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# Organizational ethical climate, perceived organizational support, and employee silence: A cross-level investigation

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## Abstract

This article reports on a study investigating the cross-level relationships of organizational ethical climate on employee silence. Using a sample of 408 full-time employees from 24 high-technology firms in Taiwan, the study conducted multilevel analyses to examine its hypotheses. The results showed that instrumental climate – one type of organizational ethical climate – had a positive association with acquiescent silence, but not with defensive silence. Another two types of organizational ethical climate – caring climate and independence climate – had a negative association with both acquiescent silence and defensive silence. Rules climate and the law and code climate, the remaining types of organizational ethical climate, were not associated with either the acquiescent silence or the defensive silence. The results also showed that the associations of the instrumental climate, caring climate, and independence climate with acquiescent silence and defensive silence are mediated by the perceived organizational support – an individual-level variable. Implications for management and future research are discussed.

## Keywords

acquiescent silence, defensive silence, ethical climate, employee silence, multilevel analysis, perceived organizational support

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## Introduction

Employee silence is pervasive in modern organizations and has become an issue critical to organization management (Brinsfield et al., 2009; Johannesen, 1974; Morrison and Milliken, 2000; Pinder and Harlos, 2001; Van Dyne et al., 2003). Employee silence refers to the intentional withholding of information, opinions, suggestions, or concerns about potentially important organizational issues (Morrison and Milliken, 2000; Pinder and Harlos, 2001; Van Dyne et al., 2003). Scholars argue that employee silence could be either beneficial or detrimental to organizations. Although employee silence can sometimes help decrease managerial information overload, reduce interpersonal conflicts, and increase informational privacy of co-workers (Tangirala and Ramanujam, 2008: 37), most of the time employee silence is a dysfunctional behavior that will reduce innovation in the workplace (Argyris and Schön, 1978), interfere with organizational change (Morrison and Milliken, 2000; Ryan and Oestreich, 1991), decrease employees' positive job attitudes such as satisfaction and commitment (Morrison and Milliken, 2000; Vakola and Bouradas, 2005), and even result in serious corruption in organizations (e.g. Enron; Ashforth and Anand, 2003). As a result, an understanding of the factors that contribute to employee silence has become an important issue in organization management because seriously negative organizational consequences can result when these factors are ignored by managers (Morrison, 2011).

In the literature, the effects of various kinds of antecedents, including individual factors (e.g. individual personalities, work experience, tenure, and position level) and organizational contextual factors (e.g. supervisor's openness and trustworthiness, organizational culture, leadership, and hierarchical structure), on employee silence have been explored in empirical studies (Milliken et al., 2003; Premeaux and Bedeian, 2003; Vakola and Bouradas, 2005; Walumbwa and Schaubroeck, 2009). However, ethical climate, an organizational contextual factor that is considered to be closely related to employees' willingness to report organizational problems including incidents of corruption (Rothwell and Baldwin, 2006, 2007), has remained scarcely explored. Organizational ethical climate, defined as 'the shared perceptions of what ethically correct behavior is and how ethical issues should be handled in an organization' (Victor and Cullen, 1987: 51), provides organizational members with guidance in their decision-making and behaviors. Recently, as an antidote to organizational corruption, scholars have called for increased devotion from managers to the nurturing of ethical climate through ethical leadership and ethical training (Brown et al., 2005). Ethical climate can enhance employees' awareness of moral obligation, a result which not only prevents the undertaking of unethical acts but also enhances their willingness to speak up about organizational problems, especially those corruptive in nature. Although practitioners in organizations constantly devote effort and resources to cultivating ethical climate, how effective it is in preventing employee silence remains unknown. The first purpose of this article is to examine the effects of ethical climate on employee silence. By validating these effects with empirical evidence, our article will contribute to the literature by providing support to the call for more research on the relationship between organizational contextual factors and employee silence (Pinder and Harlos, 2001) and also the call for increased attention to the management of ethical climate.

Scholars have used different typologies to describe organizational ethical climate in their research. One of the typologies popular among researchers was established by Victor and Cullen (1988) and Martin and Cullen (2006) and includes five different types of ethical climate: instrumental, caring, independence, rules, and law and code. The instrumental climate is considered as a negative type of climate, while the rest are considered to be positive. These five climates vary in their level of analysis and in the ethical criteria to which they refer. An organization characterized by less of the negative type of climates and more of the positive types of climates will influence their employees in placing greater weight on ethics in their decision-making process and behaviors. Although the positive types of ethical climates tend to facilitate the emergence of positive organizational attitudes and behaviors in general (Leung, 2008; Martin and Cullen, 2006; Wimbush et al., 1997), their effects may still vary according to their dependence upon organizational control. A positive type of ethical climate that implies stricter organizational control (e.g. a rules or a law and code climate) will not be as effective as other types of positive climates that depend on self-control (e.g. a caring or an independence climate). The second purpose of this article is to compare the different types of ethical climates based on their effectiveness in reducing employee silence. This will allow managers to focus their attention on nurturing the more effective climates for the purpose of encouraging employees to speak up about work-related problems in order to enhance organizational effectiveness.

In the literature, scholars have argued that employee silence results from conscious decision-making, on the part of employees, concerning whether they will speak up about problems they have encountered while performing their jobs (Morrison and Milliken, 2000; Pinder and Harlos, 2001; Van Dyne et al., 2003). Morrison (2011) further suggested that the interplay between an employee's prosocial motive and futility and threat expectations are critical to the decision-making. The prosocial motive, referring to employees' intentions for helping their colleagues and organization, facilitates employees' choice of voicing their concerns. In contrast, employees may choose to remain silent when the futility and threat expectations override their prosocial motive. The futility expectation is the expectation that their efforts are futile because their organizations will ignore problems that they bring up. The threat expectation includes the fear of incurring negative outcomes and the fear of retaliation from colleagues or superiors who do not welcome their act of speaking up. Following Morrison's viewpoints, the present study will use the prosocial motive and the futility and threat expectations in the silence/voice decision-making to argue that ethical climate, as an organizational contextual factor, works to reduce employee silence.

