Contemporary perspectives on the study of psychological climate: A commentary

Michael J. Burke
Tulane University, New Orleans, LA, USA

Chester C. Borucki
Southampton, MA, USA

Jennifer D. Kaufman
Tulane University, New Orleans, LA, USA

At the individual level of analysis, we address how work environment perceptions (psychological climate) are conceptualized and measured with respect to three perspectives in the applied psychology literature: (1) social constructionist, (2) general psychological, and (3) multiple stakeholder. Similarities and differences between these perspectives regarding the hypothesized bases of work environment perceptions, factor models for capturing these perceptions, and the generality/specificity of psychological climate factors are discussed. A general framework for conceptualizing and measuring climate perceptions with respect to different referents, organizational levels, industries or sectors, and stakeholder groups is then presented. This framework is posited to include core, generalizable dimensions associated with each relevant stakeholder group. Finally, we recommend methods and discuss future research directions related to the aggregation of individual level climate perceptions to organizational levels.

Since the 1970s, applied psychologists and management researchers have devoted considerable attention to studying the meaning of individuals’ work environment perceptions in a variety of public, private, and military organizations. Individual perceptions of work environment characteristics are referred to as psychological climate (James & Sells, 1981). Notably, different perspectives or models have been advanced for explaining the structure of psychological climate.

Requests for reprints should be addressed to M.J. Burke, A.B. Freeman School of Business and Department of Psychology, 7 McAlister Dr., Tulane University, New Orleans, LA 70118, USA. Email: mburke1@tulane.edu

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In this article, we review and comment on what we identify as the three primary perspectives on the meaning of work environment perceptions that have emerged over this time period: (1) social constructionist or “climate for something” (Schneider & Reichers, 1983), (2) general psychological climate, PCg (James & James, 1989), and (3) multiple stakeholder (Burke, Borucki, & Hurley, 1992). These three perspectives not only vary with respect to the theoretical bases of employee work environment perceptions, but also yield different organizing frameworks (i.e., first versus higher-order factor models). Although these perspectives may appear to offer competing explanations for the meaning of individuals’ work environment perceptions, we argue instead that these perspectives are complementary. That is, although the three perspectives differ in regard to their underlying assumptions, we discuss below how these different assumptions and perspectives can be integrated into a general framework for conceptualizing and measuring work environment perceptions.

The remainder of this review unfolds as follows. First, at the individual level of analysis, we address the question of how psychological climate might be conceptualized and measured. Here, we discuss the bases of employee work environment perceptions, hypothesized organizing frameworks for employee work environment perceptions, and the generality/specificity of first- and higher-order factors for each psychological climate perspective. Second, we present a general framework for conceptualizing and measuring psychological climate perceptions. Third, we discuss issues, methods, and future research directions related to the aggregation of psychological climate perceptions.

CONCEPTUALIZING AND MEASURING PSYCHOLOGICAL CLIMATE

As noted previously, psychological climate has been broadly defined as individual perceptions of work environment characteristics. Though intuitively appealing, this definition is lacking with respect to how individuals interpret environmental attributes in terms of the meaning and significance these attributes have for themselves and for others. In this section, we discuss the primary bases for individuals’ work environment perceptions in regard to each psychological climate perspective, the organizing framework (factor structure) for each perspective, and the generality/specificity of factors within each perspective.

Social constructionist perspective

Arguably, given the numerous articles that have focused on a particular referent such as service or safety since the 1970s, the dominant approach to the study of psychological climate is the social constructionist perspective. Proponents of the social constructionist perspective contend that individuals’ perceptions arise
primarily from their interactions with each other and their organizational context and, therefore, the “construction” of their beliefs about the current work environment occurs almost exclusively in that work environment (Ashforth, 1985; Ashkanasy, Wilderom, & Peterson, 2000; Kozlowski & Doherty, 1989; Schneider & Reichers, 1983). Essentially, employees’ perceptions are viewed as individual descriptions of their work environment (i.e., social setting or context). These descriptions are the basis for individuals making sense of their work environment, and do not necessarily involve any emotional evaluation of the situation.

