Methods

The Quantitative Measurement of Organizational Culture in Health Care: A Review of the Available Instruments

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Objective. To review the quantitative instruments available to health service researchers who want to measure culture and cultural change.

Data Sources. A literature search was conducted using Medline, Cinahl, Helmis, Psychlit, Dhdata, and the database of the King's Fund in London for articles published up to June 2001, using the phrase "organizational culture." In addition, all citations and the gray literature were reviewed and advice was sought from experts in the field to identify instruments not found on the electronic databases. The search focused on instruments used to quantify culture with a track record, or potential for use, in health care settings.

Data Extraction. For each instrument we examined the cultural dimensions addressed, the number of items for each questionnaire, the measurement scale adopted, examples of studies that had used the tool, the scientific properties of the instrument, and its strengths and limitations.

Principal Findings. Thirteen instruments were found that satisfied our inclusion criteria, of which nine have a track record in studies involving health care organizations. The instruments varied considerably in terms of their grounding in theory, format, length, scope, and scientific properties.

Conclusions. A range of instruments with differing characteristics are available to researchers interested in organizational culture, all of which have limitations in terms of their scope, ease of use, or scientific properties. The choice of instrument should be determined by how organizational culture is conceptualized by the research team, the purpose of the investigation, intended use of the results, and availability of resources.

Key Words. Organizational culture, measurement instruments

Health system reforms have until recently tended to focus primarily on structural change. The introduction of managed care in the United States (Miller and Luft 1997), the establishment of standard-setting bodies such as the National Institute for Clinical Excellence (Department of Health 1998) in the United Kingdom, the development of medical error reporting systems in Australia (Wilson et al. 1995), and the restructuring of primary care in the United Kingdom and Canada (Hutchison, Abelson, and Lavis 2001) are

examples of this approach. However, recent studies show that structural changes alone do not deliver anticipated improvements in quality and performance in health care (Le Grand, May, and Mulligan 1998; Shortell, Bennett, and Byck 1998). As a result, we hear calls for "cultural transformation" to be wrought alongside structural change in order to deliver improvements in quality and performance. This call has been prominent in the United States (Institute of Medicine 2001) and also as a central component of the recent reforms of the National Health Service (NHS) in the United Kingdom (Department of Health 2000, 2002).

A theory of organizational culture emerges from a combination of organizational psychology, social psychology, and social anthropology. The development of organizational culture as a subject of study can be seen as an elaboration of the human relations (Roethlisberger and Dickson 1939) and social systems approaches (Parsons 1977); which in turn developed as correctives to the scientific management techniques of Frederick Winslow ("Speedy") Taylor, and his successor Frank B. Gilbreth. The study of organizations has been conducted from within various different theories or paradigms (Burrell and Morgan 1979). The term "organizational culture" first appeared in the academic literature in an article in *Administrative Science Quarterly* by Pettigrew (Pettigrew 1979; Hofstede et al. 1990)—though Jacques refers to the culture of a factory as early 1952 (Jacques 1952). Its constituent themes can be traced to earlier literature on organizational analysis. Pettigrew's own empirical study of a private British boarding school appears strongly influenced by Burton Clarke (Clarke 1970). Both trace the influence of the strong, idiosyncratic individuals who founded the organizations. This concern with the role of leaders and leadership in turn underlines the influence of Selznick's *Leadership in Administration* (Selznick 1957). Selznick distin-

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guishes between two ideal types of enterprise: on the one hand, a rational instrumental *organization* and, on the other hand, the value-infused *institution.* According to Selznick, the term "organisation" suggests a technical instrument to harness human energies and direct them towards set aims, while the term "institution" suggests an organic social entity, or culture.

Organizational culture has been variously defined (Ott 1989; Schein 1990; Davies, Nutley, and Mannion 2000). It denotes a wide range of social phenomena, including an organization's customary dress, language, behavior, beliefs, values, assumptions, symbols of status and authority, myths, ceremonies and rituals, and modes of deference and subversion; all of which help to define an organization's character and norms. Unsurprisingly in view of this diverse array of phenomena, little agreement exists over a precise definition of organizational culture, how it should be observed or measured, or how different methodologies can be used to inform routine administration or organizational change. While some commentators see the task in terms of specific and measurable variables, traits or processes, others see it as a global challenge to capture culture as an intrinsic property of the social milieu that forms whenever people are brought together in common enterprise. A third approach sees organizational culture as an anthropological metaphor or a paradigm (Burrell and Morgan 1979; Burrell 1996) to analyze organizations as microsocieties (Morgan, Frost, and Pondy 1983; Smircich 1983; Morgan 1986).