While Morrison's model of decision-making on voice (or silence) can account for the effects of ethical climate on employee silence, some scholars have suggested that these effects are mediated by some psychological mechanisms. For example, the *perceived ethical norm* is regarded as one such mechanism that transmits the influence of ethical climate on employee behavior (e.g. Bartels et al., 1998; Wimbush and Shepard, 1994). An ethical climate will shape the perceived ethical norm to include its corresponding proper behaviors, and the norm will guide employees to act accordingly. As a result, the perceived ethical norm can affect employee silence. For example, Wimbush and Shepard (1994) point out that a rules climate or a law and code climate makes

employees perceive an ethical norm for complying with the rules of the organization or of larger society, and this norm guides the employees to report incidents of violating the rules or the law and code.

Another psychological mechanism that is useful for explaining the influence of ethical climate on employee silence but which is seldom explored in the literature is perceived organizational support (POS), a psychological construct defined as employees' global belief concerning the extent to which their employers value their contributions and care about their well-being (Eisenberger et al., 1986; Rhoades and Eisenberger, 2002). Empirical research has shown that ethical climate often results in employees' POS because it can create a trustful work environment within an organization (Valentine et al., 2006). In addition, POS is considered as a significant psychological factor that prevents employee silence by stimulating employees' prosocial motives and inhibiting their futility and threat expectations (Morrison, 2011). It is likely that POS works as an important psychological mechanism to transmit a significant portion of the influence of ethical climate on employee silence. That is, POS may possess a strong mediation effect on the relationship between ethical climate and employee silence. The third purpose of this article is to examine this mediation effect in order to substantiate the above argument supporting POS as a mechanism. By satisfying this purpose, we will be contributing to the literature by validating an alternative argument that can be used by future researchers to further explore the ethical climate–employee silence relationship.

## Theoretical background and hypotheses

### *Employee silence*

Pinder and Harlos (2001: 334) used the term *employee silence* to describe an employee's 'withholding of any form of genuine expression about the individual's behavioral, cognitive and/or affective evaluations of his or her organizational circumstance to persons who are perceived to be capable of effecting change or redress'. Employee silence often results from a conscious decision of employees to withhold seemingly important information and concerns about their work (Morrison and Milliken, 2000; Pinder and Harlos, 2001; Van Dyne et al., 2003). Though some scholars have pointed out that employee silence is not necessarily the antithesis of voice (Scott, 1993; Van Dyne et al., 2003), we take the same stance as Morrison (2011: 380) by treating silence and voice as opposites in this study.

Scholars (Pinder and Harlos, 2001; Van Dyne et al., 2003) have argued that employee silence is a multidimensional construct and have suggested that it can be classified into three categories according to motive: acquiescent silence (a disengaged behavior stimulated by resignation), defensive silence (a self-protective behavior stimulated by fear), and prosocial silence (an others-oriented behavior that is instigated by the cooperation motive). Acquiescent silence and defensive silence are often dysfunctional to organizations because they have the potential of interfering with organizational change (Morrison and Milliken, 2000; Ryan and Oestreich, 1991) and of suppressing the improvement of organizational performance (Tangirala and Ramanujam, 2008; Van Dyne et al., 2003). In this study, we focused our attention on acquiescent silence and defensive silence because we were mainly interested in the types of employee silence that are of negative consequence to organizations. Prosocial silence, which is based on altruism or cooperative

motives aimed at benefiting others (Van Dyne et al., 2003), was not included in this study because it is often not harmful to organizations.

### *Organizational ethical climate*

Victor and Cullen (1987, 1988) have argued that several different types of ethical climate, which can be identified along two dimensions, exist within organizations. The first dimension, derived from Kohlberg's (1984) theory of cognitive moral development, concerns the three ethical criteria used for decision-making: egoism, benevolence, and principle. The second dimension, derived from sociological theories on the roles of reference groups in organizations (Merton, 1957), concerns the three loci of analysis used as references in ethical decisions: individual, local, and cosmopolitan. Victor and Cullen (1987) combined the two dimensions and proposed the classification of ethical climate into nine theoretical types. Using their ethical climate questionnaire (ECQ) in a subsequent empirical study (Victor and Cullen, 1988), they found that only five of the nine possible ethical climate types existed in organizations. These five types were designated as instrumental climate (emphasis on the maximization of self-interest, an egoistic concern at the individual or local level), caring climate (emphasis on the well-being of others – a benevolent concern at the individual or local level), independence climate (emphasis on adherence to one's personal ethical beliefs – a principled concern at the individual level), rules climate (emphasis on sticking to the company's policies and procedures – a principled concern at the local level), and law and code climate (emphasis on complying with the law and professional standards – a principled concern at the cosmopolitan level). Each of these types of climate refers to an ethical standard that is comprised of a specific criterion set at a specific level of analysis and provides a norm for guiding organizational members' decision-making and work behavior to meet the relevant ethical standard. For example, employees of an organization that is characterized as less instrumental will be more concerned about the interests of their colleagues and organization in their decision-making and work behavior. As a result, they are considered as more ethical according to the criterion of unselfishness (a standard set at the individual-level analysis and featuring non-egoism). Similarly, when caring, independence, rules, and law and code climates are present in an organization, it will be regarded as more ethical according to the standards relevant to those climates. Researchers have pointed out that organizations may possess each of the different types of ethical climate to an extent (Deshpande, 1996). In the literature, scholars have taken an analytical rather than integral approach to study the effects of the five types of ethical climate on employees' job attitudes and behaviors (e.g. Tsai and Huang, 2008; Wimbush et al., 1997). That is, the effects of each different type of ethical climate rather than the effects of the combination of all the different ethical climates are examined.

