Measuring Organizational Cultures: A Qualitative and Quantitative Study across Twenty Cases

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This paper presents the results of a study on organizational cultures in twenty units from ten different organizations in Denmark and the Netherlands. Data came from in-depth interviews of selected informants and a questionnaire survey of a stratified random sample of organizational members. Data on task, structure, and control characteristics of each unit were collected separately. Quantitative measures of the cultures of the twenty units, aggregated at the unit level, showed that a large part of the differences among these twenty units could be explained by six factors, related to established concepts from organizational sociology, that measured the organizational cultures on six independent dimensions. The organizational culture differences found resided mainly at the level of practices as perceived by members. Scores of the units on the six dimensions were partly explainable from organizational idiosyncrasies but were also significantly correlated with a variety of task, structural, and control-system characteristics of the units.

INTRODUCTION

The "Organizational Culture" Construct

The term "organizational cultures" entered the U.S. academic literature, as far as we know, with an article in Administrative Science Quarterly by Pettigrew in 1979 ("On Studying Organizational Cultures") and is thus a relatively recent addition. In the U.S. management literature, the same term, in the singular, had been casually used by Blake and Mouton (1964) to denote what others then called "climate." More customary became "corporate culture," a term that had already figured in an article by Silverzweig and Allen in 1976 but which gained popularity after a book carrying this title, by Deal and Kennedy, appeared in 1982 and especially after the success of its companion volume, from the same McKinsey–Harvard Business School team, Peters and Waterman's In Search of Excellence, which appeared in the same year. Since then, an extensive literature has developed on the topic, which has also spread to the European language areas accessible to us.

"Culture" has become a fad, among managers, among consultants, and among academics, with somewhat different concerns. Fads pass, and this one is no exception. Nevertheless, we believe it has left its traces on organization theory. Organizational/corporate culture has acquired a status similar to structure, strategy, and control. Weick (1985) has even argued that "culture" and "strategy" are partly overlapping constructs. There is no consensus about its definition, but most authors will probably agree on the following characteristics of the organizational/corporate culture construct: it is (1) holistic, (2) historically determined, (3) related to anthropological concepts, (4) socially constructed, (5) soft, and (6) difficult to change. All of these characteristics of organizations have been separately recognized in the literature in the previous decades; what was new about organizational culture was their integration into one construct.

The literature on organizational cultures consists of a remarkable collection of pep talks, war stories, and some insightful in-depth case studies. There is, we believe, a dearth of ordi-
nary research as taught by standard behavioral research methodology textbooks. Such textbooks (e.g., Selltiz et al., 1965; Blalock and Blalock, 1971) tell the student to start with a qualitative orientation and to follow up with a quantitative verification. The research project described below has attempted to do just that. We were guided by three main research questions:

First, can organizational cultures be "measured" quantitatively, on the basis of answers of organizational members to written questions, or can they only be described qualitatively? In operational terms, the issue is whether membership in one organization rather than another explains a significant share of the variance in members' answers to questions dealing with culture-related matters. Our hypothesis was that it would.

Second, if organizational cultures can be measured in this way, which operationalizable and independent dimensions can be used to measure them, and how do these dimensions relate to what is known about organizations from existing theory and research? Our hypothesis was that the analysis would produce a discrete number of independent dimensions and that these dimensions should correspond to issues covered in the organizational literature, since it was unlikely that we would find aspects of organizations that nobody had discovered before.

Third, to what extent can measurable differences among the cultures of different organizations be attributed to unique features of the organization in question, such as its history or the personality of its founder? To what extent do they reflect other characteristics of the organization, like its structure and control systems, which in themselves may have been affected by culture? To what extent are they predetermined by given factors like nationality, industry, and task? Our hypothesis was that organizational cultures are partly predetermined by nationality, industry, and task, which should be visible in significant effects of such factors on culture dimension scores. Partly, we expected them to relate to organization structure and control systems. However, we expected that correlations between culture measures and such nonculture data would leave sufficient variance unexplained to allow a considerable amount of uniqueness to each organization.

Previous Research on National Cultures

Our research project into organizational cultures was modelled after an earlier project by the first author that covered differences among national cultures (Hofstede, 1980, 1983a, 1983b, 1983c, 1983d). That study used an existing data bank from a large multinational business corporation (IBM), covering matched populations of employees in national subsidiaries in 64 countries. The data consisted of answers to questionnaires about employee values and perceptions of the work situation that were collected in the context of two worldwide rounds of employee attitude surveys. Their use for studying differences in national cultures was an unintended, serendipitous by-product, for which the corporation opened its files of 116,000 survey questionnaires collected between 1967 and 1973. Twenty different language versions were used. Initially, from the 72 different national subsidiaries for which data were available, only the 40 largest were selected.
for the analysis (Hofstede, 1980). Subsequent follow-up re-
search showed data from another 24 subsidiaries to be us-
able, 10 as separate countries and 14 grouped into three
historical/geographical regions (Arab-speaking countries, West
Africa, and East Africa), thus raising the total number of units
in the analysis to 53. In the remaining eight countries the
number of native respondents was insufficient to allow sta-
tistical use of their data (Hofstede, 1983a).

The questions in the IBM surveys had been composed from
initial in-depth interviews with employees in ten countries and
from suggestions by frequent travellers in the international
headquarters' staffs who reported on value differences they
had noticed among subsidiaries. The surveys had been man-
aged by an international team of social scientists (both from
inside and outside the corporation) who were participant ob-
servers or observing participants in the daily life of one or
more of the subsidiaries. During the years devoted to the
analysis of the data, the first author and his family lived and
worked in four different countries. This background provided
a qualitative context to the cross-national study. The possibili-
ties for quantitative analysis of the precoded answer scores
were excellent. National idiosyncrasies and nuances of ques-
tionnaire translation weigh heavily in a two-, three-, or four-
country study, but with the unusually large number of 40 or
53 countries and regions, national patterns start to show a
global structure, which the "noise" of the idiosyncrasies of
individual countries cannot suppress. The structure revealed
by the IBM data consisted of four largely independent dimen-
sions of differences among national value systems. These
were labelled "power distance" (large vs. small), "uncertainty
avoidance" (strong vs. weak), "individualism" vs. "collecti-
vism," "masculinity" vs. "femininity." All 53 countries
and regions could be scored on all four dimensions; the four
together accounted for 49 percent of the variance in country
mean scores on 32 values and perceptions questions.

Differences in values among matched populations of em-
ployees of national subsidiaries of a multinational should be a
conservative estimate of differences among the national pop-
ulations at large, as respondents are supposed to share the
same worldwide corporate culture. Differences found among
IBM subsidiary personnel, as revealed by their scores on each
of the four dimensions mentioned above, do correlate signifi-
cantly with a multitude of comparative national data from
other sources: results of surveys of other narrow but
matched samples, results of representative samples of total
national populations, and country-level indicators, such as in-
dices of income inequality, government budget composition,
or medical statistics (Hofstede, 1980: 326–331). The four-
dimensional model of national culture differences certainly
does not represent the ultimate truth about the subject, but it
has so far served as a useful framework for teaching both
practitioners (such as future expatriates) and students and for
guiding research design in the previously fuzzy field of na-
tional cultures (e.g., Bourgoin, 1984; Triandis, 1984; Triandis
et al., 1986; Kreacic and Marsh, 1986; Gudykunst and Ting-
Toomey, 1988). Recently, another study on student popula-
tions from 23 countries using a survey questionnaire
designed by Chinese scholars has revealed a fifth meaningful
dimension independent of the four others (Hofstede and Bond, 1988; Bond and Mai, 1989). This fifth dimension, "Confucian dynamism," opposing a long-term to a short-term orientation in life and work, has the merit of providing a cultural explanation for the remarkable economic success within the past 25 years of the East-Asian countries.

