Ethical Climates and Workplace Safety Behaviors: An Empirical Investigation

K. Praveen Parboteeah
Edward Andrew Kapp

ABSTRACT. In this article, the important but neglected link between workplace safety-enhancing behavior and ethics is explored. Using data from 237 employees from five manufacturing plants in the Midwest, we investigated how specific local ethical climate types are linked to incidences of injuries and two types of safety-enhancing behaviors: safety compliance and safety participation. It was hypothesized that egoist climates are positively related to injuries and negatively related to safety-enhancing behaviors. In contrast, it is proposed that both benevolent and principled climates have negative relationships with injuries and positive relationships with safety-enhancing behaviors. Results provided support only for our principled climate types while benevolence has the desired negative relationship with injuries. Egoism and benevolence are not related to safety-enhancing behaviors. Theoretical and practical implications of findings are discussed.

KEY WORDS: ethical climates, safety-enhancing behavior, occupational safety

K. Praveen Parboteeah (Ph.D. Washington State University) is an Associate Professor of International Management in the Department of Management, University of Wisconsin – Whitewater. Parboteeah's research interests include international management, ethics, religion and technology and innovation management. He has published articles in numerous acadamic journals including Academy of Management Journal, Organization Science, Decision Sciences, Small Group Research, Journal of World Business, Management International Review, R&D Management and Journal of Engineering and Technology Management.

Edward Andrew Kapp is an Assistant Professor in the Department of Occupational and Environmental Safety & Health at the University of Wisconsin-Whitewater. He received his Ph.D. in Industrial Engineering from the University of Wisconsin-Madision. Prior to his position at UW-Whitewater he worked in government, consulting, and private industry. Currently he teaches graduate and undergraduate courses in occupational safety, environmental health & safety management, and environmental and safety law. Dr. Kapp's research is in the area of environmental health & safety management, focusing on the influence of climate and leadership on safety performance.

Workplace safety remains an issue of crucial importance to the U.S. economy. In 2002 alone, there were 6217 deaths resulting from workplace injuries and around 4.7 million non-fatal injuries (Bureau of Labor Statistics, 2003). Such work related incidents cost an estimated $146.6 billion including wage and productivity losses, administrative and medical costs, and loss of operating capital (National Safety Council, 2003). Clearly, it is important to get a more refined understanding of the factors that contribute to workplace injuries given the significant human losses and consequent cost to both the economy and organizations. It is therefore not surprising to see that research interest on workplace safety remains strong (e.g., Hofmann et al., 2003; Shannon et al., 1997; Zacharatos et al., 2005).

Although inquiries into the antecedents of workplace safety have remained strong, it is surprising to see that only one study (McKendall et al., 2002) has examined the link with ethics. In that study, McKendall et al. (2002) examined, how various aspects of an ethics program (ethical codes, communication about ethics, ethics training, and incorporation of ethics into human resources practices) were linked to Occupational Safety and Health Act (OSH Act) violations. Although they argue that the various elements of an ethics program should be related to fewer OSH Act violations, results show that the presence of ethical compliance programs do not necessarily result in fewer violations. McKendall

et al. (2002) suggest that ethical compliance programs in the 108 companies they studied may actually be used to deflect attention from illegal activities rather than promote legitimate activities.

Many studies examining antecedents of safety-related behavior and injuries have focused on the role of safety climates and leadership. For instance, some safety studies (Zohar 2002a; 2002b) have emphasized the role of leadership and other supervisory practices to improve safety while Barling et al. (2002) examined the role of transformational leadership in promoting safety. Occupational safety scholars have also focused on the role of safety climates (DeJoy et al. 2004; Griffin and Neal, 2000; Mearns et al., 2003; Zohar and Luria, 2004) in promoting safety behaviors. Tables 1 and 2 summarize examples of key studies examining antecedents of safety-related behaviors and injuries and the variables considered.

While the studies documented in Tables 1 and 2 have provided a good understanding of some of the key factors contributing to safety in organizations, none has yet directly examined ethical climate as an antecedent of various aspects of workplace safety. However, there are compelling arguments to expect ethics as manifested through ethical climates, to influence the level of safety in the organization.

To examine the link between ethical climate and safety-related behavior, a number of key safety outcomes are considered (Griffin and Neal, 2000; Zohar, 2002a). First, the relationship between ethical climate types and incidences of injuries and safety motivation is investigated. Consistent with Borman and Motowildo's (1993) perspective that there are two main components of performance, namely task performance and context performance, safety-compliance motivation (i.e., the degree to which employees are motivated to comply with safety standards) and safety participation motivation (i.e., the degree to which employees are motivated to participate in activities dedicated to safety) are considered (Griffin and Neal, 2000).

Second, because the literature suggests that motivation to perform workplace procedures safely is an important precursor to actual safety behaviors (Griffin and Neal, 2000), the relationship between safety motivation and safety performance as gauged through employee perceptions of their workplace safety-enhancing behaviors are also considered using the Borman and Motowildo (1993) viewpoint. Safety-related behaviors are critical, because they reflect the actual behaviors performed by individuals to maintain a safe workplace. Two manifestations of

TABLE 1

Summary of exemplar safety climate and safety performance studies

Author(s) and Year	Context	Variables	Key findings
De Joy et al. (2004)	Retail	Safety climate, perceived safety	Safety climate positively related to presence of safety policies and programs
Griffin and Neal (2000)	Manufacturing and mining	Safety climate, motivation, safety behavior	Safety climate positively related to safety compliance and safety participation
Mearns et al. (2003)	Offshore oil and gas drilling	Safety climate, accidents	Safety climate negatively related to accident occurrence
Neal and Griffin (2006)	Healthcare	Safety climate, motivation, safety behavior, accidents	Safety climate positively related to safety behavior, negatively related to accidents
Zohar (1980)	Manufacturing	Safety climate, expert assessment of safety programs	Safety climate was positively related to evaluation of safety programs