### *Organizational ethical climate and employee silence*

In this section, we will first explore the relationship between ethical climate and employee silence. Then, we will examine the mediation effects of POS on the ethical climate–silence relationship in accordance to our mediation effect argument.

### *The ethical climate–employee silence relationship*

An instrumental climate encourages a norm of decision-making which is characterized by the maximization of one's own interests to the extent of disregarding the well-being of other people (Martin and Cullen, 2006). This norm of decision-making influences employee silence in that a climate that is low-or non-instrumental encourages employees to speak up about work-related problems, especially those that are harmful to the common interests of all organizational members. On the other hand, a climate that is more instrumental encourages egoism in employees (Martin and Cullen, 2006) and results in their silence regarding work-related problems because speaking up for the good of all is not their focus. An instrumental climate may also make employees feel that speaking up is futile, because in perceiving egoistic qualities in their colleagues, they are led to believe that any effort to improve the collective well-being may not be valued or appreciated by colleagues. This expectation of futility may then lead to acquiescent silence. Alternatively, egoism may sensitize employees to the need of self-protection from the threat of being viewed negatively by their colleagues when speaking up about problems causes interruptions in organizational routines (Kish-Gephart et al., 2009; Milliken et al., 2003). This may then lead to defensive silence. Based on the above reasoning, we propose the following hypothesis:

*Hypothesis 1a:* An instrumental climate positively affects both acquiescent silence and defensive silence.

In contrast to an instrumental climate, a caring climate encourages employees to behave and to make decisions from a benevolent perspective. The norm of benevolence in a caring climate stimulates employees' prosocial motive (Martin and Cullen, 2006), which then makes them feel obliged to speak up about work-related problems that may result in harmful consequences to all in the organization. Furthermore, because a caring climate makes organizations value their employees' contributions more (Leung, 2008), it can reduce employees' feelings of futility when speaking up about work-related problems. Lastly, employees in a caring climate will be less fearful of the possible adverse personal consequences of speaking up about work-related problems, because a benign and caring organizational atmosphere provides psychological safety for voicing their concerns. Thus, we expect that both acquiescent and defensive silences will occur less in organizations with a prevalent caring climate.

*Hypothesis 1b:* A caring climate negatively affects both acquiescent silence and defensive silence.

Organizations with an independence climate encourage the norm of making decisions on the basis of personal morality and values. Under such a climate, employees hold themselves to higher ethical standards (Martin and Cullen, 2006; Victor and Cullen, 1988) and experience a greater sense of moral duty, which can make them prosocial by inducing them to prioritize the interests of their organization before personal interests (Blau and Scott, 1962). This norm can prevent employees from withholding information concerning work-related problems, because speaking up is regarded as correct and

obligatory. In addition, there is a reduction in feelings of resignation or fear of reprisal from the act of speaking up, because concerns about work originate from the independent moral judgment that is encouraged in an independence climate. Therefore, we posit that:

*Hypothesis 1c:* An independence climate negatively affects both acquiescent silence and defensive silence.

While we have suggested that instrumental, caring, and independence climates are related to employee silence, we are uncertain about how a rules climate and a law and code climate affect employee silence. On the one hand, a rules climate or a law and code climate may encourage a norm of reporting work-related incidents, especially those involving violations of organizational rules or code and laws (Wimbush and Shepard, 1994). On the other hand, rules and law and code climates often carry the implication of organizational punishment for violating the rules, codes, or laws (Litzky et al., 2006). Consequently, employees feel hesitant to speak up about work-related problems lest it brings harm to their colleagues or organization (Khatri et al., 2009; Somers, 2001; Westmarland, 2005). Concern for harmful consequences may counteract the stimulating effect that a rules climate and a law and code climate have on employees' intent to speak up about work-related problems, making them less effective in reducing employee silence. Thus, we argue that compared with caring and independence climates, rules and law and code climates have a weaker and negative association with both acquiescent and defensive silence. Hence, we propose:

*Hypothesis 1d:* The associations between rules and law and code climates and acquiescent and defensive silence are weaker than the associations between instrumental, caring, and independence climates and acquiescent and defensive silence.

### *The ethical climate–POS–employee silence relationship: The POS mechanism argument*

Valentine et al. (2006: 583) pointed out that ethical climate can give rise to POS because 'organizations that advance ethical values and permit employees to act with integrity should be experienced as more supportive'. When POS is higher among individual employees, they will feel that they are valued by their organizations for speaking up on work-related problems and expect no undesirable consequences. This willingness to speak up manifests itself in the form of a decreased number of incidences of acquiescent or defensive silence.

A scenario in which the effect of ethical climate on employees' decision to engage in acquiescent/defensive silence is mediated through POS is described as follows. As we have suggested previously, caring and independence climates convey norms of decision-making that place importance in caring for the well-being of others and in taking personal responsibility on meeting moral expectations. These norms induce managers in organizations to be more concerned about the well-being of their subordinates and more appreciative of their subordinates' contributions to the organization, resulting in an atmosphere of organizational support. The resulting POS in subordinates will reduce



both the fear of expressing opinions regarding work-related problems and worries about being unappreciated by their organizations for speaking up. Consequently, these employees will not remain silent about work-related problems. Thus, we expect that POS will mediate the negative effects that caring and independence climates have on acquiescent and defensive silence.