A Study of Organizational Cultures

Paradoxically, the cross-national research in IBM did not reveal anything about IBM's corporate culture, except that it engaged in a survey project of this size: all units studied shared the same corporate culture, and there were no outside points of comparison. However, the cross-national study was a model of how a cross-organizational study could be undertaken. Instead of one corporation in many countries, we would study many different organizations in one and the same country. The plan for this project had been formulated as early as 1980, at the time of the foundation of the Institute for Research on Intercultural Cooperation (IRIC), under the umbrella of which the research was carried out. At that time, the "organizational culture" construct was just gaining popularity. The logistics of such a cross-organizational study, however, proved quite formidable. Whereas in the cross-national IBM study existing data were used, the Institute itself now had to acquire access to the participants and raise the necessary funds. We were finally able to go ahead with the research in 1985 and 1986. In order to find a sufficient number of participating organizations we had to include two national environments rather than one: besides in IRIC's home country, the Netherlands, we also operated in Denmark. On the national culture dimensions from the cross-national study, these two countries scored fairly similarly, and they belong to the same Nordic-Dutch cluster.¹

METHOD

Sample. We attempted to cover a wide range of different work organizations, to get a feel for the size of culture differences that can be found in practice, which would then enable us to assess the relative weight of similarities and differences. A crucial question is what represents "an organization" from a cultural point of view. One organization may include several culturally different departments, and these departments may consist of culturally different work groups. Determining what units are sufficiently homogeneous to be used for comparing cultures is both a theoretical and an empirical problem. We took the pragmatic approach, to accept as units of study both entire organizations and parts of organizations and to follow management's judgment as to whether a unit was culturally homogeneous. In a few cases, the research results later gave us reason to doubt a unit's cultural homogeneity, but it is unlikely that the results have been substantially affected by this. In the end, we got access to 20 units from 10 different organizations, five in Denmark, five in the Netherlands. These 20 units were from three broad kinds of organizations: (1) private companies manufacturing electronics, chemicals, or consumer goods (six total divisions or production units, three head office or marketing units, and two research and development units); (2) five units from private service companies (banking, transport, trade); and (3)

¹ Earlier reports on this research project have appeared in Danish (Hofstede and Ohayv, 1987) and in Dutch (Sanders and Neuijen, 1987).
four units from public institutions (telecommunications, police). Unit sizes varied from 60 to 2,500 persons. Twenty units was a small enough number to allow studying each unit in depth, qualitatively, as a separate case study. At the same time, it was large enough to permit statistical analysis of comparative quantitative data across all cases.

Design. The project consisted of three phases. In the first phase, we conducted in-depth interviews of two to three hours’ duration each with nine informants per unit, for a total of 180 interviews. These interviews allowed us to get a qualitative feel for the gestalt of the unit’s culture and to collect issues to be included in the questionnaire for the subsequent survey. Informants were chosen nonrandomly in a discussion with our contact person(s) in the unit. They included, in all cases, the unit top manager and his (never her) secretary, and then a selection of men and women in different jobs from all levels, sometimes a gatekeeper or doorman, an oldtimer, a newcomer, an employee representative (equivalent to a shop steward). A criterion in their selection was that they were assumed to be sufficiently reflective and communicative to be valuable discussion partners. The interview team consisted of 18 members (Danish or Dutch), most of them with a social science training but deliberately naive about the type of activity going on in the unit studied. Each unit’s interviews were divided among two interviewers, one woman and one man, so that the gender of the interviewer would not affect the observations obtained. All interviewers received the same project training beforehand, and all used the same broad checklist of open-ended questions. Interviews were taped and reports were written in a prescribed sequence, using respondents’ actual words.

In the second phase, we administered a standardized survey questionnaire consisting of 135 precoded questions to a random sample from the unit, consisting of about 25 managers, 25 college-level nonmanagers (“professionals”) and 25 non-college-level nonmanagers (“others”). Altogether, 1,295 usable questionnaires were collected, or an average of 65 per unit. About 60 of the questions in the survey were taken from the earlier cross-national study and its later extensions; the remaining questions, with a few exceptions, were developed on the basis of the interviews and were directed at the issues that the interviewers found to differ substantially between units. These included, in particular, many perceptions of daily practices, which had been almost entirely missing in the cross-national studies. The results of the interviews and of the surveys were discussed with the management of the units and were sometimes fed back to larger groups of unit members, if management chose to do so.

In the third phase, we used questionnaires, followed by personal interviews, to collect data at the level of the unit as a whole on such factors as its total employee strength, budget composition, key historical facts, or the demographics of its key managers. The first author collected all unit-level data personally, since finding out what comparable data could meaningfully be collected from such a varied set of organizations was a heuristic process difficult to share across researchers. The informants for the unit-level data were the top
manager, the chief personnel officer, and the chief budget officer.

Interviews. The checklist used for the in-depth interviews was based on a survey of the literature on the ways in which organization cultures are supposed to manifest themselves and on our own ideas. We classified manifestations of culture into four categories: symbols, heroes, rituals, and values, as shown in Figure 1.

Figure 1. Manifestations of culture: From shallow to deep.

Symbols are words, gestures, pictures, or objects that carry a particular meaning within a culture. Heroes are persons, alive or dead, real or imaginary, who possess characteristics highly prized in the culture and who thus serve as models for behavior (Wilkins, 1984). Rituals are collective activities that are technically superfluous but are socially essential within a culture—they are therefore carried out for their own sake. In Figure 1, we have drawn these as the successive skins of an onion—from shallow, superficial symbols to deeper rituals. Symbols, heroes, and rituals can be subsumed under the term "practices," because they are visible to an observer although their cultural meaning lies in the way they are perceived by insiders. The core of culture, according to Figure 1, is formed by values, in the sense of broad, nonspecific feelings of good and evil, beautiful and ugly, normal and abnormal, rational and irrational—feelings that are often unconscious and rarely discussable, that cannot be observed as such but are manifested in alternatives of behavior. We selected these four terms from the terminology offered in the literature (e.g., Deal and Kennedy, 1982), because we believe them to be (1) mutually exclusive and (2) reasonably comprehensive, thus covering the field rather neatly.
The interview checklist contained questions like the following: "What are special terms here that only insiders understand?" (to identify organizational symbols); "What kind of people are most likely to make a fast career here?"; "Whom do you consider as particularly meaningful persons for this organization?" (to identify organizational heroes); "In what periodic meetings do you participate?"; "How do people behave during these meetings?"; "Which events are celebrated in this organization?" (to identify organizational rituals); and "What things do people very much like to see happening here?"; "What is the biggest mistake one can make?"; "Which work problems can keep you awake at night?" (to identify organizational values). Interviewers were free to probe for more and other information if they felt it was there.

The interviews were used to create a qualitative, empathic description of the culture of each of the twenty cases. The following are extracts from two of the twenty unit gestalt descriptions made on the basis of the interviews:

The TKB case. TKB is a 60-year-old production unit in the chemical industry. Many of its employees are oldtimers. Stories about the past abound. Workers tell about how heavy the jobs used to be, when loading and unloading was done by hand. They tell about heat and physical risk. TKB used to be seen as a rich employer. For several decades, the demand for its products exceeded the supply. Products were not sold, but distributed. Customers had to be nice and polite in order to be served. The money was made very easily. TKB’s management style used to be paternalistic. The old general manager made his daily morning walk through the plant, shaking hands with everyone he met. This, people say, is the root of a tradition that still exists of shaking hands with one’s colleagues in the morning. Rich and paternalistic, TKB has long been considered a benefactor, both to its employees in need and to the local community. Some of this has survived. Employees still feel TKB to be a desirable employer, with good pay, benefits, and job security. A job with TKB is still seen as a job for life. TKB is a company one would like one’s children to join. Outside, TKB is a regular sponsor of local sports and humanitarian associations: "No appeal to TKB has ever been made in vain."

The working atmosphere is good-natured, with a lot of freedom left to employees. The plant has been pictured as a club, a village, a family. Twenty-fifth and fortieth anniversaries are given lots of attention; the plant’s Christmas parties are famous. These celebrations are rituals with a long history, which people still value a lot. In TKB’s culture, or, as people express it, in “the TKB way,” unwritten rules for social behavior are very important. One doesn’t live in order to work, one works in order to live. What one does counts less than how one does it. One has to fit into the informal network, and this holds for all hierarchical levels. “Fitting” means avoiding conflicts and direct confrontations, covering other people’s mistakes, loyalty, friendliness, modesty, and good-natured cooperation. Nobody should be too conspicuous, in a positive or a negative sense. TKB-ers grumble, but never directly about other TKB-ers. Also, grumbling is reserved for one’s own circle and is never done in front of superiors or outsiders. This concern for harmony and group solidarity fits well into
the regional culture of the geographical area in which TKB is located. Newcomers are quickly accepted, as long as they adapt. The quality of their work counts less than their social adaptation. Whoever disrupts the harmony is rejected, however good a worker he or she is. Disturbed relationships may take years to heal: “We prefer to let a work problem continue for another month, even if it costs a lot of money, above resolving it in an unfriendly manner.” Company rules are never absolute. The most important rule, one interviewee said, is that rules are flexible. One may break a rule if one does it gently. It is not the rule-breaker who is at risk, but the one who makes an issue of it.

