

referred to the wage differentials in the French and German plants reported by Brosard and Maurice, which were considerably larger in France (the lowest French plant had a larger wage differential between top percentile and bottom decile than the highest German plant). The lower strata in the German plants are both better paid and more qualified.

Granick (1962), in an impressionistic study of French, Belgian, German, and British executives seen from an American viewpoint, found least centralization in Britain. French, Belgian, and German companies were more centralized, but in Germany the central authority tended to be a *team*; in France and Belgium, a *person*.

The higher proportion of managerial and specialist personnel in France goes together with a greater appreciation for white-collar work in general. Vlassenko (1977) shows that the high income inequality scores for France and Italy are mainly due to the salary gap between blue-collar and white-collar workers, which is wider in these countries than in the remaining ones on the list. Whyte (1969: 35) reports from Latin America "a sharp line of social distinction between white collar and blue collar jobs." This is another form of inequality which seems to be associated with PDI and is bound to affect the division of labor in organizations.

The Aston studies have shown another dimension: structuring of activities. The search for a corresponding dimension of national culture led to the identification of "Uncertainty Avoidance" which will be the subject of the next chapter.

Figure 3.9 summarizes the "consequences" of national differences in PDI for political systems, religious life, and philosophical and ideological thinking, and for organizations, as described in the previous sections. The term "consequences" must be seen in the sense of the righthand box in the model of Figure 1.4, with a feedback loop to the societal norm (PDI) itself, so that it does not suggest only a one-way causality. If we stay with the model of Figure 1.4, for the PDI-case we find the origins (lefthand box) in Figure 3.8 and a description of the norm itself (middle box) in Figure 3.7. The PDI level of a country is fairly strongly related to a country's level of economic development, as we saw, but the value differences go beyond economic differences: A considerable range of PDI values is possible for countries at the same level of economic development.

As a conclusion I paraphrase from George Orwell's *Animal Farm*—which I discovered Parkin (1971) did before me—"All societies are unequal but some are more unequal than others."

## NOTES

1. The Christian Church has not escaped the force toward status consistency either. Monks' orders have collectively become wealthy and powerful. A study by George and George (1966) has shown that from 2489 official Roman Catholic Saints and Beati living between the first and twentieth centuries, 78 percent belonged to the upper classes of their time and only 5 percent to the lower classes.
2. "The fundamental treaty substitutes moral and legal equality for any physical inequality between men which nature may have caused; and while they may be unequal in force or intelligence, they become all equal by agreement and by law" (Rousseau, 1762 [1972]: 122-123; my translation). See also Bottomore (1976).
3. Freedom, equality, brotherhood.

4. Even as an ideological statement it was weak because it did not take into account that equality imposes restrictions on freedom and vice versa.

5. Inkeles (1969) has constructed a "modernity scale" based on the answers of survey respondents in six developing countries, and shows that across individuals in these countries, "modernity" relates to educational level. Every year longer in school leads to two to three points of gain on a modernity scale of zero to 100. In our case the theoretical length of the PDI scale is 300 points; a gain of 18 points per year on a 300-point scale means 6 points' gain per year on a 100-point scale. Lower power distances are one aspect of Inkeles' modernity. PDI, however, is an aggregate, not an individual index.

6. This list does not include questions for which the ecological correlation with IDV is higher than the correlation with PDI. The rationale for this will be explained in Chapter 5.

7. The other concepts are anger, courage, fear, laughter, peace, truth, punishment, crime, knowledge, progress, success, death, defeat, love, sympathy, and trust.

8. In Moulin's Nobel Index, Great Britain and its former dominions are taken together. There are therefore no separate data for Australia, Canada, Ireland, and New Zealand. Israel is missing because it was only established in 1948.

9. Norway was a part of Sweden until 1905.

10. The values of the Nobel Index are: SWI 2.62, DEN 1.43, AUT 1.19, NET 1.15, SWE 1.13, GER 71, GBR .67, USA .41, FRA .40, FIN .29, BEL .26, ITA .10, JAP .01, NOR .00.

11. This is significant at the .05-level. The Spearman rank correlations of the Nobel Index with the other HERMES indices are: UAI -.46\*, IDV .04, MAS -.02; the rank correlation with 1970 GNP/capita is .42.

12. "Cadres—higher educated employees—think in terms of efficiency; lower educated employees think in terms of protest."

