CHAPTER 24

Organizational Culture and Climate

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Organizational culture and climate focus on how organizational participants observe, experience, and make sense of their work environment (Schneider, Ehrhart & Macey, 2011a) and are fundamental building blocks for describing and analyzing organizational phenomena (Schein, 2000). Although culture and climate have been approached from different scholarly traditions and have their roots in different disciplines, they are both about understanding psychological phenomena in organizations. Both concepts rest upon the assumption of shared meanings—a shared understanding of some aspect of the organizational context.

Historically, the construct of climate preceded the construct of culture. The social context of the work environment, termed "atmosphere," was discussed as early as 1910 (Hollingworth & Poffenberger, 1917; Münsterberg, 1915; Scott, 1911), and was among one of the many topics investigated at the National Institute of Industrial Psychology (NIIP) during the 1930s in Britain (Kwaitkowski, Duncan, & Shimmin, 2006). Climate was formally introduced in the 1960s, primarily based on the theoretical concepts proposed by Kurt Lewin (Lewin, 1951; Lewin, Lippitt, & White, 1939) and followed by empirical research (e.g., Litwin & Stringer; 1968; Stern, 1970). Organizations were examined from a cultural perspective as early as the 1930s (Trice & Beyer, 1993); however, organizational culture did not become a popular issue for study in the management literature until the 1980s, largely following the publication of several best-selling trade books.

A great deal of attention has been devoted to the question of whether the constructs of culture and climate are different, the same, or interrelated, primarily highlighting the similarities and differences between them (see Denison, 1996; Payne, 2000; Schein, 2000). Recently, scholars have taken this a step further, focusing on how and why the two constructs can be linked to provide a more comprehensive and parsimonious view of the higher order social structure of an organization (Schneider, Ehrhart, & Macey, 2011b; Zohar & Hofmann, in press). Along those lines, we view culture and climate as two complementary constructs that reveal overlapping yet distinguishable nuances in the psychological life of organizations (Schneider, 2000). Each is deserving of attention as a separate construct as well as attention to the relationship between the two constructs. Further, the continued study of culture and climate is important because these constructs provide a context for studying organizational behavior. That is, the social and symbolic processes associated with organizational culture and climate influence both individual and group behaviors, including turnover, job satisfaction, job performance, citizenship, safety, customer satisfaction, service quality, and organizational-level indicators of effectiveness (Schneider et al., 2011a). We structure this chapter by providing separate reviews and discussion of the culture and climate literature before turning to the relationships between the two constructs and the processes underlying their emergence, strength, and change.

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INTEGRATED MODEL OF CULTURE AND CLIMATE

Before providing an overview of our integrated model shown in Figure 24.1, it is important to define the constructs of culture and climate. Climate is an experientially-based description of what people "see" and report happening to them in an organizational situation (L. R. James & Jones, 1974; Schneider, 2000). Climate involves employees' perceptions of what the organization is like in terms of practices, policies, procedures, routines, and rewards (e.g., A. P. Jones & James, 1979; Rentsch, 1990; Schneider et al., 2011b). Hence, climate's focus is on the "situation" and its link to perceptions, feelings, and behavior of employees. It can be viewed as temporal, subjective, and possibly subject to manipulation by authority figures (Denison, 1996).

While climate is about experiential descriptions or perceptions of *what* happens, culture helps define *why* these things happen (Schein, 2000; Schneider, 2000). Culture pertains to fundamental ideologies (Trice & Beyer, 1993) and assumptions (Schein, 2010) and is influenced by symbolic interpretations of organizational events and artifacts (Hatch, 2011). Culture represents an evolved context embedded in systems, is more stable than climate, has strong roots in history, is collectively held, and is resistant to manipulation (Denison, 1996; Schein, 2010). Some empirical support has been offered to demonstrate that culture and climate are distinct constructs (e.g., Glisson & James, 2002; Rentsch, 1990).

Thus, climate is more "immediate" than culture. Individuals can sense the climate upon entering an organization through things such as the physical look of the place, the emotionality and attitudes exhibited by employees, and the experiences and treatment of visitors and new employee members (Schneider et al., 2011b). Climate resides within individuals in their perceptions of the organizational context, and when these perceptions are shared across individuals, the higher-level social construct emerges (L. R. James et al., 2008). In contrast, culture is a property of the collective (Martin, 2002), reflecting deeper phenomena based on symbolic meanings (Hatch, 2011), and shared meaning about core values, beliefs, and underlying ideologies and assumptions (Schein, 2010; Trice & Beyer, 1993). Organizations and work units thus are the appropriate level of analysis in culture research (Glisson & James, 2002).[1] The interpretative or sense making process individuals engage in to understand culture explains the "why" of organizational behavior. Climate develops from the deeper core of culture. Climate, or "what," can result from espoused values and shared tacit assumptions and reflects the surface organizational experience based on policies, practices, and procedures (Guion, 1973; Schein, 2000). As such, their integration can be accomplished by viewing climate as the lens through which the deep layers of culture can be understood (Zohar & Hofmann, in press).

Figure 24.1 represents a heuristic model for locating culture and climate in a conceptual framework across aggregate and individual levels of analysis and is used to help structure our review. When we developed the framework in the 2003 version of the *Handbook,* relatively few of the linkages had been tested, but this situation has changed dramatically, highlighting the key role that culture and climate play in understanding organizational phenomena.

Figure 24.1 shows that organizational culture is a function of industry and environmental characteristics, national culture, founder's values, and an organization's vision, goals, and strategy (Aycan, Kanungo, & Sinha, 1999). While recent work has shown that most of the variance in organizational culture is not explained by country differences or by differences in national cultures (Gerhart, 2008), the relationship between societal/national culture and organizational culture may be more complex than depicted in our multilevel model (Brodbeck, Hanges, Dickson, Gupta, & Dorfman, 2004; Dickson, BeShears, & Gupta, 2004).

Returning to Figure 24.1, organizational culture is expected to align with and relate to structure, practices, policies, and routines in the organization that in turn provide the context for climate perceptions. Some research has demonstrated relationships between culture and practices (e.g., Chow & Liu, 2009; Chow & Shan, 2009), although directionality has not been established. Organizational practices are the means through which employees' perceptions of climate and subsequent attitudes, responses, and behaviors are shaped. At the unit or organizational level, cultural values and assumptions lead managers to the explicit or implicit adoption of structural features and practices that influence the climate that develops. Leaders are purported to play a key role not only in creating and shaping the culture and climate (Schein, 2010; Schneider et al., 2011b) but also in facilitating appropriate alignment between culture, practices, and climate (Chow & Liu, 2009). Collective attitudes and behaviors of employees are shaped by climate and in turn impact organizational effectiveness, performance, and efficiency. Support for the

[1] We define work units as a collection of individuals that include, but are not limited to, strategic business units, divisions, departments, and teams within organizations.

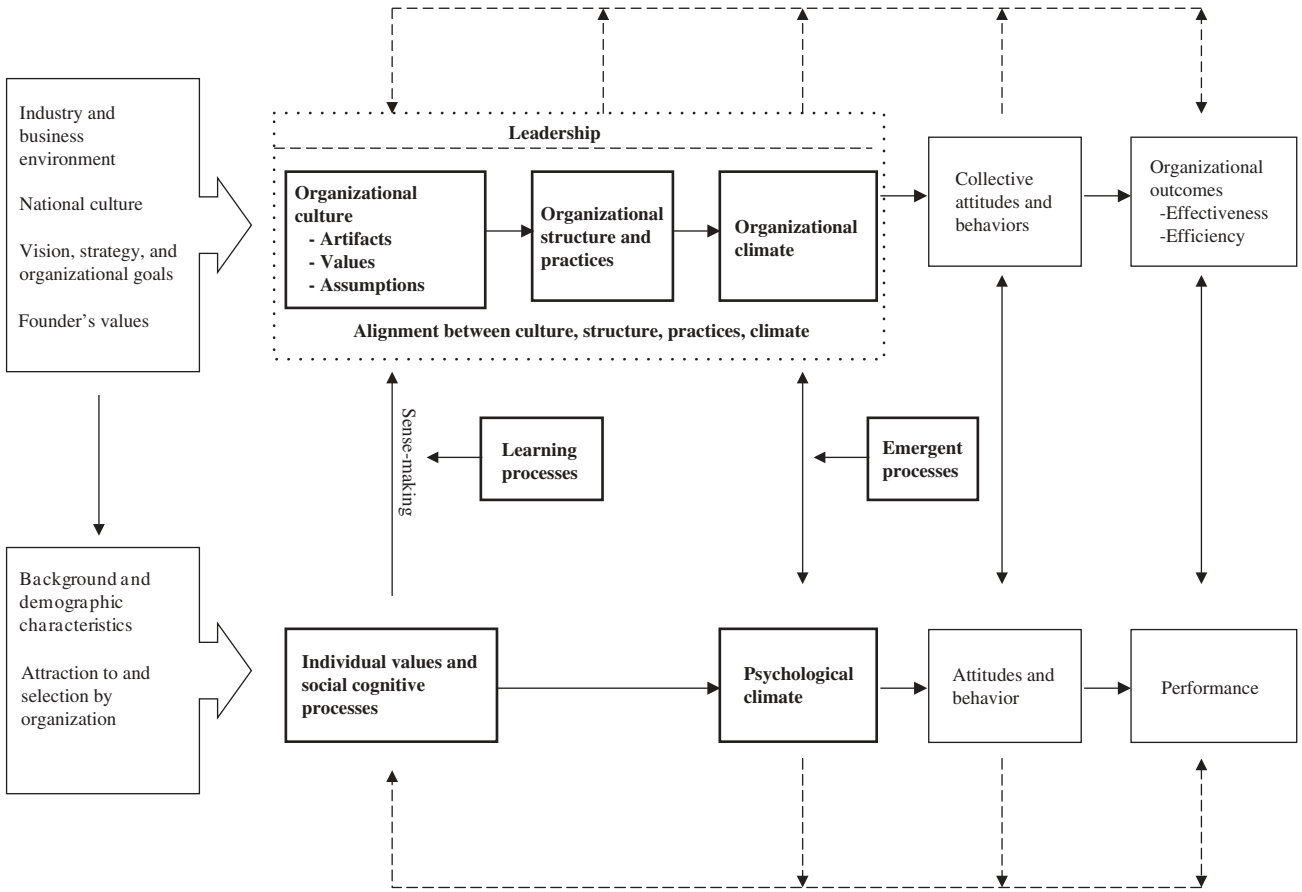

Figure 24.1 Multilevel model of organizational culture and climate

linkages has been demonstrated in several recent studies (e.g., Hemmelgarn, Glisson, & James, 2006; Ngo, Foley, & Loi, 2009; Rogg, Schmidt, Shull, & Schmitt, 2001).

Culture is learned over time. It is a product of vicarious and experiential learning (Bandura, 1977; Schein, 2010) that results from myriad interactions between leaders and unit members and produces sense making (Hartnell & Kinicki, 2011). Figure 24.1 further shows that individuals' background characteristics and process of joining the organization are related to individuals' values and social cognitive processes, which in turn influence psychological climate (L. A. James & James, 1989). When these climate perceptions are shared across an organization's employees, unit or organizational climate is said to emerge (L. R. James & Jones, 1974). We also propose that these shared perceptions will develop only when strong emergent processes are enacted in the organization (practices delivered in such a way as to create a strong situation, homogeneity of attributes among employees, interactions with other processes, social tuning to adjust perceptions to others, group processes, and leadership). When the emergent process is weak, idiosyncratic perceptions within an organization develop, producing wide variability in perceptions of climate, which can result in wide variability in individual attitudes and behaviors, diminishing the relationship to organizational performance (Ostroff & Bowen, 2000).

Finally, reciprocal relationships between the variables across the aggregate and individual level are proposed. Individual-level constructs are influenced in part by the existing organizational-level constructs; for example, individual climate perceptions are influenced by the existing organizational climate; individual attitudes and behaviors are influenced in part by the collective attitudes and behaviors. At the same time, individual constructs have a role in creating the contextual variables (Kozlowski & Klein, 2000). Finally, we include feedback loops at both levels of analysis. It is important to note the model is not comprehensive and we did not include all possible linkages, variables, and moderators in Figure 24.1. Rather, our purpose was to highlight those relationships that are most critical for integrating culture and climate across levels of analysis; boxes in bold represent the constructs and linkages that are our primary focus.

ORGANIZATIONAL CULTURE

This section begins by providing a historical overall review of the construct of organizational culture. We then consider the layers of organizational culture, the content or types of organizational cultures, and the antecedents and outcomes of organizational culture.

Historical Foundation and Definition of Organizational Culture

Research on organizational culture has its roots in anthropology. This research relies heavily on qualitative methods that use participant observation, interviews, and examination of historical information to understand how culture provides a context for understanding individual, group, and societal behavior. The application of participant observation and employee interviews to understand employee attitudes, behavior, and performance dates back to the 1930s. This work was followed by Gardner's textbook (1945) that examined organizations from a cultural perspective. Interest in an anthropological approach to studying work organizations nonetheless waned from the 1940s through early 1960s. While there was a resurgence in anthropologically based studies in the 1960s (e.g., Trice, Belasco, & Alutto, 1969) and 1970s (e.g., Mintzberg, 1973), the topic of organizational culture did not become prominent until the 1980s.

