Bies & Tripp, 1995b). Retaliatory behaviour that was related to perceived unfairness has included litigation against an employer (Bies & Tyler, 1993), absenteeism (Hulin, 1991), protest behaviour (Vermunt, Wit, Van den Bos, & Lind, 1996), the withdrawal of citizenship behaviours (e.g., Moorman, Niehoff, & Organ, 1993), and voluntary turnover (Jones & Skarlicki, 2000).

Baron and Neuman (1996) proposed three types of aggressive workplace behaviours that are influenced by perceptions of fairness: overt aggression, expressions of hostility, and obstructionism (e.g., withholding effort or resources). Other researchers (Baron & Neuman, 1996; Folger & Baron, 1996) have suggested that direct retaliation such as vandalism (DeMore, Fisher, & Baron, 1988) and theft (e.g., Greenberg, 1990a, 1993; Hollinger & Clark, 1983) may represent a small segment of retaliatory behaviour. Acts of covert retaliation may be precursors to overt retaliation, and they may be more common. Subordinate organizational members may fear reprisal for their direct retaliation because they are less powerful than the organization itself or its leaders. Thus, indirect forms of retaliation have been examined such as protest behaviour (e.g., Greenberg, 1987; Taylor et al., 1987; Van den Bos et al., 1997), the withdrawal of citizenship behaviours (e.g., Moorman et al., 1993) and resistance from employees (Jermier, Knights, & Nord, 1994). For example, Skarlicki and Folger (1997) found that when perceptions of interactional justice were low, procedural and distributive justice

interacted to account for variance in retaliatory behaviours including negative gossip about the boss, badmouthing the organization, protest behaviour, and the withdrawal of citizenship behaviour.

Interactional justice and retaliation. Cody and McLaughlin (1985) argued that a violation of social expectations (i.e., no explanation is provided when one is expected) can result in anger. However, the reaction to perceived unfairness depends on the offended party's view of the situation (Thomas, 1976). Research has found that organizational members tend to make overly personalistic attributions about others' behaviour, especially towards those in power positions (Kramer, 1994), and these attributions can motivate revenge (Baron, 1988a; Bies & Tripp, 1996). In a laboratory study, Greenberg (1993) manipulated the degree of information in an explanation about why participants would receive lower than expected pay, and provided an opportunity for theft. When the explanation was perceived as lacking, participants stole more money.

Consistent with the above, Folger and Skarlicki (1999) suggested that an authority figure's explanation for a negative outcome may mitigate personalistic or other alternative attributions for that negative outcome. They proposed that perceptions of interactional justice stemming from a sincere social account are negatively related to retaliatory behaviour and the desire to "get back". Folger and Cropanzano (1998) argued that perceptions of injustice result from an intentional offense against social mores with disregard to the interests of others (i.e., no explanation was given when one was expected), and this can lead to retaliation. Indeed, research and theory has examined the phenomenon of revenge against unfair bosses (Bies & Tripp, 1995a; Folger & Baron,

1996; Folger & Skarlicki, 1998; Greenberg & Alge, 1998; Lucero & Allen, 1994; Spector, 1997; Tripp & Bies, 1997). The relationship between perceptions of interactional justice and retaliatory behaviour is well supported (Bensimon, 1994; Greenberg, 1993, 1999; Skarlicki & Folger, 1997; Skarlicki, Folger, & Tesluk, 1999).

Folger and Cropanzano's (1998) Fairness Theory also provides additional reasons why an adequate explanation mitigates the potential harm done by a negative outcome (i.e., retaliation). Their Fairness Theory incorporates past theoretical and empirical developments in the justice literature, and is heavily influenced by both Referent Cognitions Theory (RCT; Folger, 1993b), and the idea that people's attributions of intent are a major determinant of fairness perceptions, and in particular, of reactions to unfairness. One way in which they extend RCT is that a negative event is not conceptualized solely as an unfavourable outcome (i.e., low distributive justice), but also includes the perception of unfair treatment by authority figures. For example, failing to provide an explanation for a negative outcome is a negative outcome in and of itself; it shows a sign of contempt and a lack of dignity and respect (Tyler & Lind, 1992). Folger and Cropanzano (1998) wrote, "All aspects of the agent's conduct, whether or not they have a direct bearing on employee compensation or the means for determining compensation, can carry implicit messages about whether the agent views the employee as someone worthy of that minimal level of respect to which all humans should be entitled" (pp. 174-175).

Fairness Theory proposes that the experience of a negative event and the reactions to it can depend upon what it would have been like under other conditions (i.e.,

alternative outcomes). If a manager is held accountable for a negative event, an individual considers if it could and hence should have been avoided (i.e., could another form of interpersonal conduct have occurred instead?). Thus, when determining and responding to unfairness, people compare their experience to counterfactual alternatives which are defined as mentally simulated alternative outcomes, processes, and/or interpersonal treatment. The magnitude of the impact of a negative event (either an unfair outcome, or unfair treatment) is represented by the discrepancy between the actual event and different counterfactual alternatives. Thus, the strength of a negative reaction towards management depends on the ease of imagining how management could have acted otherwise and why management should have acted otherwise.

Attributions of intent play a major role in this process because if, for example, if an individual attributes a manager's unfair treatment as intentional ill will, then the treatment clearly could and should have been avoided. Attributions of intent influence when someone will become angry and act upon their anger (Bies & Tripp, 1995a; Tripp & Bies, in press). Baron and others (1985, 1988a, 1988b, 1990a, 1990b; Johnson & Rule, 1986) have found that anger resulting from negative outcomes is reduced when fault is attributed away from the harm-doer.

Explanations can mitigate reactions to unfair outcomes because they provide an account for why management could not and hence should not have acted otherwise given the circumstances. The account undercuts the individual's counterfactual alternatives (mentally simulated alternatives) that would have resulted in a more favourable outcome. If the explanation for a negative event refers to external causes and is perceived as

adequate, there is less likelihood of an attribution of blame. If the explanation is coupled with sensitivity and respect, then the individual's cognition becomes, for example, "although I received a poor outcome, it was not my manager's fault, and he or she did consider my interests and needs before acting". If an account is not provided for a negative outcome, the individual asks should the outcome have occurred, and evaluates the outcome against a normative criterion. If it should not have occurred (i.e., someone is blamed), this becomes the basis of resentment and moral outrage. Put simply, unjustifiable and indefensible negative outcomes or treatment influence anger and resentment, which may lead to negative reactions to unfairness. Thus, the provision of adequate explanations can mitigate the impact of an unfavourable outcome that otherwise may have prompted retaliation.

To summarize the above literature, the link between perceptions of interactional justice and retaliatory behaviour (e.g., Greenberg, 1999; Skarlicki & Folger, 1997) is theoretically based in Equity Theory (Adams, 1965), and Social Exchange Theory (Blau, 1964). Fairness Theory (Folger & Cropanzano) suggests that an adequate explanation showing dignity and respect for a negative event mitigates the potential for an attribution of harmful intent, and will reduce the likelihood of retaliation.

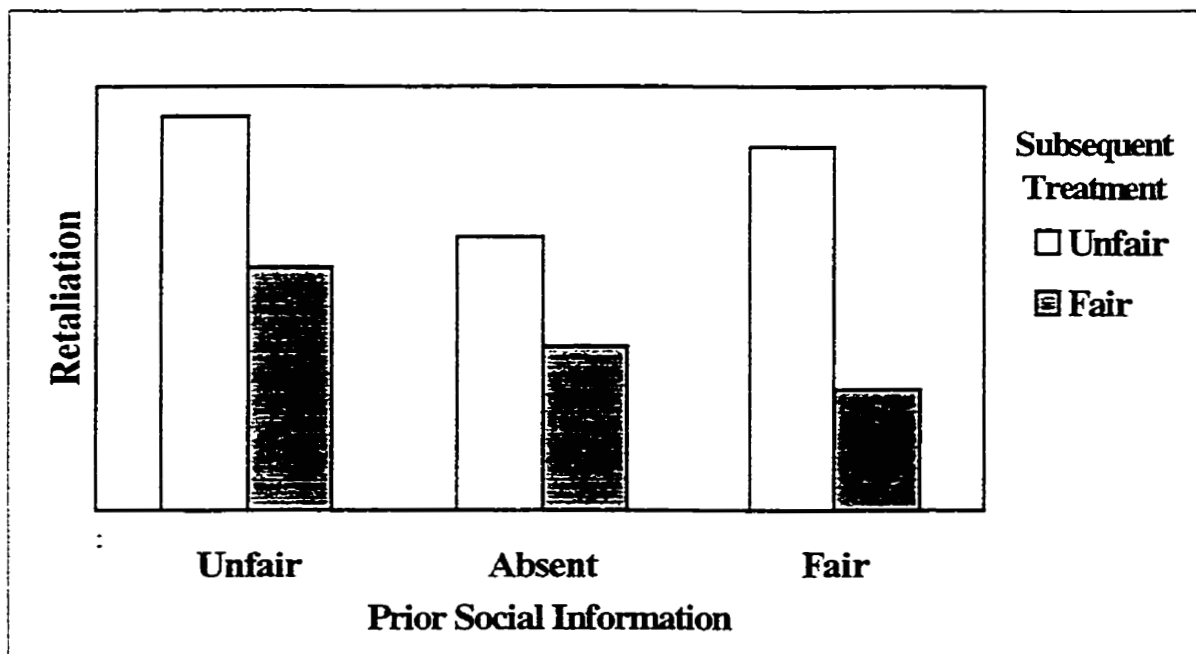
Social information from one's peers may play a role in the relationship between unfairness and retaliation. Folger and Cropanzano (1998) proposed that fairness perceptions and the responses to them can be influenced by knowledge of other people's experiences of unfair treatment. They wrote: "the inclination to censure or punish wrongful intentions should not depend on having experienced harm directly... and the

display of a willingness to engage in unbridled exploitation of others amounts to indicating that the cooperation of others will not be returned in kind (violating the universal norm or reciprocity)” (pp. 78). Moreover, a fairness violation to one group member could be perceived by other group members as a violation against the group itself (Tyler & Lind, 1988, 1992), and people may judge other group members' experiences of fairness in terms of personal impact (James & Cropanzano, 1990).

The following hypothesis contributes to the justice literature by directly examining the impact of social information regarding perceptions of interactional justice on retaliatory behaviour. For example, it may be that people are more likely to retaliate when they feel unfairly treated and have heard corroborating evidence about an authority figure's past unfair treatment than other people who also feel unfairly treated but have not heard prior social information about the authority figure's past treatment fairness. Alternatively, people that expect fair treatment based on social information may retaliate more when they subsequently experience unfair treatment (the expected and entitled fair treatment was lost) than people who did not hear prior social information. Based on the same literatures and reasoning as in Hypothesis 1, the following hypothesis was made.

*Hypothesis 2:* Whether social information from peers indicates that an authority figure's past treatment was fair, unfair, or no information is given will interact with subsequent treatment (fair or unfair) to predict retaliation (specifically, protest behaviour). See Figure 2 for a graph of the expected interaction.





Note: Higher retaliation indicates more retaliatory behaviour.

**Figure 2.** Expected interaction of social information (unfair, absent, or fair) by treatment (unfair, or fair) on retaliation.

Willingness to express anger as moderator between perceptions of unfairness and retaliation. Justice researchers have viewed perceived fairness as an affective event (e.g., Weiss & Cropanzano, 1996). Averill (1982) proposed that people assess the motives and intentions of a transgressor, and anger results when they view a harmful action as intentional. Thus, there is reason to believe that anger plays a role in the relationship between perceptions of unfairness and retaliation. Researchers have found that injustice influences anger (Bies & Shapiro, 1987; Cropanzano & Baron, 1991; Cropanzano & Randall, 1995; Weiss, Suckow, & Cropanzano, 1999), and feelings of anger have been

associated with aggression (e.g., Baron & Richardson, 1994). Consistent with interactional justice theory, research has found that a leader's causal account can reduce employees' anger (Bies & Shapiro, 1987), and the resulting punitive reactions (Gioia & Sims, 1986; Wood & Mitchell, 1981). For example, Bies, Shapiro, and Cummings (1988) found that the perceived adequacy and sincerity of an explanation influenced feelings of anger.

Past justice research has examined anger as a response to unfairness and its connection with retaliation. The present study extends this literature by examining a related, but different construct from anger (i.e., a state): one's willingness to express anger (i.e., a trait, or an individual difference measure). Ortony, Clore, and Collins (1988) suggested that behaviours are responses to emotions in conjunction with an event. It seems plausible, however, that people's willingness to express their emotions (i.e., anger) may be a predictor of their behaviour (i.e., retaliation) in response to an event (i.e., perceived unfairness). Indeed, one study was located (Rever-Moriyama, 1999) which found that one's willingness to express anger was positively associated with retaliation. Thus, people who perceive unfair treatment and who are more willing than others to express their anger may be more likely to do so through retaliation as a response to the anger associated with the unfair treatment.

*Hypothesis 3:* Interactional justice perceptions negatively relate to retaliatory behaviour (specifically, protest behaviour): lower perceptions of interactional justice (less fair) are associated with increased retaliation.

*Hypothesis 4:* The relationship between interactional justice perceptions and retaliation is moderated by people's willingness to express anger. Specifically, people that perceive lower (unfair) interactional justice and are more willing to express their anger will retaliate more than people who are less willing to express their anger, regardless of whether they have low or high interactional justice perceptions.

Perceptions of fairness and task performance. Fasolo, Eisenberger, and Michaelis (1990, cited from, Konovsky & Cropanzano, 1991) used Social Exchange Theory to predict a relationship between task performance and procedural justice. Consistent with Gouldner's (1960) concept of the Norm of Reciprocity, Social Exchange Theory predicts that when people feel fairly treated in the workplace, they may reciprocate through increasing their work efforts, and hence, task and work performance is improved. Task and work performance is also theoretically tied to fairness because when unfairness is perceived, people may lower their task effort as a means to punish the transgressor, or to restore inequity (Adams, 1965). Procedural justice perceptions have been empirically related to task performance in laboratory (e.g., Lind et al. 1990), and field studies (e.g., Fasolo et al., 1990). Konovsky and Cropanzano (1991) found that job performance was related to the provision of an explanation (interactional justice). Baron (1990a) found that explanations for a negative event that invoked external attributions led to higher task performance and more task cooperation than other approaches that did not include an explanation attributing the reason to a source external to the explanation provider.

In general, there is less literature supporting the relationship between interactional justice perceptions and task performance and the effect sizes in these studies tend to be smaller than in the other justice research reviewed herein. Thus, an interaction between social information and treatment on task performance is not predicted as it was for interactional justice perceptions and retaliatory behaviour. Instead, the following exploratory predictions were made regarding the individual effects of interactional justice perceptions and social information on task performance.