13. A very Latin proverb is "*Quod licet lvi, non licet bovi*" (What is allowed to Jupiter is not allowed to an ox).

14. The effect of inheritance laws on population was already suggested by Le Play in the nineteenth century; see Pitts (1968: 86).

15. Austria is also the only country among the 40 for which employees rate themselves on question B46 as *less* afraid to disagree with their bosses than these bosses rate them. In Switzerland, employees and their bosses break even in this respect. See also Chapter 7 for data on Austria.

16. Pirenne (1939: 397) sees the Roman Catholic Church in many respects as a continuation of the Roman Empire.

17. Ireland and Poland are Catholic countries without a Latin past; both used their Catholicism as a source of identity to protect them against powerful non-Catholic enemies.

18. The borderline of the Roman Empire ran through present-day Germany and the Netherlands. The southern parts of both countries which once were Roman are still in majority Catholic, the northern parts Protestant. In the Federal Republic of Germany, the 1976 Bundestag elections showed that the ex-borderline of the Roman Empire is also a political dividing line: The (more conservative) Christian Democrats obtained an absolute majority only in the two southern states of Bavaria and Baden-Württemberg.

## Chapter 4

### UNCERTAINTY AVOIDANCE

strongly for wealthy and for poor countries; the one consistent correlate is faster economic growth with higher UAI. A relationship is drawn between UAI and historical factors as well as countries' political systems, citizen competence, and legislation. Wealthy, high UAI countries allow cars to drive faster, have more accidents, and oblige citizens to carry identity cards. UAI scores are also related to dominant religions and to the prevalent approaches to scientific activity: more theoretical for high UAI countries, more empirical-pragmatic for low UAI countries; this is explained by a need for absolute truth on the high UAI side. The data supply only few suggestions as to the origins of UAI differences between countries, but more about their consequences for society at large, for ideology, and for organizations.

#### THE CONCEPT OF UNCERTAINTY AVOIDANCE

##### Time, Future, Uncertainty, and Anxiety

A basic fact of life is that time only goes one way. We are caught in a present which is just an infinitesimal borderline between past and future. We have to live with a future which "cannot begin" because "it moves away if we try to approach it," but which "serves as a projection screen for (our present) hopes and fears" (Luhmann, 1976: 143). In other words, we are living with uncertainty and we are conscious of it.

Extreme uncertainty creates intolerable anxiety, and human society has developed ways to cope with the inherent uncertainty of our living on the brink of an uncertain future. These ways belong to the domains of technology, law, and religion; I use the terms in a broad sense. Technology includes all human artifacts; law, all formal and informal rules that guide social behavior; religion, all revealed knowledge of the unknown. Technology has helped us to defend ourselves against uncertainties caused by nature; law, to defend against uncertainties in the behavior of others; religion, to accept the uncertainties we cannot defend ourselves against. The knowledge of a life after death is the ultimate certainty of the believer which allows him to face uncertainties in this life.<sup>1</sup> The borderline between "defending against uncertainties" and "accepting them" is fluid; many of our defenses aiming at creating certainty are not really doing so in an objective sense, but they allow us to sleep in peace.

Different societies have adapted to uncertainty in different ways. These ways not only differ between traditional and modern societies, but even among modern societies. Ways of coping with uncertainty belong to the cultural heritage of societies and they are transferred and reinforced through basic institutions like the family, the school, and the state. They are reflected in collectively held values of the members of a particular society. Their roots are non-rational, and they may lead to collective behavior in one society which may seem aberrant and incomprehensible to members of other societies. Fromm (1965) explained fascism and Nazism by a need to "escape from freedom," a response to the anxiety which freedom created in societies with a low tolerance for such anxiety. Freedom implies uncertainty in the behavior of oneself and of others. Totalitarian ideologies try to avoid this uncertainty. Psychologists, especially after World War II and especially in Great Britain and the United States, have devoted much research to personality dispositions which would make it easier