In contrast, when the ethical climate of an organization is mainly of an instrumental nature, managers are inclined to make decisions for the purpose of maximizing their own interests and to care less about the well-being of their subordinates. This in effect lowers the POS in employees and increases their threat and futility expectations when deciding whether to engage in acquiescent/defensive silence or not. Empirical research has shown that the lack of ethical leadership will lead to reduced psychological safety of employees (Walumbwa and Schaubroeck, 2009) – a consequence that often results in employee silence. Based on the above reasoning, we suggest that POS can also mediate the positive associations between an instrumental climate and acquiescent and defensive silence such that instrumental climate is negatively related to POS, and POS is negatively related to acquiescent/defensive silence. Thus, we propose:

*Hypothesis 2a:* POS mediates the positive association between an instrumental climate and acquiescent and defensive silence such that an instrumental climate is negatively associated with POS and POS is negatively associated with acquiescent and defensive silence.

*Hypothesis 2b:* POS mediates the negative association between a caring climate and acquiescent and defensive silence such that a caring climate is positively associated with POS and POS is negatively associated with acquiescent and defensive silence.

*Hypothesis 2c:* POS mediates the negative association between an independence climate and acquiescent and defensive silence such that an independence climate is positively associated with POS and POS is negatively associated with acquiescent and defensive silence.

## Methods

### *Sampling procedure*

The participants in this study were full-time employees of 24 high-technology firms in Taiwan, including electronics, semiconductor, telecommunications, information technology, and software companies. We chose to conduct our study on high-technology firms because many of the employees are highly skilled knowledge workers whose decisions on whether to engage in silence behaviors or not often have a great impact on the performance of their companies. We contacted the managers of these companies and obtained consent for the participation of their employees. Each participant received a questionnaire and a cover letter explaining the purpose of the study and assuring participants of the confidentiality and anonymity of their responses. Completed questionnaires were sealed in an envelope and returned directly to the researchers.

A total of 600 questionnaires were distributed and 426 were returned. Of the 426 returned questionnaires, 18 were eliminated because of missing responses. This resulted in a valid response rate of 68 per cent. The final sample population consisted of 408 full-time employees from 24 companies. The number of participants from a single

company ranged from 10 to 22, with an average of 17 ( $SD = 3.39$ ). Of the 408 participants, 44.4 per cent were male and 55.6 per cent were female. The age of participants ranged from 21 to 63 years, with a mean of 33.59 years ( $SD = 8.27$  years).

## Measures

The measures we used were adapted from scales that originally appeared in English-language literature. They were translated into Chinese by the authors, and the translation was then reviewed by two bilingual experts who were given the English and Chinese versions of the scales to evaluate the appropriateness and the semantic equivalence of the translation. A round of revision was conducted on the basis of their feedback. This review and revision process was repeated until no further inaccuracies in translation were detected by the bilingual experts. This procedure was to ensure the content validity of the measures (Schwab, 2005).

*Ethical climate* Ethical climate was assessed using the questionnaire developed by Victor and Cullen (1988). Six items were used to measure instrumental climate (e.g. 'in this company, people are mostly out for themselves'), four items were used to measure caring climate (e.g. 'the most important concern is the good of all the people in the company as a whole'), three items for measuring independence climate (e.g. 'the most important concern in this company is each person's own sense of right and wrong'), four items for measuring rules climate (e.g. 'it is very important to follow the company's rules and procedures here'), and four items for measuring law and code climate (e.g. 'in this company, people are expected to strictly follow legal or professional standards'). Respondents were asked to evaluate the extent to which they agreed with the items on a five-point Likert-type scale, with 1 being *strongly disagree* and 5 being *strongly agree*. Values of the Cronbach alpha for instrumental, caring, independence, rules, and law and code climates were .84, .83, .75, .78, and .84, respectively.

*Perceived organizational support* POS was assessed using Eisenberger et al.'s (1997) short version of the Survey of Perceived Organizational Support (SPOS). Six high-loading items from the SPOS were used in this study. Sample items included, 'My organization values my contributions to its well-being' and 'My organization shows little concern for me' (reverse scored). Respondents indicated the extent of their agreement with each statement on a five-point Likert-type scale, with 1 being *strongly disagree* and 5 being *strongly agree*. Cronbach's alpha for this scale was .84.

*Employee silence* Employee silence was assessed using ten items adapted from Van Dyne et al. (2003). Acquiescent silence was assessed using five items (e.g. 'you passively withhold ideas based on resignation'), and defensive silence was evaluated using another five items (e.g. 'you withhold your solutions to problems because you are motivated by fear'). Respondents were asked to indicate the extent to which they agreed with the items on a five-point Likert-type scale, with 1 being *strongly disagree* and 5 being *strongly agree*. Our analysis showed that the Cronbach alpha was .81 for acquiescent silence and .89 for defensive silence.

*Control variables* The demographic variables of gender, age, and organizational tenure were originally included as control variables in the statistical analyses in this study.

Because age and organizational tenure were found to be highly correlated with each other ( $r = .88, p < .01$ ), tenure was dropped from the analyses. Gender and age were assessed using an open-ended response format. A dummy-coded variable was used for gender (0 = female and 1 = male).