*Hypothesis 5:* Interactional justice perceptions positively relate to task performance: higher (more fair) interactional justice perceptions are associated with higher task performance.

*Hypothesis 6:* Whether social information from peers is absent, or indicates past fair or unfair treatment by an authority figure accounts for variance in task performance, incremental to the authority figure's subsequent treatment (fair or unfair).

## Method

### Participants

Participants were 134 volunteer undergraduate students from the University of Calgary who received a 1% bonus credit towards a Psychology class grade for their participation. For all results reported herein, 107 participants were used in the analyses (see the below heading of "Data Removal"). Based on medium effect sizes ( $R^2_{inc} = .10$ ; Cohen, 1988) for the main effects of social cues, treatment, and the Social Cues  $\times$  Treatment interaction, the power levels for an  $N$  of 107 were all above the recommended

.80 (.942, .974, and .942, respectively). Seventy-six participants were female (71%), and the mean age was 20.8, ranging from 17 to 46 years. On average, participants were in their first or second year of their undergraduate degrees and had previously participated in one psychological study. Nineteen participants were Psychology majors in their second to third year, and 13 had additional post-secondary education (e.g., technical school-diploma).

### Procedure

General overview. A 3 (unfair, absent, or fair Social Cues)  $\times$  2 (unfair, or fair Treatment) factorial design was used. While participants waited for a tardy experimenter, two research confederates acting as participants communicated scripted social cues indicating that the experimenter's treatment in the past was either fair, unfair, or no fairness-related information was given. Fifteen minutes after the commencement of the session, the experimenter arrived and either provided an adequate explanation for his lateness or did not do so (fair and unfair Treatment conditions, respectively). Following the manipulations of social cues and treatment, participants completed a task and questionnaire that was intended to conceal the purpose of the study. After the task-related questionnaire, measures of interactional justice, retaliatory behaviour, anger/hostility, and the manipulation checks were completed before debriefing.

Experimental sessions. Participants signed up for a single experimental session that the research assistant randomly assigned to one of six experimental cells. The sign-up sheet indicated that first and second year students were preferred in order to reduce the number of participants who had prior contact with, or familiarity with the experimenter.

A second statement asked participants to avoid signing up for a research session with people they knew to lessen the introduction of different sources of variance among the conditions such as conversation among participants.

Each experimental session was comprised of an average of seven participants (ranging from three to ten people). For every session, two female confederates acting as participants were also present (C1 and C2), as well as a female research assistant (RA), and the experimenter. At the beginning of each session, C1 was seated before any other participants arrived. C2 entered three minutes after the indicated start of the session (at which point all other participants were present), and briefly said hello to C1. Following this, the RA immediately closed the door and the experimental session began. The RA entered the room and informed participants that the study would not take the entire hour as previously indicated on the participant sign-up sheet, and that the session would begin as soon as the experimenter arrived. After the RA waited three minutes and consulted a watch in an inquisitive manner, she administered the consent forms (see Appendix A) and left the experimental room for the adjoining room.

The social cues began as soon as the RA was outside the room and was listening to the manipulation to ensure its completion before the late experimenter arrived. The experimenter was blind to the social cues condition, and the confederates were blind to the treatment condition.

Social cues manipulation. In past laboratory research, confederates' comments successfully manipulated procedural fairness (Weiss et al., 1999). In the present study, two research confederates provided scripted social cues that fictitiously claimed that the

experimenter was either unfair or fair (i.e., interactional justice) in a past research setting (see Appendix B). The confederates were trained on the delivery of the social cues so that they were believable and consistent across conditions. To reduce the likelihood of unfair comparisons (Cooper & Richardson, 1986) the unfair and fair levels of social cues covered the same content, except that the examples indicated fair or unfair past treatment. A control condition (absent social cues) was also included to determine the impact of the treatment manipulation on interactional justice, retaliation, and task performance in the absence of social cues.

So that the discourse seemed plausible and to impress upon participants that the confederates previously knew each other, the confederates conversed together in a casual manner. The conversation was grounded in fairness theory (e.g., whether or not the experimenter provided adequate responses to questions, treated people consistently, and showed respect), and was refined based on post-hoc feedback from participants in pre-study pilot trials ( $N = 19$ ) to ensure that the cues were believable. The confederates talked about a past example of one confederate's interaction with the experimenter in a previous research setting so that participants perceived the social information as relevant, credible, and salient to their immediate experience, so as to maximize the impact of social information on attitudes toward the experimenter (e.g., Salancik & Pfeffer, 1978; Weis & Nowicki, 1981). Moreover, the confederates were both in their early twenties and were psychology undergraduate students so that participants perceived the confederates as similar (i.e., fellow students) to maximize the influence of social information on attitudes (e.g., Salancik & Pfeffer, 1978). To assess consistency across conditions, the RA listened

carefully during the delivery of the social cues from outside of the room, documented any potential deviations from the confederates' scripts, and noted any conversations among participants regarding fairness or the experiment, or conversations that might have impacted participants' ability to attend to the social cues.

After the social cues manipulation, the RA immediately returned and announced that the experimenter appeared to be late, and that the study may take longer than was initially expected. The RA proceeded to administer the demographics form (see Appendix C), and remained in the room until the arrival of the tardy experimenter. The experimenter arrived fifteen minutes after the scheduled commencement of the study and immediately gave an explanation or did not (the fair and unfair treatment conditions, respectively).

Treatment manipulation. Weiner, Amirkhan, Folkes, and Verett (1987) found that the presence or absence of an explanation for lateness in a laboratory setting elicited perceptions of fair and unfair treatment. In the present study, the experimenter's lateness was intended to be a negative event (recall that participants were told that the study would not take as long as indicated and would not begin until the experimenter arrived) that would set up participants' expectations for an explanation. Feedback from participants during pilot testing indicated that the experimenter's 15-minute lateness was sufficient to be perceived as a negative event, and to prompt an expectation for an explanation.

Consistent with past theory and research, participants in the fair treatment condition received a clear, adequate, timely, and sincere explanation with an apology for



the lateness while the experimenter showed sensitivity, dignity, and respect to participants (see Appendix D). Also consistent with past justice research, the authority figure's explanation for the lateness attributed the cause to external reasons; participants were told that printing services did not make copies of some forms that were needed to complete the study. After the explanation was given, the experimenter described the ostensible research task to participants.

For the unfair treatment condition, participants heard no explanation regarding the experimenter's lateness. Instead, the experimenter entered the room, introduced himself, and immediately began to explain the task to be completed. This was expected to be perceived as unfair because theory and research shows that people expect an explanation when they have been inconvenienced or have experienced a negative event (e.g., Folger, 1993a). If an explanation is not given when expected, it can be seen as a sign of disrespect (e.g., Folger & Skarlicki, 1999). In both the fair and unfair treatment conditions, the experimenter acted as though he was "out of breath" upon arrival.

Task. Following the social cues and treatment manipulations, participants completed the task that comprised the ostensible purpose of the study. Participants were informed in the initial consent form that the purpose of the experiment was to assess performance on a cognitive task in the presence of background noise (muffled conversation) similar to which normally occurs in a work setting. Participants were instructed to spend eight minutes using a phonebook to find and record as many telephone numbers and addresses as possible from a list of 25 names in the order that they appeared (see Appendix E). The number of successfully completed addresses and

phone numbers served as the measure of task performance. Nine post-task questionnaire items (see Appendix F) were administered to impress upon participants that the task and the background noise were of primary interest to the experimenter, (e.g., "I believe that the background noise had a negative impact on my performance on the task").

Participant feedback from pilot testing indicated that the eight minute task and the completion of nine task-related questions were sufficient to impress upon participants that the task was the "true" purpose of the study.

Administration of measures. After the task questionnaire, participants completed the interactional justice measure that stated that answers were to be used to assess the research conducted within the Industrial-Organizational (I-O) Psychology area-group. The experimenter explained that the department has an I-O area group that is comprised of faculty members and graduate students who study Psychological principles as applied to the workplace. Participants were told that the questionnaire would be given out during future studies conducted by I-O area-group members, and the experimenter stressed that the questionnaire was separate from the present study. Items were typed in different format and font from the other measures, and the fairness questionnaires were visibly placed in one manila envelope. Participants completed filler items as well as target items assessing perceptions of interactional justice (see Appendix G), that included a line for the experimenter's name that was typed in a different font and size than the rest of the form.

Following the justice measures, retaliatory behaviour was assessed (see Appendix H). The experimenter told participants that this questionnaire was also separate from the

study, and that all graduate students in the future would be evaluated with the same form at least once during their two to six years of research within the department. Participants were told that the Department's director of graduate studies would use their responses as part of general graduate student evaluations. The experimenter stressed that the questionnaire was voluntary, confidential, that he would not see their responses; he also encouraged participants to seal the envelope when finished. The retaliatory questionnaire was typed in a different font and format from the other measures, had the fictitious research title typed in a different font on a line at the top, was presented on Psychology Department letterhead, was fictitiously signed by the director of graduate studies, and was individually placed in envelopes containing a departmental stamp.

Following the retaliation measure, participants were told that their participation was almost finished and were asked to complete another questionnaire (the anger/hostility scale, see Appendix I).

After all other measures were finished, participants completed the manipulation checks (see Appendix J) which assessed whether participants heard the social cues and treatment manipulations, and whether participants had prior experience with, or knowledge of the experimenter or of the experiment. After the completion of all measures, participants were led into another room (to remove participants from the experimental room so that the next session could begin) where they were debriefed about the actual research questions and purposes, and about all deception that was used. Participants were asked to give written permission for the use of their data through

informed consent (see Appendix K), and to not discuss the experiment with other students until after all testing sessions were completed.

Data removal. In the post-study debriefing, participants were questioned by the experimenter who made notes regarding the believability of all aspects of the experiment (e.g., the cover stories for the measures of interactional justice and retaliation, the lateness, and the social information). After the debriefing sessions, the confederates, research assistant, and the experimenter met to discuss the delivery of the social cues and any other potential abnormalities of the experimental session. The result of these meetings, the manipulation check data, and participants' feedback in the debriefing session were used to determine whether an entire experimental session or an individual participant would be removed from the analyses.

One session ( $n = 4$ ) was removed from the analyses because after the social cues were delivered and the RA announced that the experimenter was late, one participant commented that the lateness may have been intentional. Twenty-one other people were removed from the analyses. Twelve of these indicated on the final questionnaire that they knew of, or had experience with the experimenter or the study. Two other participants were recognized by the experimenter as people he had previous contact with (e.g., one was present at an annual seminar given by the experimenter), and one participant was removed because she was a confederate's personal friend. Finally, six people were removed from the analyses because they indicated that they did not believe one or more aspects of the deception. For example, one participant indicated his belief

that the fairness and retaliation measures were part of the study. Thus, the final  $N$  used in all analyses was 107.

### Measures

Items were summed to form the measures and reversed-worded items (indicated by an 'R' in the Appendices) were reversed scored. Larger values denote greater levels of that variable (e.g., fairer perceptions of interactional justice, higher retaliation). A demographics section asked participants their age, gender, academic major, year of program, other educational experience, and how many times they had participated in psychological research in the past.

Interactional justice. Interactional justice perceptions were assessed through self-report on four items using a seven-point Likert-type scale, ranging from -3 (strongly disagree) to 3 (strongly agree) that was coded as 1-7 (see Appendix G, items 5-8). The perceived fairness of the experimenter's treatment was assessed using items that were based on the work of Bies and Moag (1986). Each item began with "The experimenter(s) David Jones ..." so that it was clear to participants that they were evaluating the experimenter, and not, for example, the research assistant.

A principal components analysis (PCA) showed that all four items loaded cleanly onto one component that accounted for 67.60% of the variance in the items (eigenvalue = 2.70). The Cronbach's coefficient alpha was .83 and the 'alpha if item deleted' coefficients indicated that the removal of any items would lower the internal reliability of the measure. All 'item to total' correlations were greater than .62. Table 1 shows the

component loadings from the factor matrix and the communalities for each interactional justice item.

Table 1

Component Loadings and Communalities for Four Interactional Justice Items

Item	Component Loading	Communality
1. Treated me with dignity and respect.	.80	.65
2. Provided an explanation for any issue that was of concern to me.	.77	.60
3. Considered my needs as a person at all times.	.90	.82
4. Behaved in an ethical manner.	.80	.65

Retaliatory behaviour. To ensure that the measure captured retaliatory behaviour and not attitudes or intentions, participants were lead to believe that their responses were to be read by the director of graduate studies as part of graduate student evaluation, and hence would have potential repercussions for the experimenter. Thus, the retaliation that was measured will be referred to as protest behaviour throughout the remainder of this document. Protest behaviour (complaining about treatment to a higher authority) has been conceptualized as a form of employee deviance (e.g., Grover, 1997) and as a type of retaliation (i.e., political retaliation, Robinson & Bennett, 1995), and is an empirically supported response to perceived unfairness in previous laboratory research (Greenberg, 1987; Taylor et al., 1987; Van den Bos et al., 1997). In Topalli and O'Neal's (1997) study on retaliatory motivation, a measure of retaliation was used that was similar to that

used in the present study. An experimenter provoked participants who were led to believe that their written evaluation of the experimenter would have professional consequences. Protest behaviour in the present study was assessed through self-report on five items (see Appendix H). Each item began with “Based on how the experimenter treated me...” so that the items reflected a means to ‘get back’ at the experimenter for perceived unfair treatment. Anchors ranged from 1 (strongly disagree) to 7 (strongly agree).

A PCA with oblique rotation (SPSS oblimin) on the five protest behaviour items resulted in a two component solution that converged after five iterations. Using a .32 cutoff criterion (Tabachnick & Fidell, 1996), the first component was comprised of items 1, 2, 4, and 5, and it accounted for 61.20% of the variance in all of the items together (eigenvalue = 3.06). The second component was primarily comprised of item 3, however, item 2 cross-loaded onto this component. Component 2 accounted for 21.50% of the variance in the items (eigenvalue = 1.07).

On the basis of this, a second PCA was conducted on four items to determine whether item 2 would still load onto a second component when item 3 was removed from the analysis. A one-component solution explained 74.80% of the variance in the items (eigenvalue = 2.99). The ‘alpha if item deleted’ for item 3 showed that the Cronbach’s alpha coefficient for all five items (.78) increased to an internal consistency of .87 when item 3 was removed. Thus, the final protest behaviour measure was comprised of items 1, 2, 4, and 5, and the ‘item to total’ correlations ranged from .54 to .82. The decision to remove item 3 was also conceptually supported because it was regarding whether the

experimenter could benefit from training in "Ethical Dealings with Human Participants" (see Appendix H). Item 3 may have been confounded with the ethical practices of the experiment; for example, the interpretation of the information on the initial consent form. Table 2 shows the component loadings after rotation from the factor matrix and the communalities for the four items that comprised the final measure.