Climate research within the social constructionist perspective is largely based on choosing a referent or focus of interest and then measuring employee perceptions of work environment characteristics (e.g., rewards, routines) associated with this focus. For instance, researchers and practitioners have measured employee perceptions of the work environment with respect to bullying (Vartia, 1996), diversity (Kossek & Zonia, 1993), creativity and innovation (Ekvall, 1996), lesbianism (Driscoll, Kelley, & Fassinger, 1996), customer service (Schneider, 1990), organizational trust (McKnight & Webster, 2001), safety (Flin, Mearns, O’Connor, & Bryden, 2000), sexual harassment (Culbertson & Rodgers, 1997), team climate (Anderson & West, 1996; Ekelund, Jorstad, & Maznevski, 2000), transfer of learning (Rouiller & Goldstein, 1993), and so on. Schneider and Reichers (1983) and Rousseau (1988) refer to these types of climate as “climates for something” and “facet-specific climates”, respectively.

Researchers adopting a social constructionist perspective not only focus on a particular referent such as safety or service in developing their questionnaires, but also generally tailor their instrumentation to the organization or industry under study. For instance, within the domain of safety climate, although some commonalities in the dimensions studied are evident (see Flin et al., 2000), there is wide variation in how the construct is operationalized (Coyle, Sleeman, & Adams, 1995; Dedobbeleer & Beland, 1998; Flin et al., 2000). To our knowledge, this point holds even within an industry or sector such as energy (Flin et al., 2000; Smith-Crowe, Burke, & Landis, 2001) or retail service (Burke et al., 1992; Johnson, 1996; Schmit & Allscheid, 1995; Wiley, 1991). Thus, epistemologically, the social constructionist approach tends to be more inductive than other psychological climate perspectives, as the dimensions and items are often more situational and content-specific.

Given how climate has been measured, social constructionist researchers do not necessarily view psychological climate as being comprised of a universal (generalizable) set of dimensions or factors. Therefore, examinations of the dimensionality of psychological climate primarily involve the use of exploratory factor analysis or exploratory content analysis methodologies. The goal of these analyses is to uncover the categories or dimensions along which individuals
perceive characteristics of their work environments. Therefore, within the social constructionist perspective, the resulting organizing frameworks for individual work environment perceptions are almost exclusively first-order factor models.

**General psychological climate perspective**

In contrast to the social constructionist perspective, the general psychological climate perspective explicitly emphasizes the importance of personal values (e.g., clarity, responsibility, support, and friendly social relations) in the appraisal of work environment attributes. Personal values suggest what is important to the individual and are posited to produce the schemas employed to appraise the work environment in terms of its significance to the individual. Moreover, James and James (1989) hypothesize that employee perceptions of the work environment reflect a higher-order factor (General Psychological Climate, $PC_g$) comprising an emotional evaluation of the degree to which the work environment is perceived to be personally beneficial or detrimental. James and his colleagues not only advocate a single general factor for explaining work environment perceptions, but also believe that there are a somewhat limited number of generalizable first-order climate dimensions (i.e., leader facilitation and support, role stress and lack of harmony, work group co-operation, and job challenge). Epistemologically, this deductive approach to the conceptualization of psychological climate is consistent with the work of several other researchers who propose similar sets of core, generalizable psychological climate dimensions (cf., Kopelman, Brief, & Guzzo, 1990; Payne & Pugh, 1976).

The $PC_g$ perspective suggests that scientist-practitioners use climate assessment instruments to measure core generalizable factors and that individual work environment perceptions can be summarized in terms of a single score (e.g., individual scores on a composite measure of $PC_g$). Notably, James and James’ (1989) confirmatory factor analyses on four diverse samples supported a set of four core first-order climate factors and a hierarchical factor structure with a single, higher-order factor, labelled $PC_g$. Although core, generalizable factors are measured within this perspective, their content may reflect a particular referent such as safety, service, or diversity. In this sense, if first-order climate factors are focused on a particular referent, then the higher-order factor $PC_g$ may in fact explain employees’ perceptions of a “climate for something.”