TABLE 2

Summary of exemplar leadership and safety performance studies

Author(s) and Year	Context	Variables	Key findings
Barling et al. (2002)	Hospitality	Leadership, safety-related events, injuries	Transformational leadership negatively related to safety events and injuries
Kelloway et al. (2006)	Not disclosed	Leadership, safety climate, safety-related events, injuries	Transformational leadership positively related to safety climate, negatively related to safety events and injuries
Zohar (2000a)	Equipment maintenance operations	Leadership, accidents, safety behavior, safety climate	Leader–subordinate interactions negatively related to accidents, positively related to ear plug use and safety climate scores
Zohar (2000b)	Manufacturing operations	Leadership, safety climate, injuries	Transformational and transactional leadership positively related to safety climate and negatively related to injuries

safety-enhancing behavior, namely safety compliance and safety participation are considered. Safety-compliance behavior refers to the ''core safety activities that need to be carried out by individuals to maintain workplace safety'' (Griffin and Neal, 2000, 349) while safety participation behavior refers to ''behaviors that may not directly contribute to workplace safety, but they do help to develop an environment that supports safety'' (Griffin and Neal, 2000, 349).

Ethical climates and workplace safety

For the purpose of this article, the types of ethical climates identified by Victor and Cullen (Victor and Cullen, 1987, 1988; Cullen et al., 1993) are used. Ethical climates represent a subset of the array of work climates and refer to the institutionalized organizational practices and procedures that define what is considered right or wrong within the organization. The latest meta-analysis of the ethical climate literature demonstrates the utility of the ethical climate concept (Martin and Cullen, 2006). The meta-

analysis provides evidence that ethical climates are related to many key variables including organizational commitment, job satisfaction, and dysfunctional behaviors among others (Martin and Cullen, 2006).

The Victor and Cullen typology of ethical climates has three bases or criteria of moral judgment: egoism, benevolence, and principle. These form the three basic ethical climates. In an egoistic climate, company norms support the pursuit of self-interest. In the benevolent climate, company norms support maximizing the interests of a particular social group. In the principled climate, company norms support following abstract principles independent of situational outcomes.

In addition to the three basic types of ethical climates, the Victor and Cullen (1987, 1988) typology has three loci of analysis to further distinguish the basic types of climates found in organizations. These loci of analysis were derived from sociological theories of roles and referent groups in organizations (Merton, 1957) and rely on the types of referent groups used to apply the ethical criteria to decisions. The loci of analysis include individual, local, and cosmopolitan referents. The individual

locus of analysis refers to the use of the self as referent for moral reasoning. For the local locus of analysis, the important referent groups relate to the social systems within which individuals are embedded (Victor and Cullen, 1988). The most common local referent is the organization. Finally, the cosmopolitan locus of analysis refers to sources of moral reasoning outside of the immediate organization or group (i.e., corporation, society, or the profession).

Crossing the ethical criteria with the loci of analyses produces nine *possible* climate types: three egoistic; three benevolent; and three principled. Each of the nine cells produces an ethical criterion that is the expected guide to decision making in an organization or unit. For instance, in an egoistic-individual climate, norms encourage individuals to make ethical decisions mostly in their self-interest (Victor and Cullen, 1987). The egoistic-individual climate can be found in car dealerships or brokerage firms where decisions are typically self-interested. In contrast, the principled-cosmopolitan type refers to ethical decisions made based on laws or professional codes. The principled-cosmopolitan climate may be present in public accounting firms where the organizational climate supports ethical decision-making based mostly on the professional codes governing the profession.

For the purpose of this article, interest in ethical climates is at the plant level (i.e., the local level in the ethical climate terminology, Victor and Cullen, 1987; 1988). As argued by many researchers, the organization and its subunit have the most important influences on the safety behavior of the individual employee (e.g., Katz-Navon et al., 2005; Neal et al., 2000). By investigating the local level, we can more accurately tease out the effects of the plant level climate on incidences of injuries and safety motivation. Additionally, plant level climate reflects a condition that is within the organizations' ability to change. In contrast, other loci of analysis such as the individual or the cosmopolitan are not considered, because they do not necessarily reflect the strongest influence of ethical climate on safety behaviors. Furthermore the other loci are not necessarily antecedents of performance that are amenable to change by the efforts of the organization.

It is argued that there are compelling reasons to expect a strong link between local ethical climates and workplace safety. Schneider (1990, 384) defines climates as "incumbents' perceptions of the events, practices and procedures and the kinds of behaviors that get rewarded, supported and expected in a setting." Since ethical climates are concerned with issues that relate to workers' overall welfare and well being, we believe that the ethical climate within any plant will provide guidance as to the appropriate safety-enhancing behavior. Climate perceptions provide guidance to employees with respect to the types of role behaviors that will be rewarded and supported in the organization (Zohar & Luria, 2004).

Egoist-local climates

The egoist dimension is generally based upon the maximization of self-interest (Cullen et al., 2003). Within the egoist climate, the normative expectation is that the decision-maker is likely to choose alternatives that benefit himself/herself the most while ignoring the needs of others (Martin and Cullen, 2006). In the context of the local locus of analysis, decisions are made based on profitability or efficiency considerations at the expense of the individual well being (Victor and Cullen, 1987; 1988).

It is argued that an egoist-local climate will be associated with increased incidences of injuries in a plant. In an egoist-local climate, employees perceive "that self-interest guides behavior, even to the possible detriment of others" (Martin and Cullen, 2006, 178). If employees perceive that the organization is promoting the material well being of the company at the expense of the well being of the individual employees, they are less likely to be concerned about safety. In fact, they are more likely to be careless about the impact of their actions on others. Furthermore, safety programs are costly and we expect that the organization may not necessarily devote the resources to safety if they are focused on efficiency. Consequently, we expect that in such egoist-local climates, there are higher incidences of injuries because of the exclusive emphasis on the productivity and profitability of the business.