Table 2

Component Loadings and Communalities for the Final Four Protest Behaviour Items

Item	Component Loading	Communality
1. I am enthusiastic about volunteering for future research with this same experimenter.	.91	.83
2. It is possible that some participants could complain about their treatment.	.69	.48
4. I am enthusiastic about volunteering for future research within this department.	.92	.85
5. I would recommend this study to my friends who are planning to participate in a study.	.91	.83

Anger/Hostility. Five items assessing anger/hostility were taken from a sub-scale of the Revised NEO Personality Inventory, and these items comprised the short-form version of that scale (Costa & McCrae, 1992), and is purported to assess one's willingness to express anger (see Appendix I). Anchors ranged from 1 (strongly disagree) to 5 (strongly agree).



A PCA resulted in a one-component solution that accounted for 47.20% of the variance in the items (eigenvalue = 2.36). Cronbach's coefficient alpha was .72, which was deemed as sufficient for research purposes using a .70 criteria (Nunnally & Bernstein, 1994). The 'alpha if item deleted' for all items indicated that the removal of any item would decrease the internal reliability of the measure. 'Item to total' correlations ranged from .38 to .58. Table 3 displays the component loadings from the factor matrix and the communalities for the five items.

Table 3

Component Loadings and Communalities for the Angry/Hostility Items

Item	Component Loading	Communality
1. Even minor annoyances can be frustrating to me.	.61	.38
2. I often get angry at the way people treat me.	.57	.33
3. It takes a lot to get me mad.	.78	.60
4. I am quick tempered.	.76	.58
5. I am an even-tempered person.	.68	.47

Manipulation checks. For the social cues manipulation check (M1), participants responded on a seven point scale ranging from -3 (strongly disagree) to 3 (strongly agree) that was coded as 1-7 (see Appendix J in which M2 is presented prior to M1). M1 asked "The conversation between some of the participants during the study led me to believe that the experimenter was fair in the past". A t-test showed that on the manipulation check, participants' scores in the unfair social cues condition ( $M = 3.26$ ) was significantly

lower than in the fair condition ( $\bar{M} = 5.83$ ):  $t(74) = -6.05, p < .001$ . This suggested that the social cues manipulation was effective in that on average, participants heard and correctly interpreted the intended meaning of the Social cues. At the individual level, no participants responded to the social cues manipulation check in a manner that was clearly contrary to the experimental condition. For example, for the fair social cues condition, no participants responded by circling an anchor less than one (coded as five).

For the treatment manipulation check (M2), participants responded on the same scale as above to: "I received an adequate explanation about why the experimenter was late". A  $t$ -test showed that participants in the unfair treatment condition had a mean score on the manipulation check ( $\bar{M} = 2.38$ ) that was significantly lower than in the fair condition ( $\bar{M} = 6.24$ ). Levene's test for equality of variances was significant (unfair  $SD = 1.56$ , fair  $SD = 1.14$ :  $F = 7.57, p = .007$ ), thus the unequal variance  $t$ -test is reported:  $t(92.95) = -14.51, p < .001$ . This evidence suggested that the treatment manipulation was effective at the aggregate level in terms of participants' knowledge regarding the presence or absence of an adequate explanation. At the individual level, no participants responded to the treatment manipulation check in a manner that was clearly contrary to the experimental condition. For example, in the unfair treatment condition, no participants responded by circling an anchor of one or higher (coded as five).

An additional item with a yes/no response and open ended question format asked, "Have you had previous contact or knowledge of the experimenter, or knowledge of the experiment? If so, please explain".

### Materials

Three rooms were used: the first was the experimental room that accommodated 16 people at a table, the second was an attached room within listening distance of the first, and a third room was used for debriefing. Participants completed the initial consent, and informed consent forms that adhered to the ethical standards of the American Psychological Association.

The filler task used identical lists of 25 names found in the white pages of a local phonebook, 12 copies of the white pages, and extra pencils. A tape of muffled conversation was loudly played on a small portable stereo placed in the middle of the room for all conditions, and served as the background noise for the ostensible task.

### Results

#### Descriptive Statistics and Correlation Matrix

Table 4 displays the means, standard deviations, and correlations among all study measures used for hypothesis testing. Gender and the two manipulation check items (M1, M2) are also included in Table 4. The relationships between gender and the study variables, and the correlations between M1 and M2 with social cues and treatment are explored under the post-hoc analyses heading.

The squared zero-order correlations showed that social cues and treatment, respectively, accounted for 13.20% and 11.12% of the variance in interactional justice, and 6.81% and 12.19% in protest behaviour. Interactional justice accounted for 44.82% of the variance in protest behaviour. Task performance and anger/hostility, however,

were not significantly correlated with social cues, treatment, interactional justice, or protest behaviour.

Table 4

Descriptive Statistics and Correlation Matrix Among Study Variables

Variable	<u>M</u>	<u>SD</u>	1	2	3	4	5	6	7	8
1. Social Cues										
2. Treatment			.18							
3. IJ	23.66	3.75	.36+	.33+						
4. Protest Behaviour	9.93	5.08	-.26**	-.35+	-.67+					
5. Task Performance	12.00	2.47	.15	.11	.02	-.14				
6. Anger/Hostility	13.40	3.49	.08	.03	-.02	-.13	.18			
7. Gender	.29	.46	-.18	-.04	-.13	.29**	-.25**	.00		
8. M1	4.41	2.06	.53+	.43+	.26**	-.29**	.01	-.06	-.12	
9. M2	4.36	2.36	.21*	.82+	.24*	-.28**	.13	.17	.01	.34+

Note:  $N = 107$ . \*  $p < .05$ , \*\*  $p < .01$ , +  $p < .001$ . "IJ" refers to interactional justice.

Social cues was coded 1 for unfair, 2 for absent, and 3 for fair. Treatment was coded 1 for unfair, and 2 for fair. Gender was coded 0 for females, and 1 for males. M1 and M2 refer to the manipulation checks for social cues and treatment, respectively.

Coding Social Cues and Treatment for Regression

Instead of using a traditional analysis of variance framework to test the hypotheses involving the independent variables of social cues and treatment and their 3 x 2 interaction, a series of regressions were conducted in order to test the proportions of incremental variance accounted for in interactional justice, protest behaviour, and task performance. For this purpose, the two levels of treatment were effect coded (unfair = -1, fair = 1), and the three levels of social cues (unfair, absent, and fair) were effect coded

into two vectors (1, 0, -1 and 0, 1, -1). The Social Cues  $\times$  Treatment interaction was represented by two vectors that were created by multiplying each social cues vector by the treatment vector.

#### Hypothesis 1: Social Cues by Treatment Interaction on Interactional Justice

Hypothesis 1 was that whether social information from peers indicated that an authority figure's past treatment was fair, unfair, or no information was given would interact with subsequent treatment (fair or unfair) to predict perceptions of interactional justice. See (p. 31) for a graph of the hypothesized interaction.

In a moderated regression predicting interactional justice, treatment was entered in step one, the two social cues vectors were entered together in step two, and two vectors representing the interaction were entered in step three. Table 5 shows the results of this analysis.

A test of the  $b$ -weight in step two showed that treatment accounted for 7.82% of the variance in interactional justice, incremental to the variance explained by social cues,  $t(103) = 3.27, p = .001$ . When averaged across levels of social cues, those in the fair treatment condition had higher interactional justice perceptions than in the unfair treatment condition. Table 6 displays the marginal means, standard deviations, and sample sizes for the social cues and treatment variables on interactional justice. The  $F$  change statistics at step two showed that the two vectors representing the three levels of social cues significantly added to the prediction of interactional justice and accounted for 13.69% of the variance above and beyond the effect of treatment,  $F_{\Delta}(2, 103) = 9.38, p < .001$ .

When the two interaction vectors were added to the model in step 3, however, the change in  $R^2$  (.00) was not significant,  $F_{\Delta}(2, 101) = .31, p = .73$ . Thus, the interaction of Social Cues  $\times$  Treatment did not add to the prediction of interactional justice, incremental to the individual effects, and Hypothesis 1 was not supported. Figure 3 shows a graph of the  $3 \times 2$  cell means on interactional justice that is referred to in the discussion when comparing the results of this analysis on interactional justice to what was expected (see Figure 1, p. 31), and to the results on protest behaviour (see Figure 4, p. 67)

Table 5

Regression Results for Social Cues, Treatment, and their Interaction on Interactional Justice

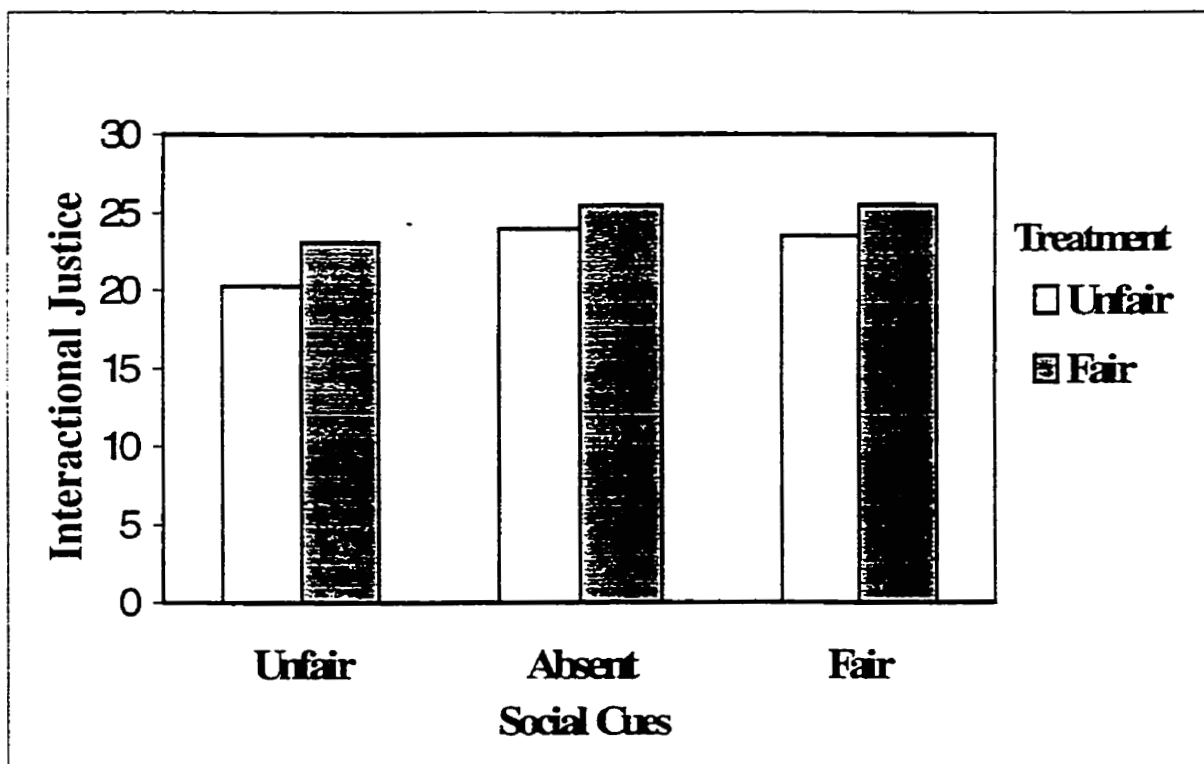
Variable	Beta	SE B	t	df	F	Model $R^2$	$R^2_{\Delta}$
Step 1				1	13.14***	.11	
1. Treatment	.33	.34	3.63***				
Step 2				3	11.33****	.25	.14***
1. Treatment	.28	.32	3.27**				
2. Social Cues V1	-.45	.46	-4.33****				
3. Social Cues V2	.24	.47	2.37*				
Step 3				5	6.83****	.25	.00
1. Treatment	.28	.33	3.23**				
2. Social Cues V1	-.44	.47	-4.19***				
3. Social Cues V2	.24	.48	2.27*				
4. Social Cues X Treatment V1	.08	.47	.75				
5. Social Cues X Treatment V2	-.06	.48	-.62				

Note:  $N = 107$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$ .  $R^2_{\Delta}$  represents the change in  $R^2$  from the previous step. V1 and V2 refer to Vectors 1 and 2, respectively.

Table 6

Marginal Means, SD's, and Sample Sizes for Social Cues and Treatment on Interactional Justice

Variable	<u>M</u>	<u>SD</u>	<u>n</u>
Unfair Social Cues	21.41	3.07	34
Absent Social Cues	24.68	3.29	31
Fair Social Cues	24.74	3.83	42
Unfair Treatment	22.39	3.93	52
Fair Treatment	24.87	3.15	55

Figure 3. Social Cues by Treatment (3 x 2) cell means on interactional justice.



The significant effect of social cues in step 2 was followed-up through linear regression analysis using a Bonferroni corrected alpha level ( $.05/3 = .0167$ ). Perceived interactional justice was lower in the unfair social cues condition than in the fair condition,  $F(1, 74) = 16.90, p = .0001$ , and in the absent condition:  $F(1, 63) = 17.16, p = .0001$ . The fair and absent social cues conditions, however, had the same levels of interactional justice:  $F(1, 71) = .01, p = .94$ .

#### Hypothesis 2: Social Cues by Treatment Interaction on Protest Behaviour

Hypothesis 2 was that whether social information from peers indicated that an authority figure's past treatment was fair, unfair, or no information was given would interact with subsequent treatment (fair or unfair) to predict retaliation (i.e., protest behaviour). See Figure 2 (p. 40) for a review of the hypothesized interaction.

The predictors were entered in the same fashion that was used to test Hypothesis 1. As can be seen in Table 7, the  $t$ -test of the  $b$ -weight in step two for treatment showed that it accounted for a significant proportion of variance in protest behaviour (9.87%) incremental to the variance explained by social cues,  $t(103) = -3.58, p = .0005$ . Protest behaviour was higher in the unfair treatment condition than in the fair treatment condition. Table 8 displays the marginal means, standard deviation, and sample sizes for the levels of social cues and treatment on protest behaviour. The  $F$  change statistics at step two showed that the two vectors representing the social cues effect accounted for 8.59% of the variance in protest behaviour above and beyond the effect of treatment,  $F_{\Delta}(2, 103) = 5.58, p = .005$ .