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1Although the social constructionist perspective does not explicitly recognize the role of personal values with respect to schemas or factors for organizing employee perceptions of work environment characteristics, theoretical arguments pertaining to the attraction, recruitment, and retention of individuals to organizations with similar individual characteristics suggest that these individuals may possess similar personal values (see McCormick, DeNisi, & Shaw, 1979, for a discussion of the gravitational hypothesis; Schneider, 1987, for a discussion of the Attraction-Selection-Attrition framework).
Multiple stakeholder perspective

Extending James and James’ (1989) work, Burke et al. (1992) argued that, in addition to personal values, values espoused by the organization towards key stakeholder groups are likely to engender additional schemas for making sense of one’s work environment. That is, Burke et al. proposed that first-order psychological climate factors reflect not only personal value-based schemas (which are shaped by past history and possibly other individual difference variables) but also organizationally espoused values and management practices towards other stakeholders such as customers, suppliers, contractors, and the general public. Consistent with Mandler (1982) and Piaget’s (1970) notion of the schema as structuring experience and being structured by it, Burke et al. posited that some first-order climate factors (i.e., value-based schemas) may change (accommodate) or be modified (via assimilation of information into evolving structures). Accommodation or assimilation may result, in part, from an individual’s desire to achieve an adaptive fit with the organization’s espoused values toward another stakeholder group, which may differ from the individual’s personal values. For example, a public energy company’s espoused values such as “Focus on our customers” and “Create and sustain a safe work environment” coupled with practices designed to reinforce these values may engender the development or modification of a schema (e.g., a first-order factor such as organizational public safety orientation) relative to another stakeholder group (in this case, the general public). Empirical support for the hypothesized influence of organizational values on employees’ perceptions of characteristics of their work environments in a variety of industries was recently presented in Vandenberghe and Peiro (1999).

In terms of the framework for organizing individual work environment perceptions, the multiple stakeholder perspective suggests that higher-order schemas may underlie individual perceptions of the degree to which the work environment is beneficial to the organization’s multiple stakeholders (e.g., employees, customers, suppliers). More specifically, researchers adopting this perspective (cf., Borucki & Burke, 1999; Burke et al., 1992; Vaslow, 1999) argue that individuals cognitively appraise their work environment with respect to the impact of work environment characteristics on personal well-being as well as with respect to the well-being of each of the other relevant stakeholder groups. Implicit in this discussion is the notion that assessments of personal well-being are made by employees as a stakeholder group. However, the multiple stakeholder perspective does not preclude assessments of personal well-being from one or more of the organization’s other stakeholder groups.

Although accommodation and assimilation are key aspects of the social constructionist perspective, this later perspective does not explicitly consider the central role of organizationally espoused values towards stakeholder groups other than employees as the underlying bases for hierarchically ordered climate perceptions.
Consistent with the PC\(_g\) perspective, the multiple stakeholder perspective calls for the use of core, generalizable dimensions for assessing individuals’ cognitive appraisals of personal well-being. Whereas the social constructionist perspective leads to the utilization of climate dimensions associated with a referent such as safety, the multiple stakeholder perspective places greater emphasis on the use of stakeholder-specific dimensions, which permit individuals’ cognitive appraisals of the well-being of the other relevant stakeholder group(s). Notably, the content of both types of climate dimensions within the multiple stakeholder perspective can be linked to a referent such as safety or service. Furthermore, the multiple stakeholder perspective may engender the conceptualization and empirical confirmation of generalizable stakeholder-specific dimensions for non-employees (e.g., customers, the public). That is, future research efforts directed toward the study of generalizable psychological climate dimensions that would apply to a non-employee stakeholder group such as suppliers would be informative. In a subsequent section, we posit a general taxonomy of “other” stakeholder dimensions to guide research on the meaning and factor structure of psychological climate.