We also argue that there is a negative relationship between an egoist-local ethical climate and safety motivation. Egoist climates tend to promote values encouraging self-interested behaviors (Victor and Cullen, 1987). Due to the norms encouraging organizational gains within an egoist-local ethical climate (Cullen et al., 2003), individuals within an

egoist-local climate will engage in workplace behaviors that maximize the organization's self-interest. In such organizations, it is likely that the egoist climates place pressures on employees for production and profitability. Furthermore, those behaviors contributing to short-run production goals and efficiency are more likely to receive immediate extrinsic reward than safety-compliance behaviors (Salminen et al., 1993; Wright, 1986). In contrast, safety-compliance behaviors are seldom acknowledged in such climates. Safety-compliance behavior seems inconsistent with an egoist-local climate, as it may not necessarily contribute to organizational efficiency and profitability. In fact, we see it more likely that employees will behave in self-interested manner and be less motivated to comply with safety standards and, more motivated to achieve production goals. Furthermore, it is also likely that as employees see others behave in self-interested fashion, they will be less likely to see the importance of safety and thus less motivated to comply (Zohar, 2002b).

An egoist-local climate is also unlikely to promote the cohesiveness and active caring that has been shown to be so crucial to making employees feel more responsible for the safety of others (Simard and Marchand, 1997; Zacharatos et al., 2005). Exclusive focus on profitability and efficiency is likely to discourage employees from voluntarily participating in activities that enhance the safety of their colleagues. The expectation is that individuals are not concerned with the well being of others (Victor and Cullen, 1988). Under such conditions, it is seems unlikely that the workers would be motivated to voluntarily participate in safety programs. This lack of caring for the individual is likely to be manifested in lower motivation to participate in safety enhancing behaviors.

Hypothesis 1a   An egoist-local climate is positively related to incidences of injuries

Hypothesis 1b   An egoist-local climate is negatively related to safety compliance motivation and safety participation motivation

Benevolent-local climates

Benevolence is primarily based on concern for others (Victor and Cullen, 1987; 1988). Within such

a climate, the decision-maker is likely to make those decisions that result in maximum collective gains even at the expense of individual needs (Cullen et al., 2003). In the benevolent-local climate, the focus is on the well being of those in the plant. Benevolent-local climates are likely to develop, for example, in research labs where there is high need for cooperation to achieve the desired success outcomes (Victor and Cullen, 1988). A person perceiving a benevolent climate is most likely to be concerned about others in the plant and will make those decisions that provide the greatest good for the greatest number of people (Martin and Cullen, 2006).

Given the above, we expect benevolent climates to be negatively associated with incidences of injuries and positively related to both aspects of safety motivation. A benevolent-local climate is inherently concerned with concern for the welfare and greatest good for the greatest number of people (Parboteeah et al., 2005), of which safety is a likely an important component. It is therefore expected that workers respond to a benevolent climate by being more aware and concerned about safety issues. It is further argued that if workers perceive others to be showing concern for their own safety, they are also more likely to be aware of safety issues and to be motivated to enhance their own safety (Barling et al., 2002; Gherardi and Nicolini, 2000). In such cases, we also expect that the incidences of injuries are relatively lower because of the emphasis on caring.

It is expected that perceptions of benevolent-local climates are positively related to motivation to participate in safety activities. Drawing from social exchange theory (Blau, 1964), we argue that when employees perceive that their organization values and supports them, an implied obligation develops on their part for future reciprocity that will benefit the organization. Due to the high level of concern for safety and the collective well-being fostered by a benevolent climate, and the sense of reciprocal obligation surrounding safety (Hofmann and Morgeson, 1999) workers are more likely to go beyond mere compliance and are more voluntarily motivated to participate in activities that promote safety within the organization.

Hypothesis 2a   A benevolent climate is negatively related to incidences of injuries

Hypothesis 2b   A benevolent climate is positively related to safety compliance motivation and safety participation motivation

Principled-local climates

Victor and Cullen's (1988) ethical criterion of principle embodies the application or interpretation of rules, laws, and standards in the normative expectations in a social unit. In general, when faced with an ethical dilemma, organizational or group norms suggest that the decision-maker resort to decisions that are based on adherence to rules and codes (Martin and Cullen, 2006). The expected sources of principles for such moral reasoning can be internal to an individual with a principled-individual climate, or external such as with a local ethical code (principled-local) or a broader code such as the Bible or state and federal laws (principled-cosmopolitan) (Victor and Cullen, 1988).

Principled climates are manifested through the application of organizational and plant rules and codes of conduct (Martin and Cullen, 2006). Given that the sample includes employees in the automotive component-manufacturing sector where adherence to quality standards is fundamental, we expect that adherence to formal policies, rules, and procedures will be the norm. As such, it is expected that in stronger principled climates, employees will be more motivated to comply with established safety requirements and thus we expect lower incidences of injuries. We also expect principled climates to be positively related to safety motivation as the inherent emphasis on security encourages employees to be more motivated to behave safely.

Additionally, it is expected that workers will be more motivated to participate voluntarily in safety programs in principled climates based on progressive personal and organizational policies and procedures that solicit employee participation in safety (Parker et al., 2001; Shannon et al., 1997). In contrast, weaker principled climates may not place as much emphasis on safety and may not motivate voluntary participation on the part of the employees. Thus, we

also expect principled ethical climates to be positively related to safety motivation.