Table 7

Regression Results for Social Cues, Treatment, and their Interaction on Protest Behaviour

Variable	Beta	SE B	t	df	F	Model $R^2$	$R^2_{\Delta}$
Step 1				1	14.58***	.12	
1. Treatment	-.35	.46	-3.82***				
Step 2				3	9.00****	.21	.09**
1. Treatment	-.32	.45	-3.58***				
2. Social Cues V1	.35	.64	3.26**				
3. Social Cues V2	-.26	.65	-2.41*				
Step 3				5	7.01****	.26	.05*
1. Treatment	-.31	.44	-3.51***				
2. Social Cues V1	.32	.63	3.03**				
3. Social Cues V2	-.24	.64	-2.34*				
4. Social Cues X Treatment V1	-.19	.63	-1.86				
5. Social Cues X Treatment V2	.26	.64	2.54*				

Note:  $N = 107$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$ .  $R^2_{\Delta}$  represents the change in  $R^2$  from the previous step. V1 and V2 refer to Vector 1 and Vector 2, respectively.

Table 8

Marginal Means, SD's, and Sample Sizes for Social Cues and Treatment on Protest Behaviour

Variable	<u>M</u>	<u>SD</u>	<u>n</u>
Unfair Social Cues	12.35	5.36	34
Absent Social Cues	8.45	4.40	31
Fair Social Cues	9.07	4.70	42
Unfair Treatment	11.75	5.72	52
Fair Treatment	8.22	3.68	55

When the two interaction vectors were added to the model in step three, they significantly improved the prediction of protest behaviour, and accounted for 4.97% of the variance, incremental to the individual effects of treatment and social cues,  $F_{\Delta}(2, 101) = 3.38, p = .04$ , thus Hypothesis 2 was supported.

The significant interaction was followed-up by testing the simple effects of social cues within the fair and unfair treatment conditions using a Bonferroni corrected alpha level ( $.05/2 = .025$ ). Within the fair treatment condition, the levels of social cues (unfair  $\bar{M} = 9.14$ ; absent  $\bar{M} = 8.53$ ; fair  $\bar{M} = 7.54$ ) were not significantly different on protest behaviour,  $F(2, 52) = .94, p = .40$ . Within the unfair treatment condition, however, significant difference(s) were found among the three levels of social cues on protest behaviour,  $F(2, 49) = 6.38, p = .003$ .

The significant simple effect of social cues within the unfair treatment condition was further explored through linear regression using a Bonferroni corrected alpha level

(.025/3 = .008). As was expected within the unfair treatment condition, protest behaviour was higher for the unfair social cues condition ( $M = 14.60$ ) than when social cues were absent ( $M = 8.38$ ),  $F(1, 34) = 12.40$ ,  $p = .0012$ . Within the unfair treatment condition, however, protest behaviour was the same whether social cues were unfair or fair ( $M = 11.56$ ),  $F(1, 34) = 2.93$ ,  $p = .096$ . Likewise, protest behaviour in the fair social cues condition was not higher than in the absent social cues condition,  $F(1, 30) = 3.24$ ,  $p = .082$ . Although these latter tests were not significant, the means were in the expected directions (see Figure 2, p. 40). Figure 4 shows the  $3 \times 2$  cell means on protest behaviour for the Social Cues  $\times$  Treatment interaction.

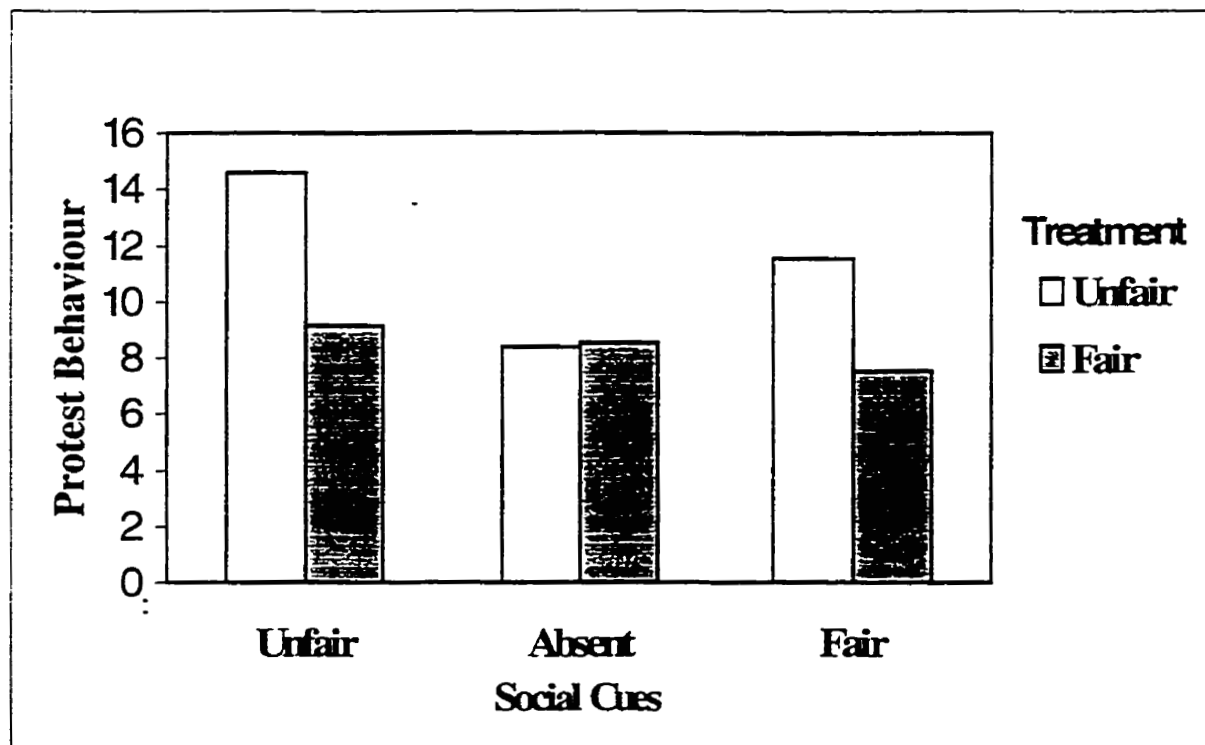


Figure 4. Social Cues by Treatment ( $3 \times 2$ ) cell means on protest behaviour.

### Hypothesis 3: Interactional Justice and Protest Behaviour

Hypothesis 3 was that interactional justice perceptions would negatively relate to retaliatory behaviour (i.e., protest behaviour): lower perceptions of interactional justice (less fair) would be associated with increased retaliation.

A linear regression showed that interactional justice accounted for a significant proportion of variance in protest behaviour (44.82%),  $F(1, 105) = 85.28, p < .0001$ . The sign of the Beta weight (-.67) indicated that lower perceptions of interactional justice were associated with higher protest behaviour, thus Hypothesis 3 was supported.

### Hypothesis 4: Interactional Justice by Anger/Hostility Interaction on Protest Behaviour

Hypothesis 4 was that the relationship between interactional justice and retaliation (i.e., protest behaviour) would be moderated by people's willingness to express anger. Specifically, people that perceived lower (unfair) interactional justice and were more willing to express their anger would retaliate more than people who were less willing to express their anger, regardless of whether they had low or high interactional justice perceptions.

A moderated regression was conducted by entering interactional justice and anger/hostility in step one, and the moderator term (interactional justice  $\times$  anger/hostility) in step two. Table 9 shows that in step one, anger/hostility did not account for incremental variance in protest behaviour,  $t(104) = -1.97, p = .052$ , however, interactional justice accounted for 45.28% of variance in protest behaviour above and beyond the effect of anger/hostility,  $t(104) = -9.40, p < .0001$ . In step two, the test of the  $b$ -weight for the interactional justice by anger/hostility moderator term on protest

behaviour was not significant,  $t(103) = -.45$ ,  $p = .65$ , thus Hypothesis 4 was not supported. When the moderator term was added to the model, interactional justice accounted for only 2.30% of the incremental variance in protest behaviour.

Table 9

Regression Results for Interactional Justice (IJ), Anger/Hostility, and their Moderator Term on Protest Behaviour

Variable	Beta	SE B	t	df	F	Model R <sup>2</sup>	R <sup>2</sup> <sub>Δ</sub>
Step 1				2	45.75****	.47	
1. IJ	-.67	.10	-9.40***				
2. Anger/Hostility	-.14	.10	-1.97*				
Step 2				3	30.33****	.47	.00
1. IJ	-.56	.36	-2.11**				
2. Anger/Hostility	.04	.59	.09				
3. IJ X Anger/Hostility	-.21	.02	-.45				

Note:  $N = 107$ . \*  $p = .052$ , \*\*  $p < .05$ , \*\*\*  $p < .0001$ .

Hypothesis 5: Interactional Justice and Task Performance

Hypothesis 5 was exploratory, and stated that interactional justice perceptions would positively relate to task performance: higher (more fair) interactional justice perceptions were expected to be associated with higher task performance.

A linear regression was performed and showed that interactional justice did not predict task performance,  $F(1, 105) = .05$ ,  $p = .82$ . Hypothesis 5 was not supported.

### Hypothesis 6: Social Cues and Task Performance

Hypothesis 6 was also exploratory, and stated that whether social information from peers was absent, or indicated past fair or unfair treatment by an authority figure would account for variance in task performance, incremental to the authority figure's subsequent treatment (fair or unfair).

The test of the  $b$ -weight in step two of a researcher-generated regression showed that treatment did not account for variance in task performance, incremental to social cues,  $t(103) = .81, p = .42$ . The  $F$  change statistics at step two showed that two vectors representing social cues did not significantly add to the prediction of task performance above and beyond the effect of treatment,  $F_{\Delta}(2, 103) = 1.96, p = .15$ . Hypothesis 6 was not supported.

### Tests of Group-Level Effects

Data were collected from groups of participants and were analyzed at the individual-level. Thus, the assumption of independent observations was violated in the regressions used for hypothesis testing. A potential confound exists if, for example, a group of participants differed from another group of participants within the same cell on the study variables. Thus, the presence of a group-level effect was explored in order to rule out the possibility that the results were influenced by the particular characteristics of the participants in each experimental session. Kenny and La Voie (1985) stated that the intra-class correlation is the most common method for testing whether a group-level effect exists, and it was used in the present study.

The intra-class correlation is calculated using the following equation, where 'MSB' represents the Mean Squares Between for a given effect, 'MSW' represents the Mean Squares Within, and the 'n' is the number of participants per cell.

$$\frac{MSB - MSW}{MSB + MSW (n-1)}$$

The MSB's for each effect and the MSW were obtained from the 3  $\times$  2 (Social Cues  $\times$  Treatment) factorial analysis of variance (ANOVA) source tables for the dependent variables of interactional justice and protest behaviour. Due to the unequal cell sizes in the present study, Kenny and La Voie's (1985) unequal 'n' equation was used for these tests. An intra-class correlation of 0 represents the complete absence of a group-level effect, and a positive intra-class correlation indicates that group members are more similar than non-group members.

Results showed that no group-level effects were present. For interactional justice, the intra-class correlations for social cues, treatment, and the interaction term were .05, .05, and -.03, respectively. For protest behaviour, the intra-class correlations for social cues, treatment, and the interaction term were .04, .05, and .03, respectively.

#### Post-Hoc Testing

Manipulation checks. The correlation matrix (Table 4, p. 59) showed that M1 and M2 were related to their associated manipulations as expected (M1 and social cues:  $r = .53$ ; M2 and treatment:  $r = .82$ ). The manipulation check items, however, were also correlated with their non-corresponding manipulations (M1 and treatment:  $r = .43$ ; M2 and social cues:  $r = .21$ ). Thus, dependent samples t-tests were used to determine



whether M1 and M2's correlations with their corresponding manipulations were significantly higher than with their non-corresponding manipulations.

As was expected for the manipulation checks, M2's correlation with its corresponding manipulation (treatment) was significantly larger than with the social cues manipulation:  $t(104) = 11.87$ ,  $t_{crit, one-tailed} = 1.671$ . For M1, however, the correlation with its corresponding manipulation (social cues) was not larger than with treatment:  $t(104) = 1.065$ . The efficacy of the social cues manipulation, however, was not necessarily threatened by the previous finding because M1 was significantly related to the corresponding social cues manipulation ( $r = .53$ ), and social cues had a larger correlation with M1 than with M2:  $t(104) = 38.46$ .

Gender. The correlation matrix (Table 4, p. 59) showed that gender was significantly related to protest behaviour (.29) and task performance (-.25), reflecting that males protested more than females and performed worse on the task. Based on the literature reviewed herein which did not report gender differences on protest behaviour or task performance, these findings were unexpected. Thus, these relationships were explored further. A potential confound for hypotheses testing would exist if gender was 'truly' related to these criterion measures, independent of the gender composition of each cell that was associated with different levels of protest behaviour and task performance.

Examination of the gender breakdown among the six conditions (3 Social Cues  $\times$  2 Treatment) on protest behaviour showed that of the 31 males who participated in the study, nine were in the unfair social cues/unfair treatment cell that was associated with the highest protest behaviour level, averaged across gender ( $M = 14.6$ ). Thus, to explore

the possibility that the gender effect on protest behaviour was an artifact of the gender composition of the cells and that results reported herein were not influenced by gender, a hierarchical regression was conducted. Gender (dummy coded 0 for females and 1 for males) was entered in step one, treatment in step two, the two social cues vectors in step three, and the interaction vectors in step four. Table 10 shows that results were virtually identical for the individual effects of social cues and treatment when gender was controlled for and when it was not (see Table 7, p. 65) in terms of the magnitude and sign of the beta weights, significance levels, and effect sizes.

Table 10

Regression Results for Gender, Social Cues, Treatment, and the Social Cues x Treatment Interaction on Protest Behaviour

Variable	Beta	SE B	t	df	F	Model R <sup>2</sup>	R <sup>2</sup> <sub>Δ</sub>
Step 1				1	9.90**	.09	
1. Gender	.29	1.04	3.15**				
Step 2				2	13.04****	.20	.11***
1. Gender	.28	.98	3.20**				
2. Treatment	-.34	.89	-3.86***				
Step 3				4	10.17****	.29	.08**
1. Gender	.29	.96	3.23**				
2. Treatment	-.32	.86	-3.74***				
3. Social Cues V1	.32	.62	3.14**				
4. Social Cues V2	-.30	.63	-2.94**				
Step 4				6	7.57****	.31	.03
1. Gender	.25	.97	2.82**				
2. Treatment	-.31	.86	-3.64***				
3. Social Cues V1	.44	.84	3.18**				
4. Social Cues V2	-.49	.87	-3.46***				
5. Social Cues X Treatment V1	-.14	.62	-1.36				
6. Social Cues X Treatment V2	.20	.64	1.97*				

Note:  $N = 107$ . \*  $p = .052$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , \*\*\*\*  $p < .0001$ .  $R^2_{\Delta}$  represents the change in  $R^2$  from the previous step. V1 and V2 refer to Vector 1 and Vector 2, respectively.