Leadership in TKB, in order to be effective, should be in harmony with the social behavior patterns. Managers should be accessible, fair, and good listeners. The present general manager is such a leader. He doesn’t give himself airs. He has an easy contact with people of all levels and is felt to be “one of us.” Careers in TKB are made primarily on the basis of social skills. One should not behave too conspicuously; one needn’t be brilliant, but one does need good contacts; one should know one’s way in the informal network, being invited rather than volunteering. One should belong to the tennis club. All in all, one should respect what someone called “the strict rules for being a nice person.”

This romantic picture, however, has recently been disturbed by outside influences. First, market conditions have changed, and TKB finds itself in an unfamiliar competitive situation with other European suppliers. Costs had to be cut and manpower reduced. In the TKB tradition, this problem was resolved, without collective layoffs, through early retirement. However, the oldtimers who had to leave prematurely were shocked that the company didn’t need them anymore. Second, TKB has been severely attacked by environmentalists because of its pollution, a criticism that has received growing support in political circles. It is not impossible that the licenses necessary for TKB’s operation will one day be withdrawn. TKB’s management tries to counter this problem with an active lobby with the authorities, with a press campaign, and through organizing public visits to the company, but its success is by no means certain. Inside TKB, this threat is belittled. People are unable to imagine that one day there may be no more TKB. “Our management has always found a solution. There will be a solution now.” In the meantime, attempts are made to increase TKB’s competitiveness through quality improvement and product diversification. These also imply the introduction of new people from the outside. These new trends, however, clash with TKB’s traditional culture.

The DLM case. DLM is a European airline company that in the early 1980s went through a spectacular turnaround. Under the leadership of a new president, the company switched from a product-and-technology to a market-and-service orientation. Before, planning and sales had been based on realizing a maximum number of flight hours with the most modern equipment available. Pilots, technicians, and disciplinarian managers were the company’s heroes. Deteriorating results forced the reorganization. The president recognized that in the highly competitive air transport market, success depended on catering to the needs of current and potential
customers. These needs should be best known by the employees with face-to-face customer contact. In the old situation, these people had never been asked for their opinions: they were a disciplined set of uniformed soldiers, trained to follow the rules. Now, they were considered to be on "the firing line," and the organization was restructured to support them rather than to order them around. Superiors became advisors; those on the firing line received a lot of discretion in dealing with customer problems on the spot, while only checking with superiors after the fact—which involves an acceptance of employees' judgment, with all risks that entails.

One of the units participating in the study is DLM's passenger terminal at its main station. The interviews were conducted three years after the turnaround. The employees and managers are uniformed, disciplined, formal, and punctual. They seem to be the kind of people who like to work in a disciplined structure. People work shift hours, and periods of tremendous work pressure alternate with periods of relative inactivity. They show considerable acceptance of their new role. Talking about the company's history, they tend not to go back to before the reorganization; only some managers do. They are proud of the company: their identity is to a large extent derived from it, and social relationships outside the work situation are frequently with other DLM-ers. The president is often mentioned as a company hero. In spite of the discipline, relationships between colleagues tend to be good-natured, and there is a lot of mutual help. A colleague who meets with a crisis in his or her private life is supported by others and by the company. Managers of various levels are visible and accessible, although more managers have trouble accepting the new role than nonmanagers. New employees enter via a formal introduction and training program, with simulated encounters with problem clients. This serves also as a screening device, to determine whether the newcomer has the values and the skills necessary for this profession. Those who pass feel quickly at home in the department. The employees demonstrate a problem-solving attitude toward clients: they show considerable excitement about original ways to resolve customers' problems, in which some rules can be twisted to achieve the desired result. Promotion is from the ranks and is felt to be on the basis of competence and collegiality.

It is not unlikely that this department, in particular, benefitted from a certain "Hawthorne effect" because of the key role it had played in a successful turnaround. At the time of the interviews, the euphoria of the successful turnaround was probably at its highest tide. Observers from inside the company commented that people's values had not really changed but that the turnaround had transformed a discipline of obedience toward superiors into a discipline of service toward customers.

Survey Questionnaire and Data Analysis

The questionnaire was aimed at collecting information on the same four types of manifestations of culture as covered in the interview checklist: symbols, heroes, rituals, and values. The first three are subsumed under the common label "practices" (Figure 1). Values items describe what the respondent feels "should be," practices items what she or he feels "is."
The distinction between the two is present not only in the conception of the researchers but also in the minds of the respondents. In a factor analysis of all 135 survey items for all 1,295 respondents, values items and practices items loaded consistently on different factors, with very little overlap. The questionnaire contained the following items:

**Values.** Twenty-two questions assessed work goals: the characteristics of an ideal job, like "have an opportunity for high earnings" or "have security of employment," were each rated on a 5-point scale of importance. These were taken from the earlier cross-national research project and from later extensions of it. The interviews revealed no additional goals to add to the list.

Twenty-eight questions assessed general beliefs, like "competition between employees usually does more harm than good," each rated on a 5-point scale from "strongly agree" to "strongly disagree." Twenty-five of these stemmed from earlier cross-national research, mostly from the IBM studies and from Laurent (1983). Three were added based on the interviews.

Both work goals and general beliefs deal with values, but work goals represent "values as the desired" (what people claim to want for themselves) while general beliefs represent "values as the desirable" (what people include in their worldview) (Hofstede, 1980: 20). Although items from the two categories tend to intercorrelate, answers are not necessarily logically consistent from the first category to the second (Hofstede, 1980: 21), and neither of the two is a perfect predictor of actual value-driven behavior in a choice situation. However, differences in verbal behavior (in questionnaire answers) between cultures do correlate with measures of collective actual behavior, at least in the national case (Hofstede, 1980: 328 ff).

Seven other questions were included, in a variety of formats, on other items statistically correlated with the previous values items, including questions on desired and actually perceived decision-making styles in one's boss. Five of these occupied a key role in the earlier cross-national research; the other two were added on the basis of the interviews.

**Practices.** Fifty-four questions assessed perceived practices in one's work situation. The first fifteen of these were inspired by Reynolds (1986), who did a thorough scan of the anecdotal U.S. literature on corporate cultures for suggested dimensions of differences. To Reynolds' questions, we added another 39 based on the interviews. We then cast all 54 questions into a bipolar format under the general heading "where I work . . ." and used 5-point scales on which, for example, 1 = "meeting times are kept very punctually" and 5 = "meeting times are only kept approximately." These 54 questions mostly cover symbols and rituals.

Seven questions asked about the "behavior of a typical member of the organization," using a 5-point "semantic differential" scale on which, for example, 1 = "slow" and 5 = "fast."

Thirteen questions asked about reasons for promotion and dismissal, rated on 5-point scales of importance or frequency.
Both the typical-member and the promotion-and-dismissal questions cover the category of "heroes" and were inspired by the interviews.

Four demographic questions asked about the respondent's sex, age group, seniority with the employer, and education level. Finally, there was an open question, asking the respondent for any additions or remarks.

RESULTS

Effects of Organizational Membership

For all 135 survey questions, without exception, unit mean scores differed significantly across the 20 organizational units. However, the 57 questions dealing with values tended to produce smaller differences between units than the 74 questions dealing with perceived practices. The range of mean scores for the group of values questions was from .32 to 2.09 (mean .87); the range for the group of perceived-practices questions was from .68 to 3.22 (mean 1.43). Because most questions were scored on 5-point scales, the mean scores from two units could maximally differ 4.0 points. A difference-of-means test showed that in view of the size of the samples and the standard deviations of the individual scores within these samples, a difference of means over .29 points was sufficient for significance at the .01-level in the most unfavorable case; in all other cases the limit was lower. Even the very lowest mean score range found, .32 for one of the values questions, still indicates a significant difference from the highest to the lowest scoring unit on this question. Most ranges were far over the significance limit (the .001-limit is at .41; all but one range are over this level).

The earlier cross-national study (Hofstede, 1980:72) included analyses of variance (ANOVAs) for ten values questions across ten countries.* The same ten questions were also subjected to ANOVAs across the twenty organizational units in this study. Eighteen practices questions that we had identified as being key questions for determining the practices dimensions were subjected to similar ANOVAs.