#### SUMMARY OF THIS CHAPTER

The second dimension of national culture found in the data has been labeled Uncertainty Avoidance. Uncertainty about the future is a basic fact of human life with which we try to cope through the domains of technology, law and religion. In organizations these take the form of technology, rules, and rituals. The pervasive share of ritual behavior in organizations is only rarely recognized, and most organization theories, except those of March, have no place for it. Data from HERMES show that the tolerance for uncertainty varies considerably among people in subsidiaries in different countries; the three indicators used are rule orientation, employment stability, and stress. The three together produce a country Uncertainty Avoidance Index (UAI). The same index cannot be used for distinguishing between occupations, however. Sex differences in uncertainty avoidance are negligible, but there is a clear relationship between UAI and the average age of respondents in the subsidiary. The chapter is further devoted to a study of the other questions in the HERMES questionnaire with which UAI correlates across countries, and with data from other studies which correlate significantly with UAI. The most important correlations are with national anxiety level, as found in national medical statistics by Lynn, and negatively with need for achievement, as measured in children's stories from 1925 by McClelland.

These and ten other cross-national survey studies allow the composition of a coherent picture of the UAI syndrome as related to anxiety, need for security, and dependence upon experts. The country UAI scores are then correlated with seven national geographic, economic, and demographic indicators; the correlates differ

or more difficult for persons to live with uncertainty. The "authoritarian personality syndrome" as described by Adorno et al. (1950) has been investigated by many others since. Attitudes correlated with the "authoritarian personality" (at least in the United States), include intolerance of ambiguity, rigidity, and dogmatism, intolerance of different opinions, traditionalism, superstition, racism, and ethnocentrism next to pure dependence on authority. I shall use the terms "uncertainty" and "ambiguity" as synonyms; the first is more common in organizational theory; the second, in psychology.

We have met the "authoritarian personality" syndrome in Chapters 1 and 3. I have argued, following Kagitcibasi (1970) that attitudes associated across individuals in the United States (or even in other countries) are not necessarily associated across cultures. In cross-cultural studies, we find a component of *norm authoritarianism* which I related to the Power Distance Index; but there is no reason why intolerance of ambiguity, dogmatism, and the rest should be related to PDI across cultures. In the present chapter I shall try to show that on the level of national cultures, norms for (in)tolerance of ambiguity exist which are independent of the norms for dependence on authority. On the cultural level, tendencies toward rigidity and dogmatism, intolerance of different opinions, traditionalism, superstition, racism, and ethnocentrism all relate to a norm for (in)tolerance of ambiguity rather than to the norm for dependence on authority. The norm for (in)tolerance of ambiguity is measured by the Uncertainty Avoidance Index (UAI), which will be described in the present chapter.

### Uncertainty in Organizations

Uncertainty is a key concept in modern organizational theories. The concept of uncertainty is often linked to the concept of environment; the "environment" which usually is taken to include everything not under direct control of the organization is a source of uncertainty for which the organization tries to compensate.

Theories of how organizations deal (or should deal) with uncertainty can be divided into those only assuming rational behavior and those also allowing for non-rational behavior. I use the words "rational" and "non-rational" in the same sense as Pareto's *Treatise on General Sociology* (first published 1916) used "logical" and "non-logical." Logical behavior consists of activities "which are logically linked to an end, not only in respect to the person performing them but also to those other people who have more extensive knowledge." Non-logical behavior consists of other activities (Pareto, 1976: 184). What is non-logical or non-rational to a larger public may seem logical or rational to the actor. What is rational for people sharing the same culture may be non-rational to people not sharing that culture.<sup>2</sup>

Theories assuming rational behavior tend to be normative (describing how organizations *should* deal with uncertainty). They include (1) theories of decision-making under uncertainty, (2) contingency theories, and (3) theories of strategic behavior. In the case of *decision-making under uncertainty*, operational research offers statistical tools to put certainty back into decisions, by making one certain of how uncertain one is. This presupposes, however, a continuity of events—that is, a relatively certain environment. The *contingency theories* consider uncertainty as an input which should affect the structure and functioning of the organization (Burns and Stalker, 1961; Lawrence and Lorsch, 1967). What I called *theories of strategic be-*

*havior* (strategic planning, strategic management) are normative approaches to the management of organizations in very *uncertain* environments; environments that are called "turbulent" or "discontinuous" (Ansoff, 1978).