Table 10 also shows, however, that after controlling for gender the interaction effect of Social Cues  $\times$  Treatment on protest behaviour was not significant as it was in Table 7 (p. 65). Although the significance test of the interaction was comparatively under-powered due to the additional degree of freedom used to test gender, the proportion

of incremental variance accounted for in protest behaviour by the interaction dropped from 4.97% to 2.72%. The test of gender in step four showed that it accounted for 5.48% of the variance in protest behaviour, incremental to all other effects.

The follow-up testing of the Social Cues  $\times$  Treatment interaction on protest behaviour that was conducted earlier when gender was not controlled for was compared to the same follow-up tests of the non-significant interaction reported above. Regression was used and the Bonferroni corrected alpha levels were the same as before. Thus, while controlling for gender (entered in step one), the follow-up tests of the Social Cues  $\times$  Treatment interaction, and of the simple effect of social cues within the unfair treatment condition were conducted, and they showed the same mean differences and non-differences as those reported earlier when gender was not controlled for (see pp. 64-65).

Table 11 shows the cell means for the 3  $\times$  2 (Social Cues  $\times$  Treatment) on protest behaviour, separately for females and males, in which gender's role in protest behaviour can be seen. Specifically, there are two notable differences between males and females that are bolded in Table 11. First, males' protest behaviour was notably higher (by 5.78) in the unfair social cues/unfair treatment condition than for their female counterparts,  $t(18) = 2.71$ ,  $p = .014$ . Second, for the condition in which fair treatment is experienced in the absence of social cues, females' protest behaviour was lower (by 5.56) than for males,  $t(13) = -4.02$ ,  $p = .001$ . Moreover, protest behaviour for males in the absent social cues/fair treatment condition appears marginally higher (by 2.88) than the protest behaviour score for males in the absent social cues/unfair treatment condition,  $t(10) = -1.62$ ,  $p = .136$ . Although this observed difference between the levels of treatment within

absent social cues was not significant, the test was under-powered with only four and eight participants in the unfair and fair treatment conditions, respectively. This unexpected finding did not occur for females, and is contrary to well-established findings in the interactional justice literature. Inferences from this data, however, are limited due to the small cell sizes when the  $3 \times 2$  design is broken down by gender.

Table 11

Means, SD's, and Cell Sizes for 3 x 2 (Social Cues by Treatment) by Gender on Protest Behaviour

Cell	<u>Females</u>			<u>Males</u>		
	<u>M</u>	<u>SD</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>n</u>
1. Unfair Social Cues Unfair Treatment	<b>12.00</b>	4.58	11	<b>17.78</b>	4.94	9
2. Unfair Social Cues Fair Treatment	9.36	3.08	11	8.33	4.16	3
3. Absent Social Cues Unfair Treatment	8.42	5.68	12	<b>8.25</b>	2.50	4
4. Absent Social Cues Fair Treatment	<b>5.57</b>	2.15	7	<b>11.13</b>	3.04	8
5. Fair Social Cues Unfair Treatment	11.54	5.36	13	11.67	4.16	3
6. Fair Social Cues Fair Treatment	7.18	3.71	22	9.50	5.08	4

The same approach (entering gender in step one of the regression) was used to examine the hypothesized relationships between interactional justice and protest

behaviour, the moderator effect of interactional justice by anger/hostility on protest behaviour, and the effects of interactional justice and social cues on task performance. The results of these analyses were consistent with those conducted earlier for hypothesis testing (i.e., Hypotheses 5, 6, 7, and 8).

### Post-Hoc Cell Comparisons

To assess whether treatment had an effect on interactional justice in the absence of social cues, the absent social cues/unfair treatment condition ( $M = 25.47$ ) was compared to the absent social cues/fair treatment condition ( $M = 23.94$ ), and this difference was not significant:  $t(29) = 1.31, p = .201$ .

The same test was conducted on protest behaviour, however, a Bonferroni corrected alpha level was used ( $.05/3 = .0167$ ) because two other post-hoc cell comparisons on protest behaviour were conducted. The absent social cues/unfair treatment ( $M = 8.38$ ) condition was not different from the absent social cues/fair treatment condition ( $M = 8.53$ ) on protest behaviour:  $t(29) = -.10, p = .922$ .

Two other post-hoc comparisons were conducted on protest behaviour. First, as can be seen in Figure 4 (p. 67), the unfair social cues/unfair treatment condition ( $M = 14.60$ ) had higher protest behaviour than the average of four conditions (unfair social cues/fair treatment, absent social cues/unfair treatment, absent social cues/fair treatment, and fair social cues/fair treatment ( $M = 8.25$ ):  $t(89) = -5.78, p < .001$ . Second, the fair social cues/unfair treatment condition ( $M = 11.56$ ) was higher on protest behaviour than the average of the same four conditions as above:  $t(85) = -2.86, p = .005$ .

## Discussion

The results of the hypothesis testing are discussed under the following headings (and are not in the order that the hypotheses appeared in the introduction): the Social Cues  $\times$  Treatment interaction on interactional justice perceptions (Hypothesis 1) and protest behaviour (Hypothesis 2); the influence of social cues on interactional justice, protest behaviour, and task performance (Hypothesis 5 and 6); interactional justice, anger/hostility, and protest behaviour (Hypotheses 3 and 4); and manipulation checks. The present study's limitations, arguments regarding the conservative nature of the hypothesis testing in the present study, theoretical and practical implications, and future research directions are then discussed.

### The Social Cues by Treatment Interaction on Interactional Justice Perceptions and Protest Behaviour

Hypothesis 1 was not supported: The Social Cues  $\times$  Treatment interaction did not predict perceptions of interactional justice. Of note, however, the observed pattern of the interactional justice cell means within unfair and fair treatment (see Figure 3, p. 63) was consistent with what was expected based on the literature (see Figure 1, p. 31). Figure 3 showed that the observed means for the levels of social cues in the fair treatment condition ranged from lowest to highest as expected (unfair, absent, and fair social cues), and within unfair treatment, absent social cues was higher than both the fair, and unfair social cues conditions, respectively. The non-significant interaction, however, suggests that the effects of these observed differences were small. Potential reasons for the non-

significant interaction will be subsequently discussed when the results on interactional justice and protest behaviour are compared.

Hypothesis 2 was supported: The Social Cues  $\times$  Treatment interaction accounted for variance in protest behaviour, incremental to the individual effects. Overall, the effects of social cues, treatment, and their interaction accounted for a practically meaningful proportion of variance in protest behaviour (26%). The observed pattern of cell means (Figure 4, p. 67) was consistent with expectations (Figure 2, p. 40). Within the fair treatment condition, protest behaviour was observed to be highest in the unfair social cues condition, followed by the absent and fair conditions, respectively, although these differences were not significant. Within the unfair treatment condition, however, social cues did have an effect on protest behaviour, which was observed to be highest for unfair social cues, followed by the fair and absent conditions, respectively. Further testing showed that within unfair treatment, unfair social cues were associated with greater protest behaviour than in the absent condition. The fair and absent social cues conditions within unfair treatment were not significantly different from one another, nor were the fair and unfair conditions different: However, the means on protest behaviour were in the expected directions and these effects approached significance.

These results provided considerable support for the reasoning based on Expectancy Theory (Olson et al., 1996), social-cognitive research on the heavy weighting of negative information (e.g., Taylor, 1991), the Endowment Effect (Thaler, 1980), and Prospect Theory (Kahneman & Tversky, 1983). Expectancy Theory suggests that the order in which fairness information is presented prompts an expectation of treatment



which is either confirmed or disconfirmed by subsequent behaviour in either a favourable or unfavourable manner. The Endowment Effect and Prospect Theory together suggest that the loss of one's entitled fair treatment would have a large impact on retaliation. Thus, it was expected that protest behaviour would be highest when unfair social cues was combined with unfair treatment. It was also thought that when people's expectations of fairness were disconfirmed in an unfavourable manner and the entitled subsequent fair treatment was not received, protest behaviour would be higher than when unfair treatment was experienced in the absence of social cues. This reasoning is consistent with Folger and Cropanzano's (1998) argument that unfairness "stings" more when one expects or is used to being treated fairly.

The patterns of cell means for Social Cues  $\times$  Treatment on interactional justice perceptions and protest behaviour were unexpectedly different from each other. A potential reason for the differential effects on these criteria is suggested by Gilliland, Benson, and Schepers (1998). These authors distinguished between judgements of fairness and decisions based on fairness. These authors proposed that a fairness judgement does not require a commitment to action, and is thus different from a commitment-laden decision. Specifically, they argued that when making fairness judgements (i.e., an evaluation of interactional justice), people tend to consider all available information relatively equally, for both fairness violations and non-violations.

In contrast, when making decisions for action based on perceived fairness (i.e., protest behaviour), people tend to not necessarily use all the available information equally, and instead, people's information search focuses on negative information until a

rejection threshold is reached. A rejection-threshold refers to the point at which the number of perceived fairness violations (assuming they are deemed important) is high enough for an individual to reject a decision alternative (i.e., rejecting the decision to *not* protest). Thus, the absence or presence of a threshold-based screening process is what distinguishes fairness judgements from fairness-based decisions, respectively. Consistent with this, researchers (Beach, 1993; Beach & Strom, 1989) have found that rejection decisions for positive alternatives (e.g., job offers) were a function of the number of perceived fairness violations.

In three experiments, Gilliland et al. (1998) used a hypothetical downsizing scenario in which the number of fairness violations was varied. They asked participants to decide if the company should be considered for an ethical employee treatment award. For this decision, when the rejection-threshold was not exceeded, both violations and non-violations were weighted to a relatively equal degree. When the number of fairness violations exceeded the threshold level (between one and three in their study), the number of violations solely predicted the decision and the number of non-violations had no influence. For fairness judgements, however, both violations and non-violations were weighted in a relatively equal manner.

For the interactional justice judgement in the present study, the interaction of Social Cues  $\times$  Treatment was not significant (see Figure 3, p. 63). Instead, it was found that interactional justice was predicted by the individual effects of social cues and treatment. Thus, the interactional justice judgement was as Gilliland et al. (1998) described: by whether or not the treatment or social cues were fair or unfair. This

judgement was independent of, for example, whether unfair or fair treatment was simultaneously coupled with either unfair, absent, or fair social cues. This suggests that a rejection-threshold was not operating for the fairness judgement; the only cell with two fairness violations (unfair social cues/unfair treatment) was not lower enough on interactional justice from the other cells to show a significant interactive effect as it was observed on protest behaviour.

Also consistent with Gilliland et al. (1998), there was evidence in the present study for a rejection-threshold in predicting the decision to protest, and that negative information was weighed heavily in this decision. For the decision to protest within the unfair treatment condition, participants who heard unfair social cues had higher protest behaviour than when the social cues were absent. Figure 4 (p. 67) showed that when one fairness violation was present in the cells of unfair social cues/fair treatment, and absent social cues/unfair treatment, and when zero fairness violations were present (absent social cues/fair treatment, and fair social cues/fair treatment), protest behaviour levels appeared to be the same. This is at odds with Gilliland et al. who argued that when a rejection-threshold is not reached, fair and unfair information is weighted equally. The similar means, however, among these different conditions suggest that this did not occur. Nevertheless, this evidence does suggest that a rejection-threshold of two fairness violations may have been operating in the present study. With the exception discussed in the next paragraph (fair social cues/unfair treatment), protest behaviour levels were virtually the same among the cells in which one or zero fairness violations were present, and protest behaviour was significantly higher when two fairness violations were present.

Concerning the exception to the rejection-threshold argument noted above, the observed mean on protest behaviour in the fair social cues/unfair treatment cell was higher than when unfair treatment was experienced in the absence of social information, although this difference was not statistically significant. This trend is at odds with Gilliland et al.'s (1998) findings because in both scenarios, one example of unfairness was present, and thus if the rejection threshold was not reached, all fair and unfair information should have been weighed equally. Thus, participants in the fair social cues/unfair treatment cell should have protested less than when unfair treatment was experienced in the absence of social cues. Instead, the opposite occurred.

The Rejection-Threshold Model for fairness-based decisions versus judgements does offer, to some extent, an explanation for the different patterns of Social Cues  $\times$  Treatment cell means on interactional justice perceptions and protest behaviour. Two exceptions, however, were noted. First, the fair social cues/unfair treatment cell was not explained by the Rejection-Threshold Model, and was instead explained by the Expectancy Theory, research on negative information, the Endowment Effect, and Prospect Theory. Second, participants did not appear to weigh fair and unfair information equally when a rejection-threshold of two violations was not reached for the decision to protest, and instead similar levels of protest behaviour occurred when zero or one fairness violation was present. The rejection-threshold model may need to be revised to explain this latter finding. Nevertheless, a complete explanation for the present study's cell mean patterns on perceptions of interactional justice and protest behaviour may be achieved by considering Expectancy Theory, the Endowment Effect, and Prospect

Theory to explain the fair social cues/unfair treatment cell on protest behaviour, and the Rejection-Threshold Model with the above revision to explain the remaining cells for both interactional justice perceptions and protest behaviour.

A more parsimonious explanation for the cell means on protest behaviour also exists. Interestingly, when social cues were absent, the unfair and fair treatment conditions did not have significantly different means on protest behaviour. Post-hoc testing of cell means showed that two of the six cells significantly differed from the average of the remaining four: when unfair treatment was experienced and either unfair or fair social cues were presented, protest behaviour was higher. This finding suggests two things. First, the treatment manipulation (unfair or fair) in the absence of social cues showed no effect on protest behaviour. It may be that the injustice used in the present study (a lack of explanation for the lateness) was not “unfair enough” in the absence of social cues to prompt greater protest behaviour compared to when the explanation was given. This is consistent with the non-significant difference between the levels of treatment on perceived interactional justice when social cues were absent. Second, when fairness-related social cues (unfair or fair) were presented prior to treatment, treatment effects were observed on protest behaviour. Thus, hearing fairness-related social information from peers may have prompted participants to be hyper-vigilant to the fairness of the treatment they subsequently received when deciding whether to protest. It may be that the social cues (whether unfair or fair) communicated fairness norms to participants about how they should be treated by the experimenter, and thus, participants became sensitive to the fairness of the subsequent treatment.

The Influence of Social Cues on Interactional Justice Perceptions, Protest Behaviour, and Task Performance

The individual effect of social cues accounted for a meaningful percentage of variance in interactional justice perceptions incremental to treatment. Follow-up testing of the social cues effect showed that participants in the unfair social cues condition were lower on interactional justice than when social cues were absent or fair. Moreover, social cues accounted for variance in protest behaviour incremental to treatment, although the significant Social Cues  $\times$  Treatment interaction on protest behaviour qualified the interpretation of the individual effect of social cues. Figure 4 (p. 67) showed that within unfair treatment, unfair social cues had higher protest behaviour than when social cues were absent.

