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Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

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SOCIAL COMPARISON PROCESSES IN ORGANIZATIONS

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Author Notes

This article was developed while the first author was a Visiting Professor at the University of Queensland and the second author was a Visiting Scholar at Duke University. The authors acknowledge the helpful comments of Brad Alge on portions of an earlier draft of this article.

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Abstract

We systematically analyze the role of social comparison processes in organizations. Specifically, we describe how social comparison processes have been used to explain six key areas of organizational inquiry: (1) organizational justice, (2) performance appraisal, (3) virtual work environments, (4) affective behavior in the workplace, (5) stress, and (6) leadership.

Additionally, we describe how unique contextual factors in organizations offer new insight into two widely-studied sub-processes of social comparison, acquiring social information and thinking about that information. Our analyses underscore the merit of integrating organizational phenomena and social comparison processes in future research and theory.

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I'm bored to extinction with Harrison.

His limericks and puns are embarrassing.

But I'm fond of the bum,

For, though dull as they come,

He makes me feel bright by comparison.

Anonymous

What this poet (sic) apparently lacks in expressive talent appears to be eclipsed, at least somewhat, by his or her keen insight into human social behavior. That people acquire personal insight by comparing themselves to others goes beyond the stuff of lame lyrical lucidity. Indeed, social scientists know a great deal about the processes governing people's comparisons with one another—so-called, *social comparisons*. For this, we are indebted to Festinger (1954), whose influential theory of social comparison introduced over a half century ago subsequently gave rise to more refined conceptual developments (e.g., Mussweiler, 2003; Wood, 1989, 1996), resulting in a massive contemporary literature on social comparison processes (e.g., Suls & Wheeler, 2000). As chronicled by the insightful contributions to the present issue of this journal by Moore (2007) and by Buunk and Gibbons (2007), research has shed considerable light on the general processes by which people compare themselves to others in the course of everyday social interaction (Wheeler & Miyake, 1992).

A highlight of this literature has been its capacity to explain social behavior in a variety of specific situations and contexts, such as judging health and illness (e.g., Tennen, McKee, & Affleck, 2000), gossiping with others (e.g., Wert & Salovey, 2004), and performing family chores (Grote, Naylor, & Clark, 2002). In view of this, we find it curious that social scientists have not made more extensive use of work on social comparison processes in studying behavior

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in one of the most popular settings for investigating human behavior, the workplace (for some exceptions, see Goodman, 1977; Steil & Hay, 1997; Tenbrunsel & Diekmann, 2002; Van Yperen, 1992). Our reaction is predicated on the observation that social comparison appears to be embedded deeply into the fabric of organizational life. For example, social comparison occurs in both planned activities, such as when supervisors evaluate subordinates' performance relative to others (Mumford, 1983), and on naturally occurring occasions, such as when employees discover by happenstance how their own pay compares to that of others (Bylsma & Major, 1994).

Despite these connections, we are aware of no unified efforts to explain organizational behavior from the perspective of social comparison processes. As we suggest here, however, such an endeavor may prove worthwhile—both insofar as it promises to shed light on our understanding of various forms of workplace behavior and on social comparison processes themselves. With this in mind, we undertake such an analysis in the present article. Specifically, we review various workplace practices and processes into which insight has been provided by application of social comparison processes. In this respect, although social comparison processes are embedded in most social interactions, we have identified six particular topics of interest to organizational psychologists that are especially germane: (1) organizational justice, (2) performance appraisal, (3) virtual work environments, and (4) affective behavior in the workplace, (5) stress, and (6) leadership. All of these topics continue to attract active research interest in I/O psychology, and involve social comparisons at varying levels. Connections between these topics and social comparison processes range from well-researched interrelationships (as in the case of organizational justice) to sets of logically derived propositions (as in the case of virtual work environments). At the end of each section, we provide

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a brief summary of the key conclusions that flow from our analyses. Finally, after analyzing these connections, we conclude with an overall assessment of the unique insight into various sub-processes of social comparison derived from examining them in organizations.

Organizational Justice

In his novel, *Woman in Love*, British author, D. H. Lawrence (1921) commented that, “One man isn’t any better than another, not because they are equal, but because...there is no term of comparison” (p. 247). This observation squares with the widely accepted social scientific dictum that when people judge how fairly they are treated they take into account the manner in which others are treated (Cohen, 1986). This is applicable to all three forms of organizational justice (for a review, see Colquitt, Greenberg, & Zapata-Phelan, 2005)—*distributive justice* (the perceived fairness of the distribution of outcomes), *procedural justice* (the perceived fairness of the procedures used to determine those outcomes) and *interactional justice* (the perceived fairness of the interpersonal treatment used to explain procedures and outcomes).

Distributive Justice

The comparative nature of justice is fundamental to distributive justice as articulated in Adams’s (1965) equity theory. This is not surprising given that equity theory is predicated on Festinger’s (1957) cognitive dissonance theory, Thibaut and Kelley’s (1959) exchange theory, and Homans’s (1961) theory of distributive justice—three conceptualizations in which social comparison processes feature prominently. Specifically, Adams (1965) stipulates that for a state of equity to be perceived as existing between two parties, they must receive some normatively appropriate rate of return in a social exchange. This is defined in terms of the ratio of benefits one receives (i.e., outcomes) relative to the contributions one has made (i.e., inputs) as compared to the corresponding ratio of some referent other. With respect to the exact nature of this “other,”

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equity theory fails to specify either the precise nature and form of these comparison standards or when they are used—an omission that Adams later would admit to being a limitation of his theory (Adams & Freedman, 1976).

Acknowledging the fundamental nature of social comparison in promoting justice, various theorists have considered the comparative nature of fairness assessments in their own analyses of equity (e.g., Austin, 1977). Indeed, research has shown that equity judgments are based more strongly on social comparisons than on general expectations (Austin, McGinn, & Susmilch, 1980). In addition, people tend to place considerable weight on social comparisons, even when they have objective information suggesting that they are doing “better than average” (Seta, Seta, & McElroy, 2006). In the workplace, moreover, where comparative information generally is available, it is recognized that judgments of fairness stem from several referent sources (for a summary, see Table 1), although most of the research and theorizing focuses on two categories—internal comparisons and external comparisons.

Table 1

Reference Standards Commonly Used in Making Equity Judgments

Reference standard	Primary sources
Other individuals within one’s own organization	Adams (1965), Walster, Walster & Berscheid (1978)
External references, such as industry standards	Zelditch, Berger, Anderson, & Cohen (1970), Jasso (1980)
Oneself at an earlier point in time	Adams (1965), Goodman (1974)

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Other people in general; transrelational Austin & Walster (1975)

equity, or equity with the world

Beliefs about others' opinions of Folger & Kass (2000)

oneself

Internal comparisons. Equity judgments may be based on comparisons between one's own outcomes and inputs relative to those of relevant others in one's organization, such as coworkers, with whom one is in a relationship. This is the so-called "person-other" comparison typically examined by social psychologists (e.g., Walster, Walster, & Berscheid, 1978), also referred to as assessments of "internal equity" by human resources specialists (e.g., Milkovich & Newman, 2004). Specifically, equity theory notes only that the "reference person or group...[is] comparable to the comparer on one or more attributes" (Adams, 1965, p. 280). Austin (1977) suggested that these attributes include factors such as proximity (e.g., "local" comparisons, such as to coworkers, made on the basis of propinquity), similarity (e.g., on such dimensions as organizational status) and instrumentality (i.e., interest in cultivating certain impressions of oneself)—all of which also have been the focus of studies by social comparison theorists (e.g., Wood, 1989).

Indeed, research has shown that people whose ratios of outcomes/inputs are unequal to the comparable ratios of referent others perceive this state of affairs to be inequitable (for a review, see Greenberg, 1982). However, the degree to which such imbalances are perceived to be inequitable is determined by the perceived self-relevance of the comparison target (Martin, 1981). For example, although women as a whole are paid less than men for doing comparable

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work, they tend not to be dissatisfied with their pay because they generally compare themselves not to men but to other women (Crosby, 1984).

Recent research also has shown that social comparisons with respect to pay for work done also occur outside the traditional workplace, specifically the division of family work. In this case, however, because one's spouse is a more salient and available source of comparison than other same-sex individuals in general, cross-gender comparisons are salient (Buunk & Van Yperen, 1991). In this regard, Grote, Naylor, and Clark (2002) found that when assessing the fairness of the division of family work, women were more likely to compare themselves to their spouses than to women in other families, and that doing so led them to believe that their current arrangements were lopsided and unfair to themselves. Such findings illustrate the tendency for people to select different referent others under different situations and that in so doing, they arrive at different conclusions about the fairness of their work arrangements. Supplementing these situational findings, research also has found reliable individual differences in the ways in which social comparisons determine reactions to relative deprivation—the so-called social comparison orientation (Buunk & Gibbons, 2007; Gibbons & Buunk, 1999).

External comparisons. Equity judgments also may be based on comparisons with external standards—others, either known specifically or generalized, who are outside one's organization. Although social psychologists acknowledge this possibility (e.g., Walster et al., 1972), sociologists have embraced it and developed it further by noting that local comparisons alone are insufficient to promote feelings of inequity (Zelditch, Berger, Anderson, & Cohen, 1970) and that employees work within a “referential structure” that defines their expectations of fairness (Jasso, 1980). Indeed, these external referents have been found to be more predictive of perceptions of inequity than local, person-to-person comparisons (Singh, 1994).

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This is reassuring given that external referents in the form of published industry standards are used widely by labor economists as the basis for determining equitable wages in many occupations (e.g., Michael, Hartmann, O'Farrell, 1989; Simkin, 2005). Research in this tradition (for a review, see Wallace, Leicht, & Raffalovich, 1999) has found that people paid lower than prevailing industry-wide wages for the work they do believe that they are unfairly paid and such individuals are inclined to organize collective action (e.g., strikes and work stoppages) against their employers. By contrast, workers who either lack such external information or who disregard it tend to feel less aggrieved because the source of invidious comparison is absent. As a result, they are disinclined to take such extreme action.

To date, although internal and external comparison standards have received the greatest attention among theorists, additional referent standards also have been identified (several of which are listed in Table 1). The proliferation of attention to comparison standards used in assessing equity has revealed more about the particular standards that *might be used* than which particular ones actually *are used* under various circumstances. Although we find Davis's (1959) characterization of the choice of comparison other as "random" (p. 281) to be too fatalistic for our taste, we surely agree with Allen's quarter-century-old depiction that this is "an obstinate problem" (Allen, 1982, p. 196).

Procedural Justice Comparisons

Allen's (1982) characterization was meant to describe the role of comparison standards in assessments of distributive justice (i.e., the perceived fairness of the allocation of resources), but it is applicable as well to knowledge of the role of comparison standards on assessments of procedural justice (i.e., the perceived fairness of the procedures on which those allocation decisions are made). Going beyond equity theory, Folger's (1986a, 1986b) referent cognitions

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theory (RCT) explicitly acknowledges the role of reference comparisons in assessments of fairness. Specifically, RCT claims that when people reflect on events and outcomes they generate mental simulations, known as referent cognitions, comparing what could have happened to what actually happened. Research has found that people feel treated unfairly when they or another would have received more favorable outcomes had a fairer procedure been used (Folger & Cropanzano, 1998), such as one that grants the individual voice or that is based on information believed to be valid. This feature of RCT is key insofar as it specifies that it is not only procedures affecting oneself that serve as a frame of reference in assessing fairness, but also procedures affecting others.

