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Instruments for Exploring Organizational Culture: A Review of the Literature

New Ideas for Improving Public Administration

Organizational culture is widely considered to be one of the most significant factors in reforming and modernizing public administration and service delivery. This article documents the findings of a literature review of existing qualitative and quantitative instruments for the exploration of organizational culture. Seventy instruments are identified, of which 48 could be submitted to psychometric assessment. The majority of these are at a preliminary stage of development. The study's conclusion is that there is no ideal instrument for cultural exploration. The degree to which any measure is seen as "fit for purpose" depends on the particular reason for which it is to be used and the context within which it is to be applied.

Organizational culture is widely considered to be one of the most significant factors in bringing about organizational change and modernizing public administration and service delivery (Claver et al. 1999; Kloot and Martin 2007; Mannion, Davies, and Marshall 2005; Morgan and Ogbonna 2008; Waterhouse and Lewis 2004). As such, a practical need to explore and understand culture has arisen among public sector researchers and practitioners. Researchers are looking for explanations, and they are trying to understand and conceptualize organizational culture, its nature, its key determinants and predictions, as well as the relationships among culture's diverse set of variables. Practitioners are interested in the management of organizational culture, and they are looking for answers and solutions: how can an organization's culture be changed and adjusted to meet organizational needs? Consequently, a wide array of instruments for assessing and measuring culture have been constructed and utilized across a broad range of settings.

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This article documents the findings of a literature review of existing qualitative and quantitative instruments for the exploration of organizational culture. The article has two purposes: (1) to document existing instruments, and (2) to offer some initial guidance on their selection for different purposes and settings. The review provides a freely available compendium (http://www.scothub.org/culture/instruments.html) that provides information on the dimensions and attributes of culture explored by candidate instruments; aspects associated with the practical administration of the instruments in different contexts, such as format, acceptability, feasibility, number of dimensions, items, and scales; instruments' psychometric assessment, including validity, reliability, association with outcomes, and sensitivity to change; as well as further detailed information relating to instruments' underpinning conceptual models of culture and previous applications. The work provides a theoretical review of the field, plus offers practical guidance to anyone who is interested in exploring organizational culture.

Given the varied conceptualizations of "organizational culture" and the many connotations of "instrument," it is important to outline our perception of these terms. Despite its intuitive appeal and widespread use by researchers, practitioners, and policy makers, there is little agreement as to how culture should be conceptualized (Kralewski, Wingert, and Barbouche 1996; Lurie and Riccucci 2003). Indeed, the concept has been described as "a riddle wrapped in a mystery wrapped in an enigma" (Pettigrew 1990). Within the literature, well over 100 dimensions associated with organizational culture can be identified. These range from observable phenomena such as "rituals" and "structures" to abstract ideas such as "warmth," "satisfaction," and "esprit de corps" (Ott 1989; Van der Post, De Coning, and Smit 1997). Typologies that cluster such dimensions into categories constituting various levels of culture differ in scope, number of items, and defining characteristics (Hawkins 1997; Ott 1989; Schein 1989). There are unresolved debates about the most appropriate approach to researching culture (Morey and Morey 1994; Tucker, McCoy, and Evans 1990; Yauch and Steudel 2003), about the existence and role of different cultural levels (Boisnier and

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Chatman 2003; Jordan 1994; Karahanna, Evaristo, and Srite 2005; Liu 2003; Nelson and Gopalan 2003), and about how organizational cultures could and should be approached as a phenomenon capable of management (Martin 1992; Schultz 1994; Smircich 1983). The multiplicity of perspectives and continued "paradigm wars" have led some to comment that the organizational culture field mirrors the "king of the mountain" game, where "[o]ne king or queen's temporary triumph at the top of the sand pile is rapidly superseded by the reign of another would be monarch, until a succession of short-lived victories and a plethora of defeats leave the pile flattened" (Martin, Frost, and O'Neill 2004, 4).

Instead of taking a limited view of organizational culture that encourages subdivision and fragmentation, we prefer to explore it from a plurality of perspectives, each offering different insights and approaches. Similarly, we do not conceive of "instrument" in the sense of a precise measuring tool, but take a broader perspective and consider it as a general means that encompasses any method of gauging organizational culture. Thus, our review includes a spectrum of perspectives and approaches, from specific quantitative tools aimed at measuring culture through more flexible and emergent approaches.