Theories allowing for non-rational behavior tend to be descriptive rather than normative. Important contributions to theories about non-rational ways of dealing with uncertainty have been made over the past 20 years by James G. March and his colleagues. In March and Simon (1958: 138) it is recognized that "in the case of uncertainty, the definition of rationality becomes problematic." This same study suggests that organizations maintain an environment which looks relatively certain to their members by "uncertainty absorption": they absorb uncertainty through a limitation of the concepts available for analyzing and communicating about the organization's problems:

The world tends to be perceived by the organization's members in terms of the particular concepts that are reflected in the organization's vocabulary [March and Simon, 1958: 165].

Cyert and March, in their *Behavioural Theory of the Firm* (1963), use the expression "uncertainty avoidance." Organizations avoid uncertainty in two major ways. First,

they avoid the requirement that they correctly anticipate events in the distant future by using decision rules emphasizing short-run reaction to short-run feedback rather than anticipation of long-run uncertain events. They solve pressing problems rather than develop long-run strategies. Second, they avoid the requirement that they anticipate future reactions of other parts of their environment by arranging a negotiated environment. They impose plans, standard operating procedures, industry tradition, and uncertainty-absorbing contracts on that situation by avoiding planning where plans depend on prediction of uncertain future events and by emphasizing planning where the plans can be made self-confirming by some control device [1963: 119].

These theories were developed in the relatively certain environment of the U.S. business firm in the 1950s and 1960s. More recently, March's attention has turned to organizations dealing with considerably greater uncertainties, not only in their environment but also within the organization itself—for example, with goals that are unclear, technologies that are imperfectly understood, histories that are difficult to interpret, and participants who wander in and out. Cohen et al. (1972) and March and Olsen (1976) focus on educational institutions (universities and schools) which they present as "organized anarchies." In these, "choices" are made rather than "decisions" in a "garbage can" process in which collections of choices look for problems, issues and feelings look for decision situations in which they might be aired, solutions look for issues to which they might be an answer, and decision makers look for work. Choices are made as well by oversight or flight as by resolution. Elements of this can be found in earlier work by political scientists who always were more accustomed to dealing with uncertain situations; a classical paper by Lindblom (1959) describes the activities of the public administrator as "The Science of Muddling Through"; administrators rarely resolve problems by a rational-comprehensive (root) method but usually by a successive limited comparison (branch) method which takes account of the limited intellectual capacities and sources of information



of the administrator, and of the conflicts of values even within the administrator himself. Non-rational aspects of organizing are also described in Weick's *Social Psychology of Organizing* (1969); "Imputing to organizations and their members the disposition towards 'rationality' reduces the unease of the theorists but in reality it says very little about the members themselves" (p. 10).

The situation of the business manager in the 1980s is one of increasing environmental and internal uncertainty, and concepts like "muddling through" and "garbage can processes" are becoming relevant also to business organizations—if this was not already the case.

The way in which organizations deal with uncertainty does not depend on some objective amount of uncertainty, but on the way in which uncertainties are *perceived* within the organization. Duncan (1972) studies the perceptions of uncertainty in 22 decision units in the United States. He relates these to the perceived complexity and dynamics of the environment. However, he stresses that uncertainty, complexity, and dynamics

are dependent on the perceptions of organization members and thus can vary in their incidence to the extent that individuals differ in their perceptions. Some individuals may have a very high tolerance for ambiguity and uncertainty so they may perceive situations as less uncertain than others with lower tolerances [1972: 325].

Downey et al. (1977) have shown for a sample of 51 U.S. business division managers that their perceptions of uncertainty related more to personality variables (their cognitive processes) than to their perception of environmental conditions.

If perceptions of uncertainty are affected by personality variables, it is more than likely that they will also be affected by cultural variables. If different societies deal with uncertainty in different ways, this should affect the ways in which they build organizations that react to uncertainty. Faucheux (1977) has shown that strategy formulation is a cultural process: That American approaches to strategic management do not apply to Latin countries in general and to France in particular. Horowitz (1978), in a comparison of 175 British, French, and German top managers, shows that the French and Germans focus much more on short-term feedback than do their British counterparts: The French and Germans show to a much larger extent the behavior which Cyert and March have labeled "uncertainty avoidance" (see their quote above). The cultural element in the way organizations deal with uncertainty merits more attention than it has so far received. The exposition in this chapter of an Uncertainty Avoidance Index with values for nations may help to achieve this.

