

## **Dimensions and Types of Ethical Climate within Public Sector Human Resource Management**

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### **Abstract**

**Background** – In recent years there has been increasing emphasis on ethical behaviour within public sector jurisdictions. One approach to the description of the ethical characteristics of workplace environments is that of ethical climate.

**Purpose** – The purpose of the study is to identify the dimensions relevant to ethical climate in public sector human resource (HR) management. The study also identifies different types of ethical climate profile and evaluates the degree to which these types of ethical environment can be seen to represent a moral continuum.

**Design/methodology/approach** – Questionnaires were returned from 255 public sector HR practitioners. Principal components analysis identified climate dimensions and guided scale development. Cluster analysis identified different types of ethical climate within the sample.

**Findings** – Five ethical climate dimensions were identified and 5 scales developed: *Law and rules* ( $\alpha = .83$ ); *Caring* ( $\alpha = .84$ ); *Independence* ( $\alpha = .73$ ); *Instrumental* ( $\alpha = .64$ ); and *Efficiency* ( $\alpha = .66$ ). Five types of ethical climate environment were also identified. Analysis of differences between these five types of ethical environment displayed a complex pattern of differences in cluster profiles.

**Conclusions** – The findings of this study support the notion that different types of organisation will display different sets of ethical climate dimensions. Analysis of differences between different types of climate environment failed to support the notion that ethical environments lie along a simple uni-dimensional moral continuum. The study was limited to three public service jurisdictions within a single country. Expanding beyond these limitations would increase generalisability.

**Key words:** *ethical climate; public sector; human resource management; ethical climate questionnaire.*

## Introduction

In recent years ethical behaviour and actions attempting to ensure good ethical behaviour have been the focus of considerable attention within different jurisdictions of the Australian Public Sector (Shacklock 2006). One way to conceptualise the ethical nature of a workplace arises from Lewin's (1975) Field Theory. Field Theory proposes a person's behaviour to be a function of their psychological field. In business research the psychological field has been empirically operationalised as organisational climate (Jones & James 1979; Manning 2010), and in ethics research it has been defined more specifically as ethical climate (Victor & Cullen 1987; Tseng & Fan 2011). This study uses the Ethical Climate Questionnaire (ECQ) of Victor and Cullen (1987) to, first, identify the ethical climate dimensions relevant to 255 public sector HR practitioners, and, second, identify the different types of ethical environment within which these HR practitioners operate.

This study makes several contributions. First, several researchers propose different climate dimensions will be relevant in different industries and in different types of organisation. The study examines ethical climate dimensions in public sector HR and contrasts the dimensions found with those found elsewhere in organisations in the private sector. Second, the issue of different types of ethical environment has been confusing in the literature as several researchers have confused the quite distinct concepts of (a) ethical climate dimensions, and (b) types of ethical environment. At times, this has resulted from the use of inappropriate statistical analysis of data. This study uses an appropriate statistical technique to identify different ethical climate environments within the sample. Third, several researchers have explicitly proposed, or implicitly assumed, that ethical environments can be considered to lie along a single moral continuum from 'unethical' to 'ethical'. This study examines this proposal and compares similarities and differences between types of ethical environment identified. The results fail to support the proposal.

## Literature review

In his Field Theory, Lewin (1975) proposed the behaviour of an individual to be a function of the psychological field subjectively experienced by them. From Field Theory, it was not necessary to understand or investigate past events as concurrent measurement of the psychological field was all that was necessary. Within the workplace, operationalisation of the psychological field comprises identification of the set of features of the social environment affecting employees' behaviour and decision making. This has been labelled 'organisational climate'.

### *Organisational climate*

Moran and Volkwein (1992) describe organisational climate as an enduring feature which embodies employee collective perceptions of factors including innovation, autonomy, support, cohesiveness, trust, recognition, and fairness. They view organisational climate as being produced by member interaction, influencing and shaping behaviour, and as providing a basis for the interpretation of situational norms, values and attitudes of the organisation.

Commonly the approach used to measure organisational climate is to record perceptions of individuals within the workplace to a number of items, factor analyse the responses (usually by using Principal Components Analysis, PCA) to identify underlying dimensions and then, for each individual, to average across items loading on each of the dimensions so derived (Jones & James 1979; Manning 2010). This procedure provides a score on each of the organisational climate dimensions, for each individual within that environment. For a particular organisation (or functional subunit) climate values on each of

the dimensions are then simply estimated by aggregating the scores (usually by taking the arithmetic mean) of the individuals within the organisation. The scales of organisational climate thus far presented vary in terms of the number of dimensions, the nomenclature of dimensions and their psychometric properties. Schneider, for example states that “...what does seem to be clear is that dimensions of practices and procedures will be differentially relevant depending upon the purpose of the study” (1975, p.471).