This interest in organizational culture was stirred by anecdotal evidence contained in three best-selling books: Ouchi's (1981) *Theory Z: How American Business Can Meet the Japanese Challenge;* Deal and Kennedy's (1982) *Corporate Cultures: The Rites and Rituals of Corporate Life;* and Peters and Waterman's (1982) *In Search of Excellence.* Each suggested that strong organizational cultures were associated with organizational effectiveness. The number of applied and scholarly publications on the topic of organizational culture has mushroomed since the 1980s (Hartnell, Ou, & Kinicki, 2011; Sackman, 2011) and is likely to continue in light of findings suggesting that organizational culture is one of the biggest barriers to creating and leveraging knowledge assets (De Long & Fahey, 2000), to effectively implementing total quality management programs (Tata & Prasad, 1998), and to successfully implementing technological innovations (DeLisi, 1990).

The concept of organizational culture has a variety of meanings and connotations. For example, Verbeke, Volgering, and Hessels (1998) identified 54 different definitions in the literature between 1960 and 1993. Part of this inconsistency is due to the fact that culture researchers represent an eclectic group that come from a variety of disciplines (such as sociology, anthropology, and psychology) and use different epistemologies and methods to investigate organizational culture. That said,

Hofstede, Neuijen, Ohayv, and Sanders (1990) conclude that there are some common characteristics across the different definitions of organizational culture. These commonalities include the notion that organizational culture includes multiple layers (Schein, 2010) and aspects (i.e., cognitive and symbolic) of the context (Mohan, 1993), that organizational culture is a socially constructed phenomenon influenced by historical and spatial boundaries (Schein, 2000; Schneider et al., 2011b), and the concept of "shared" meaning that is central to understanding an organization's culture.

While a variety of definitions of culture that integrate these commonalities have been offered, the most comprehensive one has been offered by Schein (2010):

> a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (p. 18)

Schein suggests that organizational culture is learned by unit members who pass it on to new members through a variety of socialization and communication processes. This definition also implies that overt behavior, while not directly part of organizational culture, is clearly influenced by the basic assumptions or ideologies (Trice & Beyer, 1993) people hold.

Martin (1992, 2002) proposed that organizational culture can be considered from integrative, differentiated, or fragmented perspectives. An integrative perspective is based on the idea that organizations have one overriding or *gestalt* culture, an idea that is still being debated in the literature (Harris & Ogbonna, 1999; Hartnell & Walumbwa, 2011). It is important to note that the existence of an overriding culture does not negate the existence of multiple components or dimensions. For example, Southwest Airlines' gestalt culture includes beliefs, values, and assumptions related to being employee-centric, customer focused, and productive. Most research to date has adopted an integrative viewpoint. The differentiated perspective accepts the premise that organizations have numerous subcultures. Subcultures represent a focal unit's (e.g., group, division, geographic location) shared values, beliefs, norms, and assumptions. Although the notion of subcultures is well accepted, very little research has empirically examined them or considered their relationship with a gestalt culture (Li & Jones, 2010). Subcultures are discussed later in this chapter. Finally, Martin (1992, 2002) believes that a fragmented point of view is needed because of the ambiguity associated with knowing whether or not gestalt cultures and subcultures exist. In conclusion, although research has not examined comparative relationships between Martin's three perspectives and measures of organizational effectiveness, we believe that it underscores the conclusion that organizational culture can be studied at multiple levels or units of analysis (e.g., organizational, departmental, functional, etc.) and from different vantage points (gestalt vs. subculture vs. configural system).

Layers of Organizational Culture

Numerous scholars have proposed that organizational culture possesses several layers or levels that vary along a continuum of accessibility and subjectivity (Hofstede et al., 1990; Schein, 2010). Schein (2010) concludes that there are three fundamental layers at which culture manifests itself: observable artifacts, espoused values, and basic underlying assumptions.

Observable Artifacts

Artifacts are surface-level realizations of underlying values that represent manifestations of deeper assumptions (Schein, 2010) or ideologies (Trice & Beyer, 1993). Artifacts include the

> visible products of the group, such as the architecture of its physical environment; its language; its technology and products; its artistic creations; its style, as embodied in clothing, manners of address, and emotional displays; its myths and stories told about the organization; its published lists of values; and its observable rituals and ceremonies. (Schein, 2010, p. 23).

Trice and Beyer (1993) conclude that there are four major categories of cultural artifacts: symbols (e.g., natural and manufactured objects, physical settings, and performers and functionaries), organizational language (e.g., jargon and slang, gestures, signals, signs, songs, humor, jokes, gossip, rumor, metaphors, proverbs, and slogans), narratives (e.g., stories, legends, sagas, and myths), and practices (e.g., rituals, taboos, rites, and ceremonies).

Espoused Values

Schwartz (1992) notes that values possess five key components:

> Values (1) are concepts or beliefs, (2) pertain to desirable end-states or behaviors, (3) transcend situations, (4) guide selection or evaluation of behavior and events, and (5) are ordered by relative importance. (p. 4).

Espoused values reflect values that are specifically endorsed by management or the organization at large; close to 90% of organizations across numerous countries have written documents stating espoused corporate values (e.g., Van Lee, Fabish, & McGaw, 2002). In contrast, enacted values represent values that are exhibited or converted into employee behavior. Gruys, Stewart, Goodstein, Bing, and Wicks (2008) coined the term *values enactment* to represent the connection between behaving in ways that are consistent with the espoused values, and they studied its antecedents and outcomes at the individual level of analysis. Results revealed that individuals' value enactment was higher when employees had longer tenure and when employees in the unit displayed greater values enactment on average.

Basic Assumptions

Basic assumptions are unobservable and reside at the core of organizational culture (Schein, 1990, 2010). Deeply held assumptions frequently start out as values that over time become so ingrained or taken for granted that they take on the character of assumptions. Basic assumptions are rarely confronted or debated and are extremely difficult to change. Challenging basic assumptions produces anxiety and defensiveness because they provide security through their ability to define what employees should pay attention to, how to react emotionally, and what actions to take in various kinds of situations (Schein, 2010).

Moreover, Trice and Beyer (1993) and Hatch (1993) criticize Schein's proposal that basic assumptions represent the core of culture because assumptions ignore the symbolic nature of culture. Trice and Beyer suggest that ideologies represent the core content or substance of a culture. Ideologies are "shared, relatively coherently interrelated sets of emotionally charged beliefs, values, and norms that bind some people together and help them to make sense of their world" (Trice & Beyer, 1993, p. 33). Hatch also believes that Schein's model is deficient because it fails to consider interactive processes between artifacts, values, and assumptions. We concur with Hatch's evaluation and recommend that future work investigate the dynamic relationships between the layers of culture.

The Content of Organizational Culture

Most researchers either conduct a qualitative analysis to assess the content of organizational culture (e.g., Ford, Wilderom, & Caparella, 2008; Schein, 2010), or use surveys to quantitatively assess espoused values and beliefs (e.g., Cooke & Szumal, 2000; O'Reilly, Chatman, & Caldwell, 1991) or a set of work practices thought to underlie organizational culture (e.g., Hofstede, 1998; Hofstede et al., 1990). Ashkanasy, Broadfoot, and Falkus (2000) reviewed questionnaire measures of organizational culture and concluded that many are used for consultative purposes, lack a sound theoretical basis, are infrequently used, and lack validity. Hartnell et al.'s (2011) meta-analytic review found 46 of the 94 studies used ad-hoc measures with limited evidence of validity. Further, other researchers (e.g., Schein, 2000; Trice & Beyer, 1993) do not accept the premise that surveys are a valid measure of organizational culture and conclude that they should not be used as the principal method for assessing organizational culture.

We concur with both Martin (2002) and Schneider et al. (2011a) that it is not relevant to argue for the merits of using surveys versus case studies to assess organizational culture. There simply is too much variety in each general method, and they both provide valuable information. The survey-based research has allowed for identifying different taxonomies of organizational culture to examine the content of culture. To that end, there are five culture surveys that are theoretically based and have been subjected to preliminary validation, each of which is discussed briefly below.

The *Organizational Culture Inventory* (OCI; Cooke & Lafferty, 1987) categorizes culture into three types. A constructive culture endorses normative beliefs associated with achievement, self-actualizing, humanistic-encouraging, and affiliative. The second type, a passive-defensive culture, reinforces values related to seeking approval, being conventional or dependent, and avoiding accountability. Finally, an aggressive-defensive culture endorses beliefs characterized as oppositional, power oriented, competitive, and perfectionist. Evidence supporting the reliability and validity of the OCI is provided by Cooke and Szumal (1993) and Cooke and Szumal (2000).

The *Competing Values Framework* (CVF) was developed by Quinn and his associates (Quinn & McGrath, 1985; Quinn & Rohrbaugh, 1983) and produces an assessment of the extent to which an organization possesses four core cultural types: group (now called clan), developmental (now called adhocracy), rational (now called market), and hierarchical (now called hierarchy) (see Cameron, Quinn, Degraff, & Thakor, 2006). These four types are based on the intersection of two axes—structure and focus. The structure axis contrasts flexibility and discretion with stability and control and the focus dimension contrasts an internal versus external orientation. The CVF

is the most frequently used measure of organizational culture (Hartnell et al., 2011) and its four-factor structure was supported in several studies (e.g., McDermott & Stock, 1999; Zammuto & Krakower, 1991); it was found to generalize to companies in Australia (Lamond, 2003), Korea (Choi, Seo, Scott, & Martin, 2010), and Hong Kong (Kwan & Walker, 2004).

Denison and Mishra (1995) developed the *Denison Organizational Culture Survey (DOCS)* by rotating the CVF's dimensional axes pertaining to structure and focus to create their own four culture types. The types have different names than the CVF, but they are essentially the same.

The *Organizational Culture Profile* (OCP; O'Reilly et al., 1991) measures eight dimensions of culture (innovation, attention to detail, outcome orientation, aggressiveness, supportiveness, emphasis on rewards, team orientation, and decisiveness). The survey was originally based on the Q-sort methodology and has more recently been converted to Likert-type items (e.g., Sarros, Gray, Densten, & Cooper, 2005). Research using the OCP has shown that it possesses interrater reliability, test-retest reliability, within- and between-group differences, and predictive validity. However, factor analysis of the 54 items has identified different factor structures across samples (cf., O'Reilly et al., 1991; Sarros, Gray, Densten, & Cooper, 2005). In an attempt to overcome measurement problems associated with the original OCP, Ashkanasy et al. (2000) developed a 50-item survey to measure 10 dimensions of organizational culture. Unfortunately, validation studies of this instrument uncovered a two-factor solution, thereby failing to support the a-priori dimensionality of this newly proposed instrument.

Hofstede et al. (1990) developed the *Work Practices Survey* to measure organizational culture. Examination of the items, however, indicates that they assess employees' perceptions of general and specific work-environment characteristics. Consistent with our definitions of culture and climate, we believe that these measures are actually tapping climate, not culture, and recommend that they not be used as indicators of organizational culture.

Antecedents of Organizational Culture

Very little research has examined the antecedents of organizational culture. What has been written in this regard is predominantly theoretical and antecedents come from outside or inside the organization. Predicted external antecedents include industry and business environments (Dickson et al., 2004), national culture (Hofstede et al., 1990), external stakeholders such as local communities, local media outlets, and environmental groups (Hatch, 2011), and external cultures anchored outside the organization such as competitors, strategic alliances, political parties, and professional associations (Harrison & Corley, 2011). Discussion of internal antecedents primarily revolves around the role of leadership and the values, beliefs, and assumptions of employees working in the unit. Schein (2010, p. 219), for example, aptly notes that "cultures basically spring from three sources: (1) the beliefs, values, and assumptions of founders of organizations; (2) the learning experiences of group members as their organization evolves; and (3) new beliefs, values, and assumptions brought in by new members and leaders." There clearly is consensus among researchers and practitioners that the founders of a new organization play a key role in forming culture and that leaders in general exert significant influence in how culture is maintained and changed over time (e.g., Hartnell & Walumbwa, 2011; Jung, Wu, & Chow, 2008; Trice & Beyer, 1993).

The direct effect of leadership on culture has been demonstrated. Berson, Oreg, and Dvir (2008) revealed that CEOs' self-directive values were positively associated with innovative cultures, security values were positively related to bureaucratic cultures, and benevolence values were positively correlated with supportive cultures. Similarly, Giberson, Resick, Dickson, Mitchelson, Randall, and Clark's (2009) results demonstrated that CEO values and personality were associated with the four culture types within the CVF in hypothesized directions.

Outcomes of Culture

Culture has been viewed as a key driver of organizational effectiveness (e.g., Deal & Kennedy, 1982; Peters & Waterman, 1982). The theoretical rationale for this relationship is founded on the resource-based view (RBV). According to the RBV organizations create competitive advantage by creating firm resources that are valuable, rare, inimitable, and nonsubstitutable, and organizational culture can be one of these resources (Barney, 1991). Three qualitative reviews of the relationship between culture and measures of organizational effectiveness were discussed in the 2003 version of this chapter and all three resulted in similar conclusions: There is not a significant relationship between organizational culture and organizational effectiveness. Hartnell et al. (2011) proposed that this conclusion was premature and conducted a meta-analysis of studies published between 1980 and January 2008 to provide a quantitative assessment of relationships

between organizational culture and measures of organizational effectiveness.