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At the outset, it is important to differentiate between culture and climate, which at times are used interchangeably. Both concepts share features of complexity and multidimensionality (Pettigrew 1990), have been linked to organizational outcomes, and started to emerge within comparable time frames (Sleutel 2000). While traditionally the two concepts could be distinguished on the basis of the research approach applied—culture's was qualitative, climate's quantitative—with the emergence of quantitative research studies in the organizational culture domain, it has been argued that the two concepts have become virtually indistinguishable (Denison 1990). Despite some overlap, there exist important differences (Glendon and Stanton 2000; West and Spendlove 2006). The two concepts are borrowed from different domains (Scott et al. 2003; West and Spendlove 2006) and address different levels. While culture is a more encompassing and global concept, climate, with its

meteorological roots and psychological thrust, can be perceived as an index rather than a causative factor in an organization's operation (Glendon and Stanton 2000; Meudell and Gadd 1994; Parker et al. 2003; Sleutel 2000).

Methods

Our review methodology was based on the established guidelines for systematic reviews provided by the Centre for Reviews and Dissemination at the University of York (Khan, Riet, and Glanville 2001). Electronic searches of 11 bibliographic databases were conducted (see box 1). These had previously been identified as valid sources for identifying relevant literature (Scott et al. 2001, 2003). The searches included citation and subject searches and resulted in a list of 12,375 potentially relevant references.

To expedite the identification of relevant references, only those references that referred explicitly to "culture" in the title or abstract were included. This resulted in a list of 4,762 references. The title and abstract of each of the references was screened and assessed for potential relevance. This produced a list of 877 references from which existing approaches to cultural exploration were extracted.

The unit of analysis for the study was the instrument rather than particular publications. Therefore, reasonable attempts were made to obtain a full copy of each of the identified instruments along with all relevant full-text publications identified by the search strategy. Instruments' author(s) or copyright holder(s) were contacted, where possible. In a few instances, a copy of an instrument could not be retrieved because of nonreply by the instrument's copyright owner, unwillingness to cooperate, or limited accessibility and availability of relevant publications. Such a lack of accessibility indicated that the instruments were not fully in the public domain, and thus they were excluded from this review. Examples include the Organizational Assessment Questionnaire, Survey of Organizations-2000, Inventario de Comportamiento de Estudio (English version), and the Survey of Organizational Culture.

Instruments for which psychometric information was available were categorized and evaluated against an assessment framework

Table 1 List and Description of Databases Searched

ABI Inform	Covers U.S. and international articles on business and management
COPAC	The merged online catalogs of members of the Consortium of University Research Libraries
Cumulative Index to Nursing and Allied Health	Covers the majority of English-language literature related to nursing and allied health
EMBASE (Excerpta Medica)	Covers the worldwide literature on the biomedical and pharmaceutical fields
Emerald	Covers journals on strategy, leadership, library and information management, marketing and human resource management, plus engineering, applied science and technology titles
Health and Psychosocial Instruments	Covers medical measurement instruments
Healthcare Management Information Consortium	Covers data held in the Library and Information Services of the Department of Health England and the King's Fund Information and Library Service
Medline	Covers the fields of medicine, nursing, dentistry, veterinary medicine, the health care system, and the preclinical sciences
PsychInfo	Covers the abstracts of psychological literature
Science Citation Index	Covers more than 150 disciplines related to science and technology
Social Science Citation Index	Covers more than 50 disciplines related to the social sciences

that focused on appropriateness (face validity, acceptability, feasibility, susceptibility to systematic bias), reliability (internal consistency, test-retest, interobserver), validity (content, criterion, predictive/concurrent, convergent, discriminative, cross-cultural, dimensional structure), responsiveness, and interpretability (norms, calibration). The data extraction sheet used for this was generated on the basis of the evaluation criteria put forward by Fitzpatrick et al. (1998). In some cases, such as the Corporate Culture Questionnaire, the copyright owners were only willing to provide limited access to the instrument itself or information thereon. Hence, the assessment of such instruments is limited by the degree of access granted and the extent of the information provided.

The review prioritized the identification of the widest range of instruments of culture, rather than a comprehensive assessment of a smaller number of specific instruments. An outline of the assessment framework is provided in box 2, and further information is available from the authors upon request.