From a review of early climate studies Schneider (1975) observed that often some dependent variable had implicitly driven climate research. He later wrote ‘Organisations may have many climates, including a climate for creativity, for leadership, for safety, for achievement, and/or for service. Any one research effort probably can not focus on all of these but the effort should be clear about its focus’ (Schneider, Parkington & Buxton 1980, p. 255). Over time, most climate research concentrated on the measurement of a specific facet of the psychological field that was associated with the dependent variable driving the research. For example, Zohar (2000) examined climate for safety; Delbecq & Mills (1985) examined climate for innovation; and Schneider, White, and Paul (1998) examined climate for service.

### ***Measuring ethical climate and its dimensions***

The domain of organisational climate investigated in this study is that related to ethical decision making and has been labelled *ethical climate*. Victor and Cullen (1987; 1988) presented an attempt to identify the dimensions of ethical climate in organisations using an approach with a similar philosophy to that presented earlier by Jones and James (1979) in their study of organisational climate. Jones and James viewed organisational climate as a multidimensional construct that may be represented by the aggregation of the perceptions of individuals within an organisation. Victor and Cullen similarly viewed ethical climate as a multidimensional construct that they attempted to represent by aggregated perceptions of employees. Their approach to measurement and the development of an instrument to measure ethical climate also paralleled that of the earlier organisational climate studies. Victor and Cullen proposed nine *a priori* theoretical ethical climate types which were used as the basis of a questionnaire (the ECQ) which was presented to students and employees. PCA was applied to the responses to the ECQ and five components of ethical climate were extracted.

The nine *a priori* ethical climate constructs used by Victor and Cullen resulted from an approach which examined two categorical ‘dimensions’, each with three levels. The first of these two ‘dimensions’ was labelled ‘type of criteria’ and referred to a dominant or prescribed moral philosophy used in making ethical decisions in the organisation or group interest. They propose that within the literature moral theories may be ‘differentiated on the basis of the basic criteria used in moral reasoning, i.e., maximising self-interest, maximising joint interests, or adherence to principle.’ (Victor & Cullen 1988, p. 104) The three levels of this ‘dimension’ were egoism, benevolence, and principle. They state;

People who are benevolent tend to be less cognizant of laws or rules and may also be less amenable to arguments employing rules or principles. In contrast, people who are principled tend to be less sensitive to particular effects on others. (Victor & Cullen 1988, p. 105)

The second of their two *a priori* ‘dimensions’ was labelled ‘locus of analysis’. This dimension referred to whether the central concern of individuals within the group in ethical decision making is self interest (individual), company interest (local), or societal interest (cosmopolitan). By using all possible combinations of these two categorical dimensions, nine ‘theoretical climate types’ were produced.

Although Victor and Cullen describe two *a priori* ‘theoretical dimensions’, it is not clear that the term ‘dimension’ is appropriate, at least not within the normal meaning of the term within factor analytical, or behavioural analysis. Their dimension ‘type of criteria’ was described as comprising three categories; egoism, benevolence, and principle. Given the nature of these categories, it would seem likely that ‘type of criteria’ actually would be composed of two (e.g. egoism/benevolence, and principle) or three (e.g. egoism, benevolence and principle) independent dimensions. Consequently their theoretical dimensions would most accurately be described as ‘domains’ within which up to three dimensions could exist.

Victor and Cullen (1988) obtained responses to the ECQ from 872 employees of four firms (a small printing company, a savings and loan, a manufacturing plant, and a local telephone company). PCA of these responses followed by a Varimax rotation failed to confirm the *a priori* structure proposed by them and only five components were extracted. The authors unfortunately did not report the criteria used to determine the number of components extracted, the proportion of total variance explained by each individual component, nor did they report the proportion of total variance explained by the five components in concert. Victor and Cullen labelled their five components as: *Caring*, corresponding to the degree to which the environment may be characterised by workers who are sincerely interested in the well-being of each other; *Law and Code*, corresponding to the degree to which employees adhere strictly to the codes and regulations of their profession and government; *Rules*, corresponding to the degree to which employees strictly adhere to the rules and mandates of their organisation or subunit; *Instrumental*, corresponding to the degree to which employees look out for their own self-interest; and *Independence*, referring to the degree to which employees would be expected to be guided by their personal moral beliefs.

Wimbush, Shepard and Markham (1997) examined whether the five component solution of Victor and Cullen (1988) could be replicated from the responses of employees within a single multiunit organisation. This organization was ‘a national, multiple operating unit, retail, commissioned sales organization.’ (Wimbush et al. 1997, p. 69). Using PCA followed by a varimax rotation, five components were extracted (i) *Caring*: Five items loading on this component also loaded on Victor and Cullen’s caring component. Three of the items, however, loaded on Victor and Cullen’s instrumental component. The seven remaining items were related to utilitarianism (five items) and egoism (two items). (ii) *Law and rules*: The eight items loading on this component represented a composite of items of two of Victor and Cullen’s components – Law and codes, and rules. (iii) *Service*: The content of the items loading on this factor referred mostly to customer service. (iv) *Independence*: This component was described as being identical to the identically titled component in the Victor and Cullen study. (v) *Instrumental*: Four of the five items loading on this factor loaded on the similarly titled component of Victor and Cullen.