In the Hartnell et al. (2011) meta-analysis, measures of culture were coded into the CVF cultural types and measures of organizational effectiveness were coded into categories of employee attitudes, operational effectiveness, and financial effectiveness. Hierarchical cultures were not examined due to a lack of studies using this culture type. Overall, 23 out of 25 positive correlations between culture types and the measures of effectiveness were significant.

Overall, Hartnell et al.'s (2011) results demonstrate that types of organizational culture have differential relationships with criteria (see Boggs & Fields, 2010) and many of these relationships are moderated. Correlations between culture and effectiveness also varied in terms of their strength, suggesting the need to examine additional moderators and mediators of the culture–effectiveness relationship. Finally, the results revealed that the three culture dimensions were moderately to largely correlated with each other. One conclusion derived from this later finding is that culture dimensions interact with each other to further account for culture's role in firm effectiveness, which thereby reinforces the need to examine cultural configurations.

Mediators and Moderators

We uncovered three different theoretically derived patterns of relationships between organizational culture and outcomes. Similar to Figure 24.1, results support the view that organizational culture is a key exogenous variable that indirectly influences outcomes via multilevel mediators such as leadership (Chen, 2004), individual needs (Cardador & Rupp, 2011), human resource practices and policies (Carroll, Dye, & Wagar, 2011), and corporate reputation (Flatt & Kowalczyk, 2008). In contrast, other studies support linkages in which culture serves as a mediator of relationships between corporate responsibility and human resource practices and various outcomes (Surroca, Tribó, & Waddock, 2010). Finally, several studies support the argument that organizational culture is a key social contextual variable that moderates the relationship between leadership and criteria such as organizational commitment (Chen, 2004), innovation (Jung et al., 2008), and employee attitudes and financial effectiveness (Kinicki, Jacobson, Galvin, & Prussia, 2011). Organizational culture also was found to be an inconsistent moderator of the linkage between human resources practices and policies and various criteria (Carroll et al., 2011).

Conclusion

Five key conclusions can be derived from research on the content of organizational culture. First, we concur with Martin (2002) and Schneider et al. (2011a) that it is impossible and illusionary to resolve this paradigmatic argument about whether culture should be measured ethnographically or via surveys. Second, organizational culture can be measured and organizations can be differentiated on the basis of their cultures (cf. Cameron et al., 2006; Fey & Denison, 2003). Third, although the CVF and DOCS have been the most frequently used measures of culture since 1980 (see Hartnell et al., 2011), there may be other valuable dimensions of culture worth investigating. For example, researchers have discussed the importance of considering "strategically oriented" cultures that are customer focused (Ford et al., 2008), innovative (Dombrowski et al., 2007), or ethical (Zhang, Chiu, & Wei, 2009). Fourth, past research is plagued with problems associated with levels of analysis. Specifically, although organizations and work units are the correct level of analysis in culture research, many researchers continue to measure culture by assessing individuals' perceptions of values—similar to measures of psychological climate—and then analyze data at the individual level of analysis (Hartnell et al., 2011). Individual perceptions of culture represent a very different construct than unit or organizational culture, and labeling such studies as *culture* distorts and convolutes knowledge about organizational culture (see Yammarino & Dansereau, 2011) because results based on idiosyncratic perceptions get interpreted as if they apply to unit-level data and analysis (see Sackman, 2011). We encourage both journal editors and reviewers to look for this problem in journal submission and to ensure constructs are defined and analyzed appropriately.

In terms of antecedents of culture, rhetoric has outpaced rigorous research, although leadership appears to be supported both theoretically and empirically as an antecedent to culture. While recent meta-analytic work (Hartnell et al., 2011) shows relationships between culture and performance, it appears that culture's effects on effectiveness may be more indirect as culture may be both a mediator and moderator of other key relationships.

CLIMATE

This section provides a brief review of the climate construct. We begin by discussing the historical roots and

theoretical underpinnings of the construct, examine the content of climate, and summarize research findings on antecedent and outcome relationships.

Historical Roots and Theoretical Foundations

Climate is widely defined as the perception of formal and informal organizational policies, practices, procedures, and routines (Schneider et al., 2011b). However, the focus of climate research has evolved over the years since Lewin's studies of experimentally created social climates (Lewin, 1951; Lewin et al., 1939). Lewin and his colleagues were interested in examining the climate or atmosphere created by different leadership styles and the consequences these different climates had for the behaviors and attitudes of members in the groups, in this case young boys.

From a theoretical perspective, the relationship between people and their social environment was framed in the formulation: behavior is a function of person and the environment (Lewin, 1951). As such, the environment is created by and/or studied as a construct that is separate from the people who operate within it (Roberts, Hulin & Rousseau, 1978). Climate is an abstraction of the environment that is based on the patterns of experiences and behaviors that people perceive in the situation (Schneider, et al., 2011b). The "agents" (e.g., leaders, management) or factors that create the climate (e.g., structure, strategy, practices) were either assumed or not directly studied (Denison, 1996).

Following the work of Lewin, research in the late 1950s through the early 1970s emphasized the human context of organizations, with particular emphasis on individual-level and organizational outcomes (Schneider et al., 2011b). For example, a number of theorists (e.g., Argyris, 1964; Likert, 1967; McGregor, 1960) suggested that the social context, climate, or atmosphere created in the workplace has important consequences such that the conditions created in the workplace influence the extent to which an employee is satisfied, gives his or her services wholeheartedly to the organization, and performs up to potential in patterns of activity that are directed toward achieving the organization's objectives. Similarly, a number of researchers documented consistency between climates and the needs or personalities of individuals within them (e.g., George & Bishop, 1971; Pervin, 1967) and showed the impact that climates have on the performance and attitudes of individuals that work within them (e.g., Litwin & Stringer, 1968; Schneider & Bartlett, 1968).

Controversies and Resolutions

Despite climate's strong historical foundation, the concept was still somewhat ill-defined and, as work continued throughout the 1970s and 1980s, the construct became plagued by controversies, ambiguities, and methodological difficulties (Kozlowski & Doherty, 1989). These issues centered around the objective versus perceptual nature of climate, and the appropriate level of analysis for addressing climate.

Objective Versus Perceptual Climate and Levels of Analysis

In contrast to the approach based on Litwin's work (that climate was driven largely by leadership and practices), Payne and Pugh (1976) suggested that climate was produced by the objective context and structure of the organization (e.g., size, hierarchy, span of control, resources, and rate of turnover). Controversy continued over whether climate was an objective organizational property or a subjective and perceptual one (Taguiri & Litwin, 1968). A related controversy centered on whether climate was an individual or organizational attribute (e.g., Guion, 1973).

To resolve this issue, a distinction between *psychological climate* when climate is conceptualized and measured at the individual level and *organizational climate* when climate is conceptualized and studied as an organizational variable was proposed (L. R. James & Jones, 1974). In doing so, the original Lewinian basis for climate was extended to include interactionist and cognitive theoretical perspectives. That is, climate was conceptualized as sets of perceptually based descriptions of organizational features, events, and processes. At the individual level, these perceptions represent cognitive interpretations of the context and arise from individuals' interactions with context and with each other (e.g., L. R. James & Jones, 1974; A. P. Jones & James, 1979). Thus, more attention was given to individuals' perceptions than to organizational characteristics, and psychological meaningfulness became an explicit part of the definition (Rentsch, 1990).

A related concern was raised about psychological climate perceptions, questioning whether climate is a measure of affective responses similar to job satisfaction (e.g., Guion, 1973). This issue was resolved through a series of papers showing that climate and satisfaction are conceptually distinct constructs (e.g., LaFollette & Sims, 1975; Payne, Fineman & Wall, 1976; Schneider & Snyder, 1975). To maintain this distinction, given that climate is defined as perceptions of the context, Schneider and his colleagues (Schneider et al., 2011a) propose that climate

items be phrased to be descriptive of the context and not include feelings, affective tone, or internal evaluations of the experience in the environment.

Nevertheless, debate continued into the 1980s over whether *organizational* climate should be measured through objective features of organizations (Glick, 1985, 1988) or through assessments of how individuals perceive the organization (L. R. James, Joyce & Slocum, 1988). James and his colleagues (e.g., L. R. James et al., 1988; L. A. James & James, 1989) argued that since organizational climate arises out of cognitive appraisals and social constructions of individuals, measures of organizational climate should rely on the individual as the basic unit of theory and thus it is appropriate to describe organizations in psychological terms. When consensus among individuals in their perceptions of climate can be demonstrated, the perceptions can be meaningfully aggregated to represent unit or organizational climate (L. R. James, 1982). The distinction between psychological climate as an individual perception and organizational climate as a shared perception is widely accepted today (L. R. James et al., 2008; Schneider et al., 2011a).

Climate Is Not Aggregation Alone

The generally accepted definition of climate is that it is a perception of practices, policies, procedures, and routines in the organization. When these perceptions are shared, climate can be construed as what Ferris, Arthur, and Berkson (1998) refer to as higher-order social structure—a socially interactive context within which individuals operate and that highlights the behaviors and responses that are expected, supported, and rewarded (Schneider et al., 2011b). In our view, simply showing that employees have some degree of consensus around a construct does not necessarily constitute climate. For example, the degree to which team members' share affective responses such as mood, emotion, and affect has been labeled affective climate (e.g., Gamero, González-Romá & Peiró, 2008). As these are not based on perceptions of practices, policies, procedures, and routines, we would conceptualize this as collective affective tone, not as climate.

Similarly, researchers have long recognized the important role of leaders in creating and maintaining climates (e.g., Kozlowski & Doherty, 1989; Lewin et al., 1939; Rentsch, 1990) and have typically viewed leadership as an antecedent of climate. However, some researchers have also viewed leadership as a dimension of climate (Schneider et al., 2011b). Leadership and climate are distinct constructs and blurring of boundaries between the two constructs muddies the construct space and potential nomological network. For many years, assessments of leaders' style and behaviors have been based on aggregated responses from subordinates or other organizational members. Using a leadership style or behavior measure and terming it climate because it is based on aggregated responses of subordinates (see Chen & Bliese, 2002; Liu & Phillips, 2011; Wallace, Johnson, Mathe, & Paul, in press) is inconsistent with the definitions both of leadership and of climate. While leaders certainly play a role in creating the climate, climate typically entails more than leader behaviors alone. Importantly, in the widely accepted definition of climate as perceptions of practices, policies, and routines (Schneider et al., 2011b), leader behaviors are not included. Our perspective is that the constructs of leadership and climate should be treated separately, and the behaviors and styles of supervisors should be viewed as triggers or antecedents of climate.

The Content and Modes of Conceptualizing Climate

In terms of the content of climate, attempts have been made to determine the dimensions and categories of climate (e.g., Campbell, Dunnette, Lawler, & Weick, 1970; L. A. James & James, 1989; Kuenzi & Schminke, 2009; Ostroff, 1993; Patterson, et al., 2005). Different approaches and terms have proliferated. We provide an overview of the molar, generic, and strategic approaches and attempt to clarify the meaning inherent in these different approaches

Molar Climate and Climate Systems

Early work often focused on global or molar concepts of climate. Based on the Gestalt psychology tradition, Litwin and Stringer (1968) denoted climate as a molar construct that captures the motivational value of the *total* situation and Schneider (1975) provided a general definition of climate perceptions as "psychologically meaningful molar descriptions that people can agree characterize a system's practices and procedures" (p. 474). A similar view was proposed by James and James (1989) in that a higher-order factor underlies measurements of psychological climate, termed PC_g. Because climate perceptions are based on emotionally relevant cognitions, they share a single latent component that reflects the subjective valuations of the environment individuals make in reference to their sense of organizational well-being (L. R. James et al., 2008). Some research has supported the notion that a second-order factor of a molar climate of well-being exists (e.g., Burke, Borucki, Chester, & Hurley 1992; L. A. James & James, 1989). Given its theoretical basis in terms of

well-being, this view of molar climate is likely most relevant for understanding individual-level or collective attitudinal outcomes (Schulte, Ostroff, Shmulyian, & Kinicki, 2009).

The aforementioned view of molar climate is based on an additive, compensatory model. That is, scores on various dimensions of climate (e.g., autonomy, cooperation, leader support, and role stress) are averaged or combined additively. However, as proposed in the first version of this chapter (Ostroff, Kinicki, & Tamkins, 2003) and echoed by Zohar & Hofmann (in press), this view underestimates the complexity of climate in that patterns or configurations based on relative emphasis or priorities likely exist and a patterned approach may more accurately reflect climate. A summed or aggregate score across dimensions also has little practical meaning or utility as it does not allow for isolating the more important dimensions or those that are not in alignment (Schneider et al., 2011a). Thus, a system approach has been proposed to identify the configurations or patterns that exist across multiple dimensions or aspects of climate, that is, the pattern of high and low scores across all climate dimensions (cf. MacCormick & Parker, 2010; Schulte, Ostroff & Kinicki, 2006; Schulte et al., 2009). Each configural system represents the overall pattern of climate across dimensions and can then be related to outcomes of interest. This view of climate is consistent with Tolman (1932), who distinguished between molar and molecular behaviors, with molar being strongly influenced by gestalt psychology and conveying the notion that the whole is more than the sum of the parts in emergent properties.

Generic Climate Dimensions

In addition to molar climate, early attention was devoted to the study of multiple climates within an organization. Research and rhetoric attempted to define a set of broad dimensions thought to best represent the most important aspects of organizational climate that are relevant across organizations. The result has been a proliferation of dimensions, largely without parsimony (Zohar & Hofmann, in press).