Findings

Seventy instruments for exploring and assessing organizational culture were identified. Psychometric information could be obtained

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for 48 of these (see box 3). However, the seemingly definitive set of instruments defined in these listings belies the ambiguity of the instruments available: similar instruments may have different names, and rather different instruments may be similarly named, sowing a good deal of confusion. Moreover, when modifying a preexisting instrument, authors frequently retain its original name, thereby masking any changes made.

The origins of the instruments retrieved cover broad temporal, contextual, and geographic spectra. In line with the increased interest in organizational culture that started in the 1980s, a surge in the development of instruments from that point onward is noticeable, peaking in the 1990s. While the majority of instruments emerged during the 1990s, their development spans a time frame of more than five decades. The oldest, such as the Critical Incident Technique and Wallach's Organizational Culture Index, can be traced back to the mid-twentieth century; others, such as the Organizational and Team Culture Indicator and the Cultural Assessment Survey, were developed in recent years.

The contexts within which the instruments were developed and applied include both the private and the public sectors. Private sector applications cover a wide spectrum of business activities, ranging

Table 2 Assessment Framework

- Description
  - o Country of origin
  - o Development date
  - o Available versions
  - o Stated definition and/or intended conceptual model of culture
  - o Intended purpose for measure
  - o Format
  - o Dimensions, items and response scale
  - o Level of measurement
  - o Procedure for deriving scale scores, including aggregation procedures
  - o Level of measurement
  - o Methods used in item generation and reduction
  - o Methods used in item reduction and modification
- Appropriateness
- o Face validity
  - o Acceptability
  - o Feasibility
  - o Susceptibility to systematic bias
- Reliability
  - o Internal consistency
  - o Reproducibility over time (test-retest)
  - o Reproducibility over respondents (interobserver)
- Validity
  - o Content
  - o Criterion
  - o Predictive/concurrent
  - o Convergent
  - o Discriminative
  - o Cross-cultural
  - o Dimensional structure
- Responsiveness
- Interpretability
  - o Norms
  - o Calibration
- Applications

Table 3 Instruments and Approaches for Exploring Organizational Culture

Assessing Learning Culture Scale*
Assessment of Organizational Readiness for Evidence-Based Health Care Interventions
Competing Values Framework (ipsative)*/(Likert scale)*
Competing Values Instrument for Organizational Culture (Chang and Wiebe)
Competing Values Instrument for Organizational Culture (Howard)
Competing Values Instrument for Organizational Culture (Quinn and Spreitzer)
NIC/Q 2000 Tool
Competing Values Instrument for Organizational Culture (Zammuto and Krakower)
National VA Quality Improvement Survey (NQIS)
Organizational Culture Assessment Instrument (OCAI) (Cameron and Quinn)
Concept-Mapping and Pattern-Matching Approach
Core Employee Questionnaire
Corporate Culture Questionnaire*
Culture Gap Survey
CULTURE Questionnaire in the Contextual Assessment of Organizational Culture (CAOC Approach)*
Culture Snapshot
Culture Survey*
Critical Incident Technique
The Cultural Audit*
Cultural Assessment Survey*
Cultural Consensus Analysis*
Denison Organizational Culture Survey*
Ethnography
Five Window Culture Assessment Framework
FOCUS Questionnaire*
General Practice Learning Organization Diagnostic Tool*
Global Leadership and Organizational Behavior Effectiveness (GLOBE) Culture Scales*
Grid/Group Model
Group Practice Culture Questionnaire*
Hofstede's Culture Measures

Hofstede's Culture Measure of Organizational Culture*
Values Survey Module*
Hospital Culture Questionnaire*
Hospital Culture Scales*
Hospitality Industry Culture Profile*
Interactive Projective Test
Interviews
Inventory of Polychronic Values*
Japanese Organizational Culture Scale*
Laddering
Metaphorical Analysis
Narratological Approach
Norms Diagnostic Index*
Nurse Medication Questionnaire*
Nurse Self-Description Form*
Nursing Unit Cultural Assessment Tool*
Nursing Work Index/Nursing Work Index–Revised*
Organizational Assessment Survey (MetriTech)*
Organizational Assessment Survey (OPM)*
Organizational Commitment Questionnaire
Organizational Culture and Core Task (CULTURE) Questionnaire
Organizational Culture Assessment Instrument*
Organizational Culture Inventory*
Organizational Culture Profile (Ashkanasy)*
Organizational Culture Profile (O'Reilly)*
Organizational Culture Questionnaire (Harrison)
Organizational and Team Indicator*
Organizational Culture Survey*
Organizational Development Questionnaire*
Organizational Norms Opinionnaire
Perceived Cultural Compatibility Index*
Perceived Organizational Culture*
Personal, Customer Orientation, Organizational and Cultural Issues Model*
Practice Culture Questionnaire
Questionnaire of Organizational Culture*
Repertory Grids
School Quality Management Culture Survey*
School Values Inventory*
School Work Culture Profile*
Semiotics
Storytelling
Thomas' Questionnaire on Organizational Culture*
Time Dimension Scales*
Twenty Statements Test
Van der Post Questionnaire*
Wallach's Organizational Culture Index*
Ward Organizational Feature Scales (Nurses' Opinion Questionnaire)*
Women Workplace Culture Questionnaire*
Work Culture Assessment Scale
* Instruments and approaches subjected to psychometric assessment.