In addition to core, generalizable dimensions, the multiple stakeholder perspective incorporates higher-order factors relative to each stakeholder group. For example, within a retail service context, Burke et al. (1992) proposed that employee work environment perceptions within a retail service environment, at the higher-order factor level, reflect employees’ cognitive appraisals of the behavior of agents towards: (1) employees’ well-being in the organization’s internal environment, and (2) the well-being of customers in the task environment. The internal environment is composed primarily of current employees and production technology, whereas the task environment comprises sectors that conduct day-to-day transactions with the organization and thus influence its basic operations (Bourgeois, 1980). Confirmatory factor analytic results (with data collected from 18,457 sales personnel in 567 stores of a national US retail chain) provided support for viewing employee work climate perceptions as comprising two higher-order factors, labelled concern for employees and concern for customers. Furthermore, the first-order factors comprising concern for employees were highly consistent with the core first-order factors of James and James’ (1989) higher-order PC\(_g\) model, and the first-order factors comprising concern for customers were focused more on aspects of customer service in a retail store setting. Related to the previous discussion, the first-order factors comprising concern for employees and concern for customers were found to be invariant across regions in which the company operated.

As another example, Vaslow (1999) compared psychological climate models based on the three perspectives in a secondary US public school district with data collected from 357 teachers. His study was designed to specifically address the question of whether teachers cognitively appraise the extent to which
characteristics of the school environment impact not only the well-being of teachers (i.e., the PC§ model) but also the well-being of teachers and students (i.e., the multiple stakeholder model in an educational setting). The multiple stakeholder model of work climate included two higher-order factors, concern for teachers and concern for students, conceptually defined respectively as the extent to which teachers perceive organizational agents to be acting towards the well-being of the teachers and the extent to which teachers perceive organizational agents to be acting towards the well-being of students. Confirmatory factor analytic results demonstrated that the multiple stakeholder model of psychological climate generalizes to an educational setting. Furthermore, empirical support for the conceptual distinction between the higher-order factors concern for teachers and concern for students provides compelling evidence that James and James’ (1989) higher-order PC§ factor (which is consistent with the higher-order factor concern for teachers) is not merely due to common methods variance (see Parker, 1999). That is, if common methods variance was a threat to the construct validity of these higher-order factors, Vaslow (1999) would not have confirmed two independent higher-order factors.

A general taxonomy for psychological climate

The general implication of the multiple stakeholder perspective is that in order to more completely assess the nature of employees’ work climate perceptions, researchers should consider all relevant stakeholder (or constituent) groups. Most climate surveys only focus on measuring employee perceptions of how the work environment impacts them personally (cf., James & James, 1989). In contrast, the multiple stakeholder perspective suggests that climate surveys may be enhanced by including dimensions and items that ask individuals to rate how work environment attributes impact the well-being of each of the important stakeholder groups. Furthermore, a situational referent such as safety, service, or diversity could be employed to focus the development of survey items for both core (employee) and other stakeholder-specific dimensions.

A non-exhaustive list of the core, first-order dimensions, which we believe would comprise the higher-order factor concern for employees in almost all work environments would be goal emphasis, means emphasis, management support, reward orientation, work group cooperation, and autonomy and decision making. Dimensions similar to these have been discussed in the literature (Kopelman et al., 1990) and confirmed as invariant across organizational units, organizations, and industries (see Burke et al., 1992; James & James, 1989; Vaslow, 1999). Furthermore, as demonstrated within several confirmatory factor analytic studies, these dimensions relating to the employee stakeholder group can be measured with respect to a particular referent (e.g., a climate for service, a climate for learning).
Theoretical rationales presented in Burke et al. (1992) and Vaslow (1999) suggest that a non-exhaustive list of the core, first-order dimensions comprising a higher-order factor related to a second stakeholder group (e.g., customers, suppliers, contractors, the public, etc.) would include first-order factors concerning the organization’s policies and procedures pertaining to the other stakeholder group, human-resource related obstacles to fulfilling the other stakeholder’s requirements and expectations, and physical resource-related obstacles to fulfilling the other stakeholder’s requirements and expectations. These dimensions could also be measured with respect to a particular referent. Furthermore, for practical purposes, the item content could be targeted to either the departmental (sub-unit), organization, industry, or sector level.