The F-values shown in Table 1 are a measure of the variance explained by the criterion (country or organization). Again, all but one are significant at the .001-level. For the questions on values, country differences explain more variance than orga-

### Table 1

<table>
<thead>
<tr>
<th>Questions</th>
<th>Min.</th>
<th>Max.</th>
<th>Median</th>
<th>p ≤ .001</th>
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<td>46.7</td>
<td>8.0</td>
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<td>6.4</td>
<td>4.0</td>
<td>2.5</td>
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<td>4.3</td>
<td>12.8</td>
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* From Hofstede, 1980:72.
organization differences for any single question studied; for organizations, questions on practices have almost twice as much variance explained as questions on values.

Our first hypothesis was thus supported. Membership in an organization does explain a significant share of the variance in the answers by members for all 131 culture questions used in the survey. However, we found an unpredicted difference between questions dealing with values and questions dealing with perceived practices: the latter produced a much wider range of answers across organizations than the former. In the earlier research on national culture differences, the questions selected from the data bank because they discriminated among countries dealt almost exclusively with values. Where the same questions about values appeared in both studies, across countries and across organizations, the ANOVAs across countries explained a much larger share of the variance than the ANOVAs across organizations, although even across organizations the variances in answers on questions about values stayed above the significance level.

A possible explanation of the differences in explained variance between values and practices could be the process by which the questions were chosen: those about values were chosen for their potential to discriminate among countries, and those about practices for their supposed ability to discriminate among organizations. Our results could just be artifacts of this selection process. However, in selecting, we never deliberately associated “values” with “countries” only, or “practices” with “organizations.” We only discovered this association after the fact. We did add five new questions about values on the basis of interviews in the organizations, but these discriminated only marginally better among organizations than those taken from the cross-national questionnaire, with mean scores ranging across the 20 units from .81 to 1.09, with a mean of .97. So we believe the “artifact” explanation does not hold.

Other criteria included in all the ANOVAs reported in Table 1 were occupation level, sex, and age. Their effects were not systematically different between the cross-national and the cross-organizational study, nor between values and practices questions in the cross-organizational study.

Dimensions of Culture

The second research question, on the dimensions on which the cultures of the twenty organizational units could be measured, can be answered by multivariate analysis, reducing the data from the 131 survey items so as to explain the maximum share of their variance by the smallest possible number of meaningful factors.

As organizational cultures are supposed features of organizational units, not of individuals, the multivariate analysis here was not to be performed on the answers to the questions by individual respondents but on their mean scores for each of the twenty organizational units, so as to move from the individual level to the social system.

Multivariate analysis is based on correlations. If one wants to determine the correlation between two variables measured at the level of individual respondents, who are also members of
Because some of the questions were scored on ordinal scales, we cannot guarantee that the answers are equidistant (which would make them into interval scales). In this case, the median would be the mathematically more correct measure of central tendency. However, for the type of 5-point scales used, mean and median have been shown to be almost identical (Hofstede, 1980: 70), and the mean is much easier to compute and to handle statistically.

Because organizational culture is a collective characteristic, the between-unit level is the correct level of analysis. The answers on each question by 1,295 individual respondents were aggregated into mean scores for 20 organizational units.* Each mean score was derived from a stratified sample of approximately equal shares of managers, professionals, and others.

Our purpose was to detect the structure in a 131 (variables, excluding the demographics) × 20 (cases) ecological matrix. We computed a 131 × 131 product-moment correlation matrix, correlating the 20 mean scores for each possible pair of questions. This showed that (1) values correlated with other values but rarely with practices (as we had already found in an
earlier factor analysis of individual scores); (2) perceived practices and typical-member scores correlated among each other, and (3) reasons for promotion and dismissal correlated among each other but rarely with other items. We therefore decided to divide the questions, for analytic purposes, into three categories—57 values questions, 61 perceived practices and typical-member scores, and 13 reasons for promotion and dismissal—and to conduct separate factor analyses for these three categories.

Ecological factor analyses are of necessity characterized by flat matrices, that is, few cases in comparison to the number of variables, often fewer cases than variables. The textbooks on factor analysis generally require the number of cases to be much larger than the number of variables, although they remain vague on the allowable limit: "Unfortunately, nobody has yet worked out what a safe ratio of the number of subjects to variables is" (Gorsuch, 1983: 332). The reason for wanting a large number of subjects is that, otherwise, factors become unstable and unduly dependent on the whims of individual respondents. However, this constraint does not apply to factor analyses of ecological data, in which each case is based on the mean of a large number of individual scores; such means are extremely stable. The stability of the factor structure for ecological matrices does not depend on the number of aggregate cases but on the number of independent individuals who contributed to each case. In our situation, it is based not on 20 (units) but on 1,295 (respondents), which is sufficient: both in the cross-national and in the cross-organizational study, factor scores derived through such analyses show many significant and theoretically meaningful correlations with outside data. However, if these factors were unstable, their factor scores would offer no more than random correlations with other phenomena. For the cross-national study, these outside validation data have been summarized in Hofstede (1980: 326–331); the validation data for the cross-organizational factors are shown in Table 4, below.

As ecological correlations tend to be stronger than individual correlations, we can expect to find high percentages of variance explained. To avoid paying attention to trivialities in factor analyzing ecological data it is therefore wise to keep the number of factors small, much smaller than the number of cases and smaller than what is technically possible based on the "eigenvalues" larger than 1.0. Also, one should only consider variables with high loadings on a factor, say over .50 or .60.

Value Differences

For further treatment, the 22 questions on work goals had to be standardized. Items scored on "importance" tend to be subject to response-set bias (different categories of respondents choosing different parts of the 5-point scale across all items, regardless of content). Response-set bias in a factor analysis leads to all questions loading on one trivial response-set factor. Also, by definition, "importance" is a relative concept: something is more or less important than something else. The response-set bias can be eliminated by computing for each unit the grand mean across all 22 work-goal items and replacing the means per item by their distance from this
grand mean, divided by the standard deviation of the 22 item means around this grand mean. For the other questions, which all used scales with a natural zero point (like agree-disagree), response-set bias does not normally play an important role, and the unit means can be used as they are.

For the 57 questions that we classified as dealing with values (22 standardized work goals, 28 general beliefs, and 7 other questions), an ecological principal component factor analysis was performed with orthogonal varimax rotation. A scree test indicated that we should limit the number of factors to three, which together explained 62 percent of the variance. We chose the following labels for these factors: V1 = need for security, V2 = work centrality, and V3 = need for authority. The results of the factor analysis are shown in Table 2.

Table 2

<table>
<thead>
<tr>
<th>Results of Factor Analysis of Unit Mean Scores on 57 Values Items across 20 Units*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor V1: Need for Security</td>
</tr>
<tr>
<td>.92 Man dislikes work</td>
</tr>
<tr>
<td>.91 Variety and adventure in work unimportant</td>
</tr>
<tr>
<td>.89 Fringe benefits important</td>
</tr>
<tr>
<td>.87 Main reason for hierarchical structure is knowing who has authority</td>
</tr>
<tr>
<td>.87 When a man’s career demands it, family should make sacrifices</td>
</tr>
<tr>
<td>.86 Having little tension and stress at work important</td>
</tr>
<tr>
<td>.83 Would not continue working if didn’t need the money</td>
</tr>
<tr>
<td>.83 The successful in life should help the unsuccessful</td>
</tr>
<tr>
<td>.83 Pursuing own interest is not best contribution to society</td>
</tr>
<tr>
<td>.76 Working in well-defined job situation important</td>
</tr>
<tr>
<td>.75 Serving your country unimportant</td>
</tr>
<tr>
<td>.75 When people have failed in life it’s not their fault</td>
</tr>
<tr>
<td>.74 Opportunity for advancement unimportant</td>
</tr>
<tr>
<td>.74 Opportunities for training unimportant</td>
</tr>
<tr>
<td>.73 Job you like is not more important than career</td>
</tr>
<tr>
<td>.69 Being consulted by boss unimportant</td>
</tr>
<tr>
<td>.66 Living in a desirable area unimportant</td>
</tr>
<tr>
<td>.63 Employees afraid to disagree with superiors</td>
</tr>
<tr>
<td>.63 Most people cannot be trusted</td>
</tr>
<tr>
<td>.63 Desirable that management authority can be questioned (second loading)</td>
</tr>
</tbody>
</table>

Factor V2: Work Centrality

| .84 Work more important than leisure time |
| .78 Competition between employees not harmful |
| .65 Physical working conditions unimportant |
| .65 Opportunities for helping others unimportant |
| .64 No authority crisis in organizations |
| .63 Does not prefer a consultative manager |
| .62 Challenging tasks important |
| .62 Prestigious company or organization important |
| .61 Decisions by individuals better than group decisions |
| .60 Working relationship with boss important |