from family-owned grocery stores to large public companies in the finance sector. Public sector applications include local government organizations, as well as different types and sizes of schools and hospitals. Wide diversity is also noticeable in the instruments' geographic origins. These include Australia (Organizational Culture Profile), South Africa (Van der Post Questionnaire), Hong Kong (School Values Inventory), Sweden (Women Workplace Culture Questionnaire), and Estonia (Questionnaire of Organizational Culture). The largest number of instruments appear to have been developed within the United States—almost half of the identified instruments have their origin within a North American context—while the second-largest number originates within the United Kingdom. A limited number of international collaborations, such as the FOCUS Questionnaire, the GLOBE Culture Scales, and the Perceived Cultural Compatibility Index, can be identified.

The purpose and nature of the identified instruments are as diverse as their origins. These range from the exploration of highly specific

facets associated with culture, such as polychronicity (i.e., the degree to which people prefer to be engaged in two or more tasks simultaneously) in the case of the Inventory of Polychronic Values, to more comprehensive frameworks. The latter include the Cultural Audit and the CULTURE questionnaire within the Contextual Assessment of Organizational Culture. While some tools, such as Thomas' Professional Accounting Sub-Culture Questionnaire, were designed with a specific context or occupation in mind, the focus of most instruments is either on a specific modality of culture or on identifying an organization's overarching culture. For example, the Assessing Learning Culture Scale and the General Practice Learning Organization Diagnostic Tool both concentrate on learning culture; the Japanese Organizational Culture Scale examines the extent to which an organization's culture relates to Japanese management philosophy; the Nurse Medication Questionnaire focuses on treatment culture; the Concept-Mapping and Pattern-Matching Approach, the Culture Audit, and the Critical Incident Technique all try to provide a broader understanding of culture within the context in which they are applied.

Instruments' aims also vary widely, ranging from "formative" to "diagnostic." The former can be used for cultural exploration as an end in itself or as part of a broader cultural renewal process; the latter starts off with the intention to identify and assess existing cultures and modify them—the idea is to realign existing cultures to characteristics associated with "high-performance" organizations. It is assumed that this will lead to improved organizational effectiveness. Whether formative or diagnostic, the locus of examination can range from the individual to the entire organization. Instruments tend strongly to adapt either a dimensional or a typological approach. Dimensional approaches aim to assess the presence and relative strength of cultural dimensions in a specific setting (Ashkanasy, Broadfoot, and Falkus 2000). The majority of these approaches take predefined sets of dimensions. These can cover myriad categories (see box 4) and are as diverse as the existing dimensions associated with culture within the literature (e.g., Van der Post, De Coning, and Smit 1997). However, the bias is toward tangible and intangible aspects that are assumed to correlate with individual and organizational performance. These include shared beliefs, emotions, internal and external environment, goals, identity, norms, practices, structures, values, and vision. The range of dimensions within such instruments ranges from one in the case of the Cultural Consensus Analysis and the Perceived Cultural Compatibility Index to more than 10; the Culture Survey covers 12 dimensions, while the Van der Post Questionnaire includes 15. More commonly, instruments address around nine dimensions, albeit dimensions of a different nature.

If the majority of dimensional instruments explore predefined sets of dimensions, others, such as the Cultural Assessment Survey, Cultural Consensus Analysis, and the Twenty Statements Test, take an emergent approach, asking individuals or groups to generate a range of ideas that encompass the notion of organizational culture within their context(s). The ideas generated through such processes can then be clustered by group members into salient themes and rated for their relative importance before being used for further analysis.