### Technology, Rules, and Rituals in Organizations

In the same way as human societies at large use technology, law, and religion to cope with uncertainty, organizations use technology, rules, and rituals. Technology (such as the automation of a process) obviously creates short-term predictability as to its outcomes (perhaps at the cost of long-term risks of complete breakdown, which are often overlooked). The use of technology looks extremely rational but even this hides several implicit non-rational value choices.

Organizations reduce internal uncertainty—caused by the unpredictability of the behavior of their members and stakeholders—by the setting of rules and regulations. "Rules stem from past adjustments and seek to stabilize the present and future" (Perrow, 1972: 29). "A multitude of rules and regulations appears to be the very essence of a bureaucracy" (1972: 24). Bureaucracy has become a bad word, and "rules are the scapegoats for a variety of organizational problems" (p. 30), but this is because bad rules are more likely to be noticed than good ones; and rules do hold organizations together.

Rules are semirational. They try to make the behavior of people predictable. As people are both rational and non-rational, rules should take account of both aspects of people. Good rules lead to the desired outcome if they are kept (their rational side) and concur with the values of the people whose behavior they try to influence, which means they are likely to be kept (their non-rational side). Bad rules fail on either or both of these criteria.

Bad rules may arise out of differences in values between those who make them and those who have to follow them. People in accounting, planning, and control roles tend to stress the *form* of activities, while people in operating roles tend to stress *content* (Hofstede, 1978b: 453). Baker (1976) found that scores on a values test discriminated among U.S. students majoring in accounting and others; accounting majors, for example, attributed higher value to being "clean" and "responsible" and lower to being "imaginative." This suggests that people in accounting, planning, and control roles have a higher need to avoid uncertainty than others; their scores as students show that they may be self-selected on this characteristic. However, the rules they set may not correspond to other people's needs and values.

Good rules can set energies free for other things: they are not necessarily constraining. Inkson et al. (1970) showed that British executives in more structured organizations (those with more rules) did more innovative work than did executives in less structured ones. Kohn (1971), in a cross-national sample of over 3000 American men, showed that employees of more "bureaucratic" organizations (larger organizations, government organizations, and non-profit organizations) tended to be more intellectually flexible than employees of less bureaucratic organizations, counter to the public image of bureaucracies.

Rules, on the other hand, may destroy people's autonomous judgment and lead them to do things they would have considered bad without the rules. We can think of the behavior of soldiers at war, but also, for example, of the outcome of Milgram's (1974) experiments with obedience to authority. Ordinary U.S. citizens were led to torture others (at least they thought they were doing so) by the mere fact of the experimenter telling them that this was part of the rules of the experiment. In this case the rule is used as an alibi in order to avoid the uncertainty of an independent judgment. In more uncertainty-avoiding environments, people will have a greater need for the authority of rules.

The authority of rules is something different from the authority of persons. The first relates conceptually to uncertainty avoidance, the second to power distance. The German *Befehl ist Befehl* (an order is an order) refers to the authority of the rule: The person who gives the order is irrelevant, as long as he occupies the position to whom the rule assigns the giving of orders. The French *bon plaisir* (literally, "good plea-

sure": used to describe the arbitrary will of the ruler in the seventeenth century), which Crozier (1964a: 222) still finds in modern French bureaucracies, puts the authority of the person above the system of rules. The first suggests high uncertainty avoidance, the second high power distance.

Rituals, such as sacrificing to the gods, are prescribed by primitive religions to ensure the season's crop or the winning of a war. Unbelievers smile at such practices because they think they know that on the logical level the rituals do not change anything. But this is immaterial; the rituals are functional because they allow the members of that society to continue their lives as peasants or warriors together in the face of otherwise intolerable uncertainty. Of course, rituals may also be cruel and destructive, as in the case of human sacrifices.

Modern society is less different from primitive society than we sometimes think. Its basic ingredient is man, and there is no evidence that human nature has changed much in the process of modernization. In any case, we share with primitive man a need for social cohesion and a limited tolerance for uncertainty. We dispose of infinitely better technological means to defend ourselves against risks, but unfortunately these means themselves always bring new risks; and we still feel the future to be very uncertain indeed. Like the social systems of primitive man, ours have developed their rituals to make uncertainty tolerable.

Rituals in traditional and modern society serve many other purposes besides making uncertainty tolerable. They play an important role in our establishing relationships with our fellow man and in giving meaning to our lives. Rituals in modern society are recognized in religions and state ceremonies, in the family, in youth movements and countercultures. They are less easily recognized, but equally present, in pragmatic business and public organizations.