For example, if the referent were safety within the nuclear hazardous waste industry and the second stakeholder group was the public, the higher-order factor would be employees’ perceptions of concern for the public. Concern for the public would be conceptually defined as employees’ cognitive appraisals of the behaviour of organizational agents toward the well-being of the public. A core, first-order factor, organizational public safety orientation, would be relevant and would assess employees’ perceptions of the company’s policies and procedures related to the safe handling, storage, and disposal of nuclear hazardous wastes. A second core factor, human resource related obstacles to public safety, would concern the extent to which employees perceive problems or barriers to providing outstanding safety due to human resource practices (e.g., inadequately trained materials handlers, inadequate staffing to handle emergency conditions affecting the public). A third core factor, physical resource related obstacles to public safety, would concern the extent to which employees perceive problems or barriers to providing outstanding safety due to the quality of facilities and technologies (e.g., failure to maintain protective barriers in underground storage tanks, lack of appropriate equipment for monitoring hazardous substances).

Although not discussed in detail here, the higher-order factor concern for employees in the hazardous waste industry would be comprised of first-order factors focusing on safety issues in relation to the dimensions noted earlier. For example, means emphasis might include items relating to employee perceptions of the appropriateness of health and safety training and the provision of necessary reference information such as an MSDS (materials safety data sheet). In sum, the multiple stakeholder perspective and the previous general taxonomy of climate factors provide a framework for researchers and practitioners to conceptualize and specify potentially generalizable models of psychological climate with respect to different referents, organizational levels, industries or sectors, and stakeholder groups.
In this section, we discuss conceptual issues related to employing psychological climate perceptions as indicators of organizational climate, offer methodological suggestions for aggregating psychological climate perceptions, and discuss future research directions concerning the aggregation of individual level data.

Using individual work environment perceptions as indicators of higher-level constructs

Research with respect to the previously discussed perspectives has considered psychological climate as somewhat distinct from notions of group or organizational climate. More specifically, psychological climate is regarded as a characteristic of the individual with survey item responses as indicators, whereas organizational climate is considered to be a property of a group, unit, or organization (i.e., the respective practices, procedures, and routines) with aggregated individual perceptions serving as potential indicators. That is, organizational climate is considered within the literature as a collective, summary description of the work environment (cf., Rousseau, 1988).

A number of authors have presented composition arguments or theoretical rationales for expecting individual work environment perceptions to be similar within specific work environments (Borucki & Burke, 1999; Burke, Rupinski, Dunlap, & Davison, 1996; George, 1990; Kozlowski & Hattrup, 1992). For example, Schneider and Bowen (1985) have presented an argument for aggregating employee work environment perceptions to the bank branch level. More specifically, they asserted that each bank branch must be organized and managed to ensure quality service delivery by whoever is available to any client who enters the branch and needs assistance. Thus, it follows that employees within any given bank branch may have similar perceptions of what happens to and for customers.

Along with a composition argument for justifying the aggregation of individual level data, similarity of individual work environment perceptions has also been extensively discussed as a necessary condition for data aggregation (cf., Chan, 1998). That is, a demonstration of within-group interrater agreement is essential in order to employ measures of central tendency as indicators of group level or organization level constructs. Several procedures have been proposed for assessing within-group interrater agreement when individuals only rate a single target such as a group, business unit, or organization with respect to multiple items. These procedures include $r_{WG}$ type indices (James, Demaree, & Wolf, 1984; Lindell, Brandt, & Whitney, 1999) and average deviation (AD) indices (Burke, Finkelstein, & Dusig, 1999). Both AD indices and $r_{WG}$ indices
indicate the degree of interchangeability of raters (i.e., the extent to which individuals rate the target similarly).

When applying within-group interrater agreement indices, researchers often employ a cut-off value for acceptable levels of interrater agreement. If the interrater agreement value for individual responses on a measure in the group does not meet the minimum interrater agreement cut-off score, the construct is said to not “exist” at that level of analysis (i.e., is not meaningful). Obviously, inflexible adherence to minimum interrater agreement cut-offs for determining whether or not to aggregate individual responses would be considered strict operationism, where the group or organizational level construct is only defined with respect to a specified measure and interrater agreement index. However, in practice, researchers tend to conduct statistical analyses both with and without groups and organizations that have met pre-established interrater agreement cut-offs (e.g., see Borucki & Burke, 1999).