Some attempts have been proffered to organize the wide array of dimensions into facets of climate. These approaches attempt to delineate a set of broad-based generalizable facets such as autonomy, structure, reward orientation and consideration (Campbell et al., 1970), leader support, role stress, autonomy and cooperation (L. A. James & James, 1989), or affective, instrumental, and cognitive (Ostroff, 1993) facets with associated dimensions for each facet. As noted by Zohar & Hofmann (in press), this approach can advance theory by defining the boundaries of climate dimensions. However, additional work is needed to define the boundaries of climate and to compare the utility of these different generic measures of climate.

Strategic Climates

Schneider (1975) concluded the generic approach to climate was too amorphous, inclusive, and multifaceted to be useful. That is, attempting to describe organizational situations simultaneously along 10 or so generic facets has no focus and, thus, relationships to some specific outcome will be modest at best (Schneider et al., 2011b). As an alternative, he offered a strategic approach, proposing that climate be conceptualized and studied as a specific construct that has a particular referent or strategic focus, indicative of the organization's goals (Schneider, 1975). Climate should be conceived of as a "climate for" something (e.g., a climate for service), which can be directly linked to a commensurate specific, strategic criterion or outcome. The underlying premise is similar to that in attitude research (Ajzen & Fishbein, 1975) in that the predictor and criterion variables should not only be conceptually linked, but should also be operationalized at the same level of specificity.

The notion of a strategic "climate for" has gained wide acceptance. For example, researchers have studied climates for safety (e.g., Christian, Bradley, Wallace, & Burke 2009), service (e.g., Liao & Chuang, 2007), sexual harassment (e.g., Offermann & Malamut, 2002), diversity (e.g., McKay, Avery, & Morris, 2009), racial bias (Ziegert & Hanges, 2005), innovation (e.g., Klein & Sorra, 1996), justice (e.g., Mayer, Nishii, Schneider, & Goldstein, 2007), citizenship behavior (e.g, Schneider, Gunnarson, & Niles-Jolly, 1994), ethics (e.g., Victor & Cullen, 1988), empowerment (e.g., Chen, Lam, & Zhong, 2007) voice (Morrison, Kamdar, & Wheeler-Smith, 2011), and excellence (Eisenbeiss, van Knippenberg, & Boerner, 2008).

The advantages of this approach are that it focuses climate around a specific criterion of interest and coupled with the focus on commensurate climates and criteria at the same level of specificity tends to demonstrate stronger validity (Schneider et al., 2011a). That said, the strategic climate approach may be in danger of falling prey to Schneider's (1975) original criticism that the number of dimensions of climate was growing without a uniform approach, as evidenced above in the number of "strategic" climates studied. The impetus behind the strategic climate notion was not to simply study any single aspect of the social context of the organization and label it a "climate

for" but rather that a climate for should be linked to a commensurate and specific strategic outcome reflective of an organizational goal. However, what some researchers label as a strategic "climate for . . . " are often treated in much the same way that generic climate dimensions are treated, linking climate to a broad array of outcomes and mixing levels of specificity (what Zohar and Hofmann, in press, label as domain-specific climate). For example, a climate for justice has been linked to OCB, commitment, job satisfaction, team performance, and team absenteeism (Colquitt, Noe, & Jackson, 2002; Ehrhart, 2004; Liao & Rupp, 2005; Mayer et al., 2007). A climate for empowerment has been linked to feedback-seeking behavior, overall team performance, and individual performance (Chen et al., 2007; Seibert, Silver, & Randolph, 2004; Wallace et al., in press). We urge researchers to carefully consider whether they are capturing a strategic climate or simply adding another single dimension to the large body of climate dimensions.

Integration Among Molar, Generic, and Strategic Climate Approaches

Integrations of molar, generic, and strategic climates are emerging. For example, at the molar level, Burke and his colleagues (e.g., Burke, Borucki, & Hurley, 1992; Burke, Borucki & Kaufman, 2002) propose the existence of multiple higher order climates or multiple PC_gs that combine generic and strategic climates, that is, a higher order climate for well-being and a higher order climate for service. Wallace, Popp, and Mondore (2006) supported the notion that management–employee relations and organizational support climates provide a foundation for safety climate, and Schulte, et al. (2009) combined generic and strategic climate dimensions in climate configurations.

Most recently, Schneider and his colleagues (Schneider et al., 2011a, 2011b) provided a unified framework for integrating generic, molar, and strategic climate. In their conceptualization, generic dimensions (e.g., fairness, participation) represent the latent construct of a molar climate for employee well-being. This molar climate provides the foundation upon which appropriate strategic climates can be built. Another potentially useful framework for integrating climate approaches was developed by Patterson and his collegues (Patterson et al., 2005) based on Quinn and Rohrbaugh's (1983) CVF, which was discussed earlier in regard to the content of culture. The climate survey developed based on this framework should allow researchers to simultaneously consider multiple types and approaches to climate as well as to make comparisons between culture and climate.

Antecedents of Climate

More attention has been directed toward studying the outcomes of climate than to understanding the factors that influence climate, although this has been changing in recent years. Based on an extensive review, Payne and Pugh (1976) proposed a model indicating how organizational climate was produced from context (e.g., purpose, size, resources, technology) and structure (hierarchy, authority system, structuring of role activities). While early research only modestly supported this model (e.g., A. P. Jones & James, 1979; Payne & Pugh, 1976), more recent developments, and the conceptualization of climate around a specific strategic focus, have shown stronger results. For example, Lindell and Brandt (2000) revealed that climate mediated the relationship between a number of antecedents such as formalization, leadership and team process, and outcomes such as attitudes and turnover. The context, organizational practices, and leadership are potentially important antecedent variables that can be gleaned from the literature.

Organizational context variables have shown promise for understanding climate. For example, technical, structure, and reward systems have been related to a climate for technical updating (Kozlowski & Hults, 1987). Organizational-level variation in age has been shown to be important for organizational climate of age discrimination (Kunze, Boehm & Bruch, 2011) and the demographic composition of the organization has been related to women's psychological climate perceptions of gender inequity across various occupations (King, Hebl, George, & Matusik, 2010). At the team level, team size and team collectivism have been shown to be significant antecedents of team climate of justice (Colquitt et al., 2002). Some work has also explored the impact of the external context on climate, such as the degree of violence in the surrounding community for procedural justice climate (Dietz, Robinson, Folger, Baron, & Schulz, 2003) and the racial composition of the community in which the organization is located for diversity climate (Pugh, Dietz, Brief, & Wiley, 2008).

Human resource management practices have been particularly emphasized as a factor that drives climate (e.g., Kopelman, Brief, & Guzzo, 1990; Klein & Sorra, 1996; Schneider, 1990). Recently, research has supported the relationship between human resource practices and organizational climate (e.g., Collins & Smith, 2006; Ngo et al., 2009).

Finally, top management and leaders have been proposed as important direct or indirect factors believed

to influence organizational climate (e.g., Kozlowski & Doherty, 1989; Zohar & Hofmann, in press) due to the fact that managers and leaders are largely responsible for communicating meaning (Schein, 2010). However, leadership has not been a primary focus in climate research until recently (Schneider et al., 2011b). Leaders' personality has been related to individuals' perceptions of justice climates (Mayer et al., 2007) and to unit service climate (Salvaggio, Schneider, Nishii, Mayer, Ramesh, & Lyon, 2007). In terms of ethical climate, leader's moral development (Schminke, Ambrose, & Neubaum, 2005) and consideration and initiating structure (Mulki, Jaramillo, & Locander, 2009) have been related to perceptions of ethical climate. Leadership style has also been shown to influence climate (e.g., Ehrhart, 2004; Liao & Chuang, 2007). In a theoretical treatment, Dragoni (2005) argued that a leader's goal orientation and related patterns of behaviors provide cues to subordinates to influence the development of goal-oriented climates in groups. Additional issues pertaining to formation and consensus of climate perceptions are addressed later in the climate emergence section.

Outcomes of Climate

A wide variety of climates have been related to various attitudinal and performance-based outcomes. By far, the most studied group of climate outcomes are those experienced by individuals in the workplace, although a growing body of work has examined relationships between group or organizational climate and group or organizational outcomes.

Individual-Level Outcomes

Two types of studies have been conducted to examine the impact of climate on individual outcomes: (a) individual-level studies examining relations between psychological climate perceptions and individual outcomes and (b) cross-level studies whereby aggregated unit or organizational climate scores are related to individual outcomes. Two meta-analyses have demonstrated consistent relationships between psychological climate and individual outcomes. Using Ostroff's (1993) typology, Carr, Schmidt, Ford, and DeShon (2003) demonstrated that three higher order facets of climate (affective, cognitive, and instrumental) were related to job performance, stress, well-being, and withdrawal through their relationship on commitment and satisfaction. Similarly, psychological climate showed significant relationships to motivation and performance, which were fully mediated by attitudes (Parker et al., 2003).

Moreover, individuals' perceptions of strategic climates have also been related to affective and behavioral outcomes. For example, meta-analytic results indicate that perceptions of climate for safety are related to commitment, satisfaction, safety behaviors, and accidents (Beus, Payne, Bergman, & Arthur, 2010; Christian et al., 2009; Clarke, 2010). Perceptions of climate for service friendliness have been shown to be an indicator of displayed emotions of employees (Tsai, 2001), while climate for tolerance of sexual harassment has been related to attitudes and reports of harassment incidents (e.g., Offermann & Malamut, 2002).

Subunit and Organizational-Level Outcomes

Climate for service and climate for safety have been the most consistently examined climates "for" at unit and organizational levels. Studies examining climate for service have shown relationships to customer satisfaction (e.g., Mayer Ehrhart, & Schneider, 2009; Schneider, Salvaggio, & Subirats, 2002), customer perceptions of service quality (e.g., Schneider, White, & Paul, 1998), and unit performance (e.g., Jong, Ruyter, & Lemmink, 2004). In terms of climate for safety, group and organizational climate for safety have been related to a variety of indices of safety behaviors and accidents (Beus et al., 2010; Christian et al., 2009). Additional climate dimensions have also been examined. For example, team climate of procedural justice has shown significant relationships to team performance and absenteeism (Colquitt et al., 2002). Climate for innovation has been found to relate to team creativity (Pirola-Merlo & Mann, 2004) and organizational product innovation (Patterson et al., 2005). Generic climate dimensions have also been related to organizational effectiveness (e.g., Lindell & Brandt, 2000; Ostroff & Schmitt, 1993). Finally, climate systems, operationalized as configural patterns of climate, have been linked to customer satisfaction and financial performance, whereas overall climate was related to employee attitudes (Schulte et al., 2009).

Mediators, Moderators, and Boundary Conditions

In Figure 24.1, climate is positioned as a mediator between practices and employee responses and performance outcomes. In recent years, this linkage has been tested and supported at the organizational (e.g., Collins & Smith, 2006; Rogg et al., 2001; Takeuchi, Chen, & Lepak, 2009) and unit level (e.g., Chuang & Liao, 2010). In addition, at the unit level of analysis, climate has also been shown to mediate the relationship between leadership style and

citizenship behaviors at the group level (Ehrhart, 2004) and individuals' commitment (Walumbwa, Hartnell, & Oke, 2010).

Importantly, in recent years, research has moved from demonstrating a relationship between climate and outcomes toward examining the process through which climate has its effect on outcomes (Schneider et al., 2011b). In support of the linkages in Figure 24.1, collective attitudes, motivation, and behaviors have been shown to be mediators between climate and performance outcomes at the organizational level (e.g., Patterson, Warr, & West, 2004), group level (e.g., Neal & Griffin, 2006; Schneider, Ehrhart, Mayer, Saltz, & Niles-Jolly, 2005), and individual level (e.g., Carr et al., 2003; Parker et al., 2003). Also consistent with Figure 24.1, psychological climate has been shown to be a mediator between unit-level climate and individual outcomes (e.g., Seibert et al., 2004).

Climate has also been examined as a moderator that can compensate for lower levels of some organizational attributes or that can enhance the effectiveness of organizational attributes. For example, climate was shown to compensate for low level of leader attributes in terms of providing service to internal customers (Hui, Chiu, Yu, Chen, & Tse, 2007), unit performance (Fay, Lührmann, & Kohl, 2004), and team innovation (Eisenbeiss et al., 2008). In contrast, other studies have shown that climate facilitates or enhances organizational attributes (e.g., Grizzle, Zablah, Brown, Mowen, & Lee, 2009; Hofmann, Morgeson, & Gerras, 2003; Walumbwa, Peterson, Avolio, & Hartnell, 2010).

Finally, some research has begun to explore boundary conditions under which climate operates (e.g., Van der Vegt, Van de Vliert, & Xu, 2005; Yang, Mossholder, & Peng, 2007). As an illustration, the positive effect of a unit-level climate for service on customer outcomes depended on service-related variables such as frequency of customer contact and service intangibility (Dietz, Pugh, & Wiley, 2004; Mayer et al., 2009a). We encourage more research along these lines to help develop a deeper understanding of the relationship between climate and outcomes as well as theoretical treatments to develop a more parsimonious framework for understanding mediators and moderators of climate.