Rituals in organizations are non-rational. They include social rituals and uncertainty avoidance rituals. They are neither silly nor superfluous; they are, moreover, omnipresent. There are good and bad organizational rituals. Good rituals support social cohesion and relieve stress because they concur with the values of the people involved, and they have no negative consequences for the organization or any of its members (modern society knows its human sacrifices, too).

Social rituals in organizations, for example, are found in various types of meetings. Meetings partly serve a ritual purpose in all cases and serve no other purpose in many cases. Business meetings usually have their own liturgy, sacred language, and taboos. To the social rituals also belong various training programs, especially management development programs which serve as initiation rites for the organization's leaders.

Uncertainty-avoiding rituals in organizations do not make the future more predictable, but they relieve some of the stress of uncertainty by creating a pseudoceremony within which organization members can continue functioning. To the category of uncertainty-avoiding rituals we can count the following items:

- (1) *Memos and reports* which often contain no information that anyone will act upon, but which are a device to "stop time" for a moment.
- (2) *Certain parts of the accounting system.* Accounting is an "uncertainty-absorbing" process in the sense meant by March and Simon (1958: 4.5). It may absorb uncertainty to such an extent that it absorbs all usable information as well. In an

amusing series of comparisons between business and primitive society, Cleverley (1973: 38) calls the accountants the "priests" of business. Gambling (1977) draws a parallel between accounting and magic, and gives many examples showing that accounting information is often after-the-fact justification of decisions that were taken for non-logical reasons in the first place. The main function of accounting information is to maintain morale in the face of uncertainty. "In short, the accountant is the person who enables a distinctly demoralized modern industrial society to live with itself, by reassuring it that its models and data can pass for 'truth'" (1977: 18-19).

(3) *A considerable part of planning systems.* In the face of growing uncertainty, organizations sometimes try to be more rational, and they follow the frequent calls in the literature or from consultants for better and more elaborate planning. However, a more sophisticated planning system does not necessarily guarantee more effective operations if the latter are affected by unforeseeable events. Very few planning systems have helped firms to cope with the 1973 oil crisis, for example. When the event hit the firms, the planning systems were simply bypassed. Cleverley calls planning the "fertility rites" of business (1971: 67). Primitive cave dwellers already pictured the animals they *planned* to kill. Weick (1969: 102) suggests that as no one can anticipate future contingencies and we can only look back, random trial and error is more likely than planning to produce results; it furnishes data that can be viewed retrospectively and made meaningful. Having a planning system, however, allows managers to sleep more peacefully, even if it does not really work. It may also help members of an organization to believe in what they are doing, which is an essential element of success in overcoming crisis. Jönsson and Lundin (1977), using case studies from Sweden, show the importance of collectively accepted myths and wishful thinking in creating waves of enthusiasm among members which keep the organization going, even if the dreams do not come true; they are in due time replaced by new myths.<sup>3</sup>

(4) *A very considerable part of control systems.* Most control systems use a cybernetic philosophy, which presupposes some kind of standard, measurability of accomplishment, and a possibility to use feedback. If one or more of these conditions is not fulfilled, cybernetic control cannot work; but the market offers many techniques which still try to enforce it, such as management by Objectives (MBO) for non-measurable tasks, or Planning-Programming-Budgeting (PPBS; for a more extensive analysis of these attempts to enforce the impossible see Van Gunsteren, 1976; Hofstede, 1978b). Such rituals can be harmful, as they can cloud real issues by false pseudo-certainties and make things less "discussable" that should remain open for discussion. Even when the conditions for cybernetic control are fulfilled, control systems still may be entirely or mainly ritual; for example, the minute checking of the figures of travel accounts where there is no possibility to judge the necessity of the trip. Control systems also become rituals when those whose activities are controlled receive the message that correct figures are more important than correct facts. Weir (1975) calls this "control overkill." It is one of several forms of "pseudo-control." Other forms of pseudo-control are the automatic adaptation of the standard when there is a variance between measurement and standard and the excessive stress on those aspects of a process visible in the control system at the expense of the invisible elements—which could lead, for example, to balancing cost at the expense of quality.