According to Edgar Schein,

> Organizational culture is the pattern of shared basic assumptions—invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration—that 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 (Schein 1985a).

This definition captures one of the basic challenges faced by any culture to reconcile the often divergent aims and actions of its members. It also points to the difficulty of addressing that challenge. Its emphasis on the role of shared basic assumptions influencing beliefs and behavior suggests that organizational culture denotes much more than just "the way things are done around here" (Davies, Nutley, and Mannion 2000). Changing the way things are done appears, on the functional level of systems redesign, relatively easy. Attempting to understand *why* things are done in their distinctive ways, the factors underlying resistance to change attempts, and the extent to which new practices are sustained is far more challenging. To successfully engender

change in organizational behavior we need to understand the collective thought processes informing that behavior at both conscious and unconscious levels. This is where a deeper analysis and understanding of organizational culture may be productive.

Advocates of strategic cultural change typically make a number of implicit assumptions. First, health organizations possess discernible cultures, which affect quality and performance. Second, although cultures may be resistant to change, they are to some extent malleable and manageable. Third, it is possible to identify particular cultural attributes that facilitate or inhibit good performance and it should therefore be feasible for managers to design strategies for cultural change. Finally, it is assumed that any benefits accruing from the change will outweigh any dysfunctional consequences. Although there is as yet little empirical evidence to support these assumptions, some academics and many policymakers are showing renewed interest in the quantitative measurement of organizational culture in order to determine its relationship with performance and quality of care (Davies, Nutley, and Mannion 2000; Shortell et al. 2000; Shortell et al. 2001). A range of tools designed to measure organizational culture have been developed and applied in industrial, educational, and health care settings over the last two decades. In this paper we describe the results of an extensive review of these instruments and examine their usefulness for health service researchers. The review forms part of a larger study into the relationship between organizational culture and the performance of health organizations (Scott et al. 2001, In press).

METHODS

We searched relevant databases for articles on organizational culture—Medline, Cinahl, Helmis, Psychlit, Dhdata, and the database of the King's Fund in London. These databases combine coverage of all major scientific and management journals on both sides of the Atlantic with an emphasis on health services research. Initially, the inclusive term "culture" was used in the searches. Due to the high number of false hits on microbiological culture records, the search term was refined to "organizational culture." A comparison of 20 percent of records from the results of the first and second searches showed that all relevant records located by "culture" were also located by "organizational culture." Two members of the research team (Tim Scott and Russell Mannion) initially examined more than 1,700 records for relevance and identified abstracts of studies that developed or used culture

measurement tools. The bibliographies of those articles were also searched and the authors of relevant articles contacted. Thirty experts in health services policy and management research in the United Kingdom and the United States were asked if they knew of any tools that we had missed, for example unpublished instruments or ones reported only in the gray literature. No additional instruments were identified by those experts.

We were unable to find published criteria to help us to judge these instruments, so the research team, with the help of leading experts in the field, agreed on the following guiding principles:

1. Since the purpose of the overall study was to examine the relationship between measured performance and organizational culture, we wanted the instrument to be quantitative in nature—qualitative or semiqualitative approaches were therefore excluded from the review.
2. The instrument should have good face validity to assess a broad range of cultural dimensions, including leadership, communication, teamwork, commitment to innovation, and attitudes to change. It should also attempt to address the different layers of culture including artefacts, espoused values, and unspoken assumptions (Schein 1985b).
3. Priority would be given to those instruments for which some data were available on their statistical validity and reliability as measures of organizational culture.
4. Priority would also be given to instruments that had already been used in health care settings.