Factor V3: Need for Authority

| .81 Most organizations better off if conflicts eliminated forever |
| .70 Own manager autocratic or paternalistic |
| .70 Undesirable that management authority can be questioned |
| .65 Parents should stimulate children to be best in class |
| .64 Employee who quietly does duty is asset to organization |
| .62 Parents should not be satisfied when children become independent |
| .61 Staying with one employer is best way for making career |
| .61 Conflicts with opponents best resolved by compromise |

* Loadings over .60 are shown; work-goal item scores were first standardized across 22 items; items with negative loadings have been reworded negatively. The three factors together explain 62% of the variance.
V1 and V3 resemble two dimensions from the cross-national study: uncertainty avoidance and power distance, respectively. We may be dealing with basically the same value complexes, but only some questions with high loadings are the same in the cross-organizational and in the cross-national study. Uncertainty avoidance in the cross-national study deals with the extent to which a social system rejects unstructured and ambiguous situations. Power distance deals with the acceptance of inequality among ranks in the system. For the cross-organizational data in Table 2, uncertainty avoidance and power distance items from the cross-national study seem to have got somewhat mixed. V2, work centrality, does not appear among the cross-national dimensions: it expresses to what extent for most people in the system, work takes a central place in their total life pattern. It resembles the concepts of “job involvement” (Lodahl, 1964; Lodahl and Kejner, 1965) and “central life interest” (Dubin, Champoux, and Porter, 1975; Dubin and Champoux, 1977), but these were considered properties of individuals, not of the social system.

All three factors are strongly associated with the nationality of the unit: Danish or Dutch. In the cross-national study, the Danish and Dutch IBM subsidiaries, on scales from 0 to 100, differ 30 points in uncertainty avoidance (the Netherlands is more uncertainty avoiding), 20 points in power distance (Denmark shows smaller power distances), six points in individualism (both are quite individualist), and two points in masculinity (both are quite feminine). The relatively largest difference, therefore, is on the dimension of uncertainty avoidance, and this repeats itself as a difference on need for security in the cross-organizational study. However, in spite of the Danes’ lower score on power distance in the cross-national study, the Danish units in the cross-organizational study scored higher than the Dutch on need for authority. Of course, the organizations in the two countries were not matched, so that the difference found may be an accidental effect of the particular sample of Danish and Dutch units studied. On work centrality, the Danish units all scored high, while the Dutch varied. All in all, having gone out to study organizational value differences and having done this in two countries for reasons of convenience, we seem to have mainly caught national value differences.

In an attempt to focus on the organizational differences, we reran the factor analysis after shifting the scores of the Dutch units so that, on average, they equalled the Danish. Thus we artificially eliminated the country effects. We again found three factors, which could be labelled (1) work orientation (intrinsic vs. extrinsic); (2) identification (with company vs. with noncompany interests); and (3) ambition (concern with money and career vs. family and cooperation, somewhat resembling the masculinity-femininity dimension in the cross-national study). The first factor was strongly related to the unit population’s mean education level (the higher educated had a more intrinsic work orientation) and the second to their age, seniority, and hierarchical level. Thus, even if we eliminate the nationality effect, value differences between organizational units seem primarily dependent on demographics like age and education and only secondarily on membership in the

Organizational Cultures

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Lammers (1986) has shown that Peters and Waterman's eight maxims for the "excellent corporation" correspond with the findings of a number of classics in organizational sociology on both sides of the Atlantic, among them Burns and Stalker.

organization as such. This is an important conclusion, to which we return in the Discussion section.

Practice Differences

For fifty-four practice questions in the "where I work ..." format and seven "typical member" questions, another ecological principal component factor analysis was performed with orthogonal varimax rotation. A scree test showed that in this case the optimal number of factors was six, together explaining 73 percent of the variance. The labels we chose for these dimensions, partly based on their interpretation by members from the participating units during the feedback discussions, are as follows: P1 = process-oriented vs. results-oriented; P2 = employee-oriented vs. job-oriented; P3 = parochial vs. professional; P4 = open system vs. closed system; P5 = loose vs. tight control; and P6 = normative vs. pragmatic.

We computed scores for each unit on each of these dimensions, based on three "where I work ..." questions with high loadings (over .60) on the factor. We chose items that together represent the essence of the dimension, as we interpret it, and were suitable for conveying this essence to the members of the units in the feedback sessions. In Table 3, which presents the results, these key items are shown in boldface type. In an ecological factor analysis of only these 6 × 3 = 18 questions for the 20 units, they accounted for 86 percent of the variance in mean scores between units.

Dimension P1 opposes a concern with means (process-oriented) to a concern with goals (results-oriented). On a scale from 0 to 100, in which 0 represents the most process-oriented and 100 the most results-oriented unit among the 20, TKB scored 2 (very process-oriented, little concern for results), while DLM's passenger terminal scored 100—it is the most results-oriented unit we found. This dimension has often been identified in organization sociology. One of the best examples is Burns and Stalker's distinction between mechanistic and organic management systems. According to Burns and Stalker (1961: 120) mechanistic systems are among other things characterized by "the abstract nature of each individual task, which is pursued with techniques and purposes more or less distinct from those of the concern as a whole; i.e., the functionaries tend to pursue the technical improvement of means, rather than the accomplishment of the ends of the concern." Organic systems (Burns and Stalker, 1961: 121) are characterized by "the 'realistic' nature of the individual task, which is seen as set by the total situation of the concern." Results orientation also corresponds with Peters and Waterman's (1982) maxim number 1: "a bias for action."

We found confirmation of Peters and Waterman's claim that "strong" cultures are more results-oriented. We have interpreted "strong" as "homogeneous" and operationalized it as the reverse of the mean standard deviation, across the individuals within a unit, of scores on the 18 key practices questions (three per dimension). A low standard deviation means that different respondents from the same unit perceived their environment in much the same way, regardless of the content of the perceptions. Actual mean standard deviations...
Table 3

Results of Factor Analysis of Unit Mean Scores on 61 Practices Items across 20 Units

<table>
<thead>
<tr>
<th>Factor</th>
<th>Dimension I</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor P1: Process-Oriented vs. Results-Oriented</td>
<td></td>
<td></td>
</tr>
<tr>
<td>.88</td>
<td>Employees are told when good job is done</td>
<td></td>
</tr>
<tr>
<td>.86</td>
<td>Typical member fast</td>
<td></td>
</tr>
<tr>
<td>.86</td>
<td>Comfortable in unfamiliar situations</td>
<td></td>
</tr>
<tr>
<td>.85</td>
<td>Each day brings new challenges</td>
<td></td>
</tr>
<tr>
<td>.78</td>
<td>Typical member initiating</td>
<td></td>
</tr>
<tr>
<td>.75</td>
<td>Informal style of dealing with each other</td>
<td></td>
</tr>
<tr>
<td>.73</td>
<td>Typical member warm</td>
<td></td>
</tr>
<tr>
<td>.70</td>
<td>Try to be pioneers</td>
<td></td>
</tr>
<tr>
<td>.70</td>
<td>Typical member direct</td>
<td></td>
</tr>
<tr>
<td>.69</td>
<td>People put in maximal effort</td>
<td></td>
</tr>
<tr>
<td>.67</td>
<td>Mistakes are tolerated</td>
<td></td>
</tr>
<tr>
<td>.67</td>
<td>Typical member optimistic</td>
<td></td>
</tr>
<tr>
<td>.63</td>
<td>Open to outsiders and newcomers (second loading)</td>
<td></td>
</tr>
<tr>
<td>.60</td>
<td>Managers help good people to advance (second loading)</td>
<td></td>
</tr>
</tbody>
</table>

| Factor P2: Employee-Oriented vs. Job-Oriented | | |
| .84 | Important decisions made by individuals |
| .76 | Organization only interested in work people do |
| .69 | Decisions centralized at top |
| .68 | Managers keep good people for own department |
| .65 | Changes imposed by management decree |
| .64 | Newcomers left to find own way |
| .64 | Management dislikes union members |
| .62 | No special ties with local community |
| .60 | Little concern for personal problems of employees |

| Factor P3: Parochial vs. Professional | | |
| .87 | People's private life is their own business |
| .79 | Job competence is only criterion in hiring people |
| .73 | Think three years ahead or more |
| .63 | Strongly aware of competition |
| .62 | Cooperation and trust between departments normal |

| Factor P4: Open System vs. Closed System | | |
| .67 | Only very special people fit in organization |
| .67 | Our department worst of organization |
| .66 | Management stingy with small things |
| .64 | Little attention to physical work environment |
| .63 | Organization and people closed and secretive |
| .61 | New employees need more than a year to feel at home |

| Factor P5: Loose Control vs. Tight Control | | |
| .73 | Everybody cost-conscious |
| .73 | Meeting times kept punctually |
| .62 | Typical member well-groomed |
| .61 | Always speak seriously of organization and job |

| Factor P6: Normative vs. Pragmatic | | |
| .84 | Pragmatic, not dogmatic in matters of ethics |
| .68 | Organization contributes little to society |
| .63 | Major emphasis on meeting customer needs |
| .63 | Results more important than procedures |
| .63 | Never talk about the history of the organization |

* Loadings over .60 are shown; items with negative loadings have been reworded negatively; items in boldface have been chosen as key indicators for the dimension. The six factors together explain 73% of the variance.

varied from .87 to 1.08, and the Spearman rank-order correlation between these mean standard deviations, as a measure of culture strength, and the unit's scores on "results orientation" was −.71, significant at the .001-level.