While dimensional approaches might explore the nature and extent to which any cultural dimension is present in an organization,

Table 4 Prominent Dimensions Addressed within the Identified Instruments

Achievement/accomplishment
Change/attitudes to change/creating change
Collaboration/collaborative culture/collaborative team orientation
Development/development capability/employee development
Employee attributes/employee commitment/employee participation
Ethics/valuing of ethics
Focus/customer focus/long-term focus
Goals/goal clarity/goal orientation
Innovation/innovativeness/risk taking
Job attributes/job satisfaction/job security
Leadership/leadership qualities/confidence in leadership
Learning/individual learning/organizational learning
Organizational attributes/organizational identity/organizational issues
Orientation
Performance/performance facilitation/performance measures
Power/power distance
Relations/relationships/collegial relations/interdisciplinary relations
Results
Rewards
Support/Supportiveness
Task(s)/task structure
Team aspects/team orientation/team approach
Trust
Values/core values/espoused values
Vision
Workforce/work environment

typological approaches go one step further. Depending on an organization's dominant characteristics, organizations are categorized into predefined types (Ashkanasy, Broadfoot, and Falkus 2000). These can be of a general descriptive nature, where talk is about homogeneous, heterogeneous, balanced, or dissonant cultures, as is the case in the Cultural Audit, or rooted in psychoanalytical concepts, usually Jungian archetypes, as illustrated by the Competing Values Framework, the Interactive Projective Test, or the Organizational and Team Culture Indicator. A variety of archetypes are employed, including the Hero, Animus, Trickster, or Sage (Aurelio 1985; Pearson and Hammer 2004) (see box 5).

A spectrum of data-generating methodologies can be identified among the instruments, ranging from structured questionnaires to comparatively unstructured and emergent ethnographic approaches. The most common include Likert scales, Q-methodology, and ipsative measures. Likert scales ask participants to indicate their level of agreement or disagreement with a series of predefined statements. The number of statements covered by the Likert scales ranges from 3 to 129, and the available grading of answers on those scales ranges from 3 to 10 points. In the case of

Table 5 Examples of Typological Categories Employed by the Instruments

Competing Values Frameworks	Interactive Projective Test
Clan	Seven Jungian Archetypes
Adhocracy	Animus (masculine)
Hierarchy	Wise Old Man
Market	Hero
	Shadow
	Anima (feminine)
	Great Mother
	Trickster

Q-methodology, each participant is given a set of predetermined value statements and instructed to arrange these into a given number of categories. These categories represent a continuum ranging from least to most characteristic. The assumed advantage of this approach, which finds its most prominently application in the Organizational Culture Profile (O'Reilly), is its greater degree of robustness in the measurement of attitudes and subjective opinions when compared to alternative methods (Cross 2005). Ipsative measures, mainly used in the Competing Values Framework, include four-, five-, and six-statement versions. They ask participants to distribute a total number of points, usually 10 or 100, across a set of given statements.

Closely linked to methodological issues are aspects relating to resources required for an instrument's application. Most of the instruments identified are freely and easily available by reference to the existing literature. A second category of instruments are commercial packages; as such, their application or the analysis of the obtained data would incur various fees. In a third case, such as the Concept-Mapping and Pattern-Matching Approach, the instrument itself is freely available, but the software package used for the analysis of the emerging data must be purchased.

On top of any financial costs, the administrative burden entailed in an instrument's application needs to be considered. In most cases, no detailed information on feasibility could be identified. Nonetheless, it can be assumed that questionnaires would be cheaper to administer than more complex and intensive approaches such as the Cultural Consensus Analysis or the Cultural Assessment Survey, which are likely to require considerable administrator input.