We see this, for example, in research by Ambrose and Kulik (1989; Ambrose, Harland, & Kulik, 1991) showing that people rely on the procedures used with their coworkers to assess the fairness of the systems in which they, themselves are operating. Grienberger, Rutte, and Van Knippenberg (1997) shed light on this in a laboratory study in which they manipulated information about the fairness of the procedures used to determine the rewards received by themselves and a coworker. Specifically, they found that the most unfair procedures were believed to be those in which participants were denied control over the procedures used to determine outcomes although their coworkers were granted such control (for an overview of related evidence, see Conquitt, Zapata-Phelan, & Roberson, 2005). Interestingly, Grienberger et al. (1997) also found that procedures that gave participants control themselves but that denied control to their coworkers were not perceived to be unfair. These findings suggest that people make comparisons between the procedures that affect themselves and others, but that this information is processed in a self-serving manner (Greenberg, 1983; Rutte & Messick, 1995).

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Thus, in addition to relatively unfavorable outcomes, it is clear that relatively unfavorable procedures also promote feelings of injustice.

Interactional Justice Comparisons

How do people rely on social comparisons when making judgments about interactional justice? What we know, although limited in scope, is straightforward in nature. Specifically, research has shown that workers rely on consensual information from their coworkers when forming impressions of interactional justice (Lamertz 2002), especially knowledge of the injustices those individuals have suffered (Kray & Lind, 2002). Given the inherent vagaries about what constitutes appropriate levels of dignity and respect in the treatment of individuals in the workplace, reliance on social comparison information in making such judgments is not unexpected (Folger & Cropanzano, 1998). In fact, it has been demonstrated that people are so highly sensitive to violations of interactional justice in judging reactions to others that such perceptions override people's concerns about one's own relatively unfair share of outcomes (Collie, Bradley, & Sparks, 2002).

This research sets the stage for a more specific question about the role of social comparison processes in interactional justice. The research noted earlier in this section of the chapter has shown that people judging fairness make social comparisons regarding outcomes and procedures. However, do they also compare themselves to others with respect to interactional justice—that is, the way they are treated compared to others? How do people respond to receiving higher or lower amounts of information than relevant others?

Preliminary findings suggest that their reactions are quite dramatic. Specifically, in a role-playing study Greenberg (2006) found that the only condition under which people found it justifiable to strike-back at a supervisor who has treated him or her unfairly was when a

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distributive injustice (i.e., relatively low outcomes) to himself or herself was explained in an uncaring and insensitive manner whereas an analogous injustice was explained to another in a manner demonstrating higher levels of interactional justice. In other words, people are highly sensitive to being denied sensitive and caring treatment at the hands of another who has demonstrated the capacity to behave in this manner. However, workers responded less negatively to supervisors who showed themselves to be equally insensitive to others (i.e., “equal-opportunity jerks”). Apparently, it is not only the lack of sensitivity received that matters, but the decision to withhold that interpersonal benefit by someone who is capable of bestowing it (i.e., discriminatory behavior). And this, of course, is made possible by the use of social comparisons.

Key Conclusions: Organizational Justice

It is clear that assessments of fairness on the job are comparative in nature from distributive, procedural, and interactional perspectives. People judging what is fair compare the outcomes they receive to the outcomes others receive. But, this is not all. They also judge fairness by comparing themselves to others in two additional ways—the procedures by which they and others obtain rewards, and the manner in which they and others are treated in the course of enacting those procedures. Thus, the salient question in assessing fairness appears to be, “Compared to what?” And the answer, as we have noted, takes distributive, procedural, and interactional forms. In this connection, we believe that organizational justice is a potentially fruitful area in which to develop further the role of social comparison processes in organizational settings.

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Performance Appraisal

The process of formally appraising job performance is a well-established managerial function (Grote, 1996), a key purpose of which is to provide feedback useful to improving subsequent performance (Brett & Atwater, 2001; Tziner, Murphy, & Cleveland, 2005). Unless that feedback is accepted, however, this benefit is unlikely to accrue (Kluger & DeNisi, 1996). And, it has been shown that employees' acceptance of performance evaluations depend in large part on their beliefs about reliance on the use of appropriate information by supervisors (Greenberg, 1986c). Performance assessments based on characteristics believed to be related to job performance legitimately are better accepted by employees as bases for making performance judgments than characteristics whose appropriateness is questionable (Greenberg, 1986a, 1986b). As a result, such legitimate information is likely to be useful in fulfilling a key objective of the performance appraisal process.

Given people's complex and frequently biased reactions to performance evaluations, however, legitimate performance information may come to be rejected. We describe two processes that are likely to threaten the performance appraisal process by interfering with acceptance of critical information. The first, to which we refer as *the rejection problem*, refers to the tendency to give little consideration to such information; the second, to which we refer as *the deflection problem*, refers to the tendency to reconstruct the situation cognitively so as to discount that information. Both of these performance appraisal problems, as we will see, involve the social comparison process.

The Rejection Problem

Sometimes, people fail to accept what appear to be clearly legitimate bases for making performance judgments (e.g., possession of task-relevant skills), thereby threatening the validity and utility of the appraisal process. Research and theory on the proxy model of social

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comparison (Martin, 2000; Wheeler, Martin, & Suls, 1997) offers insight into why workers reject seemingly valid information. Specifically, this conceptualization claims that people engage in social comparisons to gather information about their probability of success on new, future tasks with which they are unfamiliar. To avoid failure in such situations, people ask themselves, “Can I perform this new task?” In answering, people compare themselves to other individuals (i.e., proxies) who already are performing that task, but only when two conditions prevail: (1) if the proxy’s performance on the initial task is perceived to be similar to one’s own performance, and (2) if the proxy is believed to have exerted a considerable amount of effort on that initial task.

For illustrative purposes, let’s consider a simple situation that’s likely to occur in the workplace. Suppose, for example, that Kaylene is a bank teller who is considering a new position as assistant branch manager. Because failure in that new post likely would affect Kaylene’s job security and reputation adversely, she is likely to ask herself, “Can I perform the new job?” before accepting the new position. Applying the proxy model, Kaylene would compare herself to a current assistant manager who she believes once performed equally well as a teller—but only so long as that individual also was believed to have worked very hard at that job. That assistant manager would be considered sufficiently similar to oneself to serve as a valid, diagnostic basis of comparison—hence, a proxy for Kaylene to use in gauging her own likely performance. By contrast, in judging her likelihood of success, Kaylene would *not* compare herself to another assistant manager whose performance as a teller she believes is different than hers and/or one whose effort as a teller either she believes is lower than hers or that is unknown to her.

The proxy model asserts further that when people know a proxy’s initial level of effort, they will consider related attributes irrelevant to task performance and therefore will disregard them when making judgments about potential performance. By contrast, people will consider

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these same attributes to be diagnostic of future performance when lacking information about the proxy's effort. Martin, Suls, and Wheeler (2002) demonstrated this in research in which several different performance tasks were involved. One of these was a grip-strength task. When participants had no information about another's efforts on this task they predicted their own performance based largely on information about attributes of this individual that were similar to themselves. For example, if participants' hand sizes matched those of a successful individual they expected to perform equally well, but if their own hands were smaller they expected to do worse. Thus, participants judged their own future performance based on how their own relevant characteristics compared to those of the comparison other. By contrast, relative hand size had no bearing on the judgments of participants who believed the proxy invested a great deal of effort in the task. These individuals expected to perform as well as the proxy regardless of their own hand size.

Such evidence, together with the theory upon which it rests, suggests that workers may reject what appear to be valid determinants of their task performance (hence, "the rejection problem"). Should this occur in an organization, workers would be disinclined to accept efforts to train them in key skills and abilities. Indeed, identifying candidates for remedial training is a common basis for conducting performance appraisals (Grote, 1996). Moreover, workers also may come to ignore diagnostic information about their job performance that may improve their future performance. In this regard, reliance on comparative information as outlined by the proxy model may be regarded as a legitimate form of bias in the performance appraisal process (Ilgen & Feldman, 1983).

It is important to note, however, that empirical demonstrations of the proxy model in organizations are lacking. Because the need to find and use relevant comparison standards is

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likely to be considerably greater on the job than in the laboratory conditions under which the proxy model was tested we need to be cautious about generalizing such effects. Future researchers need to consider the extent to which various contextual factors (e.g., the perceived importance of social comparison information) qualify predictions from the proxy model in organizations. Such efforts, we believe, will provide valuable insight into how workers use comparative information when assessing their own job performance. We are optimistic that the proxy model will prove to be a useful conceptual base for launching such efforts.

The Deflection Problem

In the course of evaluating performance, workers are inclined to ask themselves “How well am I doing?” More often than not, answering requires posing another question: “Compared to what or to whom?” Frequently, this involves making invidious comparisons in which one is labeled as falling short of some standard (whether relative or objective in nature) against which comparisons are made. Moreover, as Moore (2007) makes clear, whether people make “worse than average” or “better than average” comparisons depends on the context and the nature of the comparison task. Because such information may challenge people’s self-images as competent employees it potentially threatens their self-identities (Morse & Gergen, 1970).

Not surprisingly, this is likely to be problematic. As Kluger and DeNisi (1996) note in an influential review of the literature on performance feedback, such threats often result in lowered job performance. Eden’s (2003) research on the self-fulfilling prophecy suggests one underlying mechanism. If employees perceive themselves to be poor performers, their supervisors, in turn, will treat them as such (e.g., giving up on them by denying them needed resources or opportunities), thereby making their perceived poor performance a reality. This, of course, constitutes an inherent challenge to managers who deliver performance feedback insofar as the

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sharing of negative comparative information is an inevitable part of the performance appraisal process.

It is important to note that there are individual differences in people's willingness to perform poorly in response to negative performance feedback (Greenberg, 1977), suggesting that not all employees are likely to demonstrate negative behavioral effects. Yet, simply because some individuals might not lower their performance in response to negative performance feedback, it is possible that other undesirable forms of behavior may result. Because being perceived as a good employee is important to most people, they may be threatened greatly by negative performance feedback, but prefer not to call attention to themselves by performing poorly. Indeed, as noted by Mussweiler, Gabriel, and Bodenhausen (2000), people are likely to engage in less effortful, primarily cognitive, ways of responding to identity threats.

For example, instead of lowering performance, people may engage in deflection—that is, “actively reconstructing the meaning and relevance of the comparative context” (Mussweiler et al., 2000, p. 398). In other words, deflection helps protect people's self images by shifting their identities in ways that make their ostensibly poor performances appear acceptable. This, of course, can have adverse organizational consequences insofar as it insulates employees from corrective influences that otherwise would improve sub-par performance. As a result, individuals engaging in deflection are denied one of the key benefits of the performance appraisal process.

Employees engaging in deflection are likely to respond in ways that are more subtle and covert than merely lowering their job performance, making them difficult to discern. In general, because upward comparisons may be threatening to some individuals (particularly when the comparisons are being made to individuals with whom employees do not identify), it is here when deflection is most likely to occur. In other words, people may downplay cognitively the

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differences between themselves and others who seemingly outperformed them. As Mussweiler et al. (2000) explain, such behavior is likely to take several forms. Among these are the following:

- Perceiving oneself as more similar than warranted to high performing others (Schwartz & Smith, 1976), particularly when the dimension in question is important to one's identity (Van Yperen, 1992).
- Undermining the apparent superiority of another's performance by lowering one's own assessment of the work in question (Reis, Gerrard, & Gibbons, 1993).
- Discounting the validity of one's own inferior performance by negating the importance of the comparison standard (Tesser, 1988).
- Redefining the comparison other as nondiagnostic of oneself because of his or her ostensibly great difference from oneself (Wood, 1989).

Not only do all these forms of behavior occur, but they also are particularly likely among individuals who are high in self-esteem—that is, people whose identities are most heavily invested in their task performance. In reviewing research on this topic, Mussweiler et al. (2000) conclude, “In a nutshell, this body of evidence suggests that people high in self-esteem are generally more skilled at reconstructing threatening feedback in a self-protective way than are people low in self-esteem” (p. 400).