Overall, in the study of Wimbush et al. (1997), three of the components described by Victor and Cullen (1988) were found. One component (Law and rules) represented an amalgam of two components described in the earlier study and one new component (Service) was described.

Treviño, Butterfield and McCabe (1998) applied PCA to responses to the ECQ from 318 alumni of two private colleges. Also included in the PCA was a set of items designed to measure organisational culture. This PCA extracted 10 dimensions, seven of which comprised organisational climate items; *Laws and Professional Codes, Rules, Employee Focus, Community, Focus, Self-interest, Personal Ethics, and Efficiency*.

Some studies have applied confirmatory factor analysis (CFA), rather than exploratory factor analysis, to data from the ECQ. Whereas an exploratory factor analytical procedure,

such as PCA, allows the structure to emerge from the data, CFA imposes a pre-defined structure on the data then evaluates the degree to which the data fits the predefined set of dimensions. The difficulty in the situation of ethical climate, as measured by the ECQ, is deciding upon what the dimensions which should be confirmed. No exploratory study, for example, replicated the theoretical nine ethical climate dimensions proposed by Victor and Cullen (1987). So there would seem to be little expectation, *a priori*, of a CFA study confirming the theoretical dimensions. Agarwal and Malloy (1999) applied CFA to confirm the factor structure they discovered from an exploratory factor analysis. They, however, appear to have inappropriately applied both sets of analysis to a single set of data.

Peterson (2002) tested competing models including the original *a priori* theoretical nine dimensions initially proposed by Victor and Cullen (1987). Although none of the models tested satisfied all the goodness of fit criteria used in their analysis, they concluded 'the results indicated that the hypothesized nine-dimension model generally provided a better fit for the data than the empirically reported models' (Peterson 2002, p. 323). More recently Tseng and Fan (2011) applied CFA to responses of 297 in-service employees to the ECQ. They also attempted to fit the data to the nine original hypothesised dimensions. The authors concluded only three to be supported by their data; *self-interest*, *social responsibility*, and *law/professional codes*.

This diversity in patterns of ethical climate dimensions across studies is not unexpected. Manning (2010) argues the pattern of relevant climate dimensions will vary between organisations in different industries and between different types of organisation within an industry. She cites Davidson, Manning, Timo and Ryder (2001) who wrote 'it is clear that different types of organization will differentially exhibit variation within particular dimensions' (p. 446). This leads to the expectation that ethical climate studies in different types of organisation will, similarly, find different patterns of climate dimensions. Because of these past findings, the first aim of this study is to describe the dimensions of ethical climate relevant to public sector HR practitioners. Further, given the divergence of patterns of ethical climate dimensions in past research, even across studies using a CFA approach, this study will use the exploratory factor analytical approach of PCA.

### ***Types of ethical climate***

Principal components analysis, as used by Victor and Cullen (1988), is a technique which identifies a set of orthogonal (uncorrelated) dimensions. Each environment is represented by an aggregated score on *each* of these dimensions. Each of the dimensions is, to varying degrees, a characteristic of each of the environments. Victor and Cullen, however, incorrectly describe the orthogonal dimensions from their PCA as 'Climate Types' (p. 111). As Wimbush et al. (1997) note;

Victor and Cullen state that the different ethical climates are types; however, the climate literature suggests that Victor and Cullen are more appropriately referring to *dimensions* of a type of climate, ethical climate. Many different types of climates are found in organisations (Schneider, 1975) and a particular type of climate may have different dimensions. Even Victor and Cullen's methodology, factor analysis, was used to identify dimensions of a type of climate which is now known as ethical climate. (p. 1715)

This has led to some confusion in the literature. For example Flannery and May (2000) later claim the 'ECQ categorizes ethical climates into distinct types' (p. 647). Several studies have applied a simplistic method to use scores on the ECQ to classify an environment into a single ethical climate type by simply labelling that environment on the basis of the particular dimension with the highest score (Fritzsche 2000; Upchurch & Ruhland 1996). The assumption of this method is the unsubstantiated notion that there is a

single dimension of ethical climate which dominates the environment. This method is statistically crude as it throws away much of the information in the data and merely identifies the single climate dimension with the highest score for each case. A much more appropriate, and statistically sophisticated, approach is that of hierarchical cluster analysis (Manning & Munro 2007). This approach uses all of the information from all of the climate dimensions to group together cases with similar profiles across all of the climate dimensions. Cases are classified into homogenous groups across the set of dimensions used in the study. Such an approach was used by Tseng and Fan (2011). On the basis of the three climate dimensions identified in their sample (*self-interest*, *social responsibility*, and *law/professional codes*) their hierarchical cluster analysis identified two clusters. These clusters correspond to two ethical environments with different profiles across the three climate dimensions. The nature of the differences between these two types of ethical environment was investigated using multivariate analysis of variance (MANOVA). This analysis found the two cluster groups to display significantly different means on each of the three ethical climate dimensions.