The psychometric assessment of the 48 instruments amenable to such an assessment revealed that 22 (46 percent) reported adequate measures of internal consistency, 15 were rated "unclear" (31 percent), and 11 (23 percent) reported no data. Eight measures (17 percent) also reported on test-retest reliability, with five rated "adequate" and three "unclear." Ten (21 percent) reported "adequate" data on issues concerning aggregation of culture scores from individuals to higher-level units such as organizations. In terms of validity, only one instrument provided extensive data on associations with descriptive variables, while 9 (19 percent) reported moderate levels and 15 (31 percent) reported minimal levels. There was little evidence of tests of validity in terms of relationships with other measures of culture, with only five (10 percent) reporting "minimal" data. Nine measures (19 percent) were rated as providing "adequate" assessments of the dimensional validity of measures, with 22 (46 percent) providing data but being judged as "unclear" and seventeen (35 percent) reporting no data. Similarly, only four (8 percent) reported "adequate" data on sensitivity of the measure to change. Twenty-six (54 percent) reported data on the association between the measure and outcomes. Of those, 19 (39 percent) reported associations with subjective outcomes in cross sectional studies, and 6 (12 percent) reported associations with subjective outcomes in longitudinal studies. Only one (2 percent) reported associations with objective outcomes in longitudinal studies. The results of the psychometric analysis and the detailed report for each of the instruments can be accessed online at http://www.scothub.org/culture/instruments.html.

Discussion

Organizational culture is and is likely to remain a complex and contested concept. Despite its widespread use by researchers, managers, and policy makers, it is conceptualized in many different ways (see Ott 1989; Van der Post, De Coning, and Smit 1997). In addition to this conceptual diversity, only limited cumulative knowledge is evident. As a result, the debate as to how the concept should be explored continues (Martin 1992; Ott 1989; Schultz 1994; Smircich 1983; Van der Post, De Coning, and Smit 1997). This is reflected in the varied nature and characteristics of the identified instruments, which offer dimensional, typological, quantitative and qualitative approaches, as well as combinations thereof. Given such options, it is important to reflect on their utility and the issues they raise for those interested in selecting an appropriate cultural exploration instrument.

Dimensional versus Typological Approaches

Dimensional approaches offer the advantage of focusing on specific cultural variables of interest within a given organizational setting, such as innovation, job satisfaction, or values. Given organizational culture's anthropological background, inspiration for researching it has often been drawn from research on national cultures. However, transferring such an approach and the dimensions it employs may lack validity or may be of limited utility. Research by Hofstede (2001) argues that national and organizational cultures differ in two important dimensions: values and practices. Values are acquired in early youth, while practices are acquired through socialization at the workplace. Thus, dimensional approaches concentrating on values rather than practices could be of little benefit in the study of organizational culture. However, one way of dealing with such concerns might be a combined approach, as illustrated in the GLOBE Culture Scales, in which a set of nine cultural dimensions is explored at both the societal and the organizational level, and in relation to both practices and values (House et al. 2004).

The language frequently adopted by typological approaches means that despite being pithy and descriptive, there is the potential not only to stereotype and mythologize different types of culture, but also to invest them with a moral valence. This is illustrated by archetypal categories such as "Trickster" or "Jester." Such categorization can potentially lead to a neglect of one of the key points underlying culture from an anthropological perspective: it is a value-neutral concept. There is no such thing as a good, bad, positive, or negative culture (Michaelson 1989). Even to judge the appropriateness of different cultures to different organizations and environments is problematic. Such judgments tend to be neglectful of any considerations of power, ahistorical, perspectival, and short term (Hawkins 1997). Assignment to types may also be difficult because cultures might be misclassified or subordinate, and important aspects might be ignored: a culture may be deeply rooted in an organization's development; it may be evaluated from a number of different perspectives by different stakeholders; and it may be tied to a short view of the future. A "good" culture this year might not be the optimal one under changing circumstances.

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Methodological Approaches

Self-report questionnaires are the most prominent approach to exploring organizational culture, as they are cost-effective and easy to administer and analyze. They also allow an extensive survey of an organization. This is achieved, however, at the cost of intensive insights and the uncovering of unanticipated findings. Because of its association with "soft" aspects and ethnographic influences, organizational culture studies have traditionally adopted a qualitative research paradigm, in contrast to a quantitative paradigm that favors empirical "facts." Indeed, some researchers have specifically rejected such logical-positivist quasi-experimental research designs and approaches (Ott 1989).

The assumed advantage of a qualitative paradigm to organizational culture research is the ability to identify structures through the patterns displayed by individual behavior (Morey and Morey 1994). Appropriate ways to identify such patterns are considered to be participant observation, interviews or discussions, and documentary analysis (Morey and Morey 1994; Ott 1989). Such approaches allow for the detailed and meaningful analysis and examination of underlying values, beliefs, and assumptions. As a result, a rich account of the cultural dynamics and complexity within an organization can be identified (Yauch and Steudel 2003). The interactive nature of such an approach means that the researcher gets relatively fast feedback on the appropriateness of his or her questions and approach within the given setting, and can adapt the approach to new insights. Additionally, the emerging data provide a picture of organizational culture that is grounded in organizational reality (Sackmann 2001). As such, a qualitative approach scores highly on heurism, flexibility, adaptiveness, depth, and realism (Tucker, McCoy, and Evans 1990).