### *Cautions against common method bias*

Similar to previous research on employee silence (e.g. Tangirala and Ramanujam, 2008), we used a self-report method to collect data because of the inactive, implicit nature of employee silence. The lack of action in employee silence makes it difficult for observers such as supervisors and coworkers to detect and interpret such behavior, resulting in increased accuracy in assessing employee silence using data collected through a self-report method (Tangirala and Ramanujam, 2008; Van Dyne et al., 2003).

Because respondents provided measures of the dependent variable (employee silence) and the independent (ethical climate) and mediating (POS) variables simultaneously in the present study, the hypothesis testing might have suffered from the problem of common method bias. Statistical remedies recommended by Podsakoff et al. (2003) were used to guard against common method bias. We also conducted Harman's one-factor test to assess the extent of common method bias in the collected data. Results from confirmatory factor analysis (CFA) showed that the possible complex models (combinations of the eight variables in the hypotheses into more than one factor in all possible manners) all provided a better fit than the one-factor model, which lumps the eight variables into a single factor. This demonstrated that common method bias was not a serious problem in our study.

Furthermore, the independent variables (the five ethical climates) of this study were assessed at the group level from the combined opinions of multiple informants in each company. On the other hand, the mediating variable (POS) and the two dependent variables (acquiescent/defensive silence) were assessed at the individual level from each individual informant. Because of the cross-level nature, an association between the independent, mediating, and dependent variables can hardly be attributed to consequences of common method bias (Morgeson and Hofmann, 1999). Based on the above cautious measures that were taken during the study, we argue that our findings stand a low chance of being contaminated by common method bias.

### *Data analysis*

The data in the present study were multilevel in nature, with gender, age, POS, and employee silence measured at the individual level, and organizational ethical climate assessed at the group level. To test our hypotheses, we used hierarchical linear modeling (HLM; Raudenbush and Bryk, 2002) – an analytical method most suited for multi-level analysis. We employed HLM version 6.02 with restricted maximum likelihood (RML) estimation method for our analyses. Before estimating our models, following Hofmann and Gavin's (1998) suggestions, we used grand-mean centering on all of the continuous predictive variables but not on the binary variable *gender*.

## Results

### Validity of the measures

Following procedures used by other researchers (e.g. Tangirala and Ramajunam, 2008), we performed a series of CFAs to evaluate the discriminant and convergent validities of the eight variables in our hypotheses. Results (see Table 1) showed that the eight-factor model – the factors being instrumental climate, caring climate, independence climate, rules climate, law and code climate, POS, acquiescent silence, and defensive silence – fit the data better ( $\chi^2[601] = 1524.56$ ,  $\chi^2/\text{d.f.} = 2.54$ ; IFI = .88, CFI = .88, RMSEA = .06) than the other four competing models, which either combined the five types of ethical climate into one global climate factor, combined the two types of silence into an aggregated silence factor, or simply lumped all the measures of ethical climate, POS, and acquiescent/defensive silence into one factor. Furthermore, the chi-square difference tests demonstrated that the eight-factor model was a better fit than the other four competing models, which contained fewer factors. This indicates that the differentiation of these eight factors best represented the real structure of the data. Together, the above results provide evidence for the attainment of a satisfactory discriminant validity of the eight variables. Moreover, the factor loadings of the items in each of the eight variables were all greater than .50 and reached statistical significance ( $p < .01$ ) – an additional indication of the attainment of a satisfactory convergent validity of the measures (Anderson and Gerbing, 1988). As a result, we decided to use the eight-factor model for our hypothesis testing.

### Aggregation of the measures of organizational ethical climate

To create the group-level measure of organizational ethical climate, we aggregated the individual-level measures of ethical climate provided by the participants from each

**Table 1.** Results of confirmatory factor analyses.

Model	$\chi^2$	d.f.	$\chi^2/\text{d.f.}$	IFI	CFI	RMSEA	$\Delta\chi^2(\Delta\text{d.f.})$
1. Eight-factor model	1524.56	601	2.54	.88	.88	.06	–
2. Seven-factor model <sup>a</sup>	1889.32	608	3.11	.84	.84	.07	364.76** (7)
3. Four-factor model <sup>b</sup>	3464.31	623	5.56	.70	.70	.11	1939.75** (22)
4. Three-factor model <sup>c</sup>	3818.78	626	6.10	.66	.66	.11	2294.22** (25)
5. One-factor model	7156.38	629	11.38	.43	.43	.16	5631.82** (28)

Note: The values of  $\Delta\chi^2$  and  $\Delta\text{d.f.}$  are differences between the eight-factor model and the other models. IFI = incremental fit index; CFI = comparative fit index; RMSEA = root mean square error of approximation.

<sup>a</sup>This model combines the two forms of employee silence into one factor.

<sup>b</sup>This model combines the five ethical climates into one factor.

<sup>c</sup>This model combines the five ethical climates into one factor and the two forms of employee silence into another factor.

\*\* $p < .01$ .

company by using the direct consensus composition approach suggested by Chan (1998). This approach uses the average of individual-level measures to derive a group-level measure. To justify the aggregation, we calculated the within-group agreement statistic ( $r_{wg}$ ) (James et al., 1993) for each of the five ethical climates and for each company.