The second aim of this study is to identify different types of ethical climate environment in our sample. To achieve this aim, the procedures described by Tseng and Fan (2011) will be followed comprising first, an hierarchical regression to identify homogenous groups displaying similar profiles across the climate dimensions identified in our PCA. Second, the groups will then be compared via MANOVA to determine the differences between groups on the ethical climate dimensions.

### ***A moral continuum?***

Cohen (1995) proposes that organisations may be placed along a unidimensional ‘moral continuum’. She states;

it is helpful to think of moral climate as a continuum. At one end of the continuum is the positive moral climate, or ethical climate, in which organizational norms always facilitate agent behavior that merits the trust of organizational stakeholders. At the other end is the negative moral climate, or unethical climate, which, conversely, is never conducive to such behavior. Clearly, these are the extremes, with the moral climate of most business firms falling somewhere in between. (p. 319)

This proposal produces clear predictions that may be made regarding the pattern of ethical climate types that should be found. If moral climate does indeed consist of a continuum, then ethical climate types should be found that exhibit low scores on each of the ethical climate dimensions (corresponding to an ‘unethical’ climate), ethical climate types should be found that exhibit moderate scores on each of the ethical climate dimensions (corresponding to an ‘moderate’ ethical climate), and ethical climate types should be found that exhibit high scores on each of the ethical climate dimensions (corresponding to an ‘highly’ ethical climate). Each of these ethical climate types would correspond to a different point along the continuum. Should moral, or ethical, climate not be simply represented in terms of a continuum, then these constraints would not hold and other combinations would be expected to be encountered in which different climate types may be high or low on different ethical climate dimensions. The results of Tseng and Fan (2011) are consistent with the notion of a moral continuum. Although identifying only two clusters, represented by three ethical climate dimensions, their MANOVA analysis revealed cluster 1 to display higher scores on all three climate dimensions when compared to cluster 2.

The third aim of this study is to investigate the profile of different types of ethical climate identified in the study (clusters) and determine the degree to which the climate types may be viewed to represent a unidimensional moral continuum.

## Research method

### *Participants*

All public sector agencies within the state public sectors of Western Australia and Queensland, and from the Australian Federal Government were targeted. Within each agency the most senior decision-making roles in HR were identified. Two hundred and seventy six questionnaires from 152 agencies were received and 255 contained complete sets of responses. One hundred and two questionnaires were returned from 57 agencies of the Federal Government, 80 were received from 50 agencies of the Western Australian Government, and 94 from 45 agencies of the Queensland Government. In total, 45% of respondents were male and 55% female. 71% of respondents were in the 31-50 years age group. All respondents held senior level HR positions. The sample comprised experienced HR managers with 52% having worked in HR for more than ten years and 78% for over 5 years.

### *Materials*

The instrument used to measure ethical climate was the ECQ developed by Victor and Cullen (1987). Respondents were asked to indicate on a 6-point Likert-type scale (ranging from completely false to completely true) how accurately each of the items described their general work climate. Since the ECQ was originally used within large, private sector organisations, there was a need for some modification to their original instrument for this research. This was limited to minor wording changes, to bring it more into line with terminology in use within the Australian public sector setting. No changes to the basic purposes or principles were made. In addition to the ECQ, several questions related to demographic data and other issues were included but are not included in the analyses presented here.

### *Procedure*

The research was facilitated through the assistance of various central agencies in each jurisdiction, respectively; the Public Sector Management Office and/or the Office of the Public Sector Standards Commissioner in Western Australia, the Office of the Public Service in Queensland, and the Public Service and Merit Protection Commission in Canberra. Discussions with these agencies, at officer level, led to the formation of mailing lists of appropriate HR practitioners. Questionnaires were sent by mail along with return envelopes addressed to the University of the first author. All responses were confidential.

## Results

### *Identifying ethical climate dimensions*

To identify the underlying dimensions of ethical climate of the sample used in the current study, responses of the 255 participants with a complete set of responses to the ECQ were entered into a PCA followed by a Varimax rotation (Manning & Munro 2007). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy ( $KMO = .818$ ) was greater than .6 indicated that the sample size was adequate for the number of variables entered into the analysis and Bartlett's Test of Sphericity was significant (2448.9,  $p < .000005$ ), indicating that there was structure within the observed correlation matrix and therefore a PCA would be appropriate. Using a criterion of eigenvalues greater than unity, 6 components were extracted accounting for 60.2% of the total variance. Table 1 shows the rotated component loadings (for loadings of .30 or greater) for ECQ items.