A trend toward more quantitative approaches can, however, be identified from the late 1980s onward. This might be attributable to the consultancy background of many popular authors and instruments within the field. The former is illustrated by Peters and Waterman (1982), while the Denison Organizational Culture Survey and the Organizational and Team Culture Indicator are examples of the latter. Within the domain of big-company consultancy, a quantitative diagnostic focus tends to be preferred. This choice appears to be pragmatic rather than theoretical and driven by the desire to design an off-the-shelf-product: quantitative research can be administered and evaluated relatively quickly. The numerical data obtained facilitate comparisons between organizations or groups, on the one hand, and provide some indication on the extent to which participants agree or disagree, on the other (Yauch and Steudel 2003).

A quantitative approach to cultural exploration may also be preferred in circumstances in which more intensive methods might be ruled out because of time constraints, intrusiveness, human resources, or organizational policy (Tucker, McCoy, and Evans 1990). In addition, the common lack of research skills among managers makes a simple survey potentially easier to conduct than complex qualitative research. Finally, the ease with which a large sample can be covered by quantitative surveys may be advantageous. This

is especially true if cultural assessment forms are part of a long-term change program: it might be impracticable to conduct sufficient interviews to explore any changes within organizational culture over a lengthy period of time (Swaffin-Smith, Barnes, and Townsend 2002). As such, a quantitative approach is assumed to maximize precision, systematization, repeatability, comparability, convenience, large scale, unobtrusiveness and cost-effectiveness (Tucker, McCoy, and Evans 1990). Of course, these assumptions may be far from secure, especially when scrutinized from a qualitative research paradigm. Even from a quantitative paradigm, the degree of statistical precision of some such research can be questionable.

The shortcomings of quantitative cultural exploration mainly relate to the rigid categories operationalized by such research. Given predetermined categories within survey instruments, it is easy for items not contained within them to remain unnoticed; no unanticipated findings will be made and no information on respondents' reasoning behind the answers is obtained, so that one cannot be sure the questions were interpreted in the intended way. Therefore, the approach will at best arrive at superficial meanings of organizational culture; it does not lend itself to exploring the deeper levels of culture, such as values and assumptions (Easterby-Smith 1988; Mallak et al. 2003; Yauch and Steudel 2003). Moreover, prior to any administration, a number of assumptions must be made about the cultural integration of the sample under consideration: is the organization marked by a homogeneous culture, so that the input received from the sample is a mirror of the overall organizational culture, or are there distinct subcultures, so that the survey must be administered to a representative sample of each subculture? (Yauch and Steudel 2003). A focus on specific cultural dimensions might also reinforce the idea of culture as static and given: the obtained numbers and statistics give cultural assessment a spurious, reified sense of precision. Because they are "administered" to an organization, like a diagnostic test or intervention, such instruments can easily support the perception that cultural change is possible and relatively easy (Seel 2001).

If qualitative and quantitative approaches offer different strengths and weaknesses, choosing between the two paradigms hinges on a trade-off between depth and breadth of data: qualitative approaches offer detailed insights, while quantitative approaches allow for the examination of larger sample sizes. One way to harness the strengths of both paradigms is to combine them. Yauch and Steudel (2003) argue that one should start cultural exploration with a period of qualitative assessment. The insights gained from that assessment can then be used to select the most appropriate quantitative instrument and method of administration (Yauch and Steudel 2003). While certain instruments, such as the Critical Incident Technique or the Organizational Culture Profile (O'Reilly), are available in different formats, few utilize such a combination of different methodologies, one example being the Concept-Mapping and Pattern-Matching Approach.

Contingent Choice of Instruments
Although some commercial packages promise managers "road maps to unprecedented success" by aligning cultural variables and providing measures of organizational progress toward high-performance cultures and optimum results (CAPT 2007; Denison Consulting 2007), it is questionable whether there is a generic, ideal instrument for cultural exploration. It seems that factors relating to the purpose of and context within which organizational culture needs to be explored are too diverse to be amenable to any single instrument or to generic solutions.