Cast in terms of performance appraisal, all these forms of deflecting represent cognitive mechanisms through which people are able to subvert the presumably diagnostic performance information that otherwise would result by engaging in social comparison. Although deflection strategies have not yet been identified explicitly as operating in the context of performance appraisal, Feldman (1981, 1994; Ilgen & Feldman, 1983) already has chronicled that similar cognitive processes are responsible for biasing the performance appraisal process. Interestingly,

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although social comparisons generally are assumed to be an inherent part of organizational performance appraisals, our analyses suggest that their role in this process is biasing as opposed to benign.

Peer Evaluations

Thus far, we have focused on social comparison processes as they might apply in traditional, top-down evaluation settings. These days, however, peer evaluations of performance are becoming increasingly commonplace as 360-degree performance appraisal practices (Beehr, Ivantskaya, Hansen, Erofeev, & Gudanowski, 2001) and self-managed teams (e.g., Erez, LePine, & Elms, 2005) grow in popularity.

Using peers as referents. In analyzing the use of peer evaluations, Mumford (1983) has observed that “social comparison processes are likely to have a great deal of relevance to peer revaluations and their validity” (p. 875). Mumford’s (1983) arguments are quite reasonable. He begins by explaining that objective information about people’s own performance is likely to be available only infrequently, and that when it is available, it is inclined to be biased by nonperformance-related factors. As a result, workers are inclined to assess their own performance by making comparisons to peers. This, Mumford (1983) claims, is particularly likely to occur under novel conditions (e.g., when evaluating performance on a newly learned task) because existing performance standards are unlikely to exist under these conditions.

Additionally, Mumford (1983) claims that because peers share similar backgrounds and perform similar tasks under similar conditions, they are likely to be especially attractive as referents. Of special importance to I/O psychologists, Mumford (1983) also argues that as employees gain experience comparing themselves to others performing work with which they are familiar, the validity of their resulting evaluations is likely to be enhanced.

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Potential limitations in the contemporary workplace. Although these analyses are logical and follow from what social comparison theory (Festinger, 1954), and subsequent analyses (e.g., Kulik & Ambrose, 1992) suggest about basing social comparisons on similar others, we have several reasons to question them. Specifically, we believe that the processes outlined by Mumford are quite reasonable in the abstract, but in several ways are inconsistent with the realities of today's workplace.

First, as Mumford (1983) himself acknowledges, for employees' performance observations to be valid, they must be based on ample opportunities to observe one's peers. In 1983, when Mumford's article was published, it might have been reasonable to assume that workers would develop growing awareness of their peers' work as they toiled with them shoulder-to-shoulder. Today, however, the advent of virtual work environments (see the following section) suggests that it no longer is safe to assume that people always get to observe their coworkers.

Second, given today's widespread use of cross-functional work teams (e.g., Keller, 2001), it is quite possible that many of today's employees are working alongside others whose work is so highly specialized that they are not in good positions to use them as bases for evaluating their own work, let alone assessing those individuals' levels of performance. In other words, readily available comparisons may be considered non-diagnostic.

Third, given the high degree of racial and ethnic diversity found in today's workplaces (Martins, Milliken, Wiesenfeld, & Salgado, 2003), there's no longer any good reason to assume that the degree of background similarity between people working side-by-side is at all alike. Even *if* people are doing the same work in the same place with their coworkers, there's little reason to assume that they share similar background characteristics. And, absent the levels of

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background similarity that otherwise might invite people to compare themselves to one another, there is good reason to challenge the extent to which we can assume comparisons based on similarity. Indeed, in many communities, it's probably safer to assume differences instead of similarities.

Finally, we also have reason to question Mumford's claim that as workers gain job experience their awareness of performance-relevant characteristics will develop—and along with it, the validity of peer evaluations. Although this appears reasonable, it ignores two key landmines along the road to validity. First, there is considerable evidence on well-known biases in performance appraisal systems (for a review, see Stauffer & Buckley, 2005). Rather than eliminating such biases, our discussion thus far suggests that the tendency to engage in social comparison also may promote such biases. Second, we also cannot ignore the very real possibility that certain reward practices (e.g., zero-sum reward systems) may discourage positive evaluations of peers (Lawler, 2003). Indeed, research has shown that self-serving motives to bias performance evaluations frequently threaten the validity of performance ratings (Greenberg, 1991).

It is important to note that we are not rejecting peer evaluations as valid sources of performance information. Indeed, we agree with Mumford (1983) that they stand to be potentially useful in providing comparative information with diagnostic value. However, it is important to acknowledge that various features of the contemporary workplace make it unlikely that such information always will be available—or, that it would be considered relevant if it were. In other words, the potential diagnostic value of comparative information from peers cannot be assumed in some modern workplaces. Among other reasons, this is because observational opportunities may be limited and the most readily available bases of comparison

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are rejected for being non-diagnostic because of vast differences in job skills or ethnic identity.

Under such conditions, workers may have valid reasons to challenge the validity of comparisons based on peer evaluations.

Key Conclusions: Performance Evaluations

We believe that social comparison processes play a key role in the performance evaluation process but that they do not always enhance the validity of the evaluation process. In top-down evaluations, comparative information may be rejected and/or ignored in keeping with the tendency to bias information in a self-serving manner. And, although peer evaluations promise to offer relevant comparative information for self-diagnostic purposes, various features of today's workplaces limit the extent to which this promise stands to be fulfilled. In this regard, it would be useful for researchers to identify the particular contexts in which social comparison processes play especially pivotal roles in performance evaluations. Specifically, determining the conditions under which various deflection strategies are used would provide useful insight into the biasing of performance evaluations (Ilgen & Feldman, 1983).

Virtual Work Environments

Recent years have seen the emergence of *virtual work environments*—organizational settings in which employees work in physically distant locations (for a review, see Webster & Staples, 2006), capitalizing on opportunities provided by the use of advanced information and communication technology (Goodman & Wilson, 2002; Kasper-Fuehrer & Ashkanasy, 2001, 2004). By “virtual work environments,” we are referring collectively to such phenomena as “virtual teams,” “virtual organizations,” and related workplace practices characterized by the use of advanced technology to overcome physical distance. Despite differences, we refer to these practices without distinction because all are bound by the characteristic of “virtualness.”

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With influential observers arguing that virtual work environments are here to stay (e.g., Davidow & Malone, 1992; Goldman, Nagel, & Preiss, 1995), it's little wonder that practicing managers (Hertel, Geister, & Udo, 2005; Hoeffling, 2003) and social scientists (e.g., Hardin, Fuller, & Valacich, 2006; Martins, Gilson, & Maynard, 2004) have paid considerable attention to the special qualities of such environments. Most germane to our analysis, Alexander (1997) has noted that the physical absence of coworkers "changes the interactions and relationships between the parties involved" (p. 135), which, as Conner (2003) has explained, brings with it unique challenges and opportunities for social comparison. Additionally, virtual work environments, unlike their traditional counterparts, frequently are reconfigured as conditions evolve (Goodman & Wilson, 2002).

The basis for this is simple. Social comparison theory (Festinger, 1954) tells us that people compare themselves with others to whom they are similar in ability, largely because doing so allows them to reduce uncertainty and to preserve or to enhance their self-esteem (Dakin & Arrowood, 1981). Traditionally, such comparisons are based on others who are present physically, not only because such individuals are convenient, but also because such individuals are likely to be similar in key ways. This is in keeping with Goodman's (1974, 1977) acknowledgment of the importance of availability and relevance as determinants of referent choice. Not surprisingly, coworkers' physical presence enhances their salience as referent others. In virtual work environments, however, such physical presence is missing insofar as individuals may be distributed across different organizations, cultures, and time zones. This raises questions about how employees come to select referent others under such conditions. The answer is important because employees' responses to the situations they encounter are likely to be based on the referents used (Kulik & Ambrose, 1992). To date, Shepherd, Briggs, Reinig, Yen, and

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Nunamaker (1996) are the only researchers to have studied social comparison effects in this context. In a laboratory study of electronic brainstorming, they found that an on-screen display revealing that others are generating more and better ideas decreased social loafing, thereby leading to more creative ideas. Clearly, more research of this type, particularly direct comparisons between comparative information from in-person and virtual others, is called for.

Conner's Propositions

In her comparative analysis of workers' reliance on referent others in environments in which coworkers are co-located (i.e., in traditional environments) as opposed to when they are distant (i.e., in virtual environments), Conner (2003) proposes several key differences. Her analyses are predicated on the idea that virtual environments deny employees some comparative information that otherwise might be available to those in traditional work environments. Given people's fundamental desires to compare themselves to others (Festinger, 1954), coupled with the paucity of comparative information available to people in virtual environments (e.g. Cramton, 2001), they are likely to rely on other, non-local, referents. These include, for example, other people doing the same jobs in other organizations and oneself at earlier points in time. Although making such comparisons requires some effort, the absence of readily available referents is likely to motivate such behavior.

In analogous fashion, Conner (2003) also claims that people working in virtual environments sometimes have to rely on comparative information considered less than ideal because it is based on dissimilar others (Cramton, 2001, refers to this lack of shared context and information as the "mutual knowledge problem"). Specifically, although social comparison theory (Festinger, 1954) claims that people prefer making comparisons to similar others, this is not always possible in virtual work environments. Under such conditions, people resort to

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comparing themselves to others who are very different (e.g., Gartrell, 1982; Strauss, 1968). This is in keeping with Kulik and Ambrose's (1992) claim that when it comes to comparing oneself to others, "availability may override the relevance of available alternatives" (p. 229). In the case of virtual environments, in which it is difficult to locate others against whom to compare oneself, workers may be inclined to select as a comparison standard even a very different other than no one at all. We concur with Connor's claim that this is not necessarily bad. For example, conditions requiring people to compare themselves to others with whom they ordinarily would not make such comparisons may open the door to new learning opportunities created by exchanging ideas between individuals who otherwise might have refrained from communicating (Constant, Sproull, & Kiesler, 1996).

Finally, Conner (2003) asserts that the absence of readily available comparative information to employees in virtual environments denies them the opportunities to reduce personal uncertainty that normally are provided by making local comparisons. Compensating for this, such individuals are inclined to engage in more creative efforts to reduce uncertainty than those working in traditional environments. This may take such forms as making frequent phone calls to colleagues in other organizations (even if they do different work), visiting Internet message boards and chat rooms, and the like. Connor's (2003) logic is straightforward:

(1) uncertainty about work-related topics runs high among employees in virtual environments (e.g., Tangirala & Alge, in press), and (2) people find uncertainty to be an undesirable state (e.g., Lind & Van den Bos, 2002), so (3) people working in virtual environments will be inclined to be highly proactive in their information-gathering (i.e., uncertainty-reduction) efforts. By contrast, because employees in traditional environments are likely to have more information available to

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them, they are unlikely to encounter as much uncertainty, making them less inclined to engage in such effortful behaviors.

Some Caveats

The underling assumption that virtual employees are disadvantaged because of their limited access to referent information, as noted here, requires three key qualifications. First, although people working in distant locations may have to engage in more effort than their counterparts in traditional environments, it still is possible for them to be “kept in the loop” about referent information quite simply, such as by telephone and e-mail. Although this may require being more proactive than simply gathering information in a casual conversation with a colleague in an adjacent cubicle, we suspect that the strength of the underlying motive to seek-out similar others would motivate such efforts—especially given that this may be accomplished readily.

Taking this into account, it is possible that any disadvantages with respect to access to comparative information that may stem from working in virtual environments may be tempered by alternative means of accessing the same information. For example, some of the interpersonal-based disadvantages of virtual environments are mitigated by focused efforts to help members of virtual groups understand the work of others (i.e., “keeping one another in the loop”; Weisband, 1999) and by carefully communicating status differences between virtual team members that otherwise would be difficult to detect (Weisband, Schneider, & Connolly, 1995). (This is in keeping the difficulties people have differentiating status in some virtual environments; Driskell, Radtke, & Salas, 2003.)