Hypothesis 3a   A principled climate is negatively associated to incidences of injuries

Hypothesis 3b   A principled climate is positively related to safety compliance motivation and safety participation motivation

Safety-enhancing behaviors, safety motivation, and ethical climates

Consistent with the safety literature (Griffin and Neal, 2000), we propose that there is a positive relationship between safety motivation and the corresponding safety-enhancing behaviors. As mentioned earlier, linkages between safety motivation and safety-compliance (safety activities carried out to maintain workplace safety) and safety participation (behaviors that help to develop an environment that supports safety) is also considered. Our arguments are based on the view that motivation is an important precursor to actual behaviors (Ajzen and Fishbein, 2005).

It is argued that safety compliance is positively related to safety compliance motivation. Employees who are motivated to comply with safety requirements are more likely to engage in safety compliance behaviors. Furthermore, employees who are motivated to involve themselves in safety participatory activities are also more likely to be motivated to participate in safety activities.

Hypothesis 4   Safety compliance is positively related to safety compliance motivation.

Hypothesis 5   Safety participation is positively related to safety participation motivation.

We also propose that safety motivation will mediate the relationships between the ethical climates described earlier and the safety-enhancing behaviors. Organizational climates provide important information to employees regarding their work environment (James and James, 1989). Specifically, through ethical climates and through the consequent events and consequences that manifest such climates, employees can make sense of their environment and understand

the priorities regarding safety within the organization (Cullen et al., 2003) or the "way things are *done* around here." Furthermore, given that ethical climates are concerned with behaviors that have consequences for others, it is logical that ethical climates should be related to safety motivation. Given that we earlier previously argued that safety motivation is related to safety behaviors, it follows that safety motivation mediates the relationships between ethical climates and safety behaviors. Our proposition is consistent with previous research showing the mediating effects of motivation on the link between other forms of organizational climates and behaviors (Brown and Leigh, 1996). Therefore, we hypothesize the following:

Hypothesis 6 Motivation to comply mediates the local ethical climates-safety compliance behavior relationship.

Hypothesis 7 Motivation to participate mediates the local ethical climates-safety participation behavior relationship.

Methods

Sample

The sample was drawn from the hourly workforce from five plants of an American subsidiary of a European automotive component manufacturing company with operations in Europe, Asia, and the North and South America. The five locations include a total base of approximately 367 hourly workers. Questionnaires were administered to all shifts during their mid-shift break time with the exception of three shifts across two locations, leaving a total potential sample size of 346 employees. Two hundred and thirty seven employees voluntarily completed the questionnaire, thus yielding a participation rate of 68%.

Ages of the respondents ranged from 19 to 69 years old. The sample included about 42% female and 58% male respondents, and the race/ethnic composition of the sample was about 65% Caucasian, 20% African–American, 5.5 % Hispanic, 5.5% Asian, 2.5% Native American, and 1.5% other

or no response. Our sample is representative of the various plants as our sample mirrors the various percentages at the plant level in terms of age, gender, and ethnicity.

Measures

The *Ethical Climate Questionnaire* (ECQ) developed by Victor and Cullen (1987; 1988) was used to measure ethical climates. In the ECQ, respondents are asked to act as observers reporting on organizational expectations, not on their personal beliefs or their affective evaluations of the climates. Respondents indicated on a 5-point Likert scale how accurately each of the items described their ethical work climate. The version of the ECQ is published in Cullen et al. (1993).

To assess the incidence of injuries, accepted practice in the literature were followed (Zacharatos et al., 2005). Respondents were asked to indicate the number of work related injuries they experienced in the past 6 months. Self-reported measures of safety-enhancing behavior were taken from Griffin and Neal (2000). These categorize individual safety performance into behaviors directly related to safe work practices (safety compliance) and behaviors that support the overall safety of the organization (safety participation). Safety compliance was assessed using four items about individual compliance with established safety procedures and practices. Sample items include "I use all the necessary safety equipment to do my job" and "I carry out my work in a safe manner." Reliability for our safety compliance measure is 0.93.

Similar to Griffin and Neal (2000), safety participation was assessed by asking respondents four items related to behaviors that support safety improvement in the organization. Example items are "I promote the safety program within the organization" and "I put in extra effort to improve the safety of the workplace." Reliability for the safety participation measure is 0.79.

The self-reported measures of safety motivation were also taken from Griffin and Neal (2000). These measures dichotomize safety motivation along two continua of motivational measures, namely

compliance motivation and participation motivation. This matches the distinction between task and contextual performance used with the measures of safety behavior. Four items pertaining to motivation to perform safety-related tasks were used to assess compliance motivation. Example items include ''I believe that it is important to always use safe/standard work procedures'' and ''I believe that it is important to always use safe/standard procedures.'' Reliability for this measure is 0.91.

Consistent with Griffin and Neal (2000), participation motivation was also assessed by six items that measured motivation to participate in activities supporting the overall level of safety in the organization. Example items were ''I feel that it is worthwhile to volunteer for safety related tasks'' and ''I believe that it is important to encourage others to use safe practices.'' For our participation motivation measure, reliability is 0.84.

We collected responses to the following items in order to control for potential confounding effects on the perception of ethical climate and safety behavior of individual employees and to assess the generalizability of the sample to a larger population: age (number of years), gender (male, female), and marital status (married and single).

Table 3 shows a matrix of correlations and sample statistics of all variables included in the study.

Analytical procedures

In line with previous research (Griffin and Neal, 2000; Parboteeah et al., 2005), separate factor analyses on items reflecting ethical climates were conducted. Factors were then constructed using the appropriate items. We also used accepted procedures for our safety motivation and safety behaviors measures by averaging the relevant items to create the appropriate measure. Multiple regression was the analytical technique used to test Hypotheses 1 through 5. To test the mediation in Hypotheses 6 and 7, Baron and Kenny's (1986) steps were used.

Results

As noted earlier, factor analysis was used to identify the particular ethical climates being perceived in each organization type. However, because there was interest only in the local climates, only the 12 items representing the three ethical climate types (4 items per ethical climate type) were factor analyzed. The results showed that each of the ethical climate types (egoist-local, benevolent-local, and principled-local) loaded cleanly on the relevant 4 items. All climates have reliabilities above 0.70. Table 4 shows the results of the factors and the relevant items.