Purpose
A key question that needs to be addressed when setting out to explore organizational culture is the exercise's aim or purpose: is it driven by formative, summative, or diagnostic reasons? A formative exploration offers feedback on the cultural elements of performance and change. This can be used to inform organizational development and learning. A cross-sectional or longitudinal examination of culture and its relationship to other organizational variables is offered through summative exploration. Such an approach can inform judgment on various characteristics and dimensions of culture and can be employed within formal performance management arrangements. Finally, a diagnostic exploration can offer insights on existing cultural traits and processes within an organization and their functionality in relation to promoting desirable organizational processes and outcomes. The purpose is to identify areas of strengths and weakness within an organization, and it can be used to examine organizational capacity, receptiveness, and readiness for cultural change at the organization, unit, team, or individual level. While summative approaches are of greater interest to those concerned with understanding organizational culture from a general research perspective, formative and diagnostic approaches are of interest to those looking to manage and develop organizational culture.

Although cultural exploration might be driven by these three overt reasons, it would be naive to assume that the purpose(s) driving cultural exploration will always be public and can be taken at face value. In organizational reality, a cultural exploration exercise might have a range of covert sociopolitical reasons (Alvesson and Willmott 2002; Willmott 1993). These can exist from the very outset or come into play when using the insights offered by the activity.

Individual Circumstances and Contextual Variables
In addition to the end that an instrument should serve, transferability across time and, most important, space and context are key aspects to be considered. It is often assumed that similarities between originating and receiving context facilitate the transfer and application of an instrument. As such, it is usually the case that countries and sectors that are perceived as most similar are the first ports of call. The safety of such assumptions is questionable (Øvretveit 1997; Pierson 2003). Whenever instruments are transferred between settings, the vexed question of international and contextual validity arises. The feasibility, acceptability, utility, and impact of cultural assessment instruments in particular organizational contexts may depend on a wide range of factors. These can be intrinsic to the instrument or aspects that are internal and external to the organization. Instrumental factors can relate to the degree of training and technical expertise required to administer the instrument, the time required for making useful assessments, and the degree of expertise required to analyze and interpret the data yielded. External factors may include business and political constraints or preoccupations. Internal factors may include the availability of organizational resources, leadership and management style, as well as organizational sanctions and reward systems (Sheaff et al. 2006).

Despite such obstacles to instruments' potential for transferability, international collaboration is one way in which transferability might

be facilitated, as illustrated in the development of the FOCUS Questionnaire, the GLOBE Culture Scales, and the Perceived Cultural Compatibility Index. In addition, while a direct transfer between different contexts might not be warranted, there is scope for cross-fertilization; instruments that to date have only been applied within one sector might be worth considering for further development and application in others.

Concluding Remarks

Organizational culture is just one of the many pieces that make up the puzzle of public sector organizations. As such, it neither should be considered the answer to all organizational problems, nor should it be applied to all organizational aspects (Caroselli 1992; Michaelson 1989). As has been highlighted, the field is highly fragmented and continuously evolving. While insights from cultural assessment might be helpful, their inappropriate use is prone to put an organization at a disadvantage (Caroselli 1992): cultural assessment can be a starting point to solve problems, but also a way to create problematic solutions (Smit 2001).

Consequently, it is useful to consider two questions prior to embarking on cultural exploration: what is the purpose of assessment, and to what ends will the ensuing information be applied? Potential answers to these questions range from purely theoretical interests to the practical solving of organizational problems (Browaeys and Baets 2003; Lund 2003; Ogbonna and Harris 1998; Seel 2001). Along with the intention underlying any cultural examination, personal preferences, perspectives on, and understanding of "culture," as well as the availability of resources will be key influences in deciding which approach to pick from the pool of available instruments. Given the need to test aspects of instruments in different contexts and with different populations, instrument development is a potentially open-ended process. While this process is driven partly by theoretical and partly by pragmatic interests, ultimately, an instrument has value in utility. This article has examined in the most rigorous terms to date the challenging question of how one might choose the right instrument to match one's aims and objectives in assessing an organization's culture. As such, the information provided in this review can only act as guidance. Different instruments offer different insights: they reveal some areas and aspects of an organization's culture but cast others in shadow.

> It is useful to consider two questions prior to embarking on cultural exploration: what is the purpose of assessment, and to what ends will the ensuing information be applied? Potential answers to these questions range from purely theoretical interests to the practical solving of organizational problems

Acknowledgments

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