Second, it would be misleading to imply that all jobs may be classified as being either distinctly virtual or distinctly traditional in nature. Indeed, in today’s work environment, many

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jobs have both virtual and traditional components—or, as Crandall and Wallace (1997, p. 29)

referred to it, “degrees of virtualness” (see also, Griffith & Neale, 2001; Griffith, Sawyer, &

Neale, 2003). For example, whereas some employees may spend some of their time

telecommuting, they also may be required to be physically present in their offices at other times

(Kurland & Egan, 1999). As a result, it’s possible that people may be denied ready access to

comparative information on some occasions, but not others. And, whenever such information is

available, people may be especially proactive in taking it in, getting it while they can.

Unfortunately, evidence bearing on how people make social comparisons in virtual work environments has been extremely limited (e.g., Shepherd et al., 1996). This void is in keeping with Goodman and Wilson’s (2002) observation that organizational researchers still are struggling to move beyond the assumption implicit in traditional organizations that boundaries and information sources are relatively stable. Yet, scholarly work on virtual work environments now is beginning to emerge (e.g., Kasper-Fuehrer & Ashkanasy, 2001, 2004; for a review, see, Martins, Gilson, & Maynard, 2004). We encourage researchers to focus on such efforts insofar as they promise to provide considerable insight into both the nature of social comparison processes (because of the unique contextual variables examined) and virtual environments themselves (because of the knowledge likely to be provided about the process underlying its effects).

Key Conclusions: Virtual Work Environments

When workers are physically distant, as in virtual work environments, special challenges emerge as people endeavor to compare themselves to others. The limited availability of local comparisons leads workers to compare themselves to others who provide less-than-ideal sources of relevant comparative information, such as those who are dissimilar along key dimensions (e.g., people working in other organizations, or who do highly different work). We note,

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however, that people in virtual environments may attempt to overcome such limitations by being highly proactive in their efforts to collect information in alternative ways (e.g., by posing questions in e-mails or phone calls). Although this requires extra effort, it makes it possible for workers in virtual environments to gather comparative information that otherwise might have been available to them in more passive fashion had they worked in traditional settings in which comparison others are co-located. Such effort enables workers in virtual environments to remain “in the loop,” thereby overcoming the limitation imposed by environmental conditions. However, empirical research identifying social comparison effects in such settings has yet to be conducted (see Hertel et al., 2005).

Affective Workplace Behavior

According to a Chinese proverb, “It is comparison that makes people miserable.” With all due respect to ancient wisdom, however, social psychological research (for overviews, see Smith, 2000; Buunk & Gibbons, 2007) suggests that this observation paints an unduly pessimistic picture of affective responses to social comparison. Indeed, modern scientific wisdom is more highly nuanced (Moore, 2007). And because the workplace offers a wealth of comparison opportunities, reactions to which promise to affect both individual and organizational well-being, organizational scientists find such matters to be of great interest (Ashkanasy, Härtel, & Zerbe, 2005).

Contrast and Assimilation Effects

One well established finding from this literature is that a *contrast effect* occurs in which individuals generally experience positive affect when making downward comparisons and negative affect when making upward comparisons (Mussweiler & Strack, 2000; see also Moore, 2007). Simply put, comparing oneself to others who are better off prompts an unfavorable self-

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image, whereas comparing oneself to those who are worse off enhances one's self-image.

Lyubomirsky and Ross (1997) refer to this as the "hedonic consequences of social comparison" (p. 1141). This effect is so robust, in fact, that it occurs independently of one's relationship with the target other or the nature of the comparison (Wheeler & Miyake, 1992).

Alternatively, Wheeler (1966) suggested that under certain conditions people attempt to reaffirm their self-esteem by engaging in upward comparisons. Buunk, Zurriaga, Peiró, Nauta, and Gosalvez (2005) refer to this as the *assimilation effect*—the process in which individuals seek to establish their similarity to a comparison other believed to be better off (e.g., Collins, 1995), despite the negative emotions (e.g., pity or shame) that result from making such comparisons. Research has found this effect in organizational settings (e.g., Buunk, Van der Zee, & Van Yperen, 2001; Buunk et al., 2005), albeit with situational and individual moderators. For example, Buunk, Ybema, Van der Zee, Schaufeli, & Gibbons (2001) found that nurses who compared themselves to higher-ranking colleagues suffered lower levels of personal accomplishment than those who compared themselves to lower-ranking individuals. Furthermore, these negative reactions were less pronounced among individuals who were highly predisposed to make social comparisons (Buunk, Van der Zee et al., 2001; Buunk et al., 2005).

Considering that social comparisons have long-term consequences for people (e.g., beliefs in one's self-efficacy) and that these are likely to be salient to employees, we believe that both the assimilation and contrast effects are likely to be encountered in many organizational situations. And, to the extent that this occurs, the effects of social comparison on various forms of organizational behavior appear to be more profound than acknowledged to date. As such, we join Moore (2007) in encouraging researchers to incorporate such effects in future studies of social comparison.

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Self-conscious Emotions and Social Emotions

Another line of research on affect and social comparison focuses on *self-conscious emotions*—shame, guilt, embarrassment, and pride (Tangney & Fischer, 1995)—so called because they reside internally within people (Tracy & Robins, 2004). Baldwin and Baccus (2004) argue that self-conscious emotions almost always are the result of social comparisons, often generated through automatic processes of cognitive appraisal, and inevitably in response to “real, anticipated, or remembered encounters with others” (Leary, Koch, & Hechenbleikner, 2001, p. 146). Buck, Nakamura, Vieira, & Polonsky (2004) go a step further by elaborating a model of “higher level social emotions” that include pride, guilt, arrogance, shame, envy, pity, jealousy, and scorn. Specifically, they propose that pride, guilt, arrogance, and shame are experienced in reaction to one’s own success or failure in achieving expectations, whereas envy, pity, jealousy, and scorn arise in reaction to the achievements of others.

As in the case of self-conscious emotions, *social emotions*, emotions that are external to people, also are derived from social comparisons. An employee may feel arrogant, for example, because she considers herself to be superior to others. Another may feel envious of a colleague who has taken a prestigious work assignment. To date, however, there have been only a few studies of social emotions in the workplace. In one such investigation, Poulson (2000) focused on shame. Based on Lewis’s (1992) definition of shame as an emotional reaction to the violation of standards, a failure to meet expectations, or a personal deficiency perceived to be permanent, Poulson (2000) argued that shame involves a cognitive evaluation of oneself in relation to others. This, in turn, triggers either repression or rage (Nathanson, 1992). Poulson (2000) suggests further that shame in the workplace is the result of faulty management practices, unrealistic

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performance expectations, and discrimination, and that it leads to various counterproductive behaviors, such as withdrawal and aggression.

Vecchio (1995, 2000, 2005) has studied two particular social emotions in the workplace—envy and jealousy. He defines *jealousy* among employees as a set of attitudes and behaviors resulting from “an employee’s loss of self-esteem and/or loss of outcomes associated with a working relationship” (Vecchio, 2000, p. 162) and *envy* as a set of attitudes and behaviors resulting from “an employee’s loss of self-esteem loss of self-esteem in response to a reference other’s obtainment of outcomes one strongly desires” (Vecchio, 2000, p. 162). Both definitions are couched in terms of social comparison processes. We see this, for example, in Vecchio’s (2000) study of the relationships between leaders and members of their groups. Specifically, employees experiencing jealousy and envy (resulting from receipt of relatively lower outcomes) suffered reduced levels of job-related self-esteem and control. These, in turn, resulted in various forms of employee withdrawal and aggressive behavior. More recently, Vecchio (2005) examined envy among employees from the perspective of the envied as well as the envious. Overall, he found that the envied experienced less negative emotion than the envious.

Given the demonstrated importance of social emotions in the workplace, we believe that further theoretical refinement and empirical research in this field would be a wise investment. In this connection, we note that Weiss and Cropanzano’s (1996) affective events theory (AET) holds particular promise (for a review, see Weiss and Beal, 2005). This conceptualization asserts that personal events occurring in the workplace trigger emotional reactions that, in turn, determine various attitudinal and behavioral reactions. Although AET is framed in terms of the traditional dimensions of emotion (i.e., valence and intensity; see Watson & Tellegen, 1985), we believe that it is applicable as well to the social emotions in the workplace we have been

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describing. In particular, the affective reactions to social comparisons that we have outlined above serve as exemplars of mechanisms underlying AET given that events (upward or downward social comparisons) generate emotional reactions that then have attitudinal and behavioral consequences.

In closing, a brief methodological note is in order. To study the rapidly-changing nature of affective reactions necessitates using special research techniques that capture this dynamic phenomenon. In this respect, experience sampling methods (Larson & Csikszentmihalyi, 1983), in which respondents record their cognitive and affective reactions to events in real time, appear to hold special promise. Recording such responses using handheld computers (e.g., a Palm Pilot) already have proven especially useful in this regard (Yip, 2005). Another promising new approach is the day reconstruction method (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004), in which respondents are asked to relive the day in which a critical experience occurred, and to record their experiences and feelings in a minute-by-minute diary. Stone et al. (2006) have shown that this method can be used effectively to capture dynamic emotional fluctuations that individuals experience in their everyday lives.

Key Conclusions: Affective Behavior

Affective behavior is related closely to the social comparisons people make. Not only do people experience positive emotions when making downward comparisons, but they also experience negative emotions when making upward comparisons. Furthermore, both the self-conscious emotions and the social emotions that people experience also stem from the social comparisons they make. We see this, for example, in the cases of jealousy and envy, in which emotional reactions (and concomitant behavioral reactions) follow from workers' comparisons of desired outcomes relative to those of their coworkers. Although it hasn't yet been used to

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examine social comparison processes, we believe that affective response theory (Weiss & Cropanzano, 1996) holds particular promise for studying the affective reactions associated with making various social comparisons. In conducting such work, new research tools, such as experience sampling and day reconstruction are likely to prove especially useful.

Stress

Generally defined, stress refers to people's emotional and physiological experiences resulting from perceived threats to their well-being (Lazarus, 1999). Often, such threats are based on people's assessments that the demands of a situation they face exceed the personal resources they have available to meet them (Folkman & Lazarus, 1988). This would be the case, for example, if an employee were to perceive himself *as* unable to meet an impending deadline because his skill level did not allow him to work sufficiently fast. Social comparison processes enter into this process insofar as they contribute to people's perceptions of the resources available to them and their self-efficacy (Bègue, 2005). Thus, to the extent that the individual *in this example* perceives that his skills are adequate to meet the demand (i.e., he can work fast enough to meet the deadline), then stress would not *be experienced*.

Assessment of Available Resources

The extent to which social comparisons are involved in this process is likely to depend on the degree to which the assessment of resources can occur objectively—that is, in the absence of comparative information. This would be the case, for example, when the resource in question is objective in nature, such as when assessing the availability of time or money to accomplish a goal. However, comparative information is likely to be particularly important in the case of other resources, for which assessment is fundamentally comparative in nature. For example, people generally cannot determine how creative they are or how interpersonally skilled they are until

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they compare themselves to others. Indeed, it is not unusual for people to rely on others with whom they work as standards of reference against which they compare the degree to which they bring valued resources to their jobs (Suls, Martin, & Wheeler, 2002).

Research shows that this occurs in a particular manner. In general, comparing oneself to another who is more capable (i.e., making an upward comparison) reduces one's senses of personal accomplishment and self-efficacy (Maslach, 1993), whereas comparing oneself to a less capable other (i.e., making a downward comparison) inflates one's senses of control and capability (Hakmiller, 1966, 1981). Based on this, we may expect that making an upward comparison is likely to be stress-inducing.