RESULTS

Eighty-four articles appeared to report the development or use of organizational culture assessment instruments. Copies of all the instruments referred to were obtained from their designers. The guiding principles described above were applied independently by two of the research team members (Tim Scott and Russell Mannion). Both selected the same eight instruments for inclusion but initially disagreed over a ninth. After discussion it was agreed to include all nine for detailed review. A list of excluded studies is available from the authors. In addition to instruments administered in health care organizations we also looked at instruments that had been used in industry or education. We identified four additional instruments that appeared to have some potential for use in health care organizations.

We limited our detailed evaluation to this subset of 13 instruments. For each we examined the cultural dimensions that the developers were attempting to evaluate, the number of items for each questionnaire, the measurement scale adopted, examples of studies which had used the tool, the scientific properties of the instrument, its strengths and limitations, and any additional comments. The results of this assessment are presented in Table 1 for those instruments with a track record in health organizations, and in Table 2 for those instruments that have only been used in nonhealth settings.

Some general comments can be made about the 13 instruments. First, the culture measurement tools adopt either a *typological* approach, in which the assessment results in one of more "types" of organizational culture; or a *dimensional* approach, which describes a culture by its position on a number of continuous variables (Fletcher and Jones 1992) (box 1). Most of those adopting a dimensional approach have used a simple Likert-type scale for respondents to indicate their level of agreement with predefined statements. The number of items ranges from 13 to 135 and this will affect the length of time required to complete the questionnaire. Second, some of the instruments have a strong theoretical and conceptual provenance, while others have been developed in a more pragmatic way. Third, the instruments vary in scope, some focusing on the assessment of one or more specific dimensions of organizational culture, others assessing a more comprehensive range of dimensions. Fourth, there are differences in terms of the potential of the instruments to explore the deeper manifestations of culture. All of them examine employee perceptions and opinions about their working environment (the so-called "climate" of an organization) but only a few, such as the Competing Values Framework and the Organisational Culture Inventory, try to examine the values and beliefs that inform those views. None convincingly addresses those unspoken assumptions that guide attitudes and behavior and form the stable substrate of culture. Finally, the instruments vary in the extent of their use in empirical studies, the degree to which their validity and reliability have been evaluated, and the methods used to assess their scientific properties.

The Competing Values Framework (Cameron and Freeman 1991) is an example of the typological approach, characterizing organizational cultures as clannish, hierarchical, market-orientated, or adhocratic, with a long genealogy. Originating in Jung's (Jung 1923) model of psychological archetypes, the framework was constructed empirically by Quinn and Rohrbaugh (Quinn and Rohrbaugh 1981) through their analysis of the values held by individuals regarding desirable organizational performance. Using a comprehensive list of effectiveness criteria compiled by Campbell (Campbell 1977), Quinn and

Rohrbaugh discovered that the criteria clustered together in a way that reproduced the Jungian framework almost exactly (Cameron and Freeman 1991). Harrison's Organization Ideology Questionnaire (Harrison 1972, 1975) is also a typology but, in contrast with the Competing Values Framework, it appears to have been a product mainly of inspiration. Yet both instruments have been influential, applied in many settings and developed by other investigators.

Similar differences are to be seen between examples of dimensional scales. Whereas the items on the Organizational Culture Inventory (Cooke and Lafferty 1987) and the Hospital Culture Questionnaire (Sieveking, Bellet, and Marston 1993) were developed by factor analysis, the Practice Culture Questionnaire (Stevenson 2000) appears to have been developed mainly empirically, while the origins of MacKenzie's Culture Questionnaire (MacKenzie 1995) are unclear. In addition, some of the instrument designers have adapted established tools to suit the context of their research. For example, the Corporate Culture Questionnaire was developed from a review of previous instruments, and the Quality Improvement Implementation Survey was developed from the Competing Values Framework.

DISCUSSION

Investigators and consultants looking for an "ideal" instrument to measure the culture of health organizations will be frustrated. While a range of instruments is available, and researchers would have to justify developing yet another new tool from scratch, all of them have limitations in terms of their scope, ease of use, or scientific properties. There are no simple answers to the questions asked by people looking for a culture measurement tool—Which instrument is best? How and who do I choose to sample? How many subjects do I need? The answer is that it depends—on how we want to define "culture," "measurement," and "organization," the purpose of the investigation, the intended use of the results, and the availability of resources. This review helps to focus attention on the following key issues that researchers, policymakers, and practitioners should consider when attempting to choose between the options.