TABLE 3

Correlations and descriptive statistics of variables used in study

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Age	37.72	12.91											
2. Gender	.75	.89	−.19**										
3. Education	3.59	2.86	.04	.20**									
4. Marital status	.53	.50	.26***	−.02	−.01								
5. Injuries	.14	.46	.07	−.07	−.04	.05							
6. Safety compliance	4.33	.66	.04	−.09	−.001	−.01	−.10						
7. Safety participation	3.90	.70	.03	−.06	−.02	.11*	−.06	.63***					
8. Motivation to comply	4.49	.64	.14*	−.08	.09	.02	−.01	.57***	.55***				
9. Motivation to participate	4.17	.66	.04	−.01	.01	.02	−.04	.65***	.65***	.73***			
10. Egoist-individual	3.27	1.06	−.09	.05	−.03	−.02	.01	−.001	.04	−.02	.004		
11. Benevolent-local	3.04	.91	.03	.07	.04	.11	−.21**	.16*	.20**	.11	.18**	−.25***	
12. Principled-local	3.51	.84	.002	.002	−.05	.06	−.16*	.27***	.26***	.24***	.33***	−.10	.52**

N = 237; * *p* < .05; ** *p* < .01, *** *p* < .0001.

Table 5 shows the results of the regression analysis.

Hypotheses 1a, 1b, 2a, 2b, 3a, and 3b were tested using multivariate regressions (see Models 1, 2 and 3 in Table 5). Hypotheses 1a predicted that egoism–local is positively related to incidences of injuries and Hypothesis 1b proposed that the egoism–local climate that negatively related to motivation to comply and motivation to participate in safety activities. Results from Table 5 reject both hypotheses, as the egoist–local climate is not related to either form of safety motivation or to incidences of injuries.

In Hypotheses 2a, we proposed a negative relationship between the benevolent–local climate and incidences of injuries. Results from Table 5 support this hypothesis. However, results reject Hypothesis 2b. The measure of benevolent–local climate had no relationship with motivation to participate or motivation to comply.

Hypotheses 3a argued for a negative relationship between the principled–local climate and incidences of injuries. This hypothesis was not supported, as there was no relationship between the principled–local climate and incidences of injuries. Hypothesis 3b proposed a positive relationship between the principled–local climate and safety motivation. Results provide support for Hypothesis 3b as the principled–local climate displays a positive relationship with both motivation to comply and motivation to participate.

Hypothesis 4 predicted a positive relationship between safety compliance and motivation to comply. As Table 5 results show (see Model 4), Hypothesis 4 is supported. In Hypotheses 5, we posited positive relationships between safety participation and motivation to participate. Model 5 from Table 5 provides support for Hypothesis 5.

Under the guidelines provided by Barron and Kenny (1986), mediation is shown if the effect of the

TABLE 4

Factor analysis for local ethical climates

Items	Egoist-local	Benevolent-local	Principled-local
1. People are expected to do anything to further the company's interests	.712	−.213	.215
2. Work is considered sub-standard only when it hurts the company's interests	.692	−.423	−.002
3. People are concerned with the company's interests − to the exclusion of all else	.746	.001	−.144
4. Decisions here are primarily viewed in terms of contribution to profit	.578	.006	−.108
5. The most important concern is the good of all people in the company	−.008	.806	.168
6. Our major consideration is what is best for everyone in the company	−.004	.860	.168
7. People in this company view team spirit as important	−.006	.745	.144
8. People are very concerned about what is generally best for employees in the company	−.269	.790	.205
9. It is very important to follow strictly the company's rules and procedures here	−.121	.128	.845
10. Everyone is expected to stick by company rules and procedures	−.005	.112	.859
11. Successful people in this company go by the book	.006	.123	.629
12. Successful people in this company strictly obey company policies	.002	.421	.722

TABLE 5
Regression results predicting safety compliance and participation

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	Injuries	Motivation to comply	Motivation to participate	Safety compliance	Safety participation	Safety compliance	Safety compliance	Safety participation	Safety participation
Age	.003	.008	.003	-.003	-.002	.003	-.003	.00	-.002
Gender	-.03	-.087	-.022	-.022	-.06	-.100	-.027	-.078	-.061
Education	-.007	.025	.009	-.014	-.002	.007	-.01	.006	.002
Marital status	.037	-.067	-.028	-.021	.16★	-.065	-.024	.135	.175★★
Egoist-local	-.015	-.001	.024			.018	.023	.051	.033
Benevolent-local	-.10★★	-.051	-.005			.023	.062	.080	.086
Principled-local	-.04	.22★★★	.27★★★			.206★★	.029	.166★	-.043
Motivation to comply				.80★★★			.795★★★		
Motivation to participate					.78★★★				.786★★★
R²	.07	.11	.11	.59	.58	.09	.61	.09	.59
Δ R²							.52★★★		.50★★★

★ p < .05, ★★ p < .01, ★★★ p < .001.

independent variable (ethical climates) on the dependent variable (safety behaviors) decreases when the mediator (safety motivation) is added and the mediator has a significant effect on the dependent variable. As Table 5 shows, when motivation to comply is added (Model 7) to Model 6, the regression coefficients for the only significant climate (principled-local) is reduced in magnitude. The mediator had significant effects on safety compliance thereby providing support for Hypothesis 6. Hypothesis 7 was also supported, as the coefficient for the principled-local ethical climate type decreased from .17 ($p < 0.001$) to −.04 (not significant) (see Model 8 and 9). Furthermore, our mediator (motivation to participate) was positively related to safety participation.