**Table 1**  
*Component loadings of ethical climate items, the component on which they loaded in Victor and Cullen (1988), and associated a priori concept (in brackets) (n = 255).*

Item	C1	C2	C3	C4	C5	C6	Victor & Cullen*
<b>Law &amp; Rules</b>							
Everyone is expected to stick by organisational rules and procedures	.78						Rules (PL)
In this organisation, people are expected to strictly follow legal or professional standards	.74						Law & Code (PC)
People are expected to comply with the law and professional standards over and above other considerations	.73			-.31			Law & Code (PC)
The first consideration is whether a decision violates any law	.64						Law & Code (PC)
Successful people in this organisation go by the book	.62				.41	-.36	Rules (PL)
In this organisation, the law or ethical code of their profession is the major consideration	.58						Law & Code (PC)
Successful people in this organisation strictly obey the organisation's policies	.58	.35			.30		Rules (PL)
It is very important to follow strictly the organisation's rules and procedures here	.55		-.36		.35		Rules (PL)
<b>Caring</b>							
The most important concern is the good of all the people in the organisation		.79					Caring (BL)
Our major consideration is what is best for everyone in the organisation		.77					Caring (BL)
In this organisation, our major concern is always what is best for the other person		.73					Caring (BI)
In this organisation, people protect their own interests above other considerations		-.63		.43			Instrumental (EI)
In this organisation, people are mostly out for themselves		-.55		.52			Instrumental (EI)
In this organisation, people look out for each other's good		.50			-.41		Caring (BI)
<b>Independence</b>							
In this organisation, people are guided by their own personal ethics			.77				Independence (PI)
Each person in this organisation decides for themselves what is right and wrong			.76				Independence (PI)
In this organisation, people are expected to follow their own personal and moral beliefs			.69				Independence (PI)
The most important concern in this organisation is each person's own sense of right and wrong			.64				Independence (PI)
<b>Instrumental</b>							
Work is considered substandard only when it hurts the organisation's interests				.66			Instrumental (EL)
People are expected to do anything to further the organisation's interests				.64			Instrumental (EL)
There is no room for one's own personal morals or ethics in this organisation			-.35	.54			Instrumental (EL)
<b>Efficiency</b>							
The most efficient way is always the right way in this organisation					.72		Caring (EC)
The major responsibility of people in this organisation is to consider efficiency first					.65		Instrumental (EC)
In this organisation, each person is expected above all to work efficiently					.62	.59	Caring (EC)
People are concerned with the organisation's interests—to the exclusion of all else				.50	.55		Instrumental (EL)
<b>Component 6</b>							
It is expected that you will always do what is right for the customer and public						.77	Caring (BC)

\*Abbreviations for *a priori* ethical climate concepts proposed by Victor & Cullen are: B = benevolence, P = principle, E = egoism, I = individual, L = local, and C = cosmopolitan.



Table 1 presents the component loadings for each questionnaire item on each of the 6 components. In addition, the components on to which these items loaded in the study of Victor and Cullen (1988) is also shown, as is also the *a priori* ethical category of each item proposed by Victor and Cullen. An examination of the items loading on to each component, reveal only one item to have its primary (i.e. largest) loading on component 6. Given the aim of any factor analytic technique is the identification of underlying dimensions across a number of items, the interpretation of underlying dimensions is restricted to the first five components. The five multi-item components were assigned the following labels.

*Law and rules* (22.8% of the variance): This component comprised the four items loading onto the ‘Rules’ component of Victor and Cullen and the four items loading onto the ‘Law and Code’ component. These eight items were all found to load onto a single component in the study of Wimbush et al. (1997) and so the same nomenclature was applied here for this component as was used in the latter study.

*Caring* (11.9% of the variance): This component comprised four of the six items which loaded onto the ‘Caring’ component of Victor and Cullen, and two of the items loading onto the Instrumental component of the earlier study. The component labelled ‘Caring’ by Wimbush et al. also had both items labelled as ‘Caring’ and ‘Instrumental’ by Victor and Cullen. Consequently, this item was labelled ‘Caring’.

*Independence* (9.0% of the variance): The set of items loading onto this component comprised all of the items which loaded onto the Independence component of Victor and Cullen. Consequently this component was labelled ‘Independence’.

*Instrumental* (6.7% of the variance): Three items loaded onto this component. All of these items loaded onto Victor and Cullen’s component ‘Instrumental’. Consequently this component was labelled ‘Instrumental’.

*Efficiency* (5.6% of the variance): Two of the items loading onto this component loaded onto the ‘Caring’ component of Victor and Cullen, and two of the items loaded onto the ‘Instrumental’ component of the earlier study. Given this component included items such as ‘The most efficient way is always the right way in this organisation’, ‘The major responsibility of people in this organisation is to consider efficiency first’, and ‘In this organisation, each person is expected above all to work efficiently’, this component was labelled ‘Efficiency’. This component did not appear to directly correspond with any component identified in the earlier two studies.

The relationship of the components extracted here, and those of the two earlier studies of Victor and Cullen (1988) and Wimbush et al. (1997) are shown in Table 2.