Choosing an Instrument or Instruments to Meet the Purpose

Those who are comfortable with a positivist approach to organizational culture may prefer the instruments that produce a numerical summary of the

Table 1: Organizational Culture Measurement Instruments that Have a Track Record in Health Care Settings

Name and Key References	*Cultural Dimensions and Outcome Measures*	*Number of Items*	*Nature of Scale*	*Examples of Use in Health Settings*	*Scientific Properties in Health Settings*	*Strengths*	*Limitations*	*Comments*
Competing Values Framework (Cameron and Freeman 1991; Gerowitz et al. 1996; Gerowitz 1998)	Key dimensions are staff climate, leadership style, bonding systems, prioritization of goals. Assessment results in four different culture types, described as: clan, adhocracy, hierarchy, and market types. Each organization usually has more than one of these types.	16	Brief scenarios describe dominant characteristics of each type. Respondents divide 100 points between these scenarios depending on how similar each scenario is to own organization.	Applied to top managers in 265 hospitals in U.K., U.S., and Canada (Gerowitz et al. 1996; Gerowitz 1998).	No details provided.	Simple and quick to complete, high face validity, used in several studies in health settings, strong theoretical basis, assesses both congruence and strength of culture.	Narrow classification of organizational types.	Originally developed for use in educational organizations.
Quality Improvement Implementation Survey (Shortell et al. 2000)	Key dimensions are: character of organization, managers' style, cohesion, prioritization of goals, and rewards. Assessment results in four different culture types, described	20	Brief scenarios describe dominant characteristics of each type. Respondents divide 100 points between these scenarios depending on how similar each scenario is	Used to assess relationship between culture and implementation of TQM in 16 hospitals (Shortell et al. 2000), and examination of relationship between implementation	Validity unknown. Internal consistency for one of the scales 0.79 (Shortell et al. 2000)	Simple and quick to complete. High face validity. Used in health settings by one of the leading teams in the field Adds extra dimension	Narrow classification of organizational types.	Based closely on the CVF but some terms modified to increase relevance to health organizations.

	as: group, developmental, hierarchy, and rational.		to own organization.	of evidence-based medicine and culture.		(rewards) to CVF.		
Organizational Culture Inventory (Cooke and Lafferty 1987; Thomas et al. 1990; Seago 1997; Ingersoll et al. 2000)	Shared norms and expectations that guide thinking and behavior of group members, resulting in 12 thinking styles of individuals within a group: humanistic-helpful, affiliative, approval, conventional, dependent, avoidance, oppositional, power, competitive, competence/ perfectionalist, achievement, self-actualization Analysis of these 12 styles results in three factors—people/security culture, satisfaction culture and task/ security culture.	120	5-point Likert scale.	Various.	Internal consistency 0.67-0.92. Convergent and discriminant validity established (Cooke and Szumal 1991).	Good face validity, widely used, graphic illustration of results.	Analysis results in limited number of aspects of culture, initial impression that it is long and complex to complete, under copyright and may be expensive to use.	Used in wide variety of different settings, strong psychometric underpinning.

Table 1: Continued

Name and Key References	*Cultural Dimensions and Outcome Measures*	*Number of Items*	*Nature of Scale*	*Examples of Use in Health Settings*	*Scientific Properties in Health Settings*	*Strengths*	*Limitations*	*Comments*
Harrison's Organizational Ideology Questionnaire (Harrison 1975; Ott 1989; Litwinenko and Cooper 1994)	Assesses ideology of organization in terms of orientation to power, roles, tasks and individuals.	15	Respondents rank four statements in each item in terms of how representative they are of (a) the organization and (b) the respondents own attitudes and beliefs.	Used to assess cultural implications of organizational change in U.K. (Litwinenko and Cooper 1994).	No data.	Good face validity, addresses both existing and preferred culture.	Limited number of culture types.	Used widely in variety of settings, strong theoretical underpinning.
Hospital Culture Questionnaire (Sieveking, Bellet, and Marston 1993)	Employee opinions of organization in eight different dimensions: supervision, employer attitudes, role significance, hospital image, competitiveness, staff benefits, cohesiveness, workload.	50	6-point scale.	10 U.K. private hospitals (Sieveking, Bellet, and Marston 1993).	No data on validity, factor analysis with coefficient scores of 0.61-0.93 (Sieveking, Bellet, and Marston 1993).	Developed for use in health context.	Developed for private sector and would have to be adapted for use in public sector, under copyright.	Limited development after initial study.
Nursing Unit Cultural Assessment Tool (Coeling and Simms 1993; Rizzo, Gilman,	Individual and group preferred behavior, rated by respondents as those behaviors that they prefer in	50	4- or 6-point Likert scale.	Nursing units.	Construct validity established through preliminary qualitative studies Reliability	Detailed assessment in one staff group within organization.	Lack of subscales, limited to assessment of one stakeholder group.	Useful for assessment of professional culture but less good for