Discussion

In this article, we examined an important but neglected research question: how are ethical climates linked to incidences of injuries and workplace safety behavior? Given the substantial costs to individuals and organizations associated with unsafe work practices, it is critical to understand factors contributing to safety behaviors in the workplace. Using the popular ethical climate concept as articulated by Victor and Cullen (1987; 1988) and the task and contextual performance measures of safety motivation and behavior suggested by Griffin and Neal (2000), our results provide support for the position that principled-local climates are positively related to safety-enhancing behaviors as mediated by individual motivation to behave safely. Furthermore, our results also show the positive effects of a benevolent-local climate as the latter was negatively related to incidences of injuries. Such results are noteworthy, because contrary to previous scholarship (McKendall et al., 2002), evidence is provided that ethics, through ethical climates, is indeed linked to safety behavior.

Consistent with the hypotheses, the measure of benevolence-local climate was negatively associated with incidence of injuries. This suggests that the inherent concern for the welfare and well being of others translates into an environment whereby people's physical well being is important. This result also supports the latest meta-analysis of ethical climates suggesting the overwhelming findings of the positive effects of benevolent climates (Martin and Cullen, 2006).

It was also expected that benevolent-local climate would be positively related to two types of safety-enhancing behavior. A benevolent-local climate suggests that employees are concerned about the welfare of their immediate community, such as the plant, line or shift. The pervading concern for overall welfare was expected to encourage employees to be more concerned with safety issues and thus more likely to be motivated to enhance safety. However, the benevolent-local climate was unrelated to safety-enhancing motivation. Such findings are surprising and this apparent incongruity also demands further investigation. One potential explanation again revolves around the perceived level of injury risk in the plant. The company from which the sample was drawn had an excellent safety record. Although employees indicated some incidences of injuries, they experienced 250 to over 2100 days without lost time due to serious injuries. Under these conditions of long-time spans without serious injuries, safety loses its association with individuals' well being and other issues become more highly associated with colleagues' well being. Furthermore, the low incidence of injuries associated with the benevolent-local climate may be the result of greater emphasis on more costly engineering approaches rather than employee behavior to control the hazards of the workplace. Such decisions are not surprising in an organization that cares about its employees' well being.

Principled-local climates, which emphasize the adherence to company derived rules and procedures, have the desired predicted associations with compliance and participation motivation and both types of safety-enhancing behaviors. Motivation to comply is directly associated with safety compliance, and the motivation to participate is directly related to both safety compliance and safety-participation behaviors. As predicted, the direct effects of principled-local climate on safety-enhancing behavior diminished and become non-significant with the inclusion of the associated motivation verifying the mediating roles of motivation to participate and motivation to comply respectively.

Our results for egoist climates were surprising, as we were expecting that the focus on self-interest would be negatively associated with those

safety-enhancing behaviors commonly unrewarded by the organization. However, findings show that the egoist climate is neither related to injuries nor to safety-enhancing behaviors. We can only speculate on such findings. Perhaps the prominence of well-developed and well-enforced safety programs, including elements of engineering control, administrative control, and personal protective equipment in manufacturing companies like the one studied counteract the potential negative influence of egoism on individual safety behavior. Furthermore, it is also possible that the focus on profitability and efficiency typical of egoist-local climates also encompasses focus on safety. It is likely that individuals engage in safety-enhancing behavior at certain times, for example when the perceived risk of injury reaches a certain threshold level. Such behavior may be seen at that point as being consistent with a decrease in the likelihood of injury, and thus consistent with maximization of self-interest (Wilde, 1982). However, these explanations are only speculative and it is hoped that future research can shed some more light on these relationships.

Theoretical contribution

Given the previous findings, this article makes some important contributions. First, we contribute to the dearth of scholarship examining the link between ethics and workplace safety (McKendall et al., 2002). This study is the first one to demonstrate the utility of the ethical climate concept in explaining workplace safety behaviors.

Secondly, we also add to the burgeoning perspective that workplace safety can be enhanced through organizational climate (e.g. DeJoy et al., 2004; Griffin and Neal, 2000; Hofmann et al., 2003; Mearns et al., 2003; Zohar, 1980), rather than relying solely on the more typical contingent reward approach based on use of reward and punishment to encourage safe behavior.

Third, the demonstration of the sustained utility of ethical climates also makes a contribution to the literature. The results this study support other studies on ethical climates as influencing agents of organizational behavior (e.g., Parboteeah and Cullen, 2005), while encouraging the continued use of strong organiza-

tional safety policies and procedures to improve workplace safety (Cohen, 1977; Hoonakker et al, 2005). By providing important evidence that some forms of ethical climates are related to safety-related behaviors, this buttresses the argument that organizational norms have important influences on legal and regulatory compliance behavior.

Finally, the specific finding that principled-local climates have the highest positive effect on safety-enhancing behaviors is noteworthy. We believe it is important to consider such findings in light of the legal environment of companies. Workplace safety is enforced by the regulations as promulgated under the Occupational Safety and Health Act (29 U.S.C. § 651 et seq.), and any violations of the Act or its ensuing regulations can result in severe fines to organizations. However, such fines may be substantially reduced if companies can demonstrate 'good faith' efforts. An appropriate ethics compliance program, which includes elements related to workplace safety, such as whistleblower protection for those reporting workplace hazards, may be one such example of a good faith effort on the part of an employer. As such, our results are particularly noteworthy. We demonstrate that ethical climates can ''serve as a modifier of motive and opportunity, either prompting or discouraging organizations from engaging in illegal behavior'' (McKendall et al., 2002, 367), including workplace safety behaviors.

Practical implications

As ethical climates at the local level tend to be somewhat controllable by managers, the results of this study provide suggestions on appropriate ways that managers can enhance safety performance by aligning their safety initiatives and ethical climate. Within egoist-local climates, the norms that encourage personal gains do not appear to encourage or discourage safety compliance and safety-participation behaviors. Therefore, encouraging or supporting the establishment of this climate type within the organization should be actively opposed if enhancing safety is a desired outcome. If such a climate is already established in an organization, identifying and addressing those factors that influence the individual's determination of what is in

their self-interest to include the personal benefits from maintaining a safe work environment for the individual (safety compliance) and his/her colleagues (safety participation) is in order.