Crozier (1964a: 185, 191) sees "ritualism" as contributing to the dysfunctions of bureaucracy, and finds its origins in the French case in a need for self- and peer-group protection among officials. It stresses the needs of the individual and of the group, but not of the organization.

(5) *A final uncertainty-avoiding ritual is the nomination of experts.* Experts used by an organization may be in-house specialists or outside consultants. Whether the expert can apply more information, insight, or skill to solving the problem is often immaterial, as long as the organization members see him as transforming uncertainty into certainty. Cleverley compares consultants with the "sorcerers" of primitive societies (1971: 53). Outside consultants are often used when various persons within the organization cannot reach consensus, to absorb this inside uncertainty. Modern people-processing organizations such as social welfare agencies resort to an increasing degree to professionalization in order to make the uncertainties inherent in this type of organization tolerable. The belief in experts, however, is strongly determined by the national norm for uncertainty avoidance. Great Britain which, as we will see later, has a low uncertainty avoidance norm, is known for its preference for a generalist, nonspecialized education for managers. A British ex-executive (Marks, 1977) states that "the more difficult it is to plan, the less you need full-time professional planners." In such countries as France and Germany (higher uncertainty avoidance norm), this statement definitely would not be endorsed; the opposite probably would be defended.

#### MEASURING NATIONAL DIFFERENCES IN UNCERTAINTY AVOIDANCE IN HERMES

##### An Uncertainty Avoidance Index for HERMES Countries

The previous paragraphs have argued that coping with the inevitable uncertainties in life is partly a non-rational process which different individuals, organizations, and societies resolve in different ways. The main underlying dimension is the tolerance for uncertainty (ambiguity) which can be found in individuals and which leads some individuals in the same situation to perceive a greater need for action for overcoming the uncertainty than others. This tolerance for uncertainty is partly a matter of personality, partly a matter of culture. Societies differ in their societal norms (Figure 1.4) for uncertainty avoidance, and members of these societies are socialized in the society's institutions toward this norm.

Chapter 2 has described how three questions in the HERMES data bank were selected from which the country scores could be used to form a country Uncertainty Avoidance Index. The three questions refer to three components of national levels of uncertainty avoidance: rule orientation, employment stability, and stress. It is likely that other and perhaps better survey indicators of national levels of uncertainty avoidance can be developed, but I had to use the data available in the HERMES archives; and uncertainty avoidance had not been a familiar concept to us when, in 1967, we composed the HERMES questionnaire.

The "rule orientation" item in the HERMES questionnaire is: "Company rules should not be broken—even if the employee thinks it is in the company's best inter-

ests," with a five-point answer scale from "strongly agree" to "strongly disagree". The selection of this item was guided by the findings of the Aston group in Great Britain (Pugh, 1976; Pugh and Hickson, 1976). The Aston group found, among different organizations in Britain, three dimensions of organizational structure of which the third was relatively weak. The two strong dimensions are "concentration of authority"—conceptually related to power distance—and "structuring of activities." The item in the HERMES questionnaire most closely conceptually related to "structuring of activities" is the item just mentioned.

It will be evident that disagreement with the "rule orientation" statement indicates a higher level of tolerance for uncertainty: It is acceptable that employees break company rules if they believe this is in the company's interest. The opposite position, agreement with the "rule orientation" statement, avoids the uncertainty of employees deciding themselves whether or not a rule should be followed.

The "employment stability" item in the HERMES questionnaire is: "How long do you think you will continue working for this company?" Answers are: (1) Two years at the most; (2) From two to five years; (3) More than five years (but I probably will leave before I retire); (4) Until I retire. It had long been noticed that this question showed considerable and consistent differences in answer distributions among countries. What was not evident from the start is that country scores on this question would be correlated with "rule orientation" country scores, which, however, appeared to be the case ( $r = .59$  across 40 countries; see the statistical analysis). The link between the two questions is that a low percentage of employees planning to leave within five years and a low "rule orientation" score (= strong rule orientation) both indicate a strong Uncertainty Avoidance norm in a country: Employment stability and rule orientation are two ways of avoiding uncertainty.

There is evidence that the answers on the employment stability question do reflect actual behavior. An unpublished study in HERMES showed that across 14 countries, country scores on this question in the 1968 survey of technical experts correlated highly with 1967 turnover rates among technical experts.