More recently, Lindell and Brandt (2000) and Schneider, Salvaggio, and Subirats (2002) have examined climate consensus or climate strength (i.e., variance in climate ratings) as mediators or moderators in organization-level analyses. These authors suggest that such variation in climate ratings within an organization may be theoretically important. Furthermore, Schneider et al. (2002) proposed the use of the standard deviation as an index of climate strength, with smaller standard deviations being indicative of greater strength. However, we believe that researchers can more easily interpret and study climate strength in terms of the magnitude of the AD index of interrater agreement (Burke & Dunlap, 2002). The AD index, which measures the absolute value of dispersion of responses about the mean (or median) response, provides a more direct conceptualization and measurement of climate strength in the metric or units of the original measurement scale. Although the AD index is used as a measure of agreement, the quantity AD is actually a measure of disagreement. As such, if AD were equal to zero (no disagreement), one would conclude that there is a very strong climate (or perfect agreement among the raters about the organization’s climate on an item or scale). Importantly, researchers can readily compare climate strength along multiple dimensions with a standard index such as AD, as opposed to comparing climate strength along such dimensions with standard deviations (particularly if the dimensions or scales have different numbers of items).

**Suggested methods and future research directions for aggregating psychological climate perceptions**

There are several issues to consider when aggregating individual level responses and using aggregated values (means or medians) in analyses at any level above the individual level of analysis. First, researchers should consider computing interrater agreement with respect to both AD and $r_{WG}$ type indices when
assessing interrater agreement with respect to ratings of a single target. The use of more than one interrater agreement index allows for checks on the results and suggests where researchers can conduct useful follow-up analyses to examine why, if any, discrepancies are occurring. Conducting follow-up checks is particularly informative in situations where researchers are considering the elimination of data points (e.g., units or groups with respect to data aggregation) that have not met a minimally acceptable level of interrater agreement on a particular interrater agreement index. If alternative indices support interrater agreement, the researcher can be more confident in conclusions about the degree of interrater agreement that is present. More informed decisions can then be made about whether or not to aggregate individual level data or discard cases at the group or organization level, both of which impact statistical power.

We should note that psychometric rationales for establishing interrater agreement cut-offs have only begun to appear in the literature under the assumption that a rectangular distribution (i.e., the distribution in which each response category is equally likely) is a reasonable approximation to judges responding randomly to an item or set of items in a measure (see Burke & Dunlap, 2002). Clearly, more research is needed on how this important assumption affects the establishment of practical cut-offs for interrater agreement with both $r_{WG}$ and AD type indices. Furthermore, this line of research could be extended beyond Likert-type rating scales, to the establishment of interrater agreement cutoffs (or interpretive standards) for the case of a response scale that involves percentages or proportions, rather than discrete categories, or at the other extreme, to dichotomous items and scales (i.e., for yes–no, agree–disagree, true–false scales).

Second, where data from multiple sources is available, researchers should consider aggregated employee and non-employee (e.g., customers) perceptions as alternative indicators of organizational level constructs and not necessarily treat the aggregated scores on the respective sources (e.g., employee and customer measures) as measures of independent constructs. With only a few exceptions (cf., Borucki & Burke, 1999), researchers have considered aggregated responses from alternate sources as indicators of distinct higher-level organizational constructs. Given that organizational variables (as indicated by aggregated perceptual variables) are not necessarily isomorphic with individual perceptions or variables (Borucki & Burke, 1999), this recommendation is intended to caution researchers against making inappropriate inferences about relations between organizational level constructs based on aggregated individual level data from different sources.

An important research issue that has only begun to be addressed is whether the observed agreement for a group is sufficiently different from chance agreement (i.e., whether or not we can conclude that some agreement exists regardless of its magnitude). Ensuring that the interrater agreement results for
any given interrater agreement index meet this criterion may be helpful for making decisions about data aggregation and is necessary for hypothesis-testing purposes (i.e., ensuring that agreement is significantly different from chance responding given the size of the group). Recently, researchers have discussed how the bootstrapping method (Cohen, Doveh, & Eick, 2001) or chi-square test (Lindell & Brandt, 1999) can be employed to test the statistical significance of $r_{WG}$ type indexes. Unfortunately, the chi-square test, which is widely available, is very inaccurate for statistical tests of $r_{WG}$ interrater agreement indices (Dunlap, Burke, & Smith-Crowe, in press). Therefore, Burke and Dunlap (2002) proposed the use of an approximate randomization test for testing the statistical significance of AD interrater agreement results, and extended the use of approximate randomization tests for use with $r_{WG}$ (Dunlap et al., in press).3

Issues concerning the use of statistical significance tests for studying interrater agreement with respect to multiple item scales remain to be addressed.