Dimension P2 opposes a concern for people (employee-oriented) to a concern for getting the job done (job-oriented). On a scale from 0 to 100, TKB scored 100 and DLM's pas-
senger terminal 95—both of them extremely employee-oriented. This dimension corresponds to the two axes of Blake and Mouton’s Managerial Grid (1964). The fact that Blake and Mouton claimed employee orientation and job orientation to be two independent dimensions seems to conflict with our placing them at opposite poles of a single dimension. However, Blake and Mouton’s grid applies to individuals, while our analysis was made at the level of social systems. It simply means that the units in our analysis tend to vary along the line 9,1–1,9 in Blake and Mouton’s grid.

Dimension P3 opposes units whose employees derive their identity largely from the organization, which we called “parochial,” to units in which people identify with their type of job, which we called “professional.” Sociology has long known this distinction as “local” versus “cosmopolitan,” the contrast between an internal and an external frame of reference (Merton, 1968: 447 ff.). The parochial type of culture is often associated with Japanese companies. DLM passenger terminal employees scored as quite parochial (24); TKB employees scored about halfway (48).

Dimension P4 opposes open systems to closed systems. On this dimension, TKB again scored halfway (51) and DLM as extremely open (9). This dimension describes the communication climate (Poole, 1985), a focus of attention for both human resources and public relations experts.

Dimension P5 refers to the amount of internal structuring in the organization. It appears from the data that a tight formal control system is associated, at least statistically, with strict unwritten codes in terms of dress and dignified behavior. On a scale of 0 = loose and 100 = tight, DLM scored as extremely tight (96), and TKB scored, once more, halfway (52); but halfway is loose for a production unit, as comparison with other production units shows. The tight-versus-loose distinction is well known from the literature on management control (e.g., Hofstede, 1967: 144 ff.).

Dimension P6 deals with the popular notion of “customer orientation.” Pragmatic units are market-driven; normative units perceive their task toward the outside world as the implementation of inviolable rules. The DLM passenger terminal was the top scoring unit on the “pragmatic” side (100), which shows that the president’s message came across. TKB scored 68, also on the pragmatic side; in the past, according to the interviews, it must have been more normative toward its customers, but the market changes already had their effect. This dimension receives enormous attention in the present-day business literature. The pragmatic pole corresponds with Peters and Waterman’s maxim number 2: “staying close to the customer.” It is interesting that our empirical data have identified “results orientation” and “customer orientation” as two separate and independent dimensions. We found examples of units being results-oriented but not customer-oriented (one of the two police corps). Examples of the opposite combination can be found in service businesses: trying to serve the customer does not automatically imply a results orientation.
The questionnaire contained seven questions on reasons for promotion, and six on assumed reasons for dismissal. The reasons for promotion were, in order of average endorsement across all 20 units, as follows: personality, performance, commitment to the organization, creativity, collegiality, diplomas, and seniority. The reasons for dismissal were (in order of endorsement): stealing the equivalent of U.S. $500, same but $50, alcohol during working hours, poor performance, conflict with the boss, and sex with a subordinate. These items, as mentioned above, did not correlate strongly with any other parts of the questionnaire, but only among themselves. In a factor analysis of the 13 item means for the 20 units, there was a strong first factor (H1, H for heroes) opposing promotion for present merits (commitment, creativity, performance) to promotion for past merits (diplomas and seniority). A weaker second factor (H2) opposed dismissal for job-related misbehavior (stealing) to dismissal for off-the-job morals (sex).

In order to test the relationships between the three values factors (V1 through V3), the six practice factors (P1 through P6), and the two promotion and dismissal factors (H1 and H2), we did a second-order factor analysis of the scores on the eleven dimensions represented by these factors, plus five demographic indicators—sex, age, seniority, education and nationality—across the twenty units. We found the following three clusters: (1) V3 (larger need for authority), P1 (process-oriented), H2 (dismissal for off-the-job morals), and mean age, which we call a “bureaucracy” cluster; (2) V2 (strong work centrality), P3 (professional), and higher mean education level, clearly a “professionalism” cluster; and (3) V1 (stronger need for security), P4 (closed system), H1 (promotion on past merits), and Dutch rather than Danish nationality, which we call a “conservation” cluster.

The three other practice factors, P2, P5, and P6 were not associated with other variables in the second-order analysis. The second-order analysis shows values and practices to be distinct but partly interrelated characteristics of culture. Apart from the “conservation” cluster, which reflects mainly national cultural differences among the two nations studied, the other two present major dichotomies among organizations known from organization sociology. The first, bureaucracy, opposes the mechanistic vs. organic systems described by Burns and Stalker (1961), and the second shows that the distinction between local and cosmopolitan also has a values component.

All in all, the results of the multivariate analysis of the survey data confirm our second hypothesis. We did find a discrete number of independent dimensions of organizational cultures, and these dimensions are well rooted in organizational theory and refer to quite classical distinctions among organizations. The six dimensions of perceived practices, P1 through P6, can be seen as a checklist for practical culture differences between organizations.
Relationships between Organizational Culture and Other Organizational Characteristics

In our third hypothesis we assumed that organizational cultures are partly predetermined by nationality, industry, and task, partly related to organizational structure and control systems, and partly unique products of idiosyncratic features like the organization's history or the personality of its founder. Nationality, industry, and task of a unit are directly observable features. The results reported above show that nationality, as well as education, age, seniority, and hierarchical level, strongly affected the answers on questions dealing with values. For the answers on questions dealing with perceived practices no such dominant effect of demographic characteristics was evident.

For the organization's task, the scoring profiles of the twenty units on the six practice dimensions showed that dimensions P1 (process vs. results), P3 (parochial vs. professional), P5 (loose vs. tight), and P6 (normative vs. pragmatic) relate at least partly to the type of work the organization does and to the type of market in which it operates. In fact, these four dimensions form a major part of the industry culture, a frequently neglected component of the organizational culture (Pennings and Gresov, 1986). The two remaining dimensions, P2 (employee- vs. job-oriented) and P4 (open vs. closed) seem to be independent of the industry but more determined by the philosophy of founders and top leaders.

Of the quantitative data collected at the unit level, about forty out of a much larger number of quantifiable characteristics tried were really comparable across units. Unit scores on these forty characteristics were correlated with the unit scores on the six practices dimensions.

Table 4 lists those characteristics that yielded significant and meaningful correlations with practice dimension scores. We checked for the possible effects of intercorrelations among the unit-level measures. There was a clear cluster of measures related to the unit's size, such as annual budget, total invested capital, and number of employees. From this cluster, number of employees appeared to be the indicator most strongly correlated with culture dimensions. Size strongly affected the correlations between culture and budget split (labor- vs. materials-intensive), so we controlled for it in the corresponding lines of Table 4. None of the other correlations in Table 4 were affected by controlling for size. Other intercorrelations among structural measures were of insufficient interest to be taken into account in the analyses presented in Table 4.

Table 4 contains 15 correlations significant at the .01-level and beyond and 28 at the .05-level. Crossing 40 characteristics with 6 dimensions we could expect two or three correlations at the .01-level by chance, and 12 at the .05-level. Chance, therefore, can only account for a minor part of the relationships found.