Role of identification. Importantly, however, these effects are likely to occur only to the extent that the person in question does not identify with the comparison other. Indeed, as several researchers have demonstrated, the negative effects of upward comparisons and the positive effects of downward comparisons depend on the degree to which one identifies with the comparison other and his or her associates (Buunk, 1994; Buunk, Collins, Taylor, Van Yperen, & Dakoff, 1990; Tesser, 1988; Ybema & Buunk, 1995). Specifically, when individuals who evaluate their resources relative to those with whom they identify perceive that they are similar to those others, the upward comparison to that target will inflate—and, with it, perception of one's capabilities (Van der Zee, Buunk, & Sanderman, 1990; Ybema & Buunk, 1995).

This is in keeping with evidence showing that people intentionally compare themselves with superior others so as to enjoy the opportunity to relate to them, promoting beliefs in their own superiority (Collins, 2000). Thus, comparing oneself upward with an individual with whom we identify is likely to raise one's confidence in the capacity to marshal resources required to meet the demands of the environment. As a result, stress levels are likely to be attenuated. By

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contrast, people making downward comparisons with those with whom they identify are likely to feel less qualified to face environmental demands, thereby elevating their stress levels.

Caveat: Dynamic Nature of Evaluations

Before concluding this point, it is important to note that this rationale is based solely on initial evaluations of stressors in the environment. However, the dynamic nature of stress evaluations described by Lazarus (1999) suggests that the bases for evaluations are likely to change, and with them, experiences of stress. In fact, it may be said that if people making upward comparisons with similar others come to perceive their capacities to deal with environmental demands in unrealistically inflated terms, their overconfidence may lead them to make decisions whose results may be quite stressful. This would be the case, for example, if a protégé believes that he or she is capable of performing a task as well as his or her mentor. By the same token, whereas individuals who under-evaluate their capacities to deal with environmental demands (because of downward comparisons with similar others) may experience stress at first (as they perceive situations to be more threatening than they really are), it's possible that over time, they will come to realize that they are better equipped than earlier envisioned, thereby lowering their stress levels. In sum, the potentially stress-relieving or stress-inducing effects of engaging in social comparisons are likely to be only temporary in nature. Yet, insofar as the effects of most stressors are likely to be temporally-limited in nature (Peterson, 1999), social comparisons as sources of stress cannot be dismissed on this basis.

Key Conclusions: Stress

Social comparison processes are involved with stress in a cognitive capacity. Comparisons with others help people assess the extent to which they have the resources necessary to perform a task. And this, in turn, is a primary step in the assessment of stress

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(Folkman & Lazarus, 1988). Of course, the resulting assessment is likely to be determined on the selection of a comparison standard, which itself is based on identification with various comparison others. We note, however, that the continuous nature of the process of evaluating potential stressors requires acknowledging the highly dynamic nature of this process. As in the case of measuring affective events, research tapping the effects of various stressors also stands to benefit from the use of research tools such as experience sampling and day reconstruction, that capture people's experiences on a real-time basis,

Leadership

Leadership has been depicted as a process of social interaction in which leaders attempt to influence the behavior of followers (Yukl & Van Fleet, 1992). From followers' perspectives, leaders attempt to promote impressions of themselves as being charismatic (Weierter, 1997), striving to be seen as superior in the eyes of their followers. Moreover, followers are likely to be influenced by upward social comparisons with their leaders (Wood, 1989), thereby making such comparisons salient. This is particularly so in Western cultures, which are characterized by low power distance in hierarchical relationships (Hofstede, 2001; Carl, Gupta, & Javidan, 2004).

Further, given that leaders occupy higher status positions in organizations and that highly ambitious people make upward comparisons (Wheeler, 1966), it is reasonable to conclude that ambitious followers compare themselves to leaders and emulate them so as to become leaders themselves. In the case of employees, organizational leaders are indeed likely to be highly salient as bases of social comparison (Messé & Watts, 1983; Diener, 1984). Despite these connections, an explicit conceptual link between social comparison processes and leadership has yet to emerge. Two particular theories of leadership, however—leader-member exchange (LMX)

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theory (for a review, see Graen & Uhl-Bien, 1995) and the social identity theory (SIT) of

leadership (Hogg, 2001)—hold special promise for developing this connection.

Leader-Member Exchange (LMX) Theory

LMX theory posits that leaders relate to their followers differently depending on the level of trust developed with each individual. As such, it is inappropriate to regard groups as homogeneous entities, but rather as a set of differentiated individual relationships between leaders and followers (Graen & Uhl-Bien, 1995). Using this framework, Scandura (1999) has argued that a leader's trust in and commitment to low LMX subordinates (i.e., individuals who are not favored by their leaders) is lower than it is for high LMX subordinates (i.e., individuals who are favored by their leaders).

This has interesting implications for social comparison processes. Specifically, it would appear that social comparisons are more likely to occur in high LMX relationships than in low LMX relationships. Specifically, subordinates in high LMX relationships may be expected to be more likely to make upward social comparisons and to have aspirations to become leaders themselves than those in low LMX relationships. This proposition has not been tested, however. Yet, the prospects for understanding LMX relationships in terms of social comparison processes make this an area worthy of future research and theory development.

Social Identity Theory

An alternative perspective on the role of social comparison and leadership is offered by Hogg's (2001; Van Knippenberg & Hogg, 2003) social identity theory (SIT) of leadership. Whereas LMX focuses on relationships between leaders and members, SIT asserts that leaders embody members' identities as a group. Thus, a leader is likely to be the most "prototypical" member of a group. Like LMX theory, however, SIT theory also stipulates that members

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experience special affinity for a leader who is perceived to be similar to them in terms of ideals and personal attributes. For this to occur, however, there must be higher levels of trust and commitment among group members who share their leaders' ideas of their groups' identities than among those who do not share these views.

In effect, SIT implies that a group member's sense of esteem and identity is determined in part by his or her social comparisons to the group's leader (see also Lord & Brown, 2004). Van Knippenberg, Van Knippenberg, De Cremer, and Hogg (2004) refer to this as "follower self-conception" (p. 825). Although these authors do not mention social comparison theory explicitly, it is implicit throughout SIT because the followers' self conception always is framed in terms of the group's identity, which in turn, is embodied in the leader. In other words, group members engage in a continuous process of social comparison with their leader as a means of maintaining their groups' identities, and ultimately, to establish their own self-identities within and between groups.

Key Conclusions: Leadership

Although social comparison processes as of yet have not been applied to studies of leadership, there is value in acknowledging the processes of social comparison inherent in both the LMX and SIT theories of leadership. Specifically, social comparisons serve to define both group members' relationships with their leaders as well as members' own senses of self-identity and group-identity. As such, understanding of social comparison processes has the potential to promote understanding of the fundamental interpersonal processes on which organizational leadership is based. Indeed, future researchers would do well to develop this potential.

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Social Comparison Processes in Organizations: Is Anything Unique?

Wood (1996) has noted that social comparison consists of several sub-processes, with most attention paid to two particular ones—acquiring social information and thinking about that information. It is within these, we believe, that the unique nature of social comparison processes in organizations becomes apparent (see also Goodman & Haisley, 2007).

Acquiring Social Information in Organizations

With respect to the acquisition of social information, the making of social comparisons is considered by most to be a deliberate act (Wood, 1989). In other words, it is assumed that that people intentionally select the other individuals against whom they compare themselves. Wood (1996) notes that most social psychological research adopts this tradition, and the same can be said, we believe, about much of the organizational research summarized here. In equity theory (Adams, 1965), for example, the selection of a comparison standard has been treated in the literature as a deliberate choice (Adams & Freedman, 1976). In fact, a case could be made for recasting the referents summarized in Table 1 as simply a menu of options as workers ponder the question, “To whom shall I compare myself in this situation?” In similar fashion, our analyses of virtual work environments suggests that people whose working conditions result in having certain (presumably more desirable) comparison options taken from them engage in compensatory efforts to obtain the information they otherwise would have received in a traditional work setting. Here too, the choice of comparison referents is assumed to be deliberate.

An alternative possibility is that people encounter social information passively instead of searching for it actively. Indeed, everyday life provides many opportunities for people to experience comparative social information by happenstance (Wheeler & Miyake, 1992). The same thing also may occur in the workplace. For example, a worker may make casual notice of

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the fact that a colleague is putting in longer hours at the office. When people stumble upon social information, Wood (1996) argues, they automatically compare themselves to the individuals involved. Indeed, research confirms that people make social comparisons fairly spontaneously, in relatively effortless fashion (Gilbert, Giesler, & Morris, 1995).

Elaborating the distinction between deliberate efforts to acquire comparison information and the casual encountering of such information, we believe that studies of social comparison in the workplace highlight a third alternative. Specifically, social comparisons made in organizations sometimes are the direct byproducts of formally imposed procedures. For example, the introduction of a particular pay policy, performance appraisal system, or virtual work process brings with it opportunities to acquire relevant forms of social information (e.g., whether one is paid higher or lower than comparable others). Associated with these practices are changes that impose social comparisons on workers.

Some have argued that encounters cannot force social comparison insofar as it is always up to individuals themselves as to whether or not they wish to think about comparative information (Brickman & Bulman, 1977). Although this may be so at an abstract level, we believe that the salience of certain externally imposed conditions (e.g., changes in leadership, pay policies, and/or appraisal systems) may drive certain social comparisons. Put differently, although casual encounters with comparison opportunities may be ignored when it comes to thinking about social information (e.g., comparing oneself to a more intelligent or attractive individual casually encountered in a public place; Goethals's, 1986), workers do not have this luxury when encounters with others are imposed upon them in the workplace. Indeed, by design, many organizational processes are intended to impose new sets of comparative standards, making their application difficult, if not impossible, to ignore. For example, in the course of

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completing a 360-degree appraisal form managers are likely to be required to compare themselves with others doing similar work (Beehr et al., 2001; Brett & Atwater, 2001). Likewise, the introduction of a team-based pay system brings with it a set of new rules about relevant referent comparisons (Balkin & Montemayor, 2000).

With this in mind, we believe that organizational settings provide valuable opportunities to study social comparison processes insofar as the manner in which some comparative information is made available to people is unique in its deliberateness, presence, and salience. The matter of how people assess such information, and the possibility that they respond to such cognitions differently promises to be worthy of future research consideration.

Thinking About Social Information in Organizations

After people acquire social information, Wood (1996) explains that the stage is set for them to think about it. One form this may take involves assessing one's standing relative to another with respect to some attribute. In some social situations such judgments are made casually and with only limited regard for the consequences. This would be the case, for example, if while purchasing an inexpensive used car Man A observes another person at the same time, Man B, purchasing a more expensive, new, top-of-the-line new vehicle off the showroom floor. This may reinforce Man A's self-beliefs that others are wealthier, but it may have little bearing on his self-image because Man A already is likely to know his relative standing with respect to the dimension of wealth. Also, wealth may not be given much weight in the formation of his self-image.

Although similarly unremarkable social comparisons surely are made all the time in the workplace, it also is possible that certain qualities of the workplace make assessments of relative standing of considerable interest. Consider, for example, employees seeking answers to such

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questions as, “How do I stand compared to the job performance of others?” or “Do I have a chance at promotion relative to my colleague?” Answers may be sought as responses to explicit inquiries to supervisors or they may be based on covert and implicit (but equally deliberate), observations of the workplace. Clearly, these different forms may bring different answers, and on its own the question of which of these two forms of information-seeking is likely to be used is a very an interesting one. In either case, however, the comparative information analyzed is likely to be carefully evaluated in view of the answers’ consequences for employees self-images and their continued employment.