and Mersmann 1994; Goodridge and Hack 1996; Seago 1997)	comparison to those that typically occur in their unit.				unknown (Goodridge and Hack 1996).			organizational culture.
Practice Culture Questionnaire (Stevenson 2000)	Attitudes to and engagement with quality improvement (clinical governance) and resistance to change.	25	5-point scale.	Pilot-tested in 110 primary care practices in U.K.	Test-retest and split-half reliability (Stevenson 2000).	Detailed assessment focused on primary care.	Origin of items unclear, generalizability outside U.K. primary care uncertain. Examines superficial manifestations of culture only.	Recently developed instrument, development on-going.
MacKenzie's Culture Questionnaire (MacKenzie 1995)	Employee commitment, attitudes to and belief about innovation, attitudes to change, style of conflict resolution, management style, confidence in leadership, openness and trust, teamwork and cooperation, action orientation, human resource orientation, consumer orientation, organizational direction.	76	Respondents tick each statement which they feel is broadly true of their organization.	One NHS trust (MacKenzie 1995).	Unknown.	Simple to complete.	Origin of items unclear, scientific properties unknown.	Designed to assess specific business units of hospitals.

Table 1: Continued

Name and Key References	*Cultural Dimensions and Outcome Measures*	*Number of Items*	*Nature of Scale*	*Examples of Use in Health Settings*	*Scientific Properties in Health Settings*	*Strengths*	*Limitations*	*Comments*
Survey of Organizational Culture (Tucker, McCoy, and Evans 1990)	Describes culture in terms of 13 dimensions: orientation to customers, orientation to employees, congruence amongst stakeholders, impact of mission, managerial depth/maturity, decisionmaking/ autonomy, communication/ openness, human scale, incentive/ motivation, cooperation versus competition, organizational congruence, performance under pressure, theory S/theory T.	55	5-point scale.	Applied within three hospitals in U.S. (Tucker, McCoy, and Evans 1990)	Good internal reliability, median alpha scores for 14 scales of 0.62–0.9 (Tucker, McCoy, and Evans 1990).	Detailed qualitative work conducted as part of development, has been used in public and private sector.	Only used in U.S. and mostly used on senior leaders and managers, rather than on all levels of workforce.	Used in range of health and nonhealth organizations.

dimensions of culture of an organization (Davies, Philp, and Warr 1993). Those who take a more constructivist approach might prefer to use a typological tool, such as the Competing Values Framework, or Harrison's Organization Ideology Questionnaire. Alternatively, one could reject any attempt to measure culture and choose to use qualitative approaches such as observation, interviewing, or projective metaphors (Schein 1985a; Nossiter and Biberman 1990; Lisney and Allen 1993; Schein 1999).

An instrument that works well for one investigation may not be so effective for another study. For example, a global view of organizational culture could be generated with the Competing Values Framework, but lack the level of detail required to guide an intervention. Studies designed to analyze the culture of a specific professional group may use more targeted tools, such as the Nursing Unit Cultural Assessment Tool (NUCAT2) (Coeling and Simms 1993). A study focusing on team functioning might use the Practice Culture Questionnaire to analyze the cultural issues underlying the willingness, or unwillingness, of primary care teams to engage with quality improvement initiatives. Sometimes it might be desirable to use individual scales from different instruments, though the validity and reliability of the composite tool would need to be examined (Ingersoll et al. 2000).