Conclusion

Despite the now widely accepted definition of climate as a summary perception or summated meaning that people attach to particular features of the work setting, and the growing body of work elucidating the important role that climate plays in understanding organizational functioning, work is still needed in this area. It is generally acknowledged that multiple types of climate exist within an organization (e.g., Schneider et al., 2011b) and that organizations operate in multiple performance domains (e.g., Cameron, 1978). Yet, the work on climate "fors" has tended to examine one climate "for" at a time. The recent theoretical and empirical work that combines generic or foundational climates with strategic climates (e.g., Clarke, 2010; Patterson et al., 2005; Schneider et al., 2011a, 2011b) provides a fruitful avenue for future research. Further, the climate system approach has the potential to better capture the totality of climate while at the same time retaining the relative importance of various facets of climate. Different configurations of climates are likely to be related to effectiveness outcomes in different performance domains (Schulte et al., 2009), but more work is needed in this area.

Important research is also being conducted to elucidate the antecedents of climate; however, this work has not been conducted systematically. We identified three areas of potential antecedents—context, practices, and leadership. The relative importance of these factors in determining climate is largely unknown. Further, understanding the intersection of practices and leadership in creating climates is needed. Finally, interesting research has begun to examine climate as a mediator and moderator. There is additional research on how and why climate relates to outcomes as well as on the boundary conditions under which climate has its effects.

RELATIONSHIP BETWEEN CULTURE AND CLIMATE

There are several key issues to consider when discussing the relationship between culture and climate. We begin with the theoretical and empirical overlap between the constructs and propose that organizational practices are the linking mechanism that mediates the relationship between culture and climate. We then explore levels of analysis issues and data aggregation.

Overlap and Confusion Between Culture and Climate

Although researchers traditionally made theoretical distinctions between culture and climate, a number of articles have explored what differentiates these concepts (cf. Denison, 1996; Payne, 2000; Schein, 2000; Schneider et al., 2011b; Zohar & Hofmann, in press). Traditionally, culture

was studied with qualitative methodologies using case studies while climate research has been largely quantitative and survey-based, asking employees about their perceptions of the organizational context. However, in more recent years, many empirical culture studies have become virtually indistinguishable from traditional climate research (Boggs & Fields, 2010). We believe the root cause for the blurring of culture and climate stems, not so much from theoretical treatments, but from empirical attempts to assess the constructs.

Two types of studies have contributed to the overlap between climate and culture. First, during the 1990s, a number of quantitative "culture" studies began appearing, using a survey-based methodology much like that of climate (e.g., Chatman, 1991; Cooke & Szumal, 1993), often focusing on the same dimensions originally investigated in climate research (e.g., support, achievement, innovation). In the culture literature, these dimensions (e.g., support, innovation, achievement) are often referred to as "values," while in the climate literature they are often referred to as climate dimensions or the organizational context. We argue that, in these studies, the "why" of culture and "what" of climate are not clearly distinguished. The second research stream that has contributed to the blurring of these constructs is culture studies that focus on quantitative assessments of perceptions of organizational practices (e.g., Hofstede, 1998; Hofstede et al., 1990; van Dyck, Frese, Baer, & Sonnentag, 2005). The items and dimensions assessed in these studies are often very similar to traditional climate research and more closely resemble climate as the perceptions of practices, policies, and procedures.

These types of studies tend to focus on what Schein (2010) terms *artifacts* and represent an overlap between research in climate and culture. We argue, similar to others, that artifacts are the overlapping area between climate as perceptions of practices and culture as deep-rooted assumptions and values. Climate can be viewed as a representation of enacted values, and a comparison between espoused and enacted values helps inform employees about the basic assumptions and core values (Zohar & Hofmann, in press).

Organizational Practices: The Linking Mechanism Between Culture and Climate

Practices, policies, procedures, and routines play a role in both culture and climate. They are viewed as artifacts in culture (Schein, 2010) while in the climate literature (e.g., L. R. James, 1982; Schneider & Reichers, 1983) they are viewed as the basis for the formation of climate perceptions. We propose that the set of actual practices, policies, and procedures is the linking mechanism between culture and climate (see Figure 24.1), *not* a measure of either culture or climate.

Several researchers and theorists (e.g., Carroll et al., 2011; Kopelman, Brief, & Guzzo, 1990) assert that the organizational practices, management practices, policies, and procedures (hereafter referred to generically as "practices") adopted in an organization reflect cultural influences. Similarly, other work has examined the degree of (in)congruence between culture and actual organizational practices and has taken this to be a measure of culture "consistency" or "alignment"(e.g., Denison, 1990; Zohar & Hofmann, in press). That is, alignment between culture and practices is a separate variable or construct. This implies that (a) culture is not practices and (b) culture should lead to a set of practices, policies, procedures, and routines that are consistent with the underlying cultural values (e.g., Kopelman et al., 1990). To the degree alignment is achieved, organizational functioning and effectiveness should be enhanced (Chow & Lin, 2009; Schein, 2010).

However, alignment between culture and practices is not sufficient for organizational effectiveness. Organizational members must perceive the practices in a manner consistent with the underlying values and intended strategic goals (Chow & Liu, 2009; Ostroff & Bowen, 2000). Therefore, culture can lead to a set of relevant practices that are then perceived by organizational members as climate. For example, a set of reward practices about how to treat customers, selection standards, and so forth may be adopted to be consistent with a culture that values the customer. To the extent that organizational members perceive these practices to be consistent with a service focus and agree among themselves on their perceptions, a service-based organizational climate is said to exist in the firm (Schneider, 1990). This suggests the importance of "practices" as a mediating mechanism for linking culture and climate (Kopelman et al., 1990). Further, it suggests that inconsistencies between culture and climate are likely to have occurred through some misalignment or poor implementation of the set of practices. If the adopted practices do not reflect the culture, or if practices are poorly implemented, climate perceptions may develop that are counter to the underlying cultural values and assumptions (Bowen & Ostroff, 2004). In addition, these climate perceptions provide employees with direction and orientation about where they should focus their skills, attitudes, and behaviors in pursuit of

organizational goals (Schneider et al., 1994). As implied in Figure 24.1, alignment between culture, practices, and climate is necessary for employees to respond and behave in ways that will lead to organizational effectiveness (e.g., Ostroff & Bowen, 2000).

MOVING ACROSS LEVELS OF ANALYSIS

In the culture literature, the term *levels* has been used frequently to discuss the different layers of culture (artifacts, values, assumptions/ideologies) identified by Schein (1990). In the climate literature, the term *levels* has been used in a manner consistent with the levels of analysis literature, that is, distinguishing between hierarchical levels in the organization (e.g., Klein, Dansereau, & Hall, 1994). Here, we use the term *levels* to refer to the organizational levels of analysis literature, and we distinguish between the individual, subunit (e.g., group, division, plant, function), and organizational level. We use the terms *organizational* or *unit level* generically to refer to higher level constructs.

More attention needs to be placed on levels of analysis issues in the culture literature. Culture is a unit-level construct and it has been studied at various hierarchical unit levels (e.g., societies, organizations, departments, stores). Although all of these units are legitimate levels from which to study organizational culture, limited research has been devoted to elucidating how culture comes to be understood across an entire organization or within different categorical units or subcultures (e.g., Hatch, 2011). This is unfortunate because a multilevel process takes place in culture emergence and change but the multilevel nature is underexplored. It also is important to reinforce the previously noted problem of studying this unit-level construct at the individual level of analysis, thereby creating a levels-of-analysis problem.

In the climate area, levels issues have been made explicit. A levels-based distinction has been made between psychological climate and organizational climate (L. R. James & Jones, 1974) with the relationship between them viewed as compositional. That is, there is isomorphism in the manifestations of the construct at different levels of analysis whereby the constructs share the same content, meaning, and construct validity across levels of analysis (Chan, 1998; L. R. James et al., 2008; Kozlowski & Klein, 2000). Because researchers have acknowledged that climate is based on the psychological meaning of the situation to individuals, the unit of measurement begins with the individual. Only when these perceptions are shared across people does organizational climate become a meaningful construct (e.g., L. R. James et al., 2008).

Further, there is the assumption that different cultures and climates can exist at different organizational levels of analysis in the form of subcultures (e.g., Hofstede, 1998; Martin & Siehl, 1983) and subclimates (e.g., Schulte, 2007). We acknowledge that the specific content of culture and climate can vary across groups within an organization and return to the implications of this after exploring the notion that climate and culture are emergent properties of organizations.

Shared Meaning and Perceptions

Shared meanings and perceptions are the foundation of organizational level or unit-level culture and climate. We discuss a variety of issues associated with the methods used to establish the extent of shared meaning or convergence of perceptions.

Demonstrating Agreement

Both qualitative and quantitative approaches have been used to demonstrate agreement in the culture literature. Some culture researchers elicit interpretations of what the organizational context means to employees (e.g., Langan-Fox & Tan, 1997) and, from these assessments, summarize meaning into some aggregated qualitative description of the culture. The qualitative method does not well allow for objective comparisons across units or for direct assessment of the extent of agreement. For those who examine organizational culture with surveys, many researchers assess culture via single respondents from the participating organizations, generally the CEO (e.g., Kinicki et al., 2011). A few researchers have relied on methods that assess culture with multiple respondents from a single unit and have adhered to procedures established in the levels-of-analysis literature to support the aggregation of unit-level culture scores (Hartnell et al., 2011). Two criteria should be evaluated. The first rests on demonstrating between-group differences between units on their mean scores. The second pertains to establishing within-unit agreement as a means that culture exists because individuals interpret and make sense of the environment similarly (Yammarino & Dansereau, 2011).

In contrast to the culture literature, climate researchers have devoted considerable attention to documenting the degree to which organizational members share perceptions of the organizational climate, and fundamental controversies over the "aggregation problem" have largely been

resolved (cf. Bliese, 2000; Chan, 1998; Klein et al., 2000). The most common procedure is to use a mean or aggregated score across individuals within the same unit to represent a higher-level climate. Researchers have long applied the same two criteria mentioned above (between-group differences and within-unit agreement) to show that psychological climate, operationalized at the individual level, is functionally isomorphic to another form of the construct (e.g., organizational climate) at the higher level. Recently, there has been some question regarding which particular statistic to use to demonstrate sufficient consensus among perceptions in order to justify aggregation (cf. Burke, Finkelstein, & Dusig, 1999; L. R. James, Demaree, & Wolf, 1984; LeBreton, James, & Lindell, 2005; LeBreton & Senter, 2008).

A related issue pertains to the referent or focal point for assessing climate. Traditional assessments of climate (e.g., L. R. James & Jones, 1974) tended to have the focal point of measurement as the individual (e.g., I perceive . . .) using a direct consensus model (Chan, 1998). James and his colleagues (e.g., L. R. James, 1982; L. R. James et al., 2008) purport that the individual, not the group or organization referent, is the most appropriate frame for assessing climate because climate is based on an individual's own perception of the context; when perceptions across individuals are shared, the construct of climate has meaning at a higher level of analysis. In recent years, however, many researchers have argued for a referent-shift model (Chan, 1998). Rather than measure an individual's own climate perceptions, the item referent is the unit or group as a whole or how an individual believes most people in the organization perceive the climate (e.g., Klein, Cohn, Smith, & Sorra, 2001; Kunze et al., 2011; Mayer et al., 2007; Morrison et al., 2011). That is, the conceptualization of the climate construct is still at the level of individual perception, but the referent of the content is changed to the unit level (from self to others), with the rationale being that the unit of analysis is the higher level, hence a group or organizational referent is more appropriate. The distinction between direct consensus and referent shift models is more than semantics. Asking individuals to focus on the unit as whole, and take themselves out of the equation, removes the individual and may mask one source of individual variation from the unit-level assessment, whereas asking individuals their own idiosyncratic perceptions and then demonstrating shared agreement to give rise to unit climate situates climate as shared idiosyncratic climate perceptions. Clearly, more theory and research is needed to determine the implications of this shift in focal point and the use of group-based agreement techniques for the construct meaning of climate across levels of analysis.

(Dis)agreement

The absence of shared perceptions has been addressed in both the culture and climate literatures. For example, the deviance model (Martin, 1992) or the dissensus model (Trice & Beyer, 1993) of culture highlights disagreement or lack of consensus. However, there is debate as to whether deviance or dissensus in an organization indicates whether a culture exists, a fragmented culture exists, or no culture exists.

In the climate literature, to the extent homogeneity in perceptions of climate is present, collective perceptions and responses should be more uniform and organizational-level relationships can emerge and be meaningfully examined (Ostroff & Bowen, 2000). Large variability in perceptions among members indicates that aggregated perceptions do not adequately represent a construct of climate at the higher level (e.g., L. R. James et al., 2008; Klein et al., 2000), hence only individual-level relationships are meaningful.

Empirical studies of climate have often found that while agreement on climate may be adequate from a methodological standpoint to justify aggregation, there is a still considerable variability in perceptions, and some groups or organizations in the sample have less than adequate agreement on climate perceptions (cf. Colquitt et al., 2002; González-Romá, Peiró, & Tordera, 2002; Zohar & Tenne-Gazit, 2008). Thus, dispersion models (e.g., Chan, 1998; Kozlowski & Klein, 2000) have been proposed whereby the degree of variability in responses represents an important variable in its own right (not only justification for an aggregate score), independent of the "level" of the content of climate (e.g., mean climate on some climate dimension). Issues pertaining to variability and homogeneity are discussed in the following section as they pertain to the emergence of culture and climate.