On practice dimension P1, process vs. results orientation, manufacturing and office units tended to score on the process-oriented side and research and development and service units on the results-oriented side.
| Table 4 | Product-Moment Correlation Coefficients between Various Unit-level Characteristics and Unit Scores on Six Dimensions of Practices across 20 Units* |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| **Structural characteristic** | **Practice dimension** | **P1** | **P2** | **P3** | **P4** | **P5** | **P6** |
| Measures of size | Annual budget | .61 | | | | | |
| Total invested capital | | | .53 | | | | |
| Number of employees | | | | .60 | | | |
| Private (−) vs. public (+) | | | | | | | .39 |
| Budget split in % (holding number of employees constant) | Labor | | | | | | .72 |
| | Materials | | | | | | −.46 |
| Measures of structure | Span of control, top manager | | | | | | .41 |
| | % Supervisory personnel | | | | | | | −.39 |
| | Centralization score | | | | | | | .26† |
| | Specialization score | | | | | | | −.40 |
| | Formalization score | | | | | | | −.40 |
| Control system | Top manager's boss focuses on profits | | | | | | .61 |
| | Top manager's boss focuses on budgets | | | | | | −.56 |
| | Controversial issues in employee journal | | | | | | −.55 |
| Time budget of top manager | % Reading/writing memos | | | | | | .51 |
| | % Meetings/discussions | | | | | | .66 |
| Profile of top 5 managers | At least one woman | | | | | | −.38 |
| | Average education level | | | | | | −.39 |
| | Average age | | | | | | .58 |
| | Promoted from ranks | | | | | | .46 |
| Profile of employees | % Women | | | | | | −.78 |
| | % Female managers | | | | | | −.58 |
| | % Absenteeism | | | | | | −.60 |
| | Average seniority | | | | | | .53 |
| | Average age | | | | | | .38 |
| | Average education men | | | | | | −.47 |
| | Average education women | | | | | | −.41 |
| | Recent growth in number | | | | | | −.43 |
| | Union membership | | | | | | −.39 |
| * Only significant correlations are shown; limits: .05 at .38, .01 at .52. Positive correlations indicate associations with results orientation (P1), job orientation (P2), professional (P3), closed system (P4), tight control (P5), or pragmatic (P6). | | | | | | |
| †Highest correlation with centralization score, not significant. | | | | | | |

Table 4 shows a strong correlation between dimension P1 and the balance of labor versus materials cost in the operating budget. Any operation can be characterized as labor-intensive, materials-intensive, or capital-intensive, depending on which of the three categories of cost takes the largest share of its operating budget. Labor-intensive units, holding number of employees constant, scored as more results-oriented, while materials-intensive units, again holding number of employees constant, scored as more process-oriented. If an operation is labor-intensive, people’s efforts, by definition, play an important role in its results. This appears more likely to breed a results-oriented culture. The yield of materials-intensive units tends to depend on technical processes, which seems to stimulate a process-oriented culture.

The second highest correlation of results-orientation is with lower absenteeism. This is a nice validation of the fact that,
as one of the key questions formulates it, "people put in a maximal effort."

There were three significant correlations between results orientation and structural characteristics. Flatter organizations (larger span of control for the unit top manager) scored as more results-oriented. This confirms Peters and Waterman's (1982) seventh maxim "simple form, lean staff." Three simplified scales were used, based on the Aston studies of organizational structure (Pugh and Hickson, 1976), to measure centralization, specialization, and formalization. Both specialization and formalization were negatively correlated with results orientation: more specialized and more formalized units tend to be more process-oriented. They correspond with the mechanistic systems of Burns and Stalker (1961).

The remaining correlations of results orientation are with having a top-management team with a lower education level and one that has been promoted from the ranks: doers rather than figureheads. Finally, in results-oriented units, union membership among employees tends to be lower.

Scores on dimension P2 (employee- vs. job-oriented) clearly reflected the philosophy of the unit or company's founder(s) and top leaders as we met them in the interviews. They also showed the possible scars left by past events: units that had recently been in economic trouble, especially if this was accompanied by collective layoffs, tended to score as job-oriented, even if, according to our informants, the past had been different. Opinions about the desirability of a strong employee orientation differed among the leaders of the units we studied; in the feedback discussions, we met top managers who wanted their unit to become more employee-oriented, as well as others who desired the opposite.

The strongest correlations with dimension P2 in Table 4 are with the way the unit is controlled by the organization to which it belongs. Where the top manager of the unit stated that his superiors evaluated him on profits and other financial performance measures, the members scored the unit culture to be more job-oriented. Where the top manager of the unit felt his superiors evaluated him on performance against a budget, the opposite was the case: members scored the unit culture to be more employee-oriented. It seems that operating against external standards (profits in a market) breeds a less benevolent culture than operating against internal standards (a budget). Where the top manager stated he allowed controversial news to be published in the employee journal, members felt the unit to be more employee-oriented, which validates the top manager's veracity.

The remaining correlations of employee orientation are with the average seniority and age of employees (more senior employees scored as being in a more job-oriented culture), with the education level of the top-management team (less educated teams corresponded with a more job-oriented culture), and with the total invested capital (not with the invested capital per employee). Large organizations with heavy investment tended to be more employee- than job-oriented.

On dimension P3 (parochial vs. professional), units with a traditional technology tended to score as parochial; high-tech
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units as professional. The strongest correlations of this dimension in Table 4 are with various measures of size: the larger organizations foster the more professional cultures. Professional cultures also have smaller labor union membership, their managers have a higher average education level and age, and they score higher on specialization. An interesting correlation is with the time budget of the unit top manager: in the units with a professional culture, the top managers claimed to spend a relatively large share of their time in meetings and person-to-person discussions. Finally, the privately owned units in our sample tended to score as more professional than the public ones.

In the same way as for employee versus job orientation, we believe the philosophy of the organization's founder(s) and top leaders plays a strong role in P4 (open vs. closed system). Communication climates in the units we studied seemed to have been formed historically without much outside rationale; some organizations had developed a tradition of being closed, others of remarkable openness. In the national context, however, open vs. closed was the only one of the six practices dimensions that was significantly associated with nationality: an open organizational communication climate is more characteristic of Danish than of Dutch organizations. However, one Danish unit scored as extremely closed and had been perceived by its environment and by its own members as a very closed organization for over a century.

The open-closed dimension in Table 4 is responsible for the single strongest correlation in the matrix: .78 between the percentage of women among employees and the openness of the communication climate. The percentage of women among managers and the presence of at least one woman in the top-management team are also correlated with openness. However, this correlation is affected by the bi-national composition of the research population. Among developed European countries, Denmark has one of the highest participation rates of women in the workforce, and the Netherlands one of the lowest (although steeply increasing). Also, as reported above, Danish units as a group, with one exception, score as much more open than Dutch units. This does not necessarily exclude a causal relationship between the participation of women in the workforce and a more open communication climate. Among the Danish units taken separately, the correlation between the percentage of women employees and openness is also significant, but not among the Dutch units, which may be the effect of the restricted range of scores of the Dutch units on "openness." All in all, the relationship between female participation in the labor force and openness of the organization's communication climate is a finding that merits further research.

Other correlates of the open vs. closed dimension are an association of more formalization with a more closed culture (a suitable validation of both measures), of admitting controversial issues into the employee journal with a more open culture (another validation), of higher average seniority with a more open culture, and of a high percentage of supervisory personnel with a more open culture.

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On dimension P5 (loose vs. tight control), units delivering precision or risky products or services (such as pharmaceuticals or money transactions) tended to score as tight on control, those with innovative or unpredictable activities tended to score as loose. To our surprise, the two municipal police corps we studied scored on the loose control side (16 and 41): the work of a policeman, however, is highly unpredictable, and police personnel have considerable discretion in the way they want to carry out their task.

The strongest correlation of the loose vs. tight control dimension in Table 4 is with an item in the self-reported time budget of the unit top manager: where the top manager claims to spend a relatively large part of his time reading and writing reports and memos from inside the organization, we found tighter control. This makes perfect sense. We also found that materials-intensive units have more tightly controlled cultures. As the results of such units often depend on small margins of material yields, this makes sense, too.

Tight control in Table 4 is also correlated with the percentage of female managers and of female employees, in this order. This is most likely a consequence of the type of activities for which women tend to be hired. Tighter control is found in units with a lower education level among male and female employees and also among its top managers. In units in which the number of employees had recently increased, control was felt to be looser; where the number of employees had been reduced, control was perceived as tighter. Employee layoffs are obviously associated with budget squeezes. Finally, absenteeism among employees was lower where control was perceived to be not as tight. Absenteeism is evidently one way of escape from the pressure of a tightly controlled system.

On dimension P6 (normative vs. pragmatic), service units and those operating in competitive markets tended to score as pragmatic, while units involved in the implementation of laws and operating under a monopoly tended to score as normative. Table 4 shows only two correlations with this dimension: privately owned units in our sample were more pragmatic, public units more normative (like the police corps), and there was a positive correlation between pragmatism and specialization, which we would not have predicted.