**Table 2**

*The relationship between ethical climate dimensions (principal components) described by the studies of Victor and Cullen (1988), Wimbush et al. (1997), and the present study.*

Victor & Cullen (1988)		Wimbush et al. (1997)		Present study	
Component	Title	Component	Title	Component	Title
1	Caring	1	Caring	2	Caring
2	Law and Code	2	Law and rules	1	Law & rules
3	Rules				
4	Instrumental	5	Instrumental	4	Instrumental
5	Independence	4	Independence	3	Independence
		3	Service		
				5	Efficiency

### **Scale construction and validity testing**

Using the results of the PCA, five scales were constructed to represent the five underlying dimensions of ethical climate identified via the PCA. Procedures similar to those described by Victor and Cullen were used. For each participant, for each dimension (component), the arithmetic mean was calculated across each of the items with their primary loading on that dimension. Intercorrelations between ethical climate scales, so derived, are presented in Table 4. Although 8 of the 10 correlations are statistically significant, the greatest overlap between any two scales (*Law and Rules*, and *Efficiency*) is 9.73% ( $r = .312$ ,  $r^2 = .0973$ ). Coefficient alpha (Cronbach) was calculated to provide an index of reliability for each of the scales (Table 3). The values for Alpha ranged from .638 for the *Instrumental* scale to .835 for the *Caring* scale. All of the measures were found to have satisfactory reliabilities.

**Table 3**

*Intercorrelations and reliability (Cronbach's Alpha) of ethical climate scale scores. The proportion of variance explained by each correlation is shown in brackets*

Climate scale	2	3	4	5	Alpha
1. Law and rules	.267* (7.13%)	.050 (0.25%)	-.199* (3.96%)	.312* (9.73%)	.831
2. Caring		.293* (8.58%)	-.157* (2.47%)	.157* (2.47%)	.835
3. Independence			-.130* (1.69%)	.015 (.02%)	.727
4. Instrumental				.156* (2.43%)	.638
5. Efficiency					.657

\* $p < .05$

### **Identification of different climate types**

In an attempt to evaluate whether different ethical climate types exist within the sample, an hierarchical cluster analysis using Ward's technique was performed using the participants responses to the five ethical climate scales. Hierarchical clustering does not require *a priori* knowledge of the number of clusters (Manning & Munro 2007), rather a set of clustering solutions is provided which range from a single cluster comprising all cases, to a set of clusters with each containing a single case. To determine the optimal number of clusters to form a solution, changes in the values of the agglomeration coefficient were examined following the procedures outlined by Manning and Munro (2007). Examination of the agglomeration coefficients showed a change in the rate of change of agglomeration coefficients between 5 and 6 cluster solutions after which the rate of change of agglomeration coefficients is minimal. This procedure led to the conclusion that the most parsimonious cluster solution was that found when assigning respondents to 5 clusters. Table 4 displays the pattern of means (cluster centroids) for the 5 ethical climate scales for each of the 5 clusters.

**Table 4**  
Centroids (means) and standard deviations of the 5 ethical climate types (clusters).

Climate Type (Cluster)	Ethical Climate Scale				
	Law & Rules M (SD)	Caring M (SD)	Independence M (SD)	Instrumental M (SD)	Efficiency M (SD)
I (n=101)	3.99 (.52)	3.77 (.54)	3.65 (.52)	2.27 (.60)	3.34 (.58)
II (n=24)	4.71 (.48)	4.34 (.34)	2.28 (.62)	2.14 (.47)	3.44 (.69)
III (n=33)	4.89 (.41)	4.08 (.49)	4.07 (.66)	3.14 (.62)	4.05 (.53)
IV (n=76)	4.11 (.66)	3.01 (.62)	2.88 (.57)	3.53 (.68)	3.83 (.53)
V (n=21)	3.23 (.42)	2.40 (.72)	3.21 (.94)	3.83 (.71)	2.65 (.73)

### ***Examining differences between climate types***

A MANOVA was conducted with cluster grouping as the independent variable and the five ethical climate scales as dependent variables. Using the Wilks' criterion, a significant difference was found between the five ethical climate type groups ( $F(20,816.84) = 40.25, p < .0005$ ). Univariate comparisons were then made to compare the five groups for each of the five dependent variables. Table 5 shows that each of the ethical climate measures differed significantly across the five ethical climate type groups.

**Table 5**  
Univariate comparisons of the five ethical climate type groups (clusters) for each of the five climate scales.

Ethical Climate Scale	SS	Error SS	MS	Error MS	F	Sig.
Law and rules	46.18	74.78	11.55	.30	38.60	.000
Caring	79.20	78.75	19.80	.32	62.86	.000
Independence	70.35	92.33	17.59	.37	47.62	.000
Instrumental	103.05	98.49	25.76	.39	65.39	.000
Efficiency	36.04	85.54	9.01	.34	26.33	.000

To examine how groups differed on each particular ethical climate scale, post-hoc comparisons (Tukey HSD, Manning & Munro 2007) were conducted. To summarise the pattern of relationships from the myriad of post-hoc comparisons, Table 7 was produced

using the following rules. For a particular climate scale, if a Climate Type displayed a mean significantly higher than one or more other Climate Types, and that mean was not significantly lower than any other Climate Type, then it was assigned a value of ‘High’ for that ethical climate dimension. Similarly, if a group displayed a mean significantly lower than one or more other Climate Type, and that mean was not significantly higher than any other Climate Type, then it was assigned a value of ‘Low’ for that ethical climate dimension.