EMERGENCE OF SHARED MEANING AND PERCEPTIONS

Culture and climate are viewed, at least partly, as emergent properties of organizations. As defined by Kozlowski and Klein (2000, p. 55), "A phenomenon is emergent when it originates in the cognition, affect, behaviors or other characteristics of individuals, is

amplified by their interaction, and manifests as a higher level, collective phenomenon. . . . " Two distinct dimensions of emergent processes are delineated: elemental content and interaction. Elemental content is the raw material of emergence and refers to the cognitions, affect, perceptions, or mental representations. Interaction denotes the process of emergence (e.g., how elemental content becomes shared) through communication and information exchange, sharing of ideas, exchanging work products, and other forms of interactions among employees. In combination, the elemental content and form of the interaction process comprises the emergent phenomenon. When group members share the same schema for important work-related events, it enables them to act more effectively and efficiently with one another and within the context of the situation (Schneider, 1975). Thus, it is important to understand *how* similar "cognitive maps" (Weick, 1995) can be created across people, thereby allowing an analysis of the situation as a whole as opposed to individual differences in the perception of situations (Magnusson & Endler, 1977).

Emergence of Organizational Culture

Hatch (1993, 2011) proposed a systems model to explain how Schein's (2010) organizational layers—artifacts, espoused values, and assumptions—dynamically interact to influence organizational sense making. Trice and Beyer (1993) also argued that individuals use sense making processes to interpret a unit's values, beliefs, and assumptions. Although this work enhances our knowledge about the elemental component of culture by describing how unit members derive meaning from their work environments, it does not well explain how a shared view of an organization's culture emerges or comes to exist. Schneider and Reichers (1983) focus on emergence as a process of attraction, selection, and attrition whereby new members are initially drawn to the organization based on the founder's values and goals, are selected by the initial group of management based on having values consistent with those of the founder, and leave if they do not fit in the organization, a process that creates homogeneity and allows for emergence of a shared sense of culture. However, emergence of a shared view of culture also requires the modeling of interactions into the sense-making process.

Hartnell and Kinicki (2011) pursued this recommendation by developing a model that attempts to explain how the pattern of interactions between leaders and their unit members leads to culture emergence in nascent work units. The focus on nascent units, as opposed to existing ones, is important because culture first emerges during the founding stages of an organization and thereafter becomes a unit-level property that might be further shaped. Hartnell and Kinicki integrated self-regulation theory (Carver & Scheier, 1998) and event-structure theory (Allport, 1954) to explain how leader–unit member interactions create consensus about values, beliefs, and assumptions in nascent work units over time. Their fundamental proposition is that culture emergence is a learning process based on the by-products of unit members' vicarious and experiential learning. Bass and Avolio (1994), Keith and Frese (2011), and Schein (2010) similarly concluded that unit-level learning is fundamental to culture emergence.

Culture emergence ultimately results from a sense making process of leaders' regulatory behaviors, members' regulatory behaviors, and leader–member interactions. Similar to Schein (2010), leader regulatory behaviors include planning, organizing, monitoring, evaluating, and correcting unit behavior in the pursuit of unit-level goals, and vicarious norms refer to learned behavioral expectations derived from listening to leaders and observing their regulatory behavior. This perspective clearly frames culture emergence around a vision or purpose, specifically unit goals. Unit regulatory processes are predicted to lead to experiential learning (i.e., learning based on experience or the consequences of a unit's goal-directed behavior) and shared mental models of effective behavior. Shared mental models represent a shared understanding and mental representation about the important contextual elements (Mohammed, Ferzandi, & Hamilton, 2010). Shared mental models are expected to foster experiential norms because they create consensus regarding normative expectations about future behavior (Bettenhausen & Murnighan, 1985).

Leader–member interactions are the critical linchpin within Hartnell and Kinicki's (2011) model because they drive consensus about the values, beliefs, and assumptions. Maitlis and Lawrence (2007) refer to leader–member interactions as *sense giving*. They define sense giving as an interpretative process "in which actors influence each other through persuasion or evocative language" (p. 57). Hartnell and Kinicki (2011) view leader–unit member interactions more broadly in scope than Maitlis and Lawrence in that they are directly tied to reconciling performance discrepancies (i.e., gaps between goals and actual performance) that occur over time. Leader–member interactions involve bidirectional discourse through which leaders and members affirm appropriate behavior or identify and clarify informational

discrepancies. Leaders promote two-way communication through coaching and delivering performance feedback. Members similarly propagate bilateral communication through sharing operational feedback with their leaders. These leader–member interactions identify gaps between vicarious and experiential norms, clarify behavioral expectations, and create consistent signals about appropriate and effective behavior.

The system of interactions between leaders and members is consistent with event structure theory (Allport, 1954). Event cycles represent a continual cyclical relationship between *ongoings* (everyday activities for leaders and members), and *events* (discrete interactions or circumstances that cause a significant disturbance to members' routines or pursuits toward goal accomplishment). Hartnell and Kinicki (2011) use event structure theory to describe how event cycles and their underlying repeated interactions between leaders and members create consensus about values, beliefs, and assumptions. They propose that leaders and members spend more time in ongoings than events over time, which serves to build consensus. Further, through the event cycles vicarious learning and experiential norms develop, producing consistent information about desired behavior, allowing for a shared culture to emerge.

There is one last issue to consider regarding culture emergence. Specifically, once culture has emerged, culture no longer originates in the cognitions, affect, or behaviors of individuals. Rather, "postemergent" culture stems from collective, mental models, affective states, and behaviors. This implies that events triggering culture-related event cycles after a state of emergence represent issues, information, or performance discrepancies that may modify or reshape the culture.

Very little is known about the process of culture emergence beyond theory on sense making (e.g., Hatch, 1999; 2011; Trice & Beyer, 1993; Weick, 1995). Future research is needed to test the propositions underlying Hartnell and Kinicki's model and to consider alternative theoretical explanations of culture emergence.

Emergence of Organizational Climate

The formation of climate has been regarded primarily as an individual-level process based on sense making and cognitive representations of meaning inherent in organizational features and processes (Schneider, 1983). This process, however, has also been viewed as interactive and reciprocal (Ashforth, 1985; Kozlowski & Doherty, 1989; Schneider, 1983).

Unit and organizational climate are viewed as emergent properties and as such may capture more than the sum of the individual parts (Kozlowski & Klein, 2000). In sociology, there is long tradition of studying emergence as a group effect whereby the group attribute has effects beyond a commensurate individual attribute (Blau, 1960). Some demonstration that higher-level climate is an emergent property that demonstrates group effects comes from studies showing that the aggregate higher level climate has effects on individuals beyond their own psychological perceptions of climate (e.g., Schulte et al., 2006; Spell & Arnold, 2007).

It is important to note that emergence is related to what has been referred to as agreement-based strength (Ostroff et al., 2003), which refers to the agreement on climate (Lindell & Brandt, 2000; Schneider et al., 2002). For a climate to have emerged, a reasonable degree of consensus in perceptions is needed (L. R. James et al., 2008) and, from there, the amount of variance in those perceptions can be taken to indicate how strong the emergent climate is. Below we address structure and practices, homogeneity, interaction processes, leadership, and work-group influences as factors that influence emergence of climate.

Structure and Practices

In the structuralist perspective, climate arises out of structural characteristics of an organization. With its roots in Lewin's (1951) field theory, this approach assumes that organizational characteristics such as size and structure establish a common reality that provides the basis for shared perception. Little work has specifically addressed how structural components facilitate emergence, although team size has been shown to be related to the extent of agreement in justice climate (Colquitt et al., 2002) and the degree of formalization important for safety climate (Zohar & Luria, 2005).

More consistent with current definitions of climate, the set of policies, practices, and procedures of the organization are the features that provide the basis for shared perceptions to emerge. However, merely introducing and implementing a set of practices around some strategic focus is not sufficient. Unless the practices are designed and implemented in such a way as to create a strong situation (Mischel, 1973), idiosyncratic psychological climate perceptions are likely to emerge (Ostroff & Bowen, 2000). To the extent that the situational stimulus is ambiguous or unclear, multiple categorization is likely (Feldman, 1981) and different people are likely to use different cognitive categories to attend to different aspects of the situation, making subsequent attributions and responses different.

On the other hand, collective sense making can occur when practices are designed to induce a strong situation, regardless of the type of practice implemented. Bowen and Ostroff (2004) proposed a set of meta-characteristics of HRM systems around three foci: consistency, whereby practices represent a coherent and internally consistent whole; visibility, such that practices are made very visible and salient; and consensus, with practices communicated widely and clearly and administered consistently throughout the organization. These meta-characteristics of the practices purportedly help reduce ambiguity and enhance clarity of interpretation in the setting, thereby allowing for similar "cognitive maps" to develop across people so that the context and appropriate ways of behaving are understood. A strong process of delivering practices creates the elemental content and this content is shared because interpretations are consistent across people. While the particular set of human resource management (HRM) practices should have a strong influence on the content of climate perceptions, the manner in which the practices are delivered should influence the degree of strength or consensus about these perceptions. Some research has begun to develop measures of these constructs and demonstrate the importance of HRM system strength in understanding perceptions and responses (e.g., Bartram, Stanton, Leggat, Casimir, & Fraser, 2006; De Winne, Delmotte, & Sels, 2012).

Homogeneity

This factor of emergence is based on the ASA process (Schneider & Reichers, 1983) in which individuals are attracted to and want to join organizations that have similar attributes to their own views and attributes. Selection procedures attempt to ensure that the applicants hired fit the organizational context, and people tend to leave organizations when the work context does not fit their personal characteristics. As a result, an organization is likely to be comprised of very similar people (Schnieder, 1987). These effects may be furthered by the socialization processes that can change new organizational members' personal attributes, goals, and values in the direction of those of the organization (Ostroff & Rothausen, 1997). Due to this homogeneity process, individuals may communicate more frequently, develop stronger ties, and should perceive the organization similarly (Roberson & Colquitt, 2005). Some work has begun to examine relationships between demographic similarity and the degree of consensus or strength of justice climate perceptions, but results have been mixed (cf., Naumann & Bennett, 2000; Roberson & Colquitt, 2005).

Social Interaction and Communication

The third factor that can foster emergence of organizational climate is based on social interaction, with roots in social behaviorism, such that individuals adopt the views of others to enhance their identity (Schneider & Reichers, 1983). Shared perception and meaning evolves from communications and interaction patterns among members of the same group. Overlapping schemas or cause maps across people can be facilitated through social exchange and transactions among employees. As such, they can agree on the appropriate aspects of the environment to attend to, and how to interpret these aspects and respond to them appropriately (Weick, 1995). Through a series of event cycles of interaction and interpretation (Morgeson & Hofmann, 1999), group members construct the meaning of organizational events from repeated social interactions and it is these interactions that are likely to result in conformity (Ashforth, 1985; Luria, 2008).

Social psychologists introduced the notion of social tuning to explain the process through which interactions with others lead to similar attitudes. Achieving a shared reality or a sense that beliefs are shared is thought to establish and maintain social bonds with others (Hardin & Higgins, 1996). Adjusting attitudes and beliefs toward those of others is one manner in which individuals achieve a heightening of shared reality. When individuals desire to get along with others (Sinclair, Lowery, Hardin, & Colangelo, 2005) or desire to acquire knowledge (Lun, Sinclair, Whitchurch, & Glenn, 2007), they are more likely to tune their beliefs to be consistent with those of others (Hardin & Higgins, 1996). Similarly, Venkataramani and Schleicher (2011) show the importance of negative affective ties whereby people distance themselves from individuals they dislike in their social network, thus disrupting the spread of common perceptions.

In support of the social-interaction perspective, the extent of social interactions (González-Romá et al., 2002; Schneider et al., 2002), the density of communication networks (Zohar & Tenne-Gazit, 2008), and the strength of affective ties (Venkataramani & Schleicher, 2011) have been related to the degree of consensus or strength of the climate.

Work Group Processes

As noted earlier, the aggregate level of analysis refers to any higher level (e.g., division, unit). The most immediate and proximal level is likely to have the greatest influence (Rousseau, 1985). For example, a climate of communication at the group level was found to have a stronger relationship to organizational identification

than the department-level communication climate (Bartels, Pruyn, De Jong, & Joustra, 2007). Thus, processes within an individual's immediate work group or team should be of particular importance in the formation of shared perceptions. For example, group processes, such as sharing information, coordinating efforts, interdependence, group identification, and cohesion, have been shown to be important for developing shared perceptions of climate (e.g., Luria, 2008; Naumann & Bennett, 2000; Roberson, 2006).

Leadership

Leaders are likely to play a particularly important role in the emergence of and consensus of climate perceptions. Leaders or supervisors serve as interpretative filters of relevant organizational processes, practices, and features for all group members, contributing to the development of common climate perceptions (Kozlowski & Doherty, 1989). By exposing employees to the same policies, practices, and procedures, they act as "climate engineers" (Naumann & Bennett, 2000) or "climate embedders" (Schein, 2010).