A related issue pertains to the present use of aggregated individual level data in tests of hypothesized causal models of organizational functioning. For instance, researchers (e.g., Neal, Griffin, & Hart, 2000; Schneider, White, & Paul, 1998) are beginning to test models linking several higher level climate constructs within the same organization to one another, where the climate constructs were based on aggregated individual level data. Importantly, although researchers are beginning to causally order climate constructs in tests of path models of organizational functioning, conceptual rationales are lacking for why and/or how characteristics of one organizational environment (e.g., internal environment or sub-climate) would causally affect the characteristics of the other organizational environment (e.g., task environment or sub-climate). More detailed conceptual rationales are needed in order for researchers to justify the causal ordering of characteristics of work environments that are generally conceptualized within the management and organization literatures as correlated or overlapping.

In addition to studying organizational climate based on composition arguments and aggregated individual work environment perceptions, a separate stream of research has employed an exploratory approach to identifying organizational climates or subclimates. That is, some researches advocate the use of cluster analysis to identify clusters or “collectives” of individuals and then consider aggregating individual climate scores with respect to the clusters (cf., Jackofsky & Slocum, 1988; Joyce & Slocum, 1984). The empirical evidence regarding the meaning and utility of the concept of collective climates is mixed (Gonzalez-Roma, Peiro, Lloret, & Zornoza, 1999; Patterson, Payne, & West, 1996; Payne, 1990; Young & Parker, 1999). Given that collectives are only

3A downloadable program (i.e., AGREE) for computing item-level AD and $r_{WG}$ values and for conducting tests of statistical significance with both AD and $r_{WG}$ indices is available on the web (www.tulane.edu/~dunlap/psylib.html).
identified via exploratory statistical analyses, we concur with Payne and his colleagues that individuals engaged in this line of research should demonstrate the socio-psychological meaning of the collectives and discuss their utility for enhancing our understanding of organizational processes. As an example, Young and Parker studied collective climates in relation to employee interaction groups and found that collective climates were related to these interaction groups. Their study also provided some evidence that individuals with similar levels of need strength share collective climate membership.

CONCLUDING COMMENTS

At the individual level of analysis, we addressed the question of how individual work environment perceptions might be conceptualized and measured from three psychological climate perspectives: (1) social constructionist, (2) general psychological, and (3) multiple stakeholder. Although we highlighted differences between these perspectives regarding hypothesized bases of work environment perceptions, organizing frameworks or models for capturing these perceptions, and the generality/specificity of psychological climate factors within these frameworks, we argued that these perspectives are complementary in nature. Aspects of each perspective can be meaningfully employed to enhance our understanding of individual perceptions of work environment characteristics. Moreover, this commentary has presented a general framework for conceptualizing and measuring climate perceptions with respect to different referents, organizational levels, industries or sectors, and stakeholder groups.

In regard to organizational level analyses, we discussed the importance of composition arguments or theory to justify data aggregation and the usefulness of aggregated climate perceptions as indicators of group or organizational level constructs. In addition, we suggested applicable within-group interrater agreement procedures for assessing similarity of individual responses when only a single target (e.g., group, organization) is rated and future research directions concerning data aggregation. Furthermore, we cautioned against measuring organizational climate in a strict operational sense and against viewing aggregated individual perceptions from different sources as necessarily being measures of independent organizational level constructs (i.e., isomorphism). Finally, we advocated the development of conceptual rationales as justification for the causal ordering of characteristics of work environments in tests of models of group or organizational functioning.

In conclusion, this commentary offers insights into issues related to defining and measuring work environment perceptions and provides guidance for employing aggregated perceptions as indicators of organizational climate. Although the extant psychological climate literature may appear to embody three competing perspectives, this commentary discusses how the social constructionist, general psychological, and multiple stakeholder climate
perspectives are more complementary, with the multiple stakeholder perspective providing a unifying framework.

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