The finding that benevolent-local climates are negatively related to incidences of injuries signal the importance of fostering a sense of shared responsibility for coworkers' well being for the purpose of reducing work-related injuries. Companies need to devise systems and structures to build an environment where employees genuinely care about each other's wellbeing.

Our findings for a positive relationship between principled-local climates and safety are encouraging. If it is indeed the case that principled-local ethical climates represent the ideal environment to foster sustained organizational safety performance, then the promulgation of societal safety laws and regulations may not be directly relevant to safety performance, as some have already suggested (McGarity and Shapiro, 1993; Mendelhoff, 1980), but rather impact individual safety performance indirectly through inducing organizations to establish their own safety programs. In other words, federal safety standards and their enforcement provide encouragement to companies to initiate safety policies, programs and procedures which in turn provide individual employees in principled-local climates with local rules to which organizations can adhere.

The above also suggests that those companies with climates that encourage their employees to follow company rules, and have these rules in place, are more likely to have employees who are concerned about safety and who engage in self-protective behaviors and the promotion of safety for others. Managers are thus encouraged to focus on establishing and maintaining a principled-local ethical climate, and fostering adherence to company rules and procedures while simultaneously maintaining comprehensive safety policies and procedures.

Limitations and future outlook

The results of this study are collected from five locations of a single organization dispersed over a 100-mile radius. The racial/ethnic background of the workers was representative of the population of this area including Caucasian, African-American, Asian, and Hispanic individuals, but the generalizability of the results to a different region or nation is uncertain. We encourage future research to replicate our findings in wider samples. Additionally, we did not examine company safety records per se but self-reported measures of injuries. It is hoped that future research can explore actual safety records and the link with other aspects of ethics such as ethical codes and ethics training programs. Finally, our measures were from self-reports at a single point of time. While a longitudinal design to understand the evolution of ethical climates and the relationship with safety was not considered, our study design is nevertheless consistent with current approaches.

Future research should examine some of our more surprising results. For instance, identifying those additional situational or dispositional factors that influence the safety-enhancing behaviors by individuals within an egoistic climate engage deserves further investigation. Furthermore, our other general climates for benevolence and principled were not related to safety-enhancing behaviors contrary to what is expected. We encourage future research to examine these links. Finally, we also believe that replications in different industries and examination of actual objective safety records may be useful.

Acknowledgments

References

Ajzen, I. and M. Fishbein: 2005, 'The Influence of Attitudes on Behavior', in D. Albarracín, B. T. Johnson and M. P. Zanna (eds.), *The Handbook of Attitudes* (Erlbaum, Mahwah, NJ), pp. 173–221.

Barling, J., C. Loughlin and E.K. Kelloway: 2002, 'Development and Test of a Model Linking Safety-Specific Transformational Leadership and Occupa-

tional Safety', *Journal of Applied Psychology* **87**(3), 488–496.

Baron, R.M and D.A Kenny: 1986, 'The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations', *Journal of Personality and Social Psychology* **51**(6), 1173–1182.

Blau, P.: 1964, *Exchange and Power in Social Life* (Wiley, New York).

Borman, W. C. and Motowildo, S. J.: 1993, 'Expanding the Criterion Domain to Include Elements of Contextual Performance', in N. Schmidt and W. C Borman et al. (Eds.), *Personnel Selection in Organizations*. (San Francisco, Jossey-Bass), pp. 71–98.

Brown, S. P. and T. W Leigh: 1996, 'A New Look at Psychological Climate and its Relationship to Job Involvement, Effort, and Performance', *Journal of Applied Psychology* **81**(4), 358–368.

Bureau of Labor Statistics.: 2003, 'Injuries, Illnesses, and Fatalities Data'. http://www.bls.gov/iif/home.htm.

Cohen, A.: 1977, 'Factors in Successful Occupational Safety Programs', *Journal of Safety Research* **9**(4), 168–178.

Cullen, J.B., K.P. Parboteeah and B. Victor: 2003, 'The Effects of Ethical Climates on Organizational Commitment: A Two-Study Analysis', *Journal of Business Ethics* **46**(2), 121–141.

Cullen, J.B., B. Victor and J.W. Bronson: 1993, 'The Ethical Climate Questionnaire: An Assessment of its Development and Validity', *Psychological Reports* **73**, 667–674.

Cullen, J., B. Victor and C. Stephens: 2001, 'An Ethical Weather Report: Assessing The Organization's Ethical Climate', *Organizational Dynamics* **18**(2), 50–62.

DeJoy, D., B. Schaffer, M. Wilson, R. Vandenberg and M. Butts: 2004, 'Creating Safer Workplaces: Assessing the Determinants and Role of Safety Climate', *Journal of Safety Research* **35**(1), 81–90.

Gherardi, S. and D. Nicolini: 2000, 'The Organizational Learning of Safety in Communities of Practice', *Journal of Management Inquiry* **9**(1), 7–18.

Griffin, M. A. and A. Neal: 2000, 'Perceptions of Safety at Work: A Framework for Linking Safety Climate to Safety Performance, Knowledge and Motivation', *Journal of Occupational Health Psychology* **5**(3), 347–358.

Hofmann, D. A. and F. P. Morgeson: 1999, 'Safety-Related Behavior as a Social Exchange', *Journal of Applied Psychology* **84**(2), 286–296.

Hofmann, D. A., F. P. Morgeson and S. J. Gerras: 2003, 'Climate as a Moderator of the Relationship Between Leader-Member Exchange and Content Specific Citizenship: Safety Climate as an Exemplar', *Journal of Applied Psychology* **88**(1), 170–178.