The specific mechanisms through which leaders enhance consensus in perceptions are not well understood. The patterns of leader behaviors can be interpreted by members to elucidate the leader's priorities and shape the climate (Dragoni, 2005). Further, communication from leaders is likely to be one key means for developing convergence in climate perceptions (González-Romá et al., 2002). Leaders explicitly and directly communicate their own interpretations and, in conjunction with interacting with most members, will be able to introduce a common interpretation among unit members (Rentsch, 1990). Using a technique called concept mapping, Marks, Zaccaro, and Mathieu (2000) showed that leader communication in the form of transmitting, exchanging, reporting, and/or passing on information about the task and work environment, as well as training focused on team interaction, were related to the development of shared mental models about how the work system and environment operates. Similarly, the rationale behind the finding that transformational leaders create greater climate consensus is that transformational leadership is characterized by fostering closer relationships with subordinates, creating opportunities to share and clarify perceptions (Zohar & Luria, 2004; Zohar & Tenne-Gazit, 2008). In addition to communication, the visibility of the leader (Naumann & Bennett, 2000), simpler behavioral patterns, and consistency in behavior (Zohar & Luria, 2004) have also been shown to develop greater consensus in climate perceptions (Naumann & Bennett, 2000).

Finally, according to leader–member exchange (LMX) theory, the quality and type of relationship the leader develops with his or her subordinates may be unique across group members (Graen & Scandura, 1987), resulting in LMX differentiation at the group level, that is, variance in the dyadic exchange relationships across group members (Liden, Erdogan, Wayne, & Sparrowe, 2006). Greater LMX differentiation will likely hinder the development of consensus in climate perceptions. Higher quality LMX relationships tend to be characterized by greater information exchange and more attention from the leader (Graen & Uhl-Bien, 1995). Further, leaders have been shown to be a potent source of information for newcomers' learning about the appropriate role behaviors and about the processes, routines, and value system of the organization (Ostroff & Kozlowski, 1992). Likewise, some evidence indicates greater consensus in climate perceptions among those with higher quality LMX relationships in the group compared to those with low-quality LMX relationships (Kozlowski & Doherty, 1989). Thus, to the extent that there is differentiation in the quality of LMX relationships in the group, interactions may be concentrated around select members who have higher quality LMX relationships, producing uneven relational exchanges with the leader and among coworkers (Henderson, Liden, Glibowksi, & Chaudhry, 2009; Sherony & Green, 2002) and ultimately leading to dissimilarity in members' climate perceptions (Roberson & Colquitt, 2005). The role of the leader in the emergence of climate perceptions continues to be an area ripe for research.

Implications and Research Directions

Elemental content differs between culture and climate. For example, the cognitions, interpretations, and schema are based around the policies, practices, procedures, and routines in climate (Schneider & Reichers, 1983), whereas, in culture, they are based on artifacts, values, beliefs, and assumptions (Schein, 2010; Trice & Beyer, 1993). Further, culture and climate are said to have emerged when perceptions come to be shared. However, the notion of compilation for climate (Kozlowski & Klein, 2000) is based on the assumption that organizational practices, policies, procedures, the socialization process, ASA process, and related processes are not so strong as to eliminate all meaningful differences in individual members' elemental characteristics, such as their cognitions, perceptions, and behaviors. For example, some organizations may purposefully desire to build an organization that has some heterogeneity of employees in order to create flexibility or promote change (Schneider & Reichers, 1983), or may purposefully select

individuals for their varying idiosyncratic strengths that blend with others (Ostroff & Schulte, 2007). While too much variability in fundamental elements would indicate either no climate or culture, or a fragmented climate or culture, some heterogeneity in individual elements does not preclude the emergence of a collective property (Kozlowski & Klein, 2000). Once sufficient agreement or consensus has been demonstrated and climate has emerged, the degree of strength can be examined.

The emergent property of organizational culture or climate can be strong or weak. The general notion of strong-versus-weak situations is largely derived from Mischel (1973) such that situations are strong to the degree that "they lead all persons to construe the particular events the same way, induce uniform expectancies regarding the most appropriate response pattern, provide adequate incentives for the performance of that response pattern, and instill the skills necessary for its satisfactory construction and execution" (p. 276). Weak situations are ambiguously coded or not uniformly interpreted across individuals, do not generate uniform expectancies concerning the desired behavior, do not offer sufficient incentives for performance, and/or fail to provide the learning needed for behaving appropriately.

The terms *strong culture* and *strong climate* have emerged in the literature, but with the exception of climate strength, have not been defined in consistent ways. We delineate three aspects of strength that encompass strong situations:

1. Agreement-based strength, dealing, with the extent to which employees interpret and encode the organizational situation in the same way, that is, the extent of agreement on culture or climate (e.g., Lindell & Brandt, 2000).
2. System-based strength pertaining to the notion that culture or climate is pervasive and all-encompassing throughout the entire domain of organizational life, imposes strong expectations on employees, and attempts to induce uniform behaviors through strong socialization and sanctions for behaving outside norms (e.g., Payne, 2000).
3. Alignment-based strength, referring to the alignment between culture and actual organizational practices (e.g., Zohar & Hofmann, in press) and between organizational practices and climate (e.g., Rogg et al., 2001).

Agreement-Based Strength

In culture, agreement-based strength is facilitated through the learning and sense making process (e.g., Hartnell and Kinicki, 2011), but little research has empirically examined this process. In contrast, in recent years, there has been a burgeoning interest in understanding agreement-based strength in climate. The perspectives delineated above for emergence (structural, homogeneity, social interaction, work group, and leadership) also influence the strength of the climate. Agreement-based strength is fostered when (a) practices are administered in a way that allows individuals to interpret them similarly (e.g., Bowen & Ostroff, 2004), (b) members are homogeneous and thus predisposed to view the organization similarly (e.g., Colquitt et al., 2002), (c) shared interpretations are developed through social interactions (e.g., Roberson & Colquitt, 2005), and/or (d) leaders serve as a filter and communicator of practices, policies, and procedures to influence members to interpret the situation the same way (e.g., Zohar & Luria, 2004).

In addition to studies that have begun to facilitate our understanding of the factors that influence climate strength, research has begun to address linkages between agreement-based climate strength and outcomes. Lindell and Brandt (2000) proposed that climate strength (i.e., variance in perceptions) will have direct effects because the similarity in perceptions will lead to more positive typical behaviors across group members. Some research has supported direct effects of climate strength on unit-level outcomes (e.g., González-Romá et al., 2002; Sowinski, Fortmann, & Lezotte, 2008) while other work has not (e.g., Schneider et al., 2002). A second way in which climate strength has been examined is as moderator of the relationship between climate itself (i.e., the mean climate score) and outcomes, with the underlying assumption that higher consensus coupled with moderate to above-average-level (mean) climate would result in more positive outcomes than low consensus because of process loss (Lindell & Brandt, 2000). While several studies have supported this notion (e.g., Colquitt et al., 2002; Lindell & Brandt, 2000; González-Romá et al., 2002; Schneider et al., 2002), results are often weak. One reason for the weak results is that theoretical and mathematical relationship between the level of climate (mean) and strength of climate perceptions (variance) is nonlinear, particularly when the full-scale range is attenuated in the data, whereas most tests of moderation have used linear cross-product terms. Two exceptions (Dawson, González-Romá, Davis, & West, 2008; Dickson, Resick, & Hanges, 2006) show the importance of examining the joint effect of climate and climate strength on outcomes through nonlinear means.

A number of lingering questions remain with respect to the emergence and strength of climate. In particular,

the relative importance of the various factors (structure, homogeneity, interaction, group processes, and leadership) and the degree to which they are substitutable is largely unknown. Few studies have examined a range of antecedents of climate strength simultaneously (Lindell & Brandt, 2000, is an exception). The little work that has been done to date tends to indicate that the effects of the antecedents are additive. For example, when examined simultaneously, both leader visibility and cohesion were related to justice climate strength (Naumann & Bennett, 2000) and transformational leadership and communication network density were both significantly related to safety climate strength (Zohar & Tenne-Gazit, 2008). Other research has shown the factors have interactive effects in their relationship to climate strength, such as between transformational leadership and group cohesion (Luria, 2008). It also is likely that some factors may compensate for others. For example, to the degree that the HR system is particularly strong and salient, other factors to enhance emergence and strength may not be necessary, whereas when HR system strength is weak, leadership and interaction processes may be particularly important. Additional research is needed to determine the relative importance, interactive effects, and substitutability of the factors for strength.

Without agreement-based strength or a shared sense of the climate, linkages between organizational climate and subsequent outcomes at the aggregate level are unlikely to be realized (see Figure 24.1). Yet, the fostering of agreement-based strength does not necessarily lead to system- or alignment-based strength. Agreement-based strength can be viewed as a necessary but insufficient condition for the formation of other types of strength.

System-Based Strength

Culture and climate can be more or less intense in terms of the range of employee behaviors that are expected in order to be in accordance with the culture (e.g., Payne, 2000). System-based strength is based on the notion of a tight culture whereby deviations from norms are not tolerated as well as the pervasiveness of the organizational context in defining and limiting the expected behaviors across a wide range of behaviors (Payne, 2000). Intensive socialization programs as well as a culture that embodies strong sanctions for violating norms help to foster system-based strength (Schneider et al., 2011b). We also purport that system-based strength is fostered when a set of practices is developed that is internally consistent and intensive. Internal consistency is achieved when the set of practices reinforce and support one another around a specific focus (e.g., Pfeffer, 2010). Intensity is achieved when a wide range of practices are implemented that pervade all aspects of organizational life. For example, high-performance HRM systems (e.g., Becker & Huselid, 1998) are based on the premise that employee involvement and participation are cornerstones of a productive workforce. This set of practices would be considered intense because it involves a wide range of practices that require a great deal of participation on the part of employees and encompass the range of organizational activities (Ostroff, 1995). Intense systems affect a large number of employees and a large number of behaviors, and are designed to induce a uniform set of behaviors among employees (Bowen & Ostroff, 2004).

Alignment-Based Strength

Alignment refers to the notion that the key attributes of an organization (e.g., strategy, goals, culture, practices, structure) must be arranged and designed in such a way that they complement one another and operate together harmoniously (e.g., Anand & Daft, 2007; Kinicki et al., 2011). In this vein, we argue for the importance of alignment between culture, practices, and climate. Practices must be designed in such a way that they reflect the cultural assumptions and values (Schein, 2010). For example, a cultural value emphasizing teamwork coupled with a reward system emphasizing individual competitive performance sends mixed messages to employees, likely resulting in confusion and frustration (Zohar & Hofmann, in press). A match between espoused values and practices can also facilitate greater agreement on climate (Dickson et al., 2006). Further, the climate that is perceived should be one that was intended through the set of practices (Zohar & Luria, 2005). The practices, policies, and procedures, when administered in a strong way (e.g., salient, consistent, fair, valid), provide the elemental content in the form of a cognitive representation of the climate, which can result in positive organizational outcomes. To the extent that the homogeneity process is strong *and* the process of administering practices is strong, similar cognitive elements should form and shared perceptions of climate should emerge that are consistent with the intent of the practices (thereby creating alignment-based strength). However, to the extent that the homogeneity process is weak, and/or practices are not administered in a way to create a strong situation, social interaction and leadership processes can lead to the formation of shared perceptions of climates that may not be consistent with the culture and what was ultimately intended (Bowen & Ostroff, 2004).

We propose that leaders play a key role in creating alignment among subunits in an organization and across individuals. Our perspective is consistent with upper-level management theory, which is based on the notion that "strategies are a product of the interaction of the individual leader and the organization's internal and external environment. Systems thinking is required that aims to produce the synergies that are more than the sum of the individual parts of the organization" (Bass & Bass, 2008, p. 682).

Founders and strategic leaders are purported to be the architects for establishing culture in the organization and they are responsible for creating alignment between strategic goals and culture in order to facilitate maximum organizational performance (Chow & Liu, 2009; Kinicki et al., 2011; Schein, 2010). Further, the effectiveness of the HRM system relies on close communication and integration among HR professionals and top management (Lado & Wilson, 1994; Ostroff, 1995) and this close relationship is needed to ensure alignment between practices and business needs, strategy, and culture (Maxwell & Farquharson, 2008).

Moreover, leaders at all levels can serve as aligners between culture, practices, and climate. Role modeling and the visible behaviors of leaders at all levels of management communicate core cultural assumptions and values (Schein, 2010). Importantly, Simons (2002) argues that employees must perceive "behavioral integrity" in the leader, that is, a consistent pattern of alignment between a manager's words and deeds over time, with particular attention paid to the alignment between espoused and enacted values of the leaders. Further, policies and practices that are incompatible with the espoused values are also likely to be seen as leaders' word–deed misalignments, which can undermine credibility and trust in leaders. This relates to Schein's (1985) argument that employees experience the organization and values more in reference to what "ought to be" rather than "what is." Behavioral consistency can be a means to achieve alignment between the two.

The importance of behavioral consistency implies that not only do practices need to be designed in a way that aligns with cultural assumptions and values, they must also be enacted by leaders in way that reinforces this alignment. What leaders attend to, measure, and control communicates beliefs and expectations to employees (Schein, 2010). Inconsistency in doing so creates confusion and ambiguity (Schein, 2010), which can lead to the development of a climate that was not intended (Bowen & Ostroff, 2004) or to a fragmented culture (Martin, 2002). Thus, when lower level leaders consistently monitor work in progress, provide timely communication, and enforce practices, rules, and procedures in consistent ways, they clarify supervisory directives and expectations as well as behavior–outcome contingencies for employees (Yukl, Gordon, & Taber, 2002; Zohar, 2002; Zohar & Luria, 2004).