Interestingly, formal practices such as employee development exercises and performance appraisal interviews frequently are designed to make the answers explicit and to convince employees of their veracity. Thus, the “selling” of comparative social information in the workplace is, in some ways, an institutionalized process. Given the well-accepted finding from the literature on attitude change that people better accept information they believe they came to on their own than information presented to them for purposes of convincing them about something (Petty & Wegener, 1998), it is tempting to consider the possibility that the processing of comparative information in organizations also differs as a function of the manner in which that information is sought and presented. In fact, the possibility that comparative information presented to employees is rejected on the grounds that its validity is questionable or that the motives for presenting that information are suspiciously manipulative in intent may be a possible explanation for the rejection of organizational practices that sometimes challenges the efficacy of practicing managers (Allcorn, Baum, Diamond, & Stein, 1996).

Finally, we should note another way in which studying social comparisons in organizations opens our eyes to previously unacknowledged complexities with respect to

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thinking about social information. One of the central tenets of social comparison theory

(Festinger, 1954) is that people compare themselves to similar others. Although the nature of such dimensions of similarity has been debated (Mussweiler, 2003; Wood, 1989), it is not until one considers the virtual work environment that the real possibility comes forth that finding seemingly “similar others” as referents sometimes may be very difficult, if not impossible. Consider, for example, that some virtual environments (virtual organizations, in particular) consist of large teams of individuals who work in many different organizations scattered throughout the world (Webster & Staples, 2006). Judging the similarity of such individuals in such conditions may be so challenging that workers motivated to find similar others may find it necessary to assume its existence by stretching the facts. That is, they may construct social information (a reality of social comparison processes noted by Wood, 1996) as they struggle to meet the fundamental need to compare themselves to others. And given the difficulty of detecting objective information to the contrary, it’s possible that their assumed similar comparison others are, in reality, quite different.

Some may be tempted to say that this doesn’t matter because people’s cognitions are based on their perceptions, regardless of their veracity. Although this may be true, we also cannot deny the possibility that the tenuous nature of the process of selecting comparison others is likely to lead workers to take into account the merits of various individuals as prospective bases of comparison. And, because socially constructed bases of similarity may collapse as conveniently as they are formed, the reliability of faceless individuals located half-way around the world as comparison referents surely must be called into question. Of course, the extent to which this occurs is an empirical question—and one well worth examining. If nothing else, the

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fact that it points to key questions about a fundamental quality of the social comparison process further underscores the wisdom of studying such processes in organizations.

Key Conclusions: Unique Benefits of Studying Social Comparison Processes in Organizations

This section is headed by the question as to whether or not studying social comparison processes in organizations has any unique merit. Our answer is unequivocally “yes.” Although organizations, as a context, provide opportunities to confirm what already is known about social comparison processes, potent contextual variables also lead to unique insight and raise fundamental questions about social comparison that beg to be addressed. Thus, when it comes to studying social comparison, organizations constitute a setting that cannot be dismissed on the grounds that they constitute “business as usual.” Indeed, studying social comparison in businesses is not the usual business.

Conclusion

We have analyzed social comparison processes in six key organizational contexts: (1) organizational justice, (2) performance appraisal, (3) virtual work environments, (4) affective behavior in the workplace, (5) stress, and (6) leadership. In each of these areas, we have offered a set of key conclusions and recommendations for future research. Specifically, we have emphasized the important roles played by social comparison information in these contexts. Notably, we asked how comparison information is acquired and how individuals think about and use this information once acquired. In so doing, we believe we made a strong case for studying social comparison processes in organizations—a focus that is still relatively infrequent despite its benefits to understanding organizations and social comparison processes themselves.

Our assertion that fully understanding human behavior in the workplace requires appreciating social comparison processes is far from hyperbole. To the contrary, it is axiomatic

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to say that people working with others find it almost impossible not to compare themselves to them. As referents, coworkers are more than convenient, they are compelling sources of social information (Kulik & Ambrose, 1992), and, as we have noted, workplace dynamics often impose opportunities to attend to that information. Based on this, we have argued that understanding the dynamics underlying such comparisons is worthwhile. Indeed, our analyses offer insight into popular organizational practices (e.g., performance appraisal, the introduction of virtual work environments) as well as fundamental psychological processes in organizations (e.g., perceiving fairness and experiencing affect). Although the role of social comparison processes sometimes is merely implicit in the study of these matters, researchers and theorists have acknowledged its value. However, in the case of some aspects of topics of keen interest to organizational scholars (e.g., leadership), attention to social comparison processes largely has gone unacknowledged. Yet, as we have noted, social comparison processes appear to be inextricably involved in these areas as well, warranting exploration in future studies.

We believe that organizations constitute a valuable context within which to study social comparison processes. Not only are social comparisons endemic to work settings, but if there is any merit to our analyses, such comparisons manifest themselves in ways that sometimes are broader in scope and more highly nuanced than has been recognized to date in the literature. And given the importance of understanding social comparison processes (as spotlighted by the many provocative contributions to this issue), we hope that our analyses will stimulate interest in examining them in organizations.

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Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

References

- Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267-299). New York: Academic Press.
- Adams, J. S. & Freedman, S. (1976). Equity theory revisited: Comments and annotated bibliography. In L. Berkowitz & E. Walster (Eds.), *Advances in experimental social psychology* (Vol. 9, pp. 43-90). New York: Academic Press.
- Alexander, M. (1997). Getting to grips with the virtual organization. *Long Range Planning*, 30(1), 122-124.
- Allcorn, S, Baum, H. S., Diamond, M. A., & Stein, H. F. (1996). *The human cost of a management failure: Organizational downsizing at General Hospital*. Westport, CT: Quorum.
- Allen, V. L. (1982). Effects of conformity pressure on justice behavior. In J. Greenberg & R. L. Cohen (Eds.), *Equity and justice in social behavior* (pp. 187-215). New York: Academic Press.
- Ambrose, M. L., Harland, L. K., Kulik, C. T. (1991). Influence of social comparisons on perceptions of organizational fairness. *Journal of Applied Psychology*, 76, 239-246.
- Ambrose, M. L., & Kulik, C. T. (1989). The influence of social comparison procedures on perceptions of procedural fairness. *Journal of Business and Psychology*, 4, 129-138.
- Ashkanasy, N., Härtel, C. E. J., & Zerbe, W. (2005). The effect of affect in organizational settings. In N. M. Ashkanasy, W. J. Zerbe, & C. E. J. Härtel (eds.), *Research on emotion in organizations, Vol. 1: The effect of affect in organizational settings* (pp. xiii-xix). San Diego, CA: Elsevier.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Austin, W. (1977). Equity theory and social comparison processes. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes* (pp. 279-306). Washington, DC: Hemisphere.

Austin, W., McGinn, N. C., & Susmilch, C. (1980). Internal standards revisited: Effects of social comparisons and expectancies on judgments of fairness and satisfaction. *Journal of Experimental Social Psychology*, 6, 401-408.

Austin, W. & Walster, E. (1975). Equity with the world: The trans-relational effects of equity and inequity. *Sociometry*, 38, 474-496.

Baldwin, M. W., & Baccus, J. R. (2004). Maintaining a focus on the social goals underlying self-conscious emotions. *Psychological Inquiry*, 15, 139-144.

Balkin, D. B., & Montemayor, E. F. (2000). Explaining team-based pay: A contingency perspective based on the organizational life cycle, team design, and organizational learning literatures. *Human Resource Management Review*, 10, 249-269.

Bass, B. M., & Avolio, B. J. (1990). The implications of transactional and transformational leadership for individual, team, and organizational development. In R. W. Woodman (Ed.), *Research in organizational change and development* (Vol. 4, pp. 231-272). Greenwich, CT: JAI Press.

Behr, T. A., Ivantskaya, L., Hansen, C. P., Erofeev, D., & Gudanowski, D. M. (2001). Evaluation of 360 degree feedback ratings: Relationships with each other and with performance and selection predictors. *Journal of Organizational Behavior*, 22, 775-788.

Bègue, L. (2005). Self-esteem regulation in threatening social comparison: The roles of belief in a just world and self-efficacy. *Social Behavior and Personality*, 33, 69-76.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Blyma, W. H., & Major, B. (1994). Social comparisons and contentment: Exploring the psychological costs of the gender wage gap. *Psychology of Women Quarterly*, 18, 241-249.

Brett, J. F., & Atwater, L. E. (2001). 360° feedback: Accuracy, reactions, and perceptions of usefulness. *Journal of Applied Psychology*, 86, 930-942.

Brickman, P. & Bulman, R. J. (1977). Pleasure and pain in social comparison. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 149-186). Washington, DC: Hemisphere.

Buck, R., Nakamura, M., Vieira, E. T., & Polonsky, M. (2004, July). Primary social emotions: an emergent dynamic systems view. In V. L. Zammuner (Chair), *Cultural differences and similarities in emotion: Perspectives, research paradigms, and findings*. Symposium presented at the annual meeting of the International Society for Research on Emotions, Bari, Italy.

Buunk, B. P. (1994). Social comparison processes under stress: Towards and integration of classic and recent perspectives. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 5, pp. 211-241). New York: Wiley.

Buunk, B. P., Collins, R. L., Taylor, S. E., Van Yperen, N. W. & Dakoff, G. A. (1990). The affective consequences of social comparisons: Either direction has its ups and downs. *Journal of Personality and Social Psychology*, 59, 1238-1249.

Buunk, B. P., & Gibbons, F. X. (2007). Social comparison: the end of a theory and the emergence of a field. *Organizational Behavior and Human Decision Processes*, xx, xxx-xxx.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Buunk, B. P., Van der Zee, K., & Van Yperen, N. W. (2001). Neuroticism and social comparison orientation as moderators of affective responses to social comparison at work. *Journal of Personality*, 69, 745-763.

Buunk, B. D., & Van Yperen, N. W. (1991). Referential comparisons, relational comparisons, and exchange orientation: Their relation to marital satisfaction. *Personality and Social Psychology Bulletin*, 17, 709-717.

Buunk, B. P., Ybema, J. F., Van der Zee, K., Schaufeli, W. B., & Gibbons, F. X. (2001). Affect generated by social comparisons among nurses high and low on burnout. *Journal of Applied Social Psychology*, 31, 1500-1520.

Buunk, B. P., Zurriaga, R., Peiró, J.M., Nauta, A., & Gosalvez, I. (2005). Social comparisons at work as related to a social comparison climate and to individual differences in social comparison organizations. *Applied Psychology: An International Review*, 54, 61-80.

Carl, D., Gupta, V., & Javidan, M. (2004). Power distance. In R. J. House, P. J. Hanges, M. Javidan, P. W. Dorfman, & V. Gupta (Eds.), *Culture, leadership, and organizations: The GLOBE study of 62 societies* (pp. 513-563). Thousand Oaks, CA: Sage.

Colquitt, J. A., Greenberg, J., & Zapata-Phelan, C. P. (2005). What is organizational justice? An historical overview of the field. In J. Greenberg & J. A. Colquitt (Eds.), *Handbook of organizational justice* (pp. 3-56). Mahwah, NJ: Lawrence Erlbaum Associates.

Colquitt, J. A., Zapata-Phelan, C. P., & Roberson, Q. M. (2005). Justice in teams: A review of fairness effects in collective contexts. In J. J. Martocchio (Ed.), *Research in personnel and human resources management* (Vol. 24, pp. 53-94). San Diego, CA: Elsevier.

Cohen, R. L. (1986). *Justice: Views from the social sciences*. New York: Plenum Press.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Collie, T., Bradley, G., & Sparks, B. A. (2002). Fair process revisited: Differential effects of interactional and procedural justice in the presence of social comparison information.

Journal of Experimental Social Psychology, 38, 545-555.

Collins, R. L. (1996). For better or worse: The impact of upward social comparison on self-evaluations. *Psychological Bulletin*, 119, 51-69.

Collins, R. L. (2000). Among the better ones: Upward assimilation in social comparison. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 159-172). New York: Kluwer Academic/Plenum Press.