Hoonakker, P., T. Loushine, P. Carayon, Kallman, A. Kapp and M. Smith: 2005, 'The Effect of Safety Initiatives on Safety Performance: A Longitudinal Study', *Applied Ergonomics* **34**(4), 461–469.

James, L.A. and L.R. James: 1989, 'Integrating Work Environment Perceptions: Explorations into the Measurement of Meaning', *Journal of Applied Psychology* **74**, 739–751.

Katz-Navon, T., E. Naveh and Z. Stern.: 2005, 'Safety Climate in Health Care Organizations: A Multidimensional Approach', *Academy of Management Journal* **48**(6), 1075–1089.

Kelloway, E. K., J. Mullen and L. Francis: 2006, 'Divergent Effects of Transformational and Passive Leadership on Employee Safety', *Journal of Occupational Health Psychology* **11**(1), 76–86.

Martin, K. D. and J. B. Cullen: 2006, 'Continuities and Extensions of Ethical Climate Theory: A Meta-Analytic Review', *Journal of Business Ethics* **69**, 175–194.

McGarity, T. and S. Shapiro: 1993, *Workers at Risk: The Failed Promise of the Occupational Safety and Health Administration* (Prager, Westport, CT).

McKendall, M., B. DeMarr and C. Jones-Rikkers: 2002, 'Ethical Compliance Programs and Corporate Illegality: Testing the Assumptions of the Corporate Sentencing Guidelines', *Journal of Business Ethics* **37**(4), 367–383.

Mearns, K., S. Whitaker and R. Flin: 2003, 'Safety Climate, Safety Management Practices and Safety Performance in Offshore Environments', *Safety Science* **41**, 641–680.

Mendelhoff, J.: 1980, *Regulating Safety: An Economic and Political Analysis of Occupational Safety and Health Policy* (MIT Press, Cambridge, MA).

Merton, R.K.: 1957, *Social Theory and Social Structure* (Free Press, New York).

National Safety Council.: 2003, *Injury Facts* (Author, Itasca, IL).

Neal, A., M. A. Griffin and P. M. Hart: 2000, 'The Impact of Organizational Climate on Safety Climate and Individual Behavior', *Safety Science* **34**, 99–109.

Neal, A. and M. A. Griffin: 2006, 'A Study of the Lagged Relationships Among Safety Climate, Safety Motivation, Safety Behavior, and Accidents at the Individual and Group Levels', *Journal of Applied Psychology* **91**(1), 946–953.

Occupational Safety and Health Act of 1970, 29 U.S.C. § 651(2005). http://www.ohsa.gov.

Parker, N., C. Axtell and N. Turner: 2001, 'Designing a Safer Workplace: Importance of Job Autonomy, Communication Quality, and Supportive Supervi-

sors', *Journal of Occupational Health Psychology* **6**(3), 211–228.

Parboteeah, K.P, J.B. Cullen., B. Victor and T. Sakano: 2005, 'National Culture and Ethical Climates: A Comparison of U.S. and Japanese Accounting Firms', *Management International Review* **45**(4), 459–481.

Salminen, S., J. Saari, K Saarela and T. Räsänen: 1993, 'Organizational Factors Influencing Serious Occupational Accidents', *Scandinavian Journal of Work Environment & Health* **19**, 352–357.

Schneider, B.: 1990, 'The Climate for Service: An Application of the Climate Construct', in B. Schneider (ed.), *Organizational Climate and Culture* (Jossey-Bass, San Francisco, CA), pp. 383–412.

Shannon, H., J. Mayr and T. Haines: 1997, 'Overview of the Relationship Between Organizational and Workplace Factors and Injury Rates', *Safety Science* **26**(3), 201–217.

Simard, M. and A. Marchand: 1997, 'Workgroups' Propensity to Comply with Safety Rules: The Influence of Micro-Macro Organizational Factors', *Ergonomics* **40**(2), 172–188.

Victor, B. and J. B. Cullen: 1987, 'A Theory and Measure of Ethical Climate in Organizations', in W.C. Frederick (ed.), *Research in Corporate Social Performance* (Greenwich, CT, JAI Press), pp. 57–71.

Victor, B. and J. B. Cullen: 1988, 'The Organizational Bases of Ethical Work Climates', *Administrative Science Quarterly* **33**, 101–125.

Wilde, G.: 1982, 'The Theory of Risk Homeostasis: Implications for Safety and Health', *Risk Analysis* **2**(4), 209–225.

Wright, C.: 1986, 'Routine Deaths: Fatal Accidents in the Oil Industry', *Sociological Review* **4**, 265–289.

Zacharatos, A., J. Barling and R. D. Iverson: 2005, 'High-Performance Work Systems and Occupational Safety', *Journal of Applied Psychology* **90**(1), 77–93.

Zohar, D.: 1980, 'Safety Climate in Industrial Organizations: Theoretical and Applied Implications', *Journal of Applied Psychology* **65**(1), 96–102.

Zohar, D.: 2002a, 'Modifying Supervisory Practices to Improve Subunit Safety: A Leadership-Based Intervention Model', *Journal of Applied Psychology* **87**(1), 156–163.

Zohar, D.: 2002b, 'The Effects of Leadership Dimensions, Safety Climate, and Assigned Priorities on Minor Injuries in Work Groups', *Journal of Organizational Behavior* **23**, 75–92.

Zohar, D. and G. Luria: 2004, 'Climate as a Social-Cognitive Construction of Supervisory Safety Practices: Scripts as Proxy of Behavior Patterns', *Journal of Applied Psychology* **89**(2), 322–333.

Department of Management,
University of Wisconsin - Whitewater,
800 West Main Street, Whitewater, WI, 53190,
U.S.A.
E-mail: parbotek@uww.edu