Employees infer cause–effect attributions from communications and signals in the context to determine what behaviors are important, expected, and rewarded (Kelley, 1973; Bowen & Ostroff, 2004). It is important that leaders convey and communicate messages consistently over time and over different events in order for employees to make correct attributions about the environment because making sense of the organizational environment often entails numerous cycles of attending to information, interpreting it, acting upon it, and receiving feedback to further clarify perceptions of the organizational environment (Morgeson & Hofmann, 1999; Weick, 1995). Transformational leaders are expected to be particularly adept at this because they are able to realign employees' norms and values around specific goals, and facilitate knowledge sharing about the organization's cultural values, beliefs, and climate (Bass & Avolio, 1994; Hartnell & Walumbwa, 2011; Kinicki et al., 2011).

Summary

When agreement-based strength is fostered in conjunction with alignment-based strength between the climate and practices and in conjunction with system-based strength, an organizational climate emerges that is consistent with what was intended by the practices. Alignment-based strength between culture and practices and a strong system-based culture with intense practices that induce and reward uniform values and behavior is also needed. Further, leaders need to model values, enact practices, and communicate climate content consistently to enhance alignment among culture, practices, and climate. When strength and alignment are achieved across culture *and* climate, expected relationships between climate and organizational outcomes are more likely to be realized.

Subcultures and Subclimates

Subcultures and subclimates can emerge throughout the organization. Within-unit social interactions, communication, interdependencies, and different leadership processes can lead to the formation of a culture and/or climate within a group that may differ between groups in the same organization (Schneider et al., 2011b).

While some have argued that subcultures and climates can meaningfully exist when core values or perceptions

are consistent with the organizational culture and climate. This raises the question of whether in today's large, diversified, geographically dispersed organizations, there can be such a thing as a molar organizational culture and climate (Martin, 2002). Can shared meanings and perceptions develop across such an organization? As a first step, studies are needed that include multiple units from multiple organizations to determine whether units within an organization are more similar to one another than groups across organizations.

Moreover, few studies have examined the degree of consistency between units within an organization, the factors that would enhance consistency in cultures and climates across groups, and the conditions under which the existence of subclimates and subcultures is beneficial or detrimental to the organization as a whole. In the culture area, Kinicki et al. (2011) propose a multilevel system of leadership whereby senior leaders influence others across hierarchical levels of management and, through a process of compositional alignment, leaders can create horizontal and vertical alignment around the pursuit of strategic objectives across levels of management. In the climate area, aggregated perceptions across hierarchical levels within an organization were shown to be related (Griffin & Mathieu, 1997) and relationships between organizational climate and group climate have been demonstrated (Zohar & Luria, 2005). The importance of consistency in climate perceptions between employees and management was demonstrated by McKay et al. (2009) whereby financial outcomes were highest when both employees and management perceived the unit diversity climate to be positive. While these studies point to some consistency between different climates at different levels of analysis within an organization, questions remain in terms of the factors that influence this consistency. Zohar and Luria (2005) provide some initial evidence in that a greater degree of formalization and work routinization, as well as greater consensus in organizational climate, were related to smaller between-group variance in the climates in the organization. A strong HRM system with highly visible and consistent application of practices should also create greater consensus across units in climates (Bowen & Ostroff, 2004). Leaders may also play an important role in developing consistency across units in their climate. In a study of ethical leadership, the trickle-down model of leadership was examined, supporting the notion that top leaders convey the values of the organization, serve as role models, and inspire lower-level leaders to act accordingly, and in turn lower-level leaders influence unit members (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009b). To the extent that leaders play a key role as conveyers of culture and climate, the degree to which leaders at successively lower levels enact the culture and convey the climate consistently should reduce between-unit variance in climate.

At the same time, consistency across units in culture and climate may not always be necessary or desirable. While the concept of countercultures implies a negative connotation, we argue that the effect of subcultures and subclimates depends on the extent to which they are contradictory to each other or if they complement one another and potentially form a complementarity. Clearly, if two subcultures or subclimates produce negativity, conflict, politics, and negative competition between groups, the subcultures are not complementary or compatible and may be detrimental to both individual responses and organizational outcomes. However, subcultures and subclimates can exist simultaneously without creating conflict (Hartnell et al., 2011; O. Jones, 2000). For example, an innovation-based climate in one division may complement a quality-based climate in another division. If the organization's strategy is to provide high-quality service or products, but at the same time it also wants to explore entry into new markets, these two different climates may exist simultaneously in different divisions and yet produce a complementarity at the organizational level. Again, this implies that patterns across multiple cultures or climates should be investigated and that different patterns of climates may be equifinal for organizational effectiveness (Hartnell et al., 2011; Schulte et al., 2009).

CULTURE AND CLIMATE CHANGE

Interest in culture and climate change continues to grow because of organizations' responses to forces of change associated with labor market demographics, technological advancements, shareholder, customer, and market changes, social and political pressures, and human resource problems/practices (Schneider et al., 2011b). We propose that efforts to change culture necessitate a change in climate and both should be considered simultaneously. The need for culture and climate change is precipitated by several factors. Maitlis and Lawrence (2007) and Schein (2010) suggest that unit or organizational performance discrepancies are likely to signal the need for change. Different types of misalignment also signal the need for change. For example, the set of human resource practices might be inconsistent with the organization's strategy,

desired culture, or climate (e.g., Garrow & Hirsh, 2008). Similarly, an organization's culture may be incongruent with its strategies and goals (Chow & Liu, 2009) or the leadership style of senior-level executives (Kinicki et al., 2011). Change may also be needed because subcultures exist that conflict with an organization's espoused values (Lucas & Kline, 2008).

Culture Change

Several models of culture and climate change have been proffered, beginning with Lewin's (1951) unfreezing to moving to freezing perspective. Others have suggested systems models of change (Young, 2010), stage models (Kotter, 1996; Latta, 2009), and structured approaches that rely on a host of organizational development techniques (Martins, 2011). Despite the variety of proposed models for culture and climate change, the lack of research regarding the veracity of these models led to the conclusion that "an established process that can be used to manage culture change remains elusive and represents an important area in need of further research" (Martins, 2011, p. 707).

Leaders play a key role in macro-culture change. For example, Hartmann and Khademian (2010) highlight the need for leaders to create a vision and roadmap for culture change and then to use both intrinsic and extrinsic motivators to reinforce change. Marshall and Adamic (2010) and Jacobs (2010) also discuss how leaders can use storytelling to start and reinforce culture change. Further, Hatch (2000) purports that leaders serve as artifacts and, based on their actions, are used by members to derive meaning and make sense of the change. Leaders can create and reinforce culture change by using the regulatory behaviors discussed by Hartnell and Kinicki (2011) or the embedding techniques proposed by Schein (2010). Finally, culture change can be fostered by the infusion of outsiders (i.e., selecting new employees; Harrison & Corley, 2011; Schein, 2010), particularly the hiring of senior-level executives. The process of culture change can take years (Schroeder, 2010) and leaders must attend to reducing resistance to culture change (Kotter, 1996). Rigorous research supporting the viability of culture change is needed.

The role of climate as a means to facilitate culture change has not been directly addressed. We believe that culture change starts not only with a change, in traditionally discussed artifacts like stories and espoused values, but also with a fundamental change in an organization's policies, practices, and procedures.

Climate Change

Climate is formed from the practices, policies, and procedures of the organization. Thus, a change in practices should result in a change in the content of climate (Kopelman, Brief, & Guzzo, 1990) and force a reevaluation of the situation (Guzzo & Noonan, 1994). The employee is deemed to be a "receiver" of the communicative content of practices and procedures (Guzzo & Noonan, 1994; Rousseau, 1995). Changes in practices and communications are likely to trigger systematic processing as employees derive conscious explanations of the information, that is engage in sense making (Guzzo & Noonan, 1994). Changes in particular practices (e.g., a change from a merit-based system to profit sharing, or adding a new practice such as teams) are expected to evoke a process of reinterpreting what the organization expects. Unfortunately, little research has explicitly tested whether climates change in reaction to a change in practices, and no research that we are aware of has explicitly examined the process of *how* climate perceptions change over time.

Moreover, constructs may shift levels over time (Dansereau, Yammarino, & Kohles, 1999; Yammarino & Dansereau, 2011). Changes in the set of practices may initially cause discord and disagreement among individuals in an organization. Hence a previously homogeneous group with shared perceptions of unit climate may lose their "agreement" with a change in practices, thereby enabling only a focus on psychological climates. At this point, a series of event cycles ensues (Morgeson & Hofmann, 1999). Through successive interactions with one another, communications from the leader, visibility of the leader, and role modeling by the leader (Schein, 2010), over time, consensus forms and a new climate can emerge. For example, leaders who received training to emphasize safety as a priority increased interactions with employees about safety over time, resulting in significant and stable changes in safety climate and safety outcomes (Zohar, 2002). In addition, a change in practices may not produce the desired change in the climate content unless the process of the changed practices is delivered in an effective manner, for example, evoke salience, understandability, visibility, and so forth (Bowen & Ostroff, 2004).

Successful climate change may also spur reinterpretations of culture. As Zohar and Hofmann (in press) propose, climate represents shared assessments of the enacted, not just espoused, values and priorities and climate is used to decipher the deeper layers of culture. Climate perceptions become a way to socially verify the pattern of organizational artifacts, and the combined

meaning of these patterned artifacts allows for mapping relationships between observable artifacts and deep layers of culture.

CONCLUSIONS AND FUTURE DIRECTIONS

Culture and climate are similar and interrelated in that they both focus on the creation and impact of social contexts, yet maintaining a distinction between them is important if we are to understand different aspects of the social context and shared meaning and perceptions that develop in organizational life. Researchers, theorists, and practitioners are urged to more carefully attend to whether they are referring to climate or culture and to whether they are referring to idiosyncratic psychological perceptions or higher-level emergent constructs of culture and climate in an effort to help to continue to reduce confusion between the two constructs at different levels of analysis. At the same time, we argue that there is much to be learned by examining the two streams of research simultaneously rather than approaching each as separate bodies of literature. This is particularly important in light of our focus on the alignment between culture and climate.

We first highlighted how structure, practices, policies, and procedures are the mechanisms that link culture to climate, with particular attention to the notion that practices that are inconsistent with cultural values, or delivered in a weak way, may result in a climate that was unintended or inconsistent with the culture. To date, very little research has investigated the role of structural variables and human resource practices as linking mechanisms.

In addition, throughout the chapter, we emphasized how leaders influence both climate and culture in interesting ways. Leaders, through their role-modeling, behaviors, and interactions with members, serve as sense making agents for newcomers and organizational members, helping them understand and internalize the culture. Leaders also enact the practices through their behaviors, enforcement of practices, policies, and procedures, and communications and interactions with employees, helping to foster the content of climate as well as emergence and degree of consensus in climate perceptions. Leaders can also create fractions, subcultures, or subclimates when they idiosyncratically interpret and communicate the culture and climate and convey this to group members. Given the key role of leaders in the content and emergence of both culture and climate, we propose they are particularly important as aligners of culture and climate. However, research on the role of leadership in culture and climate has been fractionalized and segmented and we encourage greater integration in future theory research to elucidate the concurrent role leaders play in both culture and climate.

Some of the reasons for the separation and difference in emphasis in culture and climate work is likely due to measurement techniques that have dominated these research areas. Climate's tradition of survey research is deductive and requires that content of climate be specified a priori, while culture's tradition of observational techniques, qualitative studies, and case studies is more inductive and allows for a deep understanding of the embedding process of cultural properties but not for robust comparisons to other organizations (Ashkanasy, Wilderom, & Peterson, 2000b). In recent years, culture research has moved toward more quantitative methods but often uses customized measures containing limited evidence of validity. We suspect that the use of ad-hoc measures is partially due to the argument that culture represents specific properties of an organization (Schein, 2010) that can be difficult to imitate (Barney, 1991), thereby necessitating the use of customized measures (Sackman, 2011). This limits its generalizability. In contrast, climate researchers have typically used more standard measures with known reliability and validity, but in recent years, researchers have begun to use more customized measures to better reflect the unique aspects of the climate in the organization (e.g., Schulte et al., 2009; Tsai, 2001). Schneider and his colleagues (Schneider et al., 2011a) propose integrating both culture items (e.g., telling stories that highlight value of safety) and climate items (e.g., safe behaviors are expected and rewarded) in survey research. Finding the appropriate balance between sufficient standardization to enhance generalizability but sufficient customization to make the measures more relevant to the particular organization will be a challenge for researchers in upcoming years.

Ten years ago, relatively few of the linkages in Figure 24.1 had been tested. Research on climate and culture has burgeoned in recent years. While it is unreasonable to expect a test of the full model in any one study, across studies, most of the linkages have been supported. That said, there are still lingering research questions, particularly in the link between culture and climate, emergence, and the change process. Research on emergence and strength of climate has been growing recently, but additional multilevel research is needed to further explicate the mechanisms of emergence and strength, and the degree to which emergence factors (e.g., structure, homogeneity, interactions, leadership) are additive, substitutable, or interactive. In terms of culture emergence,

little theory and research have been developed and more work is needed in this area to explore *how* these constructs emerge. Additional research is needed to determine how alignment-based strength is fostered as well as its relationship to agreement-based and system-based strength in the emergence and impact of culture and climate.

Finally, there is a lack of longitudinal research in culture and climate change as well as reciprocal relationships among constructs and across levels. For example, organizational outcomes can have a reciprocal relationship with climate (Schneider, White, & Paul, 1998). Research is needed to determine how the feedback loops contained in Figure 24.1 operate to more fully understand relationships among culture, climate, and effective functioning of organizations over time.

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