The "stress" question in the HERMES questionnaire is: "How often do you feel nervous or tense at work?" Answers range from 1. "I always feel this way" to 5. "I never feel this way." This question was taken from earlier surveys of managers in HERMES U.S.A. run by the company medical department, which also included questions on medical symptoms; it could be shown to be correlated with answers on medical symptom questions.

The "stress" question taps a fundamental phenomenon in human life. There is probably no human being who does not feel stressed at times. Stress is a state of mind and body which corresponds to the state of preparation for aggression in primitive man, released through acts of aggression. When social norms forbid overt aggression, modern man must cope with his stress in different ways.

Stress is a subjective experience. If you think you are under stress, you are under stress. The same objective situation may be felt as stressful by one person and as relatively stress-free by another. However, in spite of its "soft" subjective character, stress has "hard" objective consequences. Stress affects the metabolism of the body, as various medical studies have shown (Selye, 1974; Friedman and Rosenman, 1975; a popular summary can be found in Toffler, 1971: chap. 15). This is not necessarily bad; a certain amount of stress is indispensable for activity, for a feeling of satisfac-



tion in life, for physical and mental health, and for performance. An excess of stress without adequate opportunities for release, however, may lead to various physiological and mental disorders, although the exact causal relationship between a particular stressful condition and a particular complaint is often difficult to prove.

The following are some of the most frequent physiological and mental disorders that have been shown in different studies to be related to forms of stress:

- (1) diseases of the heart and the blood vessels;
- (2) diseases of the stomach and the intestines;
- (3) nervous breakdowns and disruption of interpersonal relations, in extreme cases leading to suicide; and
- (4) reduced intellectual performance; a reduced ability to perceive alternatives in decision-making, and a tendency to use negative rather than positive evidence.

Kets de Vries et al. (1975) explain stress reactions from a combination of four kinds of variables.

- (1) a personality with his personal history, traits, and so on;
- (2) a nonwork (for example, family) environment;
- (3) an organizational (work) environment; and
- (4) a sociocultural, larger environment, in which the personality, his nonwork life, and the organization in which he works are all embedded.

In the HERMES data, we can identify stress differences due to the socio-cultural environment (in the form of differences among nationalities) and due to one organizational environmental factor: occupation.<sup>4</sup> The differences in stress due to other organizational environmental factors,<sup>5</sup> to the nonwork environment, and to personality will be treated as random error. This, however, does not mean they are unimportant; other studies have dealt with these factors. For example, in the area of personality, Friedman and Rosenman (1975) have created the distinction between persons showing "Type A" and "Type B" behavior. The typical Type A person tries to do more and more things in less and less time, while the Type B person is unhurried and patient. Type A persons are more likely to suppress fatigue. Friedman and Rosenman found that for American men between the ages of 35 and 60, Type A persons were seven times more likely to develop coronary heart disease than were Type B persons. In the area of the nonwork aspects of life (or the interaction between work and non-work aspects), Holmes and Rahe (1976) have developed their "Social Readjustment Rating Scale," allocating point values to stressful life events such as the death of the spouse, getting married, or losing a job. In the United States, Japan, Sweden, and Denmark these authors and their associates have shown that if the sum of the point values of crucial life events within a certain period exceeds a certain level, a person is highly likely to suffer physical and/or mental disorders.

It now appears that on the country level, higher mean stress goes together with stronger rule orientation and greater employment stability, and vice versa. Stress, rule orientation, and employment stability in the statistical analysis form one societal "Uncertainty Avoidance" syndrome. The conceptual link among the stress question and the other two questions is the mean level of anxiety in a country. When this is higher, people feel more stressed; but at the same time they try to cope with the anxiety by a greater need for security, which is visible in both rule orientation and employment stability. The association between anxiety and rule orientation was al-

ready postulated by Van Gunsteren (1976); the HERMES data provide statistical evidence for it.

An Uncertainty Avoidance Index for each of the 40 countries has therefore been compiled on the basis of the country mean scores for the three questions:

- (a) Rule orientation: Agreement with the statement "Company rules should not be broken—even when the employee thinks it is in the company's best interest" (B60).
- (b) Employment stability: Employees' statement that they intend to continue with the company (1) for two years at the most, or (2) from two to five years; this, of course, taken with a negative sign (A43).
- (c) Stress, as expressed in the mean answer to the question "How often do