**Table 6**

*Pattern of means for different ethical climate type groups (clusters) across the five Ethical Climate Scales used to establish cluster membership.*

Climate Type (Cluster)	Ethical Climate Scale				
	Law & Rules	Caring	Independence	Instrumental	Efficiency
I	-	-	-	Low	-
II	High	High	Low	Low	-
III	High	High	High	-	High
IV	-	-	-	High	High
V	Low	Low	-	High	Low

From table 7 we may see that the largest group, Ethical Climate Type I may be typified simply as being low on *Instrumental*. Ethical Climate Type II may be described as high on both *Law and rules*, and *Caring*, whilst also being low on *Independence* and *Instrumental*. Ethical Climate Type III is high on *Law and rules*, *Caring*, *Independence*, and *Efficiency*. Ethical Climate Type IV, the second largest group, is high on both *Instrumental* and *Efficiency* dimensions. Climate Type V is high on *Instrumental* and low on *Law and rules*, *Caring* and *Efficiency*.

## Discussion

In this study the responses of public sector HR practitioners to the ECQ (Victor & Cullen 1988) were analysed to establish the underlying ethical climate dimensions relevant to our sample and to identify and describe different types of ethical climate within our sample. Principal Components Analysis (PCA) followed by a varimax rotation extracted five multi-item components. These five components accounted for 55.9% of the total variance. It is not possible to make a comparison between the proportion of variance explained by these five components and that explained by the five components described by Victor and Cullen (1988) or the five components described by Wimbush et al. (1997) as neither of the earlier studies report the proportion of variance explained by their factors.

Wimbush et al.(1997) replicated three of the five dimensions originally described by Victor and Cullen (1988), but also described two new dimensions. The components extracted here from the responses of HR practitioners display similarities with those described in the earlier two studies, but do not serve to fully confirm either. Across all three studies the three dimensions ‘Caring’, ‘Instrumental’, and ‘Independence’ were described. Both the Wimbush et al. and this study described a component labelled ‘Law and Rules’ which represents a synthesis of two distinct components, ‘Law and Code’, and ‘Rules’, originally described by Victor and Cullen. Treviño et al. (1998) found a similar split describing separate components of ‘Laws and Professional Codes’ and ‘Rules’. It would

appear that in some types of organisation these aspects of the ethical environment form distinct dimensions, whereas in others they represent a common dimension.

Both Wimbush et al. (1997) and the present study described dimensions of ethical climate not found by Victor and Cullen (1988). In the former case this dimension was labelled 'Service', and in the latter 'Efficiency'. The Service dimension of Wimbush et al. would reflect the nature of an organization heavily involved in retail sales and customer interaction. It was not surprising that this dimension was not found for the sample of public sector HR practitioners used here. The 'Efficiency' dimension identified in this study was not found by either Victor and Cullen or Wimbush et al. The samples of Victor and Cullen and Wimbush et al. were drawn from the private sector whereas the sample used here represented only public sector employees and only those working within HR. It is not clear, from the analyses that may be conducted on our sample, to what extent this dimension reflects the public sector nature of the sample or the HR nature. Treviño et al. (1998), however, also describe a dimension labelled 'Efficiency'. Their sample was drawn from alumni of two private colleges. It is possible that their extraction of the Efficiency dimension is a result of a proportion of their sample now operating within the public, rather than private, sector.

Victor and Cullen (1988) stated that they found 'similarity among companies in terms of the caring climate' and further stated that it 'implies that societal norms require organizations to develop at least a minimal caring environment'. Our comparisons do not indicate a smaller variation in the dimension of Caring when compared to other ethical climate dimensions. Table 7, for example, shows Climate Types II and III to display significantly higher mean scores on this dimension and Type V to display significantly lower scores. This pattern of differences is similar to differences displayed within other dimensions. It must be remembered, however, that the sample of Victor and Cullen comprised only four companies from a single city whereas this sample was gathered from across a country and within three different jurisdictions. Some local factors might have resulted in lower variance in the Caring dimension when compared to other dimensions. Certainly there is no evidence from this study to provide support for their observation.