More than one approach to cultural assessment can be used in a single study. For example, Ott used two quantitative instruments together with an ethnographic approach in his investigation of culture in a small business in the United States and then triangulated the results of these different methods to create a more comprehensive picture of the organization (Ott 1989). When this approach is used, it is important to consider the influence that data from one method may have on another—Ott avoided contamination of his ethnographic study by delaying the analysis of the quantitative data until he had spent three months observing the firm. It is also important to consider a priming effect, whereby administration of one instrument may influence responses to further instruments. Triangulation may be particularly relevant to the examination of organizational culture, as different methods can be used to target different layers of culture. For example, the surface manifestation of culture, the artifacts, may be examined by observation; values may be examined using quantitative questionnaires; and underlying assumptions explored through in-depth interviews (Scott et al. 2001). By addressing more than one layer or aspect of an organization's culture, congruence between methods can be tested and a composite picture of the culture drawn.

The costs of instrument administration and data analysis are also important factors. Investigators can choose between instruments that are

Table 2: Organizational Culture Measurement Instruments that Have Potential to Be Used in Health Care Settings

Name and Key References	*Cultural Dimensions and Outcome Measures*	*Number of Items*	*Nature of Scale*	*Examples of Use*	*Scientific Properties*	*Strengths*	*Limitations*	*Comments*
Corporate Culture Questionnaire (Walker, Symon, and Davies 1996)	Four principal domains: performance, human resources, decision-making, and relationships.	69 or 126 versions	5-point Likert-type scale.	Used widely as a management consulting tool and published study in engineering company (Walker, Symon, and Davies 1996).	Internal reliability 0.72–0.89, detailed factor analysis performed (Walker, Symon, and Davies 1996).	Systematically developed from review of previous instruments, comprehensive.	Long	Some potential for use in health studies but longer version only available commercially.
Core Employee Opinion Questionnaire (Buckingham and Coffman 2000)	Thirteen issues addressed: overall satisfaction, understanding of expectations, access to required resources, appropriate use of skills, recognition and praise for achievements, relationship with supervisors, encouragement for self-development, perceptions of worth, engagement with organizational mission, commitment of all employees, friendships, appraisal, opportunities for career progression.	13	5-point Likert-type scale.	2,528 business units in range of different companies (Buckingham and Coffman 2000).	No data.	High face validity, easy to complete.	Assesses only limited number of cultural dimensions.	May be useful for health studies of limited area of culture—human resource issues

Hofstede's Organizational Culture Questionnaire (Hofstede et al. 1990)	Based on 3 values: need for security, importance of work and need for authority. Within these, there are 6 factors relating to practice issues: process vs. outcome, employee vs. task, parochial vs. professional, open vs. closed system, loose vs. tight control, normative vs. pragmatic.	135	5-point scale.	Used in range of private and public organizations in Denmark and the Netherlands (Hofstede et al. 1990).	(Hofstede et al. 1990).	Good theoretical basis and face validity of values and practical issues.	Not widely used in English-speaking countries.	Significant potential for use in health care organizations.
Organizational Culture Survey (Glaser, Zamanou, and Hacker 1987)	Addresses six empirical factors: teamwork and conflict, climate and morale, information flow, involvement, supervision, meetings.	31	5-point scale.	Used in commercial sector and government agency in U.S. (Glaser, Zamanou, and Hacker 1987).	Cronbach's alpha 0.82–0.91, extensive reliability testing (Glaser, Zamanou, and Hacker 1987).	Easy to use, comprehensive process of development.	Addresses only superficial issues.	Some potential for use in health settings.

Box 1: Classification of the selected instruments (Scott et al. 2001; Scott et al. In press)

Typological approaches:	Competing Values Framework
	Harrison's Organizational Ideology Questionnaire
	Quality Improvement Implementation Survey
Dimensional approaches:	Organizational Culture Inventory
	Hospital Culture Questionnaire
	Nursing Unit Culture Assessment Tool
	Practice Culture Questionnaire
	MacKenzie's Culture Questionnaire
	Survey of Organizational Culture
	Corporate Culture Questionnaire
	Core Employee Opinion Questionnaire
	Hofstede's Organizational Culture Questionnaire
	Organizational Culture Survey

freely available, such as Harrison's Organization Ideology Questionnaire, and others that are sold commercially, such as the Organizational Culture Inventory, often as part of a larger consultancy package. Even when a free instrument is used, the cost of analyzing data should be considered. Bound up with cost are other factors including the size of the sample surveyed. For these reasons, it is advisable to factor the instrument into the design of the study, ensuring compatibility between the instrument and the aims, methods, and resources available to the investigation.