These results are consistent with Social Comparison (Festinger, 1954) and Social Information Processing Theory (Salancik & Pfeffer, 1978), which both posit that people look to the social environment to judge the adequacy of their own attitudes and they are influenced by social information from peers. A considerable amount of support was found for the importance of social cues in interactional justice attitude formation and in protest behaviour as a response to perceived fairness. The research design of this study does not necessarily lend itself to a pure causal conclusion because participants were randomly assigned to groups. Nevertheless, the presence of group-level effects was examined and ruled out, thus the experimental between-subjects design does provide some basis for the causal inference that social cues influenced perceptions of interactional justice and protest behaviour.

Exploratory hypotheses 5 and 6 were not supported: The relationship between perceptions of interactional justice and task performance was not significant, and likewise social cues did not predict task performance. These findings were counter to the reviewed literature on justice and task performance. One potential reason for these non-significant effects is that participants may not have viewed task performance as a means to punish a transgressor of fairness (e.g., Skarlicki & Folger, 1997), to restore inequity (Adams, 1965), or as a means to reciprocate fair treatment (e.g., Gouldner, 1960). For example, in the workplace, managers are often held accountable for their subordinates' performance. Thus, lowering performance can be an effective means for an employee to "get back" at an offending manager, and raising performance may be a method of reciprocating the received benefit of fair treatment. In the present study, effects of interactional justice perceptions and social cues on task performance may have been found if participants believed that their effort on the task was of crucial importance to the experimenter. For example, the experimenter could have stressed that the study results are dependent upon participants' maximum effort on the task, and that the experimenter's research funding is linked to those results.

#### Interactional Justice Perceptions, Anger/Hostility, and Protest Behaviour

Hypothesis 3 was supported. Consistent with the literature reviewed herein, perceptions of interactional justice accounted for 45% of the variance in protest behaviour. It should be noted, however, that unlike the relationships between social cues and treatment with protest behaviour, the observed strength of the interactional justice-

protest behaviour relationship may be inflated due to problems associated with common method variance (e.g., Campbell, 1982).

Hypothesis 4 was not supported: Anger/hostility did not moderate the relationship between interactional justice perceptions and protest behaviour. This hypothesis was based on findings concerning anger (a state) as a response to unfairness and as a precursor to retaliation. The present study, however, examined a related but different construct from anger: one's willingness and tendency to express anger (a trait). Results showed that one's willingness to express anger did not interact with interactional justice perceptions as a predictor of short-term protest behaviour (i.e., protest behaviour within 30 minutes of the fairness manipulations). It is still unknown whether or not one's willingness to express anger moderates the interactional justice-retaliation link when the retaliation is assessed on a long-term basis (e.g., retaliation three months after fairness perceptions are measured). Future field research that examines interactional justice perceptions and retaliation over time may benefit from testing whether anger/hostility moderates this relationship.

#### Manipulation Checks

The correlation matrix (see Table 4, p. 59) showed that the manipulation check items for social cues and treatment (M1 and M2, respectively) were correlated. Higher scores (more fair) on whether participants heard about the experimenter's past fairness from the confederates (M1) were positively associated with higher scores (more fair) on whether an adequate explanation was provided for the experimenter's lateness (M2). Moreover, significant correlations between M1 and the non-corresponding treatment



manipulation, and between M2 and the non-corresponding social cues manipulation were found. Two possible and non-exclusive reasons for these findings are presented below.

First, the theories of Fairness Heuristics (Van den Bos et al., in press), Social Comparison (Festinger, 1954), and Social Information Processing (Salancik & Pfeffer, 1978) can explain the possibility that the judgement of the authority's subsequent treatment (M2) was influenced by whether social cues were unfair, absent, or fair. Fairness Heuristic Theory proposes that the fairness information that is perceived first is weighted the heaviest during the formation of fairness perceptions. Implicit in this idea is that initial fairness information influences the interpretation of subsequent fairness information. In the present study, social cues were presented before treatment was experienced, and thus the social information may have impacted the interpretation and judgement of the treatment. Both Social Comparison and Social Information Processing Theory posit that people gather information about the acceptability of their attitudes from the social environment. Thus, participants may have altered their own attitudes regarding subsequent treatment so that they were more consistent with their peers whose attitudes were communicated through the social cues.

Second, the literatures on Expectancy Theory, the Endowment Effect, and Prospect Theory suggest that the evaluation of the social cues manipulation (M1) was influenced by the level of treatment participants experienced. Expectancy Theory suggests that the interpretation of social cues may have been influenced by whether expectations for treatment were confirmed or disconfirmed in a favourable or unfavourable manner by the subsequent treatment. Furthermore, the Endowment Effect

and Prospect Theory suggests that the loss of one's entitlement has a large impact on behaviour, thus, the unfair treatment may have impacted how the social cues were perceived, particularly when the cues were fair.

### Limitations

Treatment manipulation. The negative event that prompted an expectation for an explanation was a tardy experimenter, and the unfair treatment was the absence of an explanation for the lateness. These events were likely perceived as much less offensive as compared to negative events in the workplace that are not adequately explained, such as layoffs, pay cuts, transfers, or why the annual Christmas bonus was cancelled. In the present study, when social cues were absent, treatment had no effect on perceived interactional justice or protest behaviour. Thus, it is unknown whether social information from peers would impact perceptions of interactional justice and protest behaviour above and beyond subsequent treatment in the same manner when the injustice people subsequently experience is perceived as more unfair than in the present study. For example, it may be that when injustice is perceived as severe, social information from one's peers may have less effect on perceptions of interactional justice and protest behaviour than was observed in the present study. Future research may benefit from exploring the influence of social information on justice attitudes when the degree of injustice in the subsequent treatment is manipulated to be perceived as less fair than in the present study.

Protest behaviour. The measure of protest behaviour in the present study was dependent upon participants' belief that their evaluations were to be used by the

graduate director for graduate student evaluation (i.e., an evaluation of the experimenter). If participants did not believe that their responses would have potential repercussions for the experimenter, then the measure would not have reflected an intentional act of protest behaviour, and instead, may only reflect participants' "true" responses to the items based on the actions of the experimenter. It may be that participants responded to the protest behaviour items by considering their treatment in the study, which includes the fairness of the treatment (i.e., the treatment manipulation), and non-fairness related aspects of treatment (e.g., how enjoyable the study was). To illustrate, consider the following item: "Based on how the experimenter treated me, I am enthusiastic about volunteering for future research with this same experimenter". A participant's response on this item could be an indication of, for example, his or her boredom with the study, and not the participant's desire to retaliate by responding in a fashion that would reflect poorly on the experimenter during graduate student evaluation. Unfortunately, participants were not asked about whether they believed that their responses would have potential repercussions for the experimenter. Thus, the present study is unable to test for evidence about whether participants' responses were reflective of a means to "get back", or were simply answering "truthfully" based on their experience in the study. Of note, however, the social cues manipulation accounted for variance in protest behaviour, and this manipulation was independent of the behaviour of the experimenter. Also, interactional justice perceptions were related to protest behaviour, and this finding was consistent with past research.

Gender. Table 4 (p. 59) showed that gender was correlated with protest behaviour and task performance. These relationships were examined with respect to hypothesis testing, and it was found that the statistical inferences drawn were the same when gender was and was not controlled for, with one exception (see Tables 7 and 10, pp. 63 and 72). The interaction of Social Cues  $\times$  Treatment did not significantly predict protest behaviour when gender was controlled for. Follow-up testing of the interaction, however, showed that the results were the same whether gender was controlled for or not. Thus, it is believed that the observed gender effects do not threaten the inferences based on hypothesis testing reported herein.

Of note, however, some research in the deviance literature has reported that males engage in more deviant behaviours than females (e.g., Frone, 1998; Ruggiero, Greenberger, & Steinberg, 1982). Rever-Moriyama (1999) found that males engaged in more property retaliation than females, although there was no gender difference on political retaliation which includes the type of retaliation assessed in the present study (i.e., protest behaviour against another organizational member). Thus, it is possible that the higher protest behaviour for males in the present study is not an artifact of the gender composition of the cells, and instead reflects a “true” relationship. Moreover, future research may benefit from examining whether males are less accepting of an explanation and an apology for harm done than are females in terms of deciding whether to protest or other forms of retaliation.

Table 10 (p. 74) showed that males protested more than females when unfair social cues were followed by unfair treatment. Although inferences from these data were

limited due to the small sample sizes when the  $3 \times 2$  effects were broken down by gender, it is possible that the Rejection-Threshold Model for fairness based decision making (Gilliland et al., 1998) operated differently depending upon gender in two potential ways. First, when the rejection-threshold level was reached (two violations), behavioural responses may be stronger for men than for women. Second, it is possible that some females in this sample had a higher rejection-threshold level than males. Of note, however, males' protest behaviour level in this cell may have been influenced by the gender composition of those who manipulated fairness: a male experimenter was the transgressor of fairness in both social cues and treatment, and two female confederates claimed that the male researcher was unfair in the past. Data from the present study do not allow for a test of whether the researchers' genders impacted the results.

Table 10 (p. 74) also showed that protest behaviour for males in the absent social cues/fair treatment condition was surprisingly higher than for males in the absent social cues/unfair treatment condition. In contrast, females' mean protest behaviour scores were in the expected direction. One explanation for males' higher protest behaviour in the fair treatment condition than in the unfair treatment condition when social cues were absent is that this finding is an artifact of the small sample sizes in these conditions when broken down by gender (i.e., the law of small numbers, Tversky & Kahneman, 1971).

Unfair Comparisons. Cooper and Richardson (1986) defined an unfair comparison as a situation in which one theory, factor or variable has an artifactual advantage over another due to their manipulations, measurements, or operationalizations. Based on the above article, Folger and Cropanzano (1998) argued that much of the

organizational justice research suffers from unfair comparisons. For example, unfair comparisons may occur when researchers compare the relative strength of two factors that are operationalized in non-equivalent ways (violating procedural equivalence), or when one measure has greater range restriction than another (violating distributional equivalence). Thus, when comparing the predictive strength of two factors or variables, it is necessary to show procedural and distributional equivalence in order to draw a fair inference of comparative strength.

In the present study, the levels of social cues and treatment were not procedurally-equivalent (e.g. 1, perceptions of interactional justice in the unfair social cues condition were not equivalent to interactional justice perceptions in the unfair treatment condition, and e.g. 2, the social cues were about others' experiences with fairness and the treatment was a personal experience of fairness). Thus, inferences were not made regarding the comparative strength of effects of treatment versus social cues that were intended to generalize outside of the experimental context. The proportions of incremental variance accounted for by social cues and treatment were reported, but are limited in terms of generalizing beyond the non-equivalent manipulations that occurred. Likewise, the discussion of the specific  $3 \times 2$  cell findings above involving the non-equivalent manipulations should be interpreted with some degree of caution. This does not mean that the results of the present study can not inform future theory, research, and practice, but instead it highlights the need to replicate these findings using alternative operationalizations and manipulations. Future research can also focus on testing

manipulations that can be shown to be both procedurally, and distributionally equivalent (see Cooper & Richardson, 1986).

Victim derogation. There is reason to suspect that upon hearing the social information indicating past unfairness, some people may not have blamed the fairness transgressor for the event and instead, they may have blamed the individual who communicated that he or she received unfair treatment (e.g., “that person probably got what he or she deserved”). Research (e.g., Lerner & Simmons, 1966) suggests that when people observe someone else’s experienced injustice, they may alter their cognitions so that their belief in a just world is maintained, that is, the belief that people get what they deserve and deserve what they get. One way to maintain the just world belief in the face of someone else’s unfair treatment is to derogate the victim so that he or she appears to deserve unfairness. Skarlicki, Ellard, and Kelln (1998) examined third-party fairness perceptions regarding a layoff, and used Lerner’s (1980) just world theory to predict that participants who more readily derogated the layoff victim would perceive procedural justice as more fair regardless of the “fairness” of the process. Indeed, even when procedures were manipulated to be perceived as unfair, participants who engaged in more victim derogation rated the layoff process as more fair than did other participants.

In the present study, the potential for victim derogation in the unfair social cues condition was presumably reduced by invoking opinion consensus among the confederates (e.g., in the unfair social cues condition, “my friend was in that study and she was complaining about him too”). It is presumably less likely that people would infer that several people (versus one person) were deserving of unfair treatment by the

experimenter. Moreover, the cues were worded to imply a consensus of opinion to facilitate the effect of social information on attitudes toward the experimenter (e.g., Asch, 1952).

Expectancy development. Another potential limitation is whether or not participants formed expectations of treatment based on the social cues, and invoking opinion consensus among the confederates likely increased participants' certainty regarding their expectations of fair or unfair treatment (Olson et al., 1996). Other aspects of the experimental context also presumably increased the potential for expectancy development. For example, Olson et al.'s review noted that accessibility of expectations (the likelihood of activating an expectation) is enhanced when the initial information that prompted the expectation was recently acquired, as it was in the present study. Moreover, the explicitness of an expectation is heightened in interpersonal settings, particularly when they are impending, in which people often form trait hypotheses about others. The authors wrote "when individuals anticipate meeting someone new, they engage in attributional processing and may form conscious hypotheses about what the target person will be like" (p. 216). Thus, the experimental context in the present study provided the appropriate conditions for which expectations regarding future treatment could form.

Laboratory research. Related to the generalizability of the present study which is subsequently discussed, some aspects of the laboratory setting are likely different from a field setting. There is reason to believe that aspects of the laboratory setting (versus the field) may have set up liberal tests of the hypotheses.



First, the limited time frame likely impacted the amount of fairness-related information participants received. People in a work setting likely experience fair or unfair treatment and hear social information more frequently than they did in the present study. The limited information available to participants may have been more clearly remembered in the present study than if more information had been available over time. The limited fairness-related information used in the present study may have oversimplified the impact of social information on subsequent behaviour. The laboratory setting used in the present study, however, allowed for the degree of experimental control that is necessary (but not sufficient) to make some degree of causal inference.

Also, the limited time frame for participation in the current study may have accentuated the hypothesized effects on retaliation. For example, when participants experienced unfairness, they may have been more likely to protest shortly after the fairness transgression because they were likely to have been more angry than if more time had passed between the fairness transgression and the opportunity to protest. Thus, it is unknown whether the study's effects on protest behaviour would persist over time. Moreover, people's memory of social information from peers and of the subsequent treatment may change over time. Thus, the present study does not necessarily generalize to a situation, for example, in which an employee has heard social information several months before deciding whether or not to retaliate.