Conner, D. S. (2003). Social comparison in virtual work environments: An examination of contemporary referent selection. *Journal of Occupational & Organizational Psychology*, 76, 133-147.

Constant, D., L. Sproull, S. Kiesler, S. (1996). The kindness of strangers: The usefulness of electronic weak ties for technical advice. *Organization Science*, 7, 119-135.

Cramton, C. D. (2001). The mutual knowledge problem and its consequences for dispersed collaboration. *Organization Science*, 12, 346-371.

Crosby, F. (1984). Relative deprivation in organizational settings. In M. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 6, pp. 51-93). Greenwich, CT: JAI Press.

Dakin, S., & Arrowood, A. J. (1981). The social comparison of ability. *Human Relations*, 34, 89-109.

Davidow, W., & Malone, M. (1992). *The virtual corporation: Structuring and revitalizing the corporation for the 21st Century*. New York: Harper Collins.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Davis, J. A. A. (1959). A formal interpretation of the theory of relative deprivation. *Sociometry*, 22, 280-296.

Driskell, J. E., Radtke, P. H., & Salas, E. (2003). Virtual teams: Effects of technological mediation on team performance. *Group Dynamics*, 7, 297-323.

Eden, D. (2003). Self-fulfilling prophecies in organizations. In J. Greenberg (Ed.), *Organizational behavior: The state of the science* (pp. 91-124). Mahwah, NJ: Lawrence Erlbaum Associates.

Erez, A., LePine, J. A., & Elms, H. (2002). Effects of rotated leadership and peer evaluation on the functioning and effectiveness of self-managed teams: A quasi-experiment. *Personnel Psychology*, 55, 929-948.

Feldman, J. M. (1981). Beyond attribution theory: Cognitive processes in performance appraisal. *Journal of Applied Psychology*, 66, 127-148

Feldman, J. M. (1994). On the synergy between theory and application: Social cognition and performance appraisal. In R. S. Wyer, Jr., & T. K. Srull (Eds.), *Handbook of social cognition* (2nd ed.) (Vol. 2, pp. 111-143). Hillsdale, NJ: Lawrence Erlbaum Associates.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117-140.

Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.

Folger, R & Kass, E. E. (2000). Social comparison and fairness: A counterfactual simulations perspective. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 423-442). New York: Kluwer Academic/Plenum Press.

Folger, R. (1986a). A referent cognitions theory of relative deprivation. In J. M. Olson, C. P. Herman, & M. P. Zanna (Eds.), *Social comparison and relative deprivation: The Ontario symposium* (Vol. 4, pp. 33-55). Hillsdale, NJ: Lawrence Erlbaum Associates.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Folger, R. (1986b). Rethinking equity theory: A referent cognitions model. In H. W. Bierhoff,

R. L. Cohen, & J. Greenberg (Eds.), *Justice in social relations* (pp. 145-162). New York:

Plenum Press.

Folger, R., & Cropanzano, R. (1998). *Organizational justice and human resource management*.

Thousand Oaks, CA: Sage.

Folger, R., & Kass, E. E. (2000). Social comparison and fairness: A counterfactual simulations

perspective. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 423-441). New York: Kluwer Academic/Plenum Press.

Folkman, S. & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality*

and Social Psychology, 54, 466-475.

Gartrell, D. C. (1982). On the visibility of wage referents. *Canadian Journal of Sociology*, 7,

111-143.

Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison:

Development of a scale of social comparison orientation. *Journal of Personality and Social Psychology*, 76, 129-142.

Gilbert, D. T., Giesler, R. B., & Morris, K. A. (1995). When comparisons arise. *Journal of*

Personality and Social Psychology, 69, 227-236.

Goethals, G. R. (1986). Social comparison theory: Psychology from the lost and found.

Personality and Social Psychology Bulletin, 12, 261-278.

Goldman, S. L., Nagel, R. N., and Preiss, K. (1995). *Agile competitors and virtual organizations:*

Strategies for enriching the customer. New York: Van Nostrand.

Goodman, P. S. (1974). An examination of the referents used in the evaluation of pay.

Organizational Behavior and Human Performance, 12, 170-195

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Goodman, P. S. (1977). Social comparison processes in organizations. In B. M. Staw & G.

Salancik (Eds.), *New directions in organizational behavior* (pp. 97-132). Chicago, IL: St.

Claire Press.

Goodman, P. S., & Haisley, #. (2007). XXXXX. *Organizational Behavior and Human Decision Processes*, xx, xxx-xxx.

Goodman, P.S. & Wilson, J.M. (2000). Substitutes for socialization in exocentric teams. In M.

Neale, B. Mannix, & T. Griffith (eds.), *Research in groups and teams* (Vol. 3, pp. 53-77).

Greenwich, CT: JAI Press.

Graen, G. B., & Uhl-Bien, M. (1995). Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *Leadership Quarterly*, 6, 219-247.

Greenberg, J. (1977). The Protestant work ethic and reactions to negative performance evaluations on a laboratory task. *Journal of Applied Psychology*, 62, 682-690.

Greenberg, J. (1982). Approaching equity and avoiding inequity in groups and organizations. In J. Greenberg & R. L. Cohen (Eds.), *Equity and justice in social behavior* (pp. 389-435). New York: Academic Press.

Greenberg, J. (1983). Overcoming egocentric bias in perceived fairness through self-awareness. *Social Psychology Quarterly*, 46, 152-156.

Greenberg, J. (1986a). The distributive justice of organizational performance evaluations. In H. W. Bierhoff, R. L. Cohen, & J. Greenberg (Eds.), *Justice in social relations* (pp. 337-351). New York: Plenum Press.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Greenberg, J. (1986b). Organizational performance appraisal procedures: What makes them fair?

In R. J. Lewicki, B. H. Sheppard, & M. H. Bazerman (Eds.), *Research on negotiation in organizations* (Vol. 1, pp. 25-41). Greenwich, CT: JAI Press.

Greenberg, J. (1986c). Determinants of perceived fairness of performance evaluations. *Journal of Applied Psychology*, 71, 340-342.

Greenberg, J. (1991). Motivation to inflate performance ratings: Perceptual bias or response bias? *Motivation and Emotion*, 15, 81-98.

Greenberg, J. (2006). *Social comparison of interactional justice outcomes*. Unpublished data, Fisher College of Business, The Ohio State University, Columbus, Ohio.

Grienberger, I. V., Rutte, C. G., & Van Knippenberg. A. F. M. (1997). Influence of social comparisons of outcomes and procedures on fairness judgments. *Journal of Applied Psychology*, 82, 913-919.

Griffith, T. L., & Neale, M. A. 2001. Information processing in traditional, hybrid, and virtual teams: From nascent knowledge to transactive memory. In B. Staw & R. Sutton (Eds.), *Research in organizational behavior* (Vol. 23, pp. 379-421). Greenwich, CT: JAI Press.

Griffith, T. L., & Sawyer, J. E., & Neale, M. A. (2003). Virtualness and knowledge in teams: Managing the love triangle of organizations, individuals, and information technology. *MIS Quarterly*, 27, 265-287.

Grote, D. (1996). *The complete guide to performance appraisal*. New York: AMACOM.

Grote, N. K., Naylor, K. E., & Clark, M. S. (2002). Perceiving the division of family work to be unfair: Do social comparisons, enjoyment, and competence matter? *Journal of Family Psychology*, 16, 510-522.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Hackmiller, K. L. (1966). Threat as a determinant of downward comparison. *Journal of Experimental Social Psychology*, 1, 32-39.

Hardin, A. M., Fuller, M. A., & Valacich, J. S. (2006). Measuring group efficiency in virtual teams: New questions in an old debate. *Small Group Research*, 37, 65-85.

Hertel, G., Geister, S., & Udo, K. (2005). Managing virtual teams: A review of current empirical research. *Human Resource Management Review*, 15, 69-95.

Hoefling, T. (2003). *Working virtually: Managing people for successful virtual teams and organizations*. Sterling, VA: Stylus Publishing.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations (2nd ed.)*. Thousand Oaks, CA: Sage.

Hogg, M. A. (2001). A social identity theory of leadership. *Personality and Social Psychology Review*, 5, 184-200.

Homans, G. C. (1961). *Social behavior: Its elementary forms*. New York: Harcourt, Brace, & World.

Ilgen, D. R. & Feldman J. M. (1983). Performance appraisal: A process focus. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 5, pp. 141-197). Greenwich, CT: JAI Press.

Jasso, G. (1980). A new theory of distributive justice. *American Sociological Review*, 45, 3-32.

Kahneman, D., Krueger, A., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science*, 306, 1776-1780.

Kasper-Fuehrer, E. C. & Ashkanasy, N. M. (2001). Communicating trustworthiness and building trust in inter-organizational virtual organizations. *Journal of Management*, 27, 235-354.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Kasper-Fuehrer, E. C., & Ashkanasy, N. M. (2004). The interorganizational virtual organization:

Defining a Weberian ideal. *International Studies of Management & Organization*, 33(4), 34-64.

Keller, R. T. (2001). Cross-functional project groups in research and new product development:

Diversity, communications, job stress, and outcomes. *Academy of Management Journal*, 44, 547-555.

Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: A

historical review, a meta-analysis, and a preliminary feedback intervention theory.

Psychological Bulletin, 119, 254-284.

Kray, L. J., & Lind, E. A. (2002). The injustices of others: Social reports and the integration of

others' experiences in organizational justice judgments. *Organizational Behavior and*

Human Decision Processes, 89, 906-924.

Kulik, C. T., & Ambrose, M. L. (1992). Personal and situational determinants of referent choice.

Academy of Management Review, 17, 212-237

Kurland, N., & Egan, T. D. (1999). Telecommuting: Justice and control in the virtual

organization. *Organization Science*, 10, 500-513.

Lamertz, K. (2002). The social construction of fairness: Social influence and sense making in

organizations. *Journal of Organizational Behavior*, 23, 19-37.

Larson, R., & Csikszentmihalyi, M. (1983). The experience sampling method. In H. T. Reis

(Ed.), *Naturalistic approaches to studying social interaction: New directions for*

methodology of social and behavioral science (Vol. 15, pp. 41-56). San Francisco, CA:

Jossey-Bass

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Lawler, E. E., III. (2003). Reward practices and performance management system effectiveness.

Organizational Dynamics, 32, 396-404.

Lawrence, D. H. (1921). *Woman in love*. London: M. Secker.

Lazarus, R. S. (1999). *Stress and emotion: A new synthesis*. New York: Springer.

Leary, M. R., Koch, E. G., & Hechenbleikner, N. R. (2001). Emotional responses to interpersonal rejection. In M. R. Leary (Ed.), *Interpersonal rejection* (pp. 145-166).

Oxford, UK: Oxford University Press.

Lewis, H. (1971). *Shame and guilt in neurosis*. New York: International Universities Press.

Lewis, M. (1992). *Shame: The exposed self*. New York: Free Press

Lind, E. A., & Van den Bos, K. (2002). When fairness works: Toward a general theory of uncertainty management. In B. M. Staw & R. M. Kramer (Eds.), *Research in organizational behavior* (Vol. 24, pp. 181-223). Greenwich, CT: JAI Press.

Lord, R. G., & Brown, D. J. (2004). *Leadership processes and follower self-identity*. Mahwah, NJ: Lawrence Erlbaum Associates.

Lyubomirsky, S., & Ross, L. (1997). Hedonic consequences of social comparison: A contrast of happy and unhappy people. *Journal of Personality and Social Psychology*, 73, 1141-1157.

Martin, J. (1981). Relative deprivation: A theory of distributive injustice for an era of shrinking resources. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (Vol. 3, pp. 53-108). Greenwich, CT: JAI Press.