A review of the pattern of ethical climate dimensions extracted across this study and that of Victor and Cullen (1987) and Wimbush et al. (1997) provides some degree of support for the use of the ECQ to identify ethical climate dimensions. Three of the dimensions were identified by all three of the studies. As predicted by Wimbush, et al., however, unique dimensions are encountered for specific samples. Caution must therefore be recommended for the use of the ECQ without specific application of PCA to the sample under investigation. The original sample used by Victor and Cullen comprised only four private sector organisations within a single city. The factor structure found by them was the factor structure appropriate for that sample. The five scales they described were five scales that were appropriate for that sample with that factor structure. To attempt to simply apply those scales to new industries (e.g. Flannery and May, 2000) may well provide empirical indices for ethical climate dimensions, but for ethical climate dimensions that are potentially not appropriate for the sample to which they are applied. For such omnibus scales to be developed it would be necessary for data to be gathered from a large sample of industries and organisations, both private and public, and PCA applied. The factors, so produced, would then need to be replicated. It is also clear from the pattern of results across the three studies that the number of ethical climate dimensions extracted would be in excess of the five presented here as different types of organisation clearly present different sets of ethical climate dimensions. These issues may only be dealt with by future investigations.

By using PCA to identify underlying dimensions of ethical climate, we can identify the dimensions of ethical climate that vary from organisation to organisation. Such a procedure, of itself, does not however provide a description of different ethical climate 'types'. Victor

and Cullen (1988), and several other studies (e.g. Flannery & May 2000) equate the identification of ethical climate dimensions with that of ethical climate types. Following the procedures of Tseng and Fan (2011), the analysis presented here applies an appropriate statistical approach to the identification of different climate types. Hierarchical Cluster Analysis allowed the examination of the way in which different profiles of these dimensions appear together in different environments. Using this technique five ethical climate types were described to exist in this sample. The ethical climate type representing the largest number of respondents (Type I, n = 101) may be typified simply as being low on the ethical climate dimension labelled Instrumental. On all other dimensions its mean score was moderate. The ethical climate type comprising the second largest group of respondents (Type IV, n = 76) may be typified as high on both Instrumental and Efficiency dimensions. The ethical climate type representing the next largest group of respondents (Type III, n = 33) may be typified as high on the dimensions of Law and Rules, Caring, Independence, and Efficiency. Ethical climate Type II (n=24) may be typified as high on both Law and Rules, and Caring dimensions, whilst also being low on Independence and Instrumental dimensions. Ethical climate Type V (n = 21) may be typified as high on Instrumental and low on Law and Rules, Caring and Efficiency dimensions.

It is clear that the application of appropriate statistical techniques to identify the types of ethical climate in the present study, does not support the conclusions of Victor and Cullen of five ethical climate dimensions, each representing one of five ethical climate dimension 'Types'. Theoretically, there exists the possibility of 243 distinct ethical climate 'Types' when five dimensions are free to vary and each dimension is represented by a simple categorisation of 'low', 'moderate', and 'high'. The analyses presented here indicate (not unexpectedly) that within this sample of public sector HR practitioners only a small subset of these theoretically possible ethical climate types exist. Future studies need to examine the extent to which these profiles represent patterns peculiar to HR, or public sector HR, and the extent to which these profiles represent patterns within the workplace in general. Future research needs to examine the manner in which these five types of ethical climate environment impact on the attitudes and behaviours of public sector HR practitioners.

Clearly the pattern of ethical climate types found here, do not support the notion that ethical climates represent a continuum along which different organisations lie - as proposed by Cohen (1995), and found empirically by Tseng and Fan (2011). Such a situation could lead to the expectation of observing climate types comprising: types which are low on each dimension, types which are moderate on each dimension, and types which are high on each dimension. Each type representing a different point along the continuum. Clearly that is not consistent with the profiles of the climate types identified here. Although, for example, both Types II and III ethical climates are high for the dimensions of Law and Rules, and Caring, Type II is low on the Independence dimension and Type III is high on the Independence dimension. Clearly differences exist between the ethical climate types that cannot be explained in terms of a simple unidimensional moral continuum along which each organisation (or functional unit) may be placed. It would appear that a more parsimonious view is that there are different types of ethical climate that are not simply typified as climate types of varying degree of moral ethics. These climate types would appear to display quite different patterns across the multiple dimensions which define an ethical climate.

The results of this study suggest that the identification of different ethical climate types provides an interesting method for future studies to investigate change in industries over time. Given an intervention of governments in the ethical approaches of a public sector organisation, the question arises as to whether change within the organisations over time would be characterised by (a) across the board changes in each of the ethical climate dimensions, (b) selective changes in a subset of dimensions, or (c) changes in the frequency of organisations falling into each of the five ethical climate types identified here. The work of theorists such as Cohen (1995) who propose organisations may be placed along a continuum

would serve to argue for gradual change incrementally along each of the dimensions of ethical climate. Change might not, however, occur in this manner, and it may well occur as a shift between ethical climate types following relatively short transition periods. Certainly, the identification of different ethical climate types, with the patterns of profile presented here in which differences between types are not simply represented by 'across the board' differences in dimension scores, would serve to suggest the latter. Such questions must, however, wait until longitudinal studies are conducted.

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