Conspicuously missing from Table 4 are correlations with performance measures. It has been extremely difficult to identify measures of performance applicable to so varied a set of organizational units, and the ones we have tried did not yield significant correlations. Denison (1984), using employee survey data and financial performance figures for 34 U.S. business firms, found a positive relationship between participative decision-making practices (equivalent to our dimension P2, employee-oriented) and business success. However, we are unable either to confirm or refute such a relationship on the basis of our data.

While the task and market environment clearly affected the scores on at least four of the practice dimensions, some individual units showed surprising exceptions: a production plant with an unexpectedly strong results-orientation even on the shopfloor or a unit like TKB with a loose control system in re-
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lation to its task. These surprises confirm the possibility that a unit’s culture may have distinctive elements. None of the correlations in Table 4 is so strong as to preclude deviations by individual units from general patterns. In our interviews and during the feedback discussions within the twenty participating units, we found idiosyncratic components of organization cultures within limits set by the task and the systems.

Our third hypothesis was thus confirmed as well: Organization cultures reflect nationality, demographics of employees and managers, industry and market; they are related to organization structure and control systems; but all of these leave room for unique and idiosyncratic elements.

DISCUSSION

The popular literature on corporate cultures, following Peters and Waterman (1982), insists that shared values represent the core of a corporate culture. This study, however, empirically shows shared perceptions of daily practices to be the core of an organization’s culture. Our measurements of employee values differed more according to the demographic criteria of nationality, age, and education than according to membership in the organization per se.

What we called “practices” can also be labelled “conventions,” “customs,” “habits,” “mores,” “traditions,” or “usages.” They have already been recognized as part of culture by Edward B. Tylor in the last century: “Culture is that complex whole which includes knowledge, beliefs, art, morals, law, customs and any other capabilities and habits acquired by man as a member of society” (Tylor, 1924: 1).

An explanation for the difference between the message of Peters and Waterman (and many other U.S. authors) and our findings about the nature of organizational cultures could be that the U.S. management literature rarely distinguishes between the values of founders and significant leaders and the values of the bulk of the organization’s members. Descriptions of organizational cultures are often based only on statements by corporate heroes. In our case, we have assessed to what extent leaders’ messages have come across to members. We conclude that the values of founders and key leaders undoubtedly shape organizational cultures but that the way these cultures affect ordinary members is through shared practices. Founders’ and leaders’ values become members’ practices. Even in the case of the DLM passenger terminal, employees’ values did not change, but because of the new president’s orientation, the rules of the game were changed, so that new practices could be developed.

In organization theory, this process of a transfer of the founders’ values into the members’ practices has already been recognized by Weber (1948: 297): “... when the organization of authority becomes permanent, the staff supporting the charismatic ruler becomes routinized.” In Weber’s typology of social action, he distinguished (among other types) action toward a value (wertrational) from action dominated by habitual response (“traditional”; Burrell and Morgan, 1979: 83). Our findings suggest that actions by ordinary organization members are more often traditional than wertrational.
If members' values depend primarily on their demographics, the way values enter the organization is via the hiring process: a company hires people of a certain nationality, age, education, and sex and, therefore, with certain values. Their subsequent socialization in the organization is a matter of learning the practices: symbols, heroes, and rituals.

Organization culture differences are thus composed of other elements than those that make up national culture differences. We have pictured the distinction in Figure 2. Among national cultures—comparing otherwise similar people—we found considerable differences in values, in the sense of broad, nonspecific feelings, such as of good and evil, notwithstanding similarities in practices among IBM employees in similar jobs in different national subsidiaries. Among organizational cultures, the opposite was the case: we found considerable differences in practices for people who held about the same values. We believe this difference can be explained by the different places of socialization for values and for practices. Values are acquired in our early youth, mainly in the family and in the neighborhood, and later at school. By the time a child is ten, most of his or her basic values are probably programmed into his or her mind. Organizational practices, on the other hand, are learned through socialization at the workplace (Pascale, 1985), which we usually enter as adults, with the bulk of our values firmly in place.

In Figure 2, we have placed an occupational culture level halfway between nation and organization, suggesting that entering an occupational field means the acquisition of both values and practices; the place of socialization is the school or university, and the time is between childhood and entering work. The place of occupational cultures in Figure 2 is supported by the results of the analyses of variance presented in Table 1: Occupation level was associated equally strongly with values as with practices. Occupational cultures have re-
In a methodological study, Hofstede and Spangenberg (1987) showed that the same work-goals questions form different clusters when factor analyzed at the individual, occupational, organizational, or national levels.

In Belgium, de Cock et al. (1984) developed a questionnaire aimed at assessing "organizational climate and culture." However, this one uses an imposed factor structure based on climate studies from the 1970s; its dimensions do not resemble ours. An article in a U.S. training journal, by Wallach (1983) describes an Organizational Culture Index with three dimensions: bureaucratic, innovative, and supportive. Some aspects of these overlap with our practice dimensions, but the source of Wallach’s operationalization is not made clear.

Gibson, Ouchi, and Sung (1987) found considerable subsystem variance within a multinational “Type Z” firm. In a recent and as yet unpublished study of a large service company, we collected culture data from the full population of about 2,500 employees, divided into 130 departments. A hierarchical cluster analysis revealed four clear subcultures, one of them with an almost “countercultural” profile (Martin and Siehl, 1983).

After having done both a large cross-national and a large cross-organizational culture study, we believe that national cultures and organizational cultures are phenomena of different orders: using the term “cultures” for both is, in fact, somewhat misleading, as has already been suggested by Wilkins and Ouchi (1983: 479).

The major outcome of our research project is a six-dimensional model of organizational cultures, defined as perceived common practices: symbols, heroes, and rituals that carry a specific meaning within the organizational unit. The source of our research data, twenty organizational units in two North-West-European countries, is obviously far too limited to claim any universality for the model. Certain types of organizations, like those in the health and welfare area, government offices, and military organizations, were missing from our set, and in other national environments, other practice dimensions could become relevant. Nevertheless, we predict that in other environments, too, differences among organizational cultures will be partly quantifiable and can be meaningfully described using perhaps five to seven practice dimensions, which should partly overlap with the six described in this paper. Information from some other sources seems to bear out this prediction. In Switzerland, Pümpin (1984; Pümpin, Kobi, and Wüthrich, 1985) has described a seven-dimensional model, five dimensions of which are very similar to ours (results orientation, employee orientation, company orientation, cost orientation, and customer orientation); however, the source of his model, other than common sense, is not clear from the published materials. In India, Khandwalla (1985), in a study of managers across 75 organizations, using 5-point bipolar survey questions similar to our “where I work . . .” questions, found a first factor closely resembling our process vs. results orientation.

The usefulness of an approach that quantifies is that it makes a fuzzy field at least somewhat accessible. We do not want to deny that organizational cultures are gestalts, wholes whose flavor can only be completely experienced by insiders and which demand empathy in order to be appreciated by outsiders. However, in a world of hardware and bottom-line figures, a framework allowing one to describe the structure in these gestalts is an asset. Practitioners can use it to create awareness of cultural differences, for example, in cases of planned mergers of culturally different units. By allowing comparisons to be made with other organizations, it can suggest the cultural constraints that strategic planners will have to respect. It allows one to measure culture change over time. Finally, it can help both managers and researchers to decide whether an organization should be considered as one single culture or as a multitude of subcultures and to draw a cultural map of complex organizations.

Our multidimensional model of organizational cultures does not support the notion that any position on one of the six dimensions is intrinsically “good” or “bad.” Labelling positions on the dimension scales as more or less desirable is a matter
of strategic choice, which will vary from one organization to another. For example, the popular stress on customer orientation (becoming more pragmatic on P6) is highly relevant for most organizations engaged in services and the manufacturing of custom-made, quality products. It may be unnecessary or even dysfunctional for, for example, the manufacturing side of organizations supplying standard products in a competitive price market or for units operating under government regulations. This conclusion stands in flagrant contradiction to the “one best way” assumptions found in Peters and Waterman’s eight maxims. What is good or bad depends in each case on where one wants the organization to go, and a cultural feature that is an asset for one purpose is unavoidably a liability for another.

In this article we have reported on a piece of ordinary behavioral research in an area where, in relation to the amount of speculation offered in the literature, such research has been too rare. Our results, we believe, contribute to a demystification of the organizational culture construct, changing it from a passing fad into a regular element of the theory and practice of the management of organizations.

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