Martin, R. H. (2000). "Can I do X?": Using the proxy comparison model to predict performance. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 67-80). New York: Kluwer Academic/Plenum Press.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Martin, R., Suls, J., & Wheeler, L. (2002). Ability evaluation by proxy: Role of maximum performance and related attitudes in social comparison. *Journal of Personality and Social Psychology*, 82, 781-791.

Martins, L. L., Gilson, L. L., & Maynard, M. T. (2004). Virtual teams: What do we know and where to we go from here? *Journal of Management*, 30, 805-835.

Martins, L. L., Milliken, F. J., Wiesenfeld, B. M. & Salgado, S. R. (2003). Racioethnic diversity and group members' experiences: The role of the racioethnic diversity of the organizational context. *Group & Organization Management*. 28, 75-106.

Maslach, C. (1993). Burnout: A multidimensional perspective. In W. B. Schaufeli, C. Maslach, & T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 19-32). Washington, DC: Taylor & Francis.

Messé, L. A. & Watts, Barbara L. (1983). Complex nature of the sense of fairness: Internal standards and social comparison as bases for reward evaluations. *Journal of Personality and Social Psychology*. 45, 84-93

Michael, R. T., Hartmann, H. I., & O'Farrell, B. (1989). Pay equity: Empirical inquiries. Washington, DC: National Academy Press.

Milkovich, G., & Newman, J. (2004). *Compensation* (8th ed.). Burr Ridge, IL: McGraw- Hill.

Moore, D. A. (2007). Not so above average after all: When people believe they are worse than average and its implications for theories of bias in social comparison. *Organizational Behavior and Human Decision Processes*, xx, xxx-xxx.

Morse, S. J. & Gergen, K. J. (1970). Social comparison, self-consistency and the concept of self. *Journal of Personality and Social Psychology*, 16, 148-156.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Mowshowitz, A. (1986). Social dimensions of office automation. In M. Yovitz (Ed.), *Advances in computers* (Vol. 25, pp.335-404). New York: Academic Press.

Mumford, M. D. (1983). Social comparison theory and the evaluation of peer evaluations: A review and some applied implications. *Personnel Psychology*, 36, 867-881.

Mussweiler, T. (2003). Comparison processes in social judgment: Mechanisms and consequences. *Psychological Review*, 110, 472-489.

Mussweiler, T., Gabriel, S., & Bodenhausen, G. V. (2000). Shifting social identities as a strategy for deflecting threatening social comparisons. *Journal of Personality and Social Psychology*, 79, 389-409.

Nathanson, D. (1992). *Shame and pride: Affect, sex, and the birth of the self*. New York: Norton.

Peterson, C. L. (1999). *Stress at work: A sociological perspective*. Amityville, NY: Baywood Publishing.

Petty, R. E., & Wegener, D. T. (1998). Attitude change: Multiple roles for persuasion variables. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology*, 4th ed. (Vol. 1, pp 323-390). New York: McGraw-Hill.

Pfeffer, J. (1981). Management as symbolic action: The creation and maintenance of organizational paradigms. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 3, pp. 1-52). Greenwich, CT: JAI Press.

Poulson, C. F. II. (2000). Shame and work. In N. M. Ashkanasy, W. Zerbe, & C. E. J. Härtel (Eds.), *Emotions in the workplace: Research, theory, and practice* (pp. 490-541). Westport, CT: Quorum Books.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Reis, T. J., Gerrard, M., & Gibbons, F. X. (1993). Social comparison and the pill: Reactions to upward and downward comparison of contraceptive behavior. *Personality and Social Psychology Bulletin*, 19, 13-20.

Rivera, K., Cooke, N. J., & Bauhs, J. A. (1996). The effects of emotional icons on remote communication. *Proceedings of ACM CHI 96 Conference on Human Factors in Computing Systems*, http://www.hcibib.org/bibtoc.cgi?file=ftp/CHI96-2*.

Rutte, C. G. & Messick, D. M. (1995). An integrated model of perceived unfairness in organizations. *Social Justice Research*, 8, 239-261.

Scandura, T. A. (1999). Rethinking leader-member exchange: An organizational justice perspective. *Leadership Quarterly*, 10, 25-40.

Schwartz, J. M., & Smith, W. P. (1976). Social comparison and the inference of ability differences. *Journal of Personality and Social Psychology*, 34, 1268-1275.

Seta, J. J., Seta, C. E., & McElroy, T. (2006). Better than better-than-average (or not): Elevated and depressed self-evaluations following unfavorable social comparisons. *Self and Identity*, 5, 51-72.

Shepherd, M. M., Briggs, R. O., Reinig, B. A., Yen, J. & Nunamaker, J. F. (1996). Invoking social comparison to improve electronic brainstorming: Beyond anonymity. *Journal of Management Information Systems*, 12, 155-170.

Simkin, J. P. (2005). *American salaries and wage survey*. Farmington Hills, MI: Thomson Gale.

Singh, P. (1994). Perception and reactions to inequity as a function of social comparison referents and hierarchical levels. *Journal of Applied Social Psychology*, 24, 557-565.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Smith, R. H. (2000). Assimilative and contrastive emotional reactions toward and downward

social comparisons. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison:*

Theory and research (pp. 173-200). New York: Kluwer Academic/Plenum Press.

Stauffer, J. M., & Buckley, M. R. (2005). The existence and nature of racial bias in supervisory

ratings. *Journal of Applied Psychology*, 90, 586-591.

Steelman, L. A., & Rutkowski, K. A. (2004). Moderators of employee reactions to negative

feedback. *Journal of Managerial Psychology*, 19, 6-18.

Steil, J. M., & Hay, J. L. (1997). Social comparison in the workplace: A study of 60 dual-career

couples. *Personality and Social Psychology Bulletin*, 23, 427-439.

Stone, A. A., Schwartz, J. E., Schkade, D., Schwarz, N., Krueger, A., & Kahneman, D. A.

(2006). A population approach to the study of emotion: Diurnal rhythms of a working day

examined with the day reconstruction method. *Emotion*, 6, 139-149.

Strauss, H. M. (1968). Reference group and social comparison processes among the totally blind.

In H. H. Hyman & E. Singer (Eds.), *Readings in reference group theory and research*

(pp. 222-237). New York: Free Press.

Suls, J., & Wheeler, L. (Eds.) (2000). *Handbook of social comparison: Theory and research*.

New York: Plenum Press.

Suls, J., Martin, R., & Wheeler, L. (2002). Social comparison: Why, with whom, and with what

effect. *Current Directions in Psychological Science*, 11, 159-163.

Tangirala, S., & Alge, B. J. (2006). Reactions to unfair events in computer-mediated groups: A

test of uncertainty management theory. *Organizational Behavior and Human Decision*

Processes, 100, 1-20.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Tangney, J. P., & Fischer, K. W. (1995). *Self-conscious emotions: The psychology of shame, guilt, embarrassment, and pride*. New York: Guilford Press.

Tenbrunsel, A. E., & Diekmann, K. A. (2002). Job-decision inconsistencies involving social comparison information: The role of dominating alternatives. *Journal of Applied Psychology*, 87, 1149-1158.

Tennen, H., McKee, T. E., & Affleck, G. (2000). Social comparison processes in health and illness. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 443-486). New York: Kluwer Academic/Plenum Press.

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 181-227). New York: Academic Press.

Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York: Wiley.

Tracy, J. L., & Robins, R. W. (2004). Putting the self into self-conscious emotions: A theoretical model. *Psychological Inquiry*, 15, 103-125.

Tziner, A., Murphy, K. R., & Cleveland, J. N. (2005). Performance appraisal: Evolution and change. *Group and Organization Management*, 30, 4-5.

Van der Zee, K., Buunk, B. P. & Sanderman, R. (1990). Neuroticism and reactions to social comparison information among cancer patients. *Journal of Personality*, 66, 175-179.

Van Knippenberg, D., & Hogg, M. A. (2003). A social identity model of leadership effectiveness in organizations. *Research in Organizational Behavior*, 25, 243-295.

Van Knippenberg, D., Van Knippenberg, B., De Cremer, D., & Hogg, M. A. (2004). Leadership, self, and identity: A review and research agenda. *Leadership Quarterly*, 15, 825-856.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Van Yperen, N. W. (1992). Self-enhancement among major league soccer players: The role of importance and ambiguity on social comparison behavior. *Journal of Applied Social Psychology*, 22, 1186-1198.

Vecchio, R. P. (1995). It's not easy being green: Jealousy and envy in the workplace. In G. R. Ferris (Ed.), *Research in personnel and human resource management* (Vol. 13, pp. 201-244). Greenwich, CT: JAI Press.

Vecchio, R. P. (2000). Negative emotion in the workplace: Employee jealousy and envy. *International Journal of Stress management*, 7, 161-179.

Vecchio, R. P. (2005). Explorations of employee envy: Feeling envious and feeling envied. *Cognition and Emotion*, 19, 69-81.

Wallace, M., Leicht, K. T., & Raffalovich, L. E. (1999). Unions, strikes, and labor's share of income: A quarterly analysis of the United States, 1949-1992. *Social Science Research*, 28, 265-288.

Walster, E., Walster, G. W., & Berscheid, E. (1978). *Equity: Theory and research*. Boston, MA: Allyn & Bacon.

Watson, D., & Tellegen, A. (1985). Towards a consensual structure of mood. *Psychological Bulletin*, 98, 219-235.

Webster, J., & Staples, D. S. (2006). Comparing virtual teams to traditional teams: An identification of new research opportunities. In J. Martocchio (Ed.), *Research in personnel and human resources management* (Vol. 25, pp.183-218). San Diego, CA: Elsevier.

Weierter, S. J. M. (1997). Who wants to play "follow the leader"? A theory of charismatic relationships based on routinized charisma and follower characteristics. *Leadership Quarterly*, 8, 171-193.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Weiss, H. M., & Beal, D. (2005). Weiss, H. M. & Beal, D. J. (2005). Reflections on Affective

Events Theory. In N. M. Ashkanasy, W. J. Zerbe, & C. E. Härtel (Eds.), *Research on emotions in organizations, Vol. 1: The effect of affect in organizational settings* (pp. 1-21). San Diego, CA: Elsevier.

Weiss, H. M., & Cropanzano, R. (1996). An affective events approach to job satisfaction. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 18, pp. 1-74). Greenwich, CT: JAI Press.

Wert, S. R., & Salovey, P. (2004). A social comparison account of gossip. *Review of General Psychology*, 8, 122-137.

Wheeler, L. (1966). Motivation as a determinant of upward comparison. *Journal of Experimental Social Psychology*, 27-31.

Wheeler, L., & Miyake, K. (1992). Social comparison in everyday life. *Journal of Personality and Social Psychology*, 62, 760-773.

Wheeler, L., Martin, R., & Suls, J. (1997). The proxy social comparison model for self-assessment of ability. *Personality and Social Psychology Review*, 1, 54-61.

Wills, T. (1981). Downward comparison principles in social psychology. *Psychological Bulletin*, 90, 245-271

Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin*, 106, 231-248.

Wood, J. V. (1996). What is social comparison and how should we study it? *Personality and Social Psychology Bulletin*, 22, 520-537.

Ybema, J. F., & Buunk, B. P. (1995). Affective responses to social comparisons: A study among disabled individuals. *British Journal of Social Psychology*, 34, 279-92.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.

Yip, T. (2005). Sources of situational variation in ethnic identity and psychological well-being:

A Palm Pilot study of Chinese American students. *Personality and Social Psychology*

Bulletin, 31, 1603-1616.

Yukl, G. A., & Van Fleet, D. D. (1992). Theory and research on leadership in organizations. In

M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational*

psychology (Vol. 1, pp. 147-198). Palo Alto, CA: Consulting Psychologists Press.

Zelditch, M., Berger, J., Anderson, B., & Cohen, B. P. (1970). Equitable comparisons. *Pacific*

Sociological Review, 13, 19-26.

Preprint version

Later published as Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, 102, 22-41.