Do the Instruments Really Measure Culture?

A problem with trying to assess highly complex phenomena like culture is that experts rarely agree on which are the essential dimensions to measure. Some of the culture assessment instruments evaluate organizational climate, usually by collecting participants' views of the environment in which they work. But it is unclear if there is any relationship between climate and culture (Ott 1989). Climate is a meteorological metaphor and culture is an anthropological metaphor. Each invokes quite different images and ideas and forming a common language between them is more problematic than might appear. In organizational analysis, it is generally recognized that different metaphors or paradigms are fundamentally incommensurable (Burrell and Morgan 1979; Burrell 1996). To try to force them to speak in the same tongue violates their analytical function, which is to generate multiple aspects of the "same" organization, rather than one true, authentic version.

Whereas climate is relatively easy to assess, the values and assumptions shared by organizational members may emerge gradually and become clear only after iterative in-depth interviewing (Schein 1990). Goffman refers to the "public" and "private" face of individuals—the former representing how people present their views to strangers, the latter representing what people divulge to trusted friends (Goffman 1959). Getting beyond the public faces presented by health care providers and institutions represents a major challenge for organizational culture investigators. A rigorous multimethod approach may reveal different nuances to the public face, but qualitative methods are more suited to explore peoples' private beliefs and opinions. Quantitative and qualitative approaches can be used in a complementary way to help develop a more detailed understanding of all the layers of culture within an organization. And different levels of a culture can be checked against one another. For example, if an espoused value such as "we believe in patient-centred care" emerges during an investigation, it should trigger a search for corroborating artifacts, such as evidence of meaningful patient participation and advocacy. According to Schein (Schein 1985a), assessing congruency between artifacts and values is the key to unlocking unspoken assumptions. The latter have "dropped out of consciousness" but continue to inform the morals and behavior of participants. Contradictions or discrepancies between observed artifacts and espoused values are of particular interest as they suggest assumptions that may *really* account for what participants *actually* do.

A multimethod approach can also help to overcome the inherent limitations of closed statement questionnaires. For example, one in-depth study of an accounting firm revealed a universally negative view of its clients (all the staff routinely referred to the clients as "assholes") (Ott 1989). None of the instruments examined in this study ask respondents whether they perceive their clients in quite this pointed way, and yet the finding illustrates an important cultural characteristic of the company. It also demonstrates the potential strength of qualitative research to complement quantitative methods. Qualitative research findings can be used to inform hypotheses testable by quantitative methods, and qualitative research can be used to explore the meaning of quantitative findings. We might be prompted by Ott's finding, for example, to devise quantitative methods to gauge dimensions of respect or trust between health care professionals and patients. Those results could in turn be explored qualitatively to clarify the role and importance of respect or trust from patient and provider perspectives. We have not reviewed qualitative methods for investigating organizational culture in this paper. But there does seem to be a need for research in this area to engage in a

conversation between the methods and findings of quantitative and qualitative approaches.

Sampling and Analytical Issues

The number of individuals that need to be surveyed to assess the culture of an organization will depend upon the aims—and budget—of the study. If the quantitative data from a survey is being used to triangulate other date sources, then the sample size can be selected on pragmatic grounds. If resources are available to conduct a large-scale mapping exercise, then that would be ideal but not essential. If, however, the aim is to examine the statistical relationship between culture and a potential dependent variable, such as the performance of the organization (Scott et al. forthcoming), then the size of the sample will be determined by the anticipated effect size and the desired power of the study. On the basis of current evidence—much of which is conceptually and methodologically weak—the impact of culture on performance appears to be small. When using current approaches, therefore, the sample would probably have to be very large if any effect is to be found (Cameron and Freeman 1991; Shortell et al. 2000).