The average  $r_{wg}$  for the 24 companies was .90 for instrumental climate, .87 for caring climate, .86 for independence climate, .89 for rules climate, and .90 for law and code climate. All exceeded the conventionally accepted  $r_{wg}$  of .70 (James et al., 1993), demonstrating a reasonable level of agreement. We also calculated the intra-class correlations ICC(1) and ICC(2) for the aggregated measures (Bliese, 2000). ICC(1), which represents the proportion of the variance in the individual-level measure that is attributable to group membership, was .11 for instrumental climate ( $F[23, 384] = 3.19, p < .001$ ), .11 for caring climate ( $F[23, 384] = 3.08, p < .001$ ), .11 for independence climate ( $F[23, 384] = 3.16, p < .001$ ), .07 for rules climate ( $F[23, 384] = 2.16, p < .01$ ), and .13 for law and code climate ( $F[23, 384] = 3.60, p < .001$ ). ICC(2), which represents the reliability of the group-level aggregated measure, was .68, .67, .68, .54, and .72, respectively, for each of the above climates. The results of the  $r_{wg}$  and ICC(1) testing showed that there was an acceptable within-group agreement on the individual-level assessment of ethical climate, while the results of the ICC(2) testing suggested that the derived group-level assessment of ethical climate was reliable.

## Correlations

Table 2 shows the descriptive statistics, internal consistency reliabilities, and inter-correlations for the variables that were measured at the individual and the group level. Although gender and age were uncorrelated with acquiescent and defensive silences, POS was negatively correlated with acquiescent and defensive silences ( $r = -.31$  and  $-.23, p < .01$ ). Acquiescent silence was positively correlated with defensive silence ( $r = .62, p < .01$ ). Rules climate was positively correlated with both caring climate ( $r = .49, p < .05$ ) and law and code climate ( $r = .68, p < .01$ ) but was negatively correlated with instrumental climate ( $r = -.42, p < .05$ ).

## Hypothesis testing

Our hypotheses predicted that organizational ethical climate, a group-level variable, would be significantly related to POS and employee silence, both of which are individual-level variables. To expose the effects of a group-level variable (i.e. the ethical climate), a significant between-group variance must be present in the individual-level variables (i.e. POS and employee silence). Thus, we first ran a null model to examine whether there was a significant between-group variance in POS, acquiescent silence, and defensive silence. The results showed that the chi squares for POS ( $\chi^2 [23] = 55.51, \tau_{00} = .03, p < .001, ICC[1] = .08$ ), acquiescent silence ( $\chi^2 [23] = 88.64, \tau_{00} = .04, p < .001, ICC[1] = .14$ ), and defensive silence ( $\chi^2 [23] = 74.07, \tau_{00} = .03, p < .001, ICC[1] = .11$ ) were all significant, indicating that the prerequisite for a significant between-group variance was met.

Hypothesis 1a proposed that instrumental climate would be positively related to both acquiescent silence and defensive silence. As shown in Models 2 and 5 of Table 3,

**Table 2.** Means, standard deviations, coefficient alphas, and correlations among variables.

Variable	M	SD	1	2	3	4	5
Individual-level measures							
1. Gender <sup>a</sup>	.44	.49	–				
2. Age	33.59	8.27	.10	–			
3. POS	3.23	.57	.04	–.02	(.84)		
4. Acquiescent silence	2.26	.53	.02	–.04	–.31**	(.81)	
5. Defensive silence	1.99	.51	.03	–.02	–.23**	.62**	(.89)
Group-level measures							
1. Instrumental climate	2.79	.27	–				
2. Caring climate	3.33	.29	–.18	–			
3. Independence climate	3.47	.30	.01	.04	–		
4. Rules climate	3.67	.21	–.42*	.49*	–.07	–	
5. Law and code climate	3.66	.29	–.22	.26	–.18	.68**	–

Note: For individual-level measures,  $N = 408$ ; for group-level measures,  $N = 24$ . Numbers in parentheses are coefficient alphas. POS = perceived organizational support.

<sup>a</sup>Dummy coded variable: 0 = female; 1 = male.

\* $p < .05$ ; \*\* $p < .01$ .

instrumental climate was positively related to acquiescent silence ( $\gamma = .317, p < .01$ ) and not to defensive silence ( $\gamma = .071, ns$ ). Thus, Hypothesis 1a was partially supported for the prediction concerning the positive association of instrumental climate with acquiescent silence. Hypotheses 1b and 1c proposed that caring climate and independence climate would be negatively related to both acquiescent silence and defensive silence. Our results (see Table 3) showed that caring climate was negatively related to both the acquiescent silence ( $\gamma = -.374, p < .01$ ) and defensive silence ( $\gamma = -.322, p < .01$ ), and independence climate was negatively related to the acquiescent silence and defensive silence ( $\gamma = -.342, p < .01$ ;  $\gamma = -.298, p < .05$ , respectively). Hence, Hypotheses 1b and 1c were supported. Hypothesis 1d predicted that rules climates and law and code climates would have a weaker association with acquiescent and defensive silences in comparison to instrumental, caring, and independence climates. According to the results in Table 3 (Models 2 and 5), both rules and law and code climates were unrelated to either acquiescent or defensive silence ( $\gamma = .014, ns$  and  $\gamma = -.039, ns$ , respectively for rules climate;  $\gamma = -.022, ns$  and  $\gamma = -.185, ns$ , respectively, for law and code climates). Compared with the findings from testing Hypotheses 1a, 1b, and 1c, the results in Table 3 support Hypothesis 1d except for the prediction concerning the comparison with the instrumental climate–defensive silence relationship, which was also found to be non-significant.