Moreover, the nature of the measure of retaliation (i.e., protest behaviour) in the present study may have accentuated the relationships between perceived fairness and retaliation. Participants were given an "easy" means to retaliate; they were able to

protest the experimenter's treatment without any repercussions. Participants were told that their responses were confidential and that the experimenter would not see retaliate "in secret" without the any potential repercussions. Most forms of retaliation in organizations (e.g., theft, badmouthing the organization, wasting time, long coffee breaks) are characterized by the possibility of being caught. The measure of "easy" retaliation used in the present study, however, does parallel a situation in the workplace in which an employee rates his or her supervisor as part of a 360 degree feedback system. For example, if the employees' appraisal is confidential and not seen by the ratee, then the employee can retaliate against a supervisor in a similar manner as in the present study (i.e., retaliate by giving a poor rating of a supervisor as part of that supervisor's evaluation).

#### Conservative Tests of the Hypotheses

Alternatively, there are reasons to believe that the laboratory setting (versus the field) may have produced conservative tests of the hypotheses. First, participants in the present study had less at stake compared to employees who are unfairly treated at work. Participants in the present study who perceived unfairness knew throughout the experiment that it would end in less than one hour, and that they would then receive bonus credit regardless of the treatment they received. When unfairness is experienced at work, outcomes (e.g., pay) may be threatened, and these outcomes may be more important to employees than the bonus credit was to participants. For example, if an unfair supervisor does not provide an explanation for a poor performance appraisal that is used to determine pay, it may be seen as a greater offense than the unfairness in the

present study. Moreover, the relationship between an employee and a fairness transgressor is more long-term when compared to the relationship between an experimenter and a participant. Justice theorists have argued that unfair treatment in the workplace may be seen as an indicator of future unfair treatment (e.g., Folger & Cropanzano, 1998), and this was unlikely to have been relevant in the present study. Thus, employees in the workplace may have more reason to punish unfairness than participants in a laboratory setting.

An additional reason that the present study's design may have produced conservative tests of the hypotheses is that participants were peers in the sense that they were fellow students, but they did not know each other as well as fellow co-workers likely would. Thus, laboratory participants were less likely to be as cohesive as employees within a work-group. Researchers using Social Information Processing Theory (Salancik & Pfeffer, 1978), and the organizational climate literature (e.g., Cartwright & Zander, 1968, Naumann & Bennett, 1997) have shown that individuals' attitudes are especially influenced by their peers when groups are cohesive. Moreover, the Relational Model of procedural justice (Tyler & Lind, 1992) posits that cohesive groups communicate fairness norms, and a fairness violation to one group member is a violation to all group members. It is unlikely that the above reasoning applies to the present study in which less cohesive groups than found in the workplace were presumably tested.

### Generalizability

When experimental control is obtained in a laboratory setting, the potential for high internal validity exists because competing explanations for the observed effects can be ruled out, and this is a necessary condition for valid casual inference. Historically, however, laboratory-based studies are thought to have lower external validity and do not necessarily generalize to the “real world” as well as do studies conducted in field settings (Anderson, Lindsay, & Bushman, 1999). Anderson et al., however, questioned this belief, and examined the effect size coefficients from 38 published meta-analyses that compared tests of the same phenomenon in both laboratory and field settings (e.g., goal setting participation and employee performance, attribution and depression, and leadership style and employee performance). Their meta-analysis of previous quantitative summaries showed substantial effect size similarity between laboratory and field research among several topical domains. This suggests that laboratory research can often be more externally valid than commonly thought.

Aronson, Ellsworth, Carlsmith, and Gonzales (1990) claimed that a confusion between experimental and mundane realism is the basis for the unfounded argument that laboratory findings do not adequately generalize, and hence are of limited use in terms of predicting psychological phenomenon in contexts outside of the laboratory. Aronson et al. defined experimental realism as a situation in which participants perceive the experimental events or manipulations as believable and meaningful. Mundane realism refers to the similarity between events in an experimental context and those that occur in the “real world”. They argued that if the purpose of the research is to capture the essence

of a psychological phenomenon, experimental realism is necessary. They wrote: “the situation must be so interesting, involving, and believable that its effects will transcend the influence of the subjects’ knowledge that they are in an experiment” (p. 72). Further, they argued that mundane realism is not necessary to achieve an acceptable degree of external validity, provided the study is well-controlled and is high on experimental realism. For example, many events in the “real world” do not have a strong influence on attitudes and behaviour, thus increasing mundane realism does not necessarily increase external validity.

Aronson et al. (1990) cited Asch’s (1951) famous study regarding people’s conformity to peers’ line judgements as an example of a laboratory study that was externally valid, and was high in experimental realism yet low in mundane realism. The situation in Asch’s study was perceived as believable and meaningful: Participants showed discomfort regarding their conformity to peer opinion by their squirming and sweating, and their discomfort was also self-admitted during post-study discussions. This conformity effect is now well established in the social psychology literature (i.e., it has been replicated in other contexts and settings) and many would agree that such conformity effects represent “true” relationships. Asch’s study was externally valid because it was high in experimental realism, yet mundane realism was low: in the “real world”, people are rarely confronted with a line judgement task after hearing peers’ opinions.

In the present study, a high degree of experimental realism was presumably achieved. The majority of participants (95%) indicated that they believed that the

manipulated events that occurred in the study were “true”. Moreover, participants indicated that they perceived the events as meaningful and believable. For example, a comment from one participant (paraphrased) was “some other participants said you were fair to them in the past, and then when you were late, I couldn’t believe it! You didn’t even apologize. I thought that you were a real jerk”. The results of the present study were consistent with the theory and past laboratory and field research reviewed herein, thus it is probable that the laboratory manipulations of the present study produced meaningful experiences that are comparable to those in the “real world”. Thus, I believe that the psychological phenomenon tested in the present study does generalize outside of this experimental context.

Aronson et al. (1990) argued that high mundane realism is not sufficient to achieve adequate external validity, however mundane realism can often bolster external validity. In the present study, some degree of mundane realism was achieved. Specifically, the experimental context in the present study paralleled a workplace situation in which a supervisor is late for a meeting with a new employee who did or did not hear of the supervisor’s past treatment fairness. Upon arrival, the supervisor does or does not provide an adequate explanation for the lateness and then asks the new employee to perform a task. More generally, the context tested in the present study best generalizes to new employees who hear social information about an authority figure’s past treatment, and then subsequently judge and respond to the authority figure’s treatment when it is shortly thereafter experienced for the first time.

One question that the present study's data do not answer is whether fairness-related information from peers is available to new employees in a field setting. The newcomer socialization literature reviewed earlier, however, strongly suggests that newcomers actively seek information from their peers about attitudinal norms (e.g., Comer, 1991), and that the information sought by newcomers includes concerns that are relevant to interactional justice (Miller & Jablin, 1991). It remains to be tested in a field setting, however, whether social information from peers affects new employees' perceptions of interactional justice.

It also remains to be tested whether more seasoned job incumbents' interactional justice perceptions are impacted by social information from their peers. Recent qualitative research conducted by Jones, Holton, and Bramfield (2000) suggests that the potential for social influence exists among incumbents. They found that employees discussed interactional justice issues on a frequent basis as evidenced by the number (approximately one quarter) of within-company intra-net postings that requested explanations or indicated that adequate explanations were not given for negative events and outcomes affecting the employees. Thus, for both new and incumbent employees, the potential exists for peers' statements to influence other employees' perceptions of interactional justice. Because of the experimental realism achieved in the present study, it is reasonable to posit that social information likely influences employees' perceptions of fairness, although this remains as an empirical question.

### Theoretical Implications

The theoretical implications of the present study are threefold. First, considerable support was found for the influence of social cues on interactional justice perceptions and protest behaviour above and beyond the effects of treatment. Thus, future fairness theories may need to incorporate the idea that information from one's peers can impact justice perceptions and fairness-based responses. This idea is consistent with the Relational Model of procedural justice (Tyler & Lind, 1992), however, tests of this theory do not focus on social influence, and to the knowledge of this author, the theory has yet to be fully incorporated into a complete model of fairness perception formation. To fully understand how perceptions of fairness are formed, the social context surrounding these judgements must be considered. As was previously mentioned, people may be hyper-vigilant to fairness-related issues when they have heard prior social information regarding fairness from their peers. A corollary of this theoretical addition is that work-groups with different leaders may need to be studied separately from each other in order to maximize the prediction of interactional justice perceptions and work behaviour through considering the social information from one's work-group peers.

Second, one way in which social information can impact fairness judgements and responses was examined in the present study: social information was presented prior to an experience of treatment. The patterns of cell means were different for interactional justice perceptions and protest behaviour, and Gilliland et al.'s (1998) Rejection-Threshold Model for fairness judgements and decisions provided a reasonable explanation for these different patterns. Future justice theories may need to consider the



number of fairness violations, and how this differentially impacts fairness judgements and fairness-based decisions. This may be an important step in furthering existing justice theory and research because in laboratory settings fairness or non-fairness is typically experienced once or twice, and in the workplace, fairness and non-fairness is likely repeatedly experienced over time. Moreover, Gilliland et al.'s reasoning may potentially clarify past results of fairness research that found different patterns of results for fairness judgements and decisions.

Third, the finding of the fair social cues/unfair treatment cell on protest behaviour supported Folger and Cropanzano's (1998) notion that unfairness has a larger impact on behaviour when the individual expects or is used to fair treatment. This finding also supported the reasoning based on Expectancy Theory, the Endowment Effect, and Prospect Theory. This idea is rarely conceptually explored in the justice literature, and to this author's knowledge, it has not been previously tested. Thus, this notion may need further testing and inclusion in future justice theories.

### Practical Implications

Social information from peers is likely to exist in many organizations. In light of the present study's findings, three suggestions are presented to promote perceptions of fair treatment in the workplace. First, this study suggests that when unfair treatment is subsequently experienced, whether social information indicates unfair or fair treatment in the past results in more protest behaviour and lower perceptions of fairness. If subsequent treatment is perceived as fair, however, the deleterious effect of social information may be reduced. Because fairness-related social information from peers is

likely commonly communicated within organizations, and thus people may be hyper-vigilant to fairness-related issues, perceptions of unfair treatment should be avoided to minimize retaliation.

Second, employees may benefit from the creation of organizational mechanisms to identify and deal with fairness transgressions as quickly as possible. For example, it could be made clear to all employees that their concerns are important and should be communicated to an identified employee or organizational representative. If a climate of immediate identification of fairness transgressions existed, the representative could take action to resolve the concern in a timely manner. If the fairness violation is immediately handled to the satisfaction of the employee, this may lessen the likelihood of the spread of negative social information to other employees. Third, to reduce the influence of social information indicating past unfairness to new employees, newcomers should not be trained and mentored by employees who tend to express their discontent or frequently badmouth the organization or its leaders.

### Future Research

In addition to the suggested future research already mentioned (i.e., examining anger/hostility as a moderator of the interactional justice perceptions and protest behaviour relationship over time, examining interactional justice separately within work-groups with different leaders, research on the Rejection-Threshold Model, the findings of the fair social cues/unfair treatment cell, the gender effects on protest behaviour, and examining social information and treatment using procedurally-equivalent methods), several other avenues of study may prove fruitful. Folger and Cropanzano's (1998)

Fairness Theory posits that attributions of harmful intent are important when people are responding to perceived unfairness. Thus, future research should measure and examine how these attributions affect the influence of social information on perceptions of interactional justice. For example, when attributions of harmful intent are not made, it may be that social information has less of an impact on interactional justice perceptions than when attributions of harmful intent are made regarding unfair treatment.

Second, the negative event in the present study was held constant (the lateness was always the same), which controls for a host of competing explanations for the results reported herein because negative responses vary directly with the magnitude of the negative event (Folger & Cropanzano, 1998). Future research, however, could examine how social information from one's peers affect perceptions of treatment fairness regarding events that are varied in terms of their perceived negativity. For example, when an extremely negative event (e.g., job loss) is coupled with unfair treatment, social information from one's peers about past treatment may not influence perceptions of interactional justice above and beyond subsequent treatment to the same extent as in the present study. Moreover, fairness and unfairness of the social cues can be varied to determine potential boundary conditions for the effects of social information. For example, a fairness violation communicated by one's peers that is perceived as relatively minor compared to other violations may not influence perceptions of interactional justice and retaliatory behaviour.

Third, it was argued that the present study best generalizes to new employees because social information was presented prior to an experience of treatment. It is

unknown if the results would have been different if the treatment was experienced prior to the social information. Moreover, in the world of work, it is likely that social information and treatment do not simply occur in one particular order, and instead both occur more than once and over time. Thus, future research could focus on similar processes, except within incumbent employees.

Applied to newcomers, it is also unknown whether injustice matters to the same extent as it does for incumbents. For example, a newcomer who retaliates in the first week of work may not be as detrimental to the organization as an incumbent who retaliates continuously over time. Nevertheless, it may be that newcomers who retaliate early in his or her employment may continue to do so over time. Moreover, researchers (Jones & Skarlicki, 2000) have found that newcomer's perceptions of fairness are important. Specifically, voluntary turnover was predicted by perceptions of fairness, and the majority of those who left the organization had less than two months tenure. Moreover, Folger and Cropanzano (1998) proposed that the nature of the first contact with employees (i.e., the initial experience of fairness) can have profound implications for future relationships, and this assertion has been supported by empirical research (e.g., Gilliland, 1993; Singer, 1993). Thus, there is reason to believe that newcomers' perceptions of fairness do predict behaviour that is important to organizations. Future research should investigate the influence of social information on perceived interactional justice and on the responses to fairness by comparing newcomers to incumbents to determine if the effects are different.

Finally, it was previously mentioned that field research regarding the influence of social information on interactional justice perceptions has not been conducted. The methodological paradigm used by the organizational climate researchers may provide one method in which such field research can be conducted. Specifically, it can be examined whether group-level measures of perceived interactional justice (i.e., the mean of each work-group) predict work behaviours beyond individual-level measures within each work-group. Group cohesion and the visibility of the leaders in displaying fairness could also be examined within a climate context. Additionally, employees can be asked to rate the fairness of how their peers are treated at work to determine if this relates to their individual justice perceptions. Finally, qualitative research (i.e., open ended questions) may help to understand whether employees believe that social information affects their justice perceptions.

Because of the design and experimental control achieved through laboratory testing, the present study has shown that there is a basis for the causal inference that social information impacts perceptions of interactional justice and protest behaviour. More research is needed to better understand how justice perceptions are influenced by social information, both within the lab and field. A research program for examining social influence on interactional justice perceptions and the reactions to perceived fairness may clarify these relationships and hence further existing justice theory and practice.

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## Appendix A

## Consent Form

Research Project Title: Noise Distraction in the Workplace

Investigators: David Jones and Dr. Theresa Kline

This consent form, a copy of which has been given to you, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Please take the time to read this form carefully and to understand any accompanying information.