The selection of the sample should be determined by the purpose of the study. Some studies have surveyed only senior managers within an organization (Gerowitz et al. 1996). This is an important group in terms of formal leadership roles, for instance. But such an approach clearly results in only a partial view of the organizational culture. Purposive or stratified sampling methods can be used to access a wider range of views within an organization. For example, if in a particular hospital the proportion of managers to doctors is 1:4 and of doctors to nurses is 1:3, then the sample from that hospital might comprise 3 managers, 12 doctors, and 36 nurses. This approach would not, however, reflect the relative importance of these groups in terms of their influence on the culture of the organization. Access to all staff groups, including administrative staff and cleaners may be important, again depending on the aim of the study.

When impersonal questionnaires are administered to staff about what some might perceive to be a nebulous issue, a low response rate may be predicted—in a health setting Shortell et al. (2000) achieved one of the best response rates of 55 percent. This may be a particular problem in struggling organizations or in organizations in which the examination of culture is perceived to have a hidden agenda—the very organizations that might most warrant investigation. It is usually worth taking the trouble to engage groups of

staff and the management team with the study to help ensure that the questions and findings have some practical relevance to their work and problems. The utilitarian ethic of health services research is conducive to investigations combining research and development. Involving stakeholders in the design of studies and dissemination of findings—for example, by offering a feedback seminar—are ways of achieving this.

The existence of subcultures within an organization, particularly in health settings where professional cultures are strong (Hofstede 1980; Degeling, Kennedy, and Hill 1998), means that it is important to select an adequate sample to allow subgroup analysis alongside whole organization analysis. The Competing Values Framework is specifically designed to represent the balance of different cultures within the same organization. Some other instruments permit assessment of occupational subcultures by sample selection. The Nursing Unit Cultural Assessment Tool (NUCAT2) is an example of an assessment instrument aimed at a single occupational group. The Organizational Culture Inventory is designed for individuals to compare their own profile with the aggregated scores of colleagues, and to compare aggregated profiles of different occupations. Since culture is, by definition, a collective phenomenon, data should only be examined at group level, even where the unit of collection is the individual. Methods of aggregating individual data to represent collective responses are typically crude and their validity uncertain (Shortell et al. 2000). The validity and utility of organizational culture studies could therefore be improved by developing better methods of group data collection. A greater emphasis on the assessment of interdisciplinary team culture would be one useful development, recognizing a general trend in health care away from traditional occupational demarcations in favor of greater attention to the culture and performance of the multiskilled work group.

CONCLUSION

While it is important to acknowledge that some observers contest the nature and importance of organizational culture, this should not inhibit empirical research into an issue that has potential both as a lever for quality improvement and as an aid for understanding the management of change in health care organizations. This paper has demonstrated that a range of instruments is available to measure culture. It has argued that the purpose and context of cultural assessment should determine the choice of instrument or

instruments used. Further work is required to improve the face validity and test the properties of some instruments described in this paper. However, it is unlikely that any single instrument will ever provide a valid, reliable, and trustworthy assessment of an organization's culture, and so a multimethod approach will always be desirable.

The idea of approaching organizations as cultures needs to be set in the wider context of paradigm research. Culture is but one metaphor for organization, stemming from an anthropological paradigm of research. Its main appeal lies in seeking to engage organizations and their problems on the level of meaning. If the aim is to improve the quality of care, or the efficiency of a service, than a culture approach should inquire into what those terms actually mean to participants and how they would assess themselves against those and other definitions. It cannot be safely assumed that these things are already known, or that participants share similar definitions and judgments. The culture assessment instruments reviewed here offer a wide choice to the investigator. But culture is sometimes ambiguous, often slippery, and difficult to pin down. The investigator has to be reconciled to the nature of what is studied and not rely exclusively on a single instrument, or even a set of instruments.

In sum, there is an increasing acknowledgment of the importance of assessing the receptiveness to, and impact of, organizational change, particularly where it is aimed at quality improvement. The culture assessment instruments reviewed form a varied, versatile, and reasonably efficient toolkit for those purposes. The implications of this review for policymakers and policy researchers are that singular attempts to define and measure organizational culture are misplaced. Instead, a plurality of conceptualizations, tools, and methods are more likely to offer robust, subtle, and useful insights.

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