Hypotheses 2a–2c predicted that POS mediates the relationship between organizational ethical climate and employee silence. To test the hypotheses, we followed the cross-level mediation ( $2 \rightarrow 1 \rightarrow 1$  mediation) analysis procedures recommended by Krull and MacKinnon (2001: 253). The first step requires a significant relationship between the higher-level independent variable (i.e. instrumental, caring, and independence climates) and the lower-level dependent variable (i.e. acquiescence and defensive silences). Our results (see Models 2 and 5 of Table 3) showed that caring climate and independence

**Table 3.** HLM results for the effects of organizational ethical climates on employee silence.

	Acquiescent silence			Defensive silence		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Level 1:						
Intercept	2.246**	2.236**	2.230**	1.969**	1.952**	1.948**
Gender <sup>a</sup>	.003	.021	.053	.018	.041	.037
Age	-.002	-.003	-.003	-.001	-.001	-.002
POS			-.221**			-.149*
Level 2:						
Instrumental climate		.317**	.302**		.071	.055
Caring climate		-.374**	-.357**		-.322**	-.217**
Independence climate		-.342**	-.223**		-.298**	-.088
Rules climate		.014	.154		-.039	.091
Law and code climate		-.022	-.081		-.185	-.108
Within-group variance	.237	.236	.204	.229	.228	.203
Between-groups variance	.034**	.013	.005	.019*	.010	.010
R <sup>2</sup> <sub>within-group</sub>	.001	.005	.140	.020	.024	.131
R <sup>2</sup> <sub>between-groups</sub>		.661	.870		.665	.665
R <sup>2</sup> <sub>total</sub> <sup>b</sup>	.001	.097	.242	.018	.095	.190
R <sup>2</sup> <sub>total</sub> change		.096	.145		.077	.095

Note: POS = perceived organizational support.

<sup>a</sup>Dummy coded variable: 0 = female; 1 = male.

<sup>b</sup> $R^2_{total} = R^2_{within-group} \times (1 - ICC(1)) + R^2_{between-groups} \times ICC(1)$ , where  $ICC(1)$  represents the proportion of variance in the corresponding outcome variable that resides between groups. The  $ICC(1)$  is .14 for acquiescent silence and .11 for defensive silence.

\* $p < .05$ ; \*\* $p < .01$ .

climate were negatively related to both acquiescent silence and defensive silence, whereas instrumental climate was positively related to acquiescent silence but unrelated to defensive silence. The second step requires a significant relationship between the higher-level independent variable and the lower-level mediating variable (i.e. POS). Indeed, we found that instrumental climate, caring climate, and independence climate were all significantly related to POS ( $\gamma = -.318, .256, \text{ and } .258$ , respectively,  $p < .01$ ). Finally, to test the mediated effect, the third step requires that the previously significant effect of the independent variable on the dependent variable becomes weaker or non-significant when the lower-level mediating variable is entered into the equation. As shown in Models 3 and 6 of Table 3, the effects of instrumental climate ( $\gamma = .302, p < .01$ ), caring climate ( $\gamma = -.357, p < .01$ ), and independence climate ( $\gamma = -.223, p < .01$ ) on acquiescent silence became weaker after POS was taken into account. Similarly, the effect of caring climate on defensive silence became weaker ( $\gamma = -.217, p < .01$ ), and the effect of independence climate on defensive silence became non-significant ( $\gamma = -.088, ns$ ) after POS was taken into account. This suggests that POS had completely mediated the independence climate–defensive silence relationship.

The above findings of attenuation on the  $\gamma$  coefficients of the instrumental, caring, and independence climates suggested that POS could have mediated the effects of these climates on acquiescent or defensive silence. Except for the full mediation of POS on the independence climate–defensive silence relationship, the significance of the other mediations needed to be further confirmed. We used the procedures of Bauer et al. (2006) for estimating the cross-level indirect effect to calculate the mediation effects of POS and used a 95 per cent confidence interval (CI) to test their significance. Our results showed that: (a) POS mediated the positive relationship between instrumental climate and acquiescent silence ( $ab = .047$ ,  $SE = .017$ , 95% CI = [.012, .082],  $p < .05$ ) but did not mediate the instrumental climate–defensive silence relationship ( $ab = .031$ ,  $SE = .029$ , 95% CI = [−.026, .088], ns); (b) POS mediated the negative relationships between caring climate and both acquiescent silence ( $ab = −.063$ ,  $SE = .021$ , 95% CI = [−.105, −.021],  $p < .05$ ) and defensive silence ( $ab = −.043$ ,  $SE = .019$ , 95% CI = [−.080, −.005],  $p < .05$ ); and (c) POS mediated the negative relationship between independence climate and acquiescent silence ( $ab = −.074$ ,  $SE = .020$ , 95% CI = [−.114, −.034],  $p < .05$ ) as well as defensive silence ( $ab = −.052$ ,  $SE = .024$ , 95% CI = [−.099, −.006],  $p < .05$ ).

The regression analyses in Models 2 and 5 of Table 3 showed that the associations between rules or law and code climates and acquiescent and defensive silences were not significant. According to Krull and MacKinnon (2001), it was unlikely that POS mediated the relationship between these two climates and the two silences because they were not associated with each other. Our further estimations based on the procedures of Bauer et al. did show that rules and law and code climates did not have any significant indirect association through POS with acquiescent and defensive silences.

Taking together the above results, we found that Hypothesis 2a was partially supported in that POS only mediated the positive effect of instrumental climate on acquiescent silence. Hypotheses 2b and 2c were fully supported in that POS mediated the negative effects of caring and independence climates on both acquiescent and defensive silences.

## Discussion

This article contributes to the literature of employee silence by showing that ethical climate, an organizational contextual factor, does have a cross-level influence on employee silence. The post hoc estimation on the explanatory powers of the significant ethical climates in our cross-level regression analysis showed that the instrumental climate accounted for 7.8 per cent of interorganizational variance in acquiescent silence, the caring climate accounted for 15.6 per cent of the variance in acquiescent silence and 10 per cent of the variance in defensive silence, and the independence climate accounted for 20.8 per cent of the variance in acquiescent silence and 10 per cent of the variance in defensive silence. These substantial amounts of explained interorganizational variances demonstrate that the above three types of ethical climates are indeed an important organizational contextual factor that affects employee silence.