1. You have volunteered to participate in a research study through means of the departmental research sign-up sheet. The objective is to examine the effect of background noise on task performance.
2. You will be asked to complete an 8-minute task involving the use of a phonebook to locate postal codes for a list of addressee, a demographics form, and a questionnaire that will ask about your attitudes towards the background noise. Following, you will be asked to complete a questionnaire from the Industrial-Organizational Psych. area-group assessing their research. You will also be asked to complete a questionnaire used for graduate student evaluation. In total, the study will take 60 minutes.
3. The risks involved in this study are no greater than one would experience in everyday life at work.
4. In the event that you experience any discomfort as a result of participating on this study, please contact Dr. Theresa Kline at 220-5229, or babbitt@ucalgary.ca.
5. All information that you provide will be strictly confidential. Results will not be examined or reported at the individual level. All information will be stored without names, in a locked file cabinet at the University of Calgary for five years after which the data will be destroyed.
6. Although you may receive bonus credit towards a participating class as per the regulations of the participant pool, you will not receive extra remuneration for participating in this study.
7. You are free to not answer any questions, and you may withdraw consent and terminate participation at any time without penalty: you will still receive any applicable bonus credit. You may ask any questions to either the research assistant or the researcher David Jones before, during, and after the study.
8. Please check the space for a study summary \_\_\_, and provide a means for contact on this sheet's back side.
9. In signing this form, I fully understand that I am participating in this study as part of my educational experience in the psychology Department. In exchange for my time I expect to gain some understanding of research and some of the ideas currently being explored in psychology. If, after the study, I feel I have not gained sufficient educational benefit, or have other concerns regarding this experience, I may register my concerns with Dr. T. B. Rogers, Chair: Psychology Department Ethics Committee (Human Participants). He will insure that my comments are acted upon with no fear that I will be identified personally. Dr. Rogers can be reached at: A255B, 220-6378, tbrogers@ucalgary.ca.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate. In no way does this waive your legal rights nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free not to answer specific items or questions in interviews or on questionnaires. You are free to withdraw from the study at any time without penalty. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. If you have further questions concerning matters related to this research, please contact Dr. Theresa Kline at 220-. If you have any questions concerning your participation in this project, you may also contact the Office of the Vice-President (Research) and ask for Karen McDermid, 220-3381.

Participant \_\_\_\_\_

Investigator \_\_\_\_\_

Date \_\_\_\_\_

A copy of this consent form has been given to you to keep for your records and reference. This research has the ethical approval of the Psychology Department Ethics Committee (Human Participants).

Appendix B

Confederate's Discourse

Social Cues: (a) fair, (b) unfair

After consent forms are collected by the research assistant:

C2: So Christina, do you know the grad student who is doing this experiment, David Jones?

C1: No I don't think so, why?

C2: Well I signed up for a research study with him in the past and

a) I was impressed

b) I was not impressed

C1: a) Is that why you are here?

b) Then why are you here?

C2: a) No, this was the only time slot that I could fit into my schedule

b) This was the only time slot that I could fit into my schedule

C1: a) So why did you like him so much?

b) So why didn't you like him?

C2: a) He was really respectful, he treated us like equals, and he didn't treat us like idiots when he explained things

b) He was really disrespectful and condescending. He gave us a sheet of paper and said 'print your names clearly, I'm not an interpreter, and for God sakes spell your names right!'

C1: So this is the same guy we have today?'

C2: a) Yes, and he was really consistent, he treated us all in the same way. He even made his friend stop eating his lunch in the room because he already told everyone else that we couldn't have food in there.

b) Yes, and he was inconsistent, there was a guy doing the study that he knew and he let him eat his lunch in there after he told everyone else that we couldn't have food or drink in the room

C1: a) That's fair

b) That's not too fair

C2: a) And he answered all of our questions and gave responses that totally addressed them.

b) And he totally sloughed off our questions and gave responses that didn't really address them

C1: Was the study something to do with team performance?

C2: Yes it was

C1: a) My friend was in that study and she was saying good things about him too

b) My friend was in that study and she was complaining about him too

C2: a) I'm glad I could fit this time slot into my schedule

b) It is too bad that this was the only time slot that I could fit into my schedule

Appendix C

Personal Background

Please answer the following questions.

- a) What is your current age? \_\_\_\_\_
- b) Are you male or female? [a] Male [b] Female
- c) What is your major? \_\_\_\_\_
- d) In what year of your program are you? \_\_\_\_\_
- e) Have you completed any other post-secondary education? If yes, please indicate for how long, and what, if any, diploma or certificate was obtained.

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- f) How many times have you participated in Psychology research in the past? \_\_\_\_\_

## Appendix D

## Treatment Manipulations

Fair Discourse

Experimenter: "Hello everyone, my name is David Jones, and I'm the experimenter here today. I want to begin with a sincere apology for showing up late. I was at printing services and when I was leaving I realized that they didn't print up the debriefing forms, and we need them to complete the study. So I had to wait there while they ran off some copies. I know this is an inconvenience to you because you are all probably really busy and have important things to do. Know that I do value your contribution and time, and again, I apologize. Is everybody okay with that? All right. In my hand I have the task that we will complete..."

Unfair Discourse

In the lack of fair Social Account condition, the experimenter shows up late and gives no apology or explanation for the lateness.

## Appendix E

Please find the name in the phonebook and record the phone number, and address if available, in the same form as given in the phonebook (no abbreviations). You have 8 minutes. Please try as hard as you can, and it is very important that you find the addresses in the order they are listed below.

- 1) Cornelson, Herb \_\_\_\_\_
- 2) Sihota, Balbir \_\_\_\_\_
- 3) Friesen, Cam \_\_\_\_\_
- 4) Gerlitz, Ron \_\_\_\_\_
- 5) Benedict, C S \_\_\_\_\_
- 6) Rota, Daniel \_\_\_\_\_
- 7) Valencik, John \_\_\_\_\_
- 8) Assaf, Renee \_\_\_\_\_
- 9) Gergo, S \_\_\_\_\_
- 10) Moon, Dan \_\_\_\_\_
- 11) Wink, K \_\_\_\_\_
- 12) Majko, J \_\_\_\_\_
- 13) Valin, S \_\_\_\_\_
- 14) Hall, Lu \_\_\_\_\_
- 15) Cogbill, T \_\_\_\_\_
- 16) Evans, Tony \_\_\_\_\_
- 17) Maday, Tracy \_\_\_\_\_
- 18) Fotter, G \_\_\_\_\_
- 19) Cid, Joe \_\_\_\_\_
- 20) Janes, Cory \_\_\_\_\_
- 21) Magat, Rellie \_\_\_\_\_
- 22) Purvis, Ron \_\_\_\_\_
- 23) Teel, C \_\_\_\_\_
- 24) Foley, Don \_\_\_\_\_
- 25) Lester, Dean \_\_\_\_\_

## Appendix F

Your answers to the following questions will be used by the researcher to assess your perceptions about how the noise affected your task performance. Please carefully consider the following questions.

Use the following scale and record your response in the space provided.

1= strongly disagree    2= disagree    3= neutral    4= agree    5=strongly agree

- a) The background noise had a negative impact on my task performance. \_\_\_\_
- b) I found the background noise to be distracting while completing the task. \_\_\_\_
- c) I would rather work in a noise-free environment than the one in this study. \_\_\_\_
- d) I was able to ignore the background noise. \_\_\_\_
- e) I use the phonebook on at least a weekly basis. \_\_\_\_
- f) When I study, I listen to music. \_\_\_\_
- g) In my current, or last employed position, there was considerable noise at work. \_\_\_\_
- h) I excel under conditions of stress. \_\_\_\_
- i) Noise in the workplace is an important topic to study. \_\_\_\_



## Appendix G

These questions ask you about your feelings about the research process. Your participation is absolutely voluntary. Your answers will be used to assess, in general, research conducted within the Industrial-Organizational Psychology area group.

Please carefully consider these items and be honest about your thoughts and feelings.

1) I believe that the procedures used in this research were fair.

-3	-2	-1	0	1	2	3
strongly	disagree	somewhat	neutral	somewhat	agree	strongly
disagree		disagree		agree		agree

2) I believe that the bonus credit I have gained from my participation in this study is a fair reward for my contribution.

-3	-2	-1	0	1	2	3
strongly	disagree	somewhat	neutral	somewhat	agree	strongly
disagree		disagree		agree		agree

3) I believe that the learning experience I have gained from my participation in this study is a fair reward for my contribution.

-3	-2	-1	0	1	2	3
strongly	disagree	somewhat	neutral	somewhat	agree	strongly
disagree		disagree		agree		agree

4) I believe that in general, the benefits I have gained from participation in this study are fair rewards for my contribution.

-3	-2	-1	0	1	2	3
strongly	disagree	somewhat	neutral	somewhat	agree	strongly
disagree		disagree		agree		agree

5) The experimenter(s), David Jones, treated me with dignity and respect.

-3	-2	-1	0	1	2	3
strongly	disagree	somewhat	neutral	somewhat	agree	strongly
disagree		disagree		agree		agree

- 6) The experimenter(s), David Jones, provided an explanation for any issue that was of concern to me.

-3	-2	-1	0	1	2	3
strongly disagree	disagree	somewhat disagree	neutral	somewhat agree	agree	strongly agree

- 7) The experimenter(s), David Jones, considered my needs as a person at all times.

-3	-2	-1	0	1	2	3
strongly disagree	disagree	somewhat disagree	neutral	somewhat agree	agree	strongly agree

- 8) The experimenter(s), David Jones, behaved in an ethical manner.

-3	-2	-1	0	1	2	3
strongly disagree	disagree	somewhat disagree	neutral	somewhat agree	agree	strongly agree

- 9) I would consider applying to an Industrial-Organizational graduate Program after I finish my bachelors degree.

-3	-2	-1	0	1	2	3
strongly disagree	disagree	somewhat disagree	neutral	somewhat agree	agree	strongly agree

## Appendix H

## Confidential

As part of an ongoing graduate student evaluation, we are interested in your thoughts on the delivery of research within our department. For the following questions, your responses are confidential and will not be seen by the researcher(s) at any time. Your participation is strictly voluntary, and you may withdraw at any time, without penalty. This questionnaire data will be reviewed by the director of graduate studies as part of graduate student evaluation.

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(Director of Graduate Studies in Psychology)

Research Project Title: . The Impact of Noise on Task Performance

Please carefully consider the following questions and write the number that best represents your thoughts using the following scale.

1	2	3	4	5	6	7
(Strongly Disagree)			(neutral)			(Strongly Agree)

Based on how the experimenter(s) treated me, I am enthusiastic about volunteering for future research *with this same experimenter*. \_\_\_\_ (R)

Based on how the experimenter(s) treated me, it is possible that some participants could complain about their treatment. \_\_\_\_

Based on how the experimenter(s) treated me, this experimenter could benefit from training in "Ethical Dealings with Human Participants". \_\_\_\_

Based on how the experimenter(s) treated me, I am enthusiastic about volunteering for future research *within this department*. \_\_\_\_ (R)

Based on how the experimenter(s) treated me, I would recommend this study to my friends who are planning to participate in a study. \_\_\_\_ (R)

## Appendix I

Please carefully consider the following questions, and record the number that best corresponds to your feelings.

Please use the following scale:

1	2	3	4	5
strongly	disagree	neutral	agree	strongly
disagree				agree

- a) Even minor annoyances can be frustrating to me. \_\_\_\_
- b) I often get angry at the way people treat me. \_\_\_\_
- c) It takes a lot to get me mad. \_\_\_\_ (R)
- d) I am quick tempered. \_\_\_\_
- e) I am an even-tempered person. \_\_\_\_ (R)

## Appendix J

Please carefully consider the following questions, and circle the number that best corresponds to your feelings.

- a) I received an adequate explanation about why the experimenter was late.

-3	-2	-1	0	1	2	3
strongly disagree	disagree	somewhat disagree	neutral	somewhat agree	agree	strongly agree

- b) The conversation between some of the participants during the study led me to believe that the experimenter was fair in the past:

-3	-2	-1	0	1	2	3
strongly disagree	disagree	somewhat disagree	neutral	somewhat agree	agree	strongly agree

- c) Have you had previous contact with, or knowledge of the experimenter (David Jones), or knowledge of this experiment?

1	2
Yes	No

If yes, please explain:

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## Appendix K

University of Calgary  
Informed Consent Form

Research Project Title: Noise Distraction in the Workplace  
Investigators: David Jones and Dr. Theresa Kline

This consent form, a copy of which has been given to you, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Please take the time to read this form carefully and to understand any accompanying information.

In this study you completed a demographics questionnaire, and a task involving the use of a phonebook to locate postal codes for a list of addresses in the presence of background noise in a time limit of 8 minutes. Subsequent to the task, you completed a questionnaire that asked about your attitudes towards the background noise, your perceptions of fairness regarding the way you were treated, retaliatory behavior, and the manipulation checks.

During the debriefing process, you were verbally informed of the true purpose of the study. We were interested in the impact of social information on the formation of your perceptions of fairness regarding your treatment by the researcher. To examine this research question, you heard positive, neutral, or negative social cues from two research confederates and a research assistant regarding scripted levels of fairness of past interactions with the experimenter. Then, the researcher showed up late to the research session and either gave you an explanation and apology, or did not. We expect to find that the social cues from the research confederates has an impact on your perceptions of fairness, beyond that of the actual treatment you received. During the verbal debriefing, you were told about all aspects of the study involving deception, and were given reasons as to why the deception was absolutely necessary. Following this, you received a written copy of the above information.

All of the information we have collected from you will be stored so that your name is not associated with it (using an arbitrary participant number). The write up of the data will be on the aggregate level, and will not include any information that can be linked directly to you. The research materials will be stored securely throughout the entire investigation. Do you have any questions about this aspect of the study?

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to our use of the information you provided. In no way does this waive your legal rights nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are absolutely free to decline the use of your data, and if you choose to do so, you will receive no penalty. Your decision to permit the use of your data should be based on full informed consent, so you should feel free to ask for clarification or new information at this point. If you have further questions concerning matters related to this research, please contact: David Jones, Department of Psychology, University of Calgary; 220-5232, [dajone@ucalgary.ca](mailto:dajone@ucalgary.ca), or Dr. Theresa Kline, at 220-5229, [babbitt@ucalgary.ca](mailto:babbitt@ucalgary.ca).

If you feel you have not gained sufficient educational benefit, or have other concerns regarding this experience, you may register any concerns with Dr. T. B. Rogers, Chair: Psychology Department Ethics Committee (Human Participants). He will insure that your comments are acted upon with no fear that you will be identified personally. Dr. Rogers can be reached at: A255B, 220-6378, [tbrogers@ucalgary.ca](mailto:tbrogers@ucalgary.ca).

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 Participant

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 Date

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 Investigator

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 Date

A copy of this consent form has been given to you for your records and reference. This research has the ethical approval of the Psychology Department Ethics Committee (Human Participants).