The results of our study support the idea for nurturing ethical climate to encourage employees to speak up about work-related problems – an act which certainly includes voicing their concerns about corruption occurring in organizations. Our findings inform



researchers in the field of business ethics that cultivating an ethical climate in an organization can not only discourage employees from engaging in dishonest behavior themselves but can also motivate them to report work-related problems, which acts as an effective deterrent for their colleagues, preventing them from engaging in corruptive behavior.

The article also contributes to the literature by showing that different types of ethical climates vary in their strengths of association with employee silence. Instrumental climate had a positive association with acquiescent silence, while caring and independence climates had a negative association. Caring and independence climates were also negatively related to defensive silence. Importantly, rules and law and code climates were found to be unrelated to both acquiescent silence and defensive silence. This result corresponds with the findings from previous research (Vardi, 2001) concerning a lack of association between professional climate or atmosphere and employees' reporting of misbehavior in organizations. In other words, cultivating a climate that emphasizes external control by rules, law, or professional code may not be effective for encouraging employees to speak up about work-related problems. These findings support the argument for the differential impacts of different ethical climates on employee behavior (Vardi, 2001) and highlight the importance of taking the type of ethical climate into consideration when studying the relationship between ethical climate and employee silence, regardless of whether the type of silence is regarding change-oriented ideas or corruptive incidents, because different types of ethical climates have different effects on employee silence.

The finding that POS has a mediation effect on the relationship between instrumental, caring, and independence climates and acquiescent silence or defensive silence supports the idea of using POS as a psychological mechanism to explain the effects of ethical climate on employee silence. However, because the mediation effects are mostly partial, with the exception of the one on the independence climate–defensive silence relationship, there remains room for researchers to employ other psychological mechanisms, such as perceived ethical norm or perceived compliance pressure from the ethical climate, to account for the effect of ethical climate on employee silence. In summary, the present study contributes to the literature by highlighting the role of POS in mediating the ethical climate–employee silence relationship while suggesting that POS is as useful as other psychological mechanisms for explaining how ethical climate can affect employee silence.

An unexpected finding of the present study was that instrumental climate is not related to defensive silence. Because defensive silence is motivated mainly by the threat expectation, employees need to feel psychologically safe before they are willing to speak up. A non- or low-instrumental climate might not be sufficient to elicit feelings of psychological safety to counteract the threat expectation. Another unique finding of the study was that POS fully mediates the relationship between independence climate and defensive silence. This result indicates that POS can be used as an ideal mechanism to account for the effects of independence climate on employee silence.

### *Managerial implications*

Several practical implications can be derived from this study. First, the results suggest that effort devoted to cultivating ethical climate will be rewarded with a return manifesting in

enhanced willingness of employees to speak up on work-related problems. This potentially not only facilitates problem solving and improves performance but can also serve as a mechanism for preventing organizational corruption. Second, the findings of significant associations, with the exception of the instrumental climate-defensive silence relationship, between instrumental, caring, and independence climates and acquiescent silence or defensive silence suggest that organizations can reduce employee silence by suppressing the development of an instrumental climate and by fostering a caring or independence climate. Combining the findings of significant associations between these climates and employee silence with the finding of a lack of association between rules climates and law and code climates and employee silence leads to the conclusion that organizations should focus on cultivating a non-instrumental, caring, or independence climate in order to reduce employee silence and that they should not expect a similar outcome from a rules or law and code climate.

Third, organizations often invest resources in practices such as quality control programs (Marks et al., 1986) or suggestion systems (van Dijk and van den Ende, 2002), with the purpose of encouraging employees to speak up on work-related problems and to bring up ideas for improving organizational performance. The present study informs managers that nurturing a suitable ethical climate, which may require fewer resources compared with other organizational interventions, can be used to reduce acquiescent and defensive silence in order to better utilize employees' job knowledge and creativity in improving organizational performance.

Last, our finding that POS has a mediating effect on the relationships between ethical climate and employee silence suggests to organizations that the effort of institutionalizing ethical climate for the purpose of reducing employee silence should take into account other organizational conditions, including an unfavorable reward system, job insecurity, or role stress (Rhoades and Eisenberg, 2002), all of which may hinder the formation of POS. Lest the effects of these conditions attenuate the influence of ethical climate on POS, organizations need to make an integrated effort of managing all these factors in a coordinated mode so as to facilitate the emergence of a stronger POS (Valentine et al., 2006) that leads to reduction in employee silence.

### *Limitations and future research*

Some limitations of this study should be noted. The first concerns the generalization of the results of this study across different industries. As the data in this study were collected from a sample of high-tech companies in the electronic, semiconductor, communication and information, and software industries, the generalization of our findings to traditional industries or even to high-tech companies in other industries should be taken cautiously. To broaden the applicability of our findings, future research can replicate the study in other industries.

Second, the findings of this study concerning the relationship between ethical climate and employee silence are only applicable to acquiescent and defensive silences, the two types of silence behaviors that have been a major concern in the literature (Morrison and Milliken, 2000; Pinder and Harlos, 2001; Tangirala and Ramanujam, 2008). Scholars have pointed out that there are other types of employee silence. Examples include the prosocial type of silence (Van Dyne et al., 2003), which aims to comply with workgroup

or organizational expectations of keeping silent on work-related problems, and the political type of silence (Bies, 2009), which is used by organizational members in the fight for dominance, revenge, and blame attribution. To develop more understanding of the relationship between ethical climate and employee silence, future research can be extended to include these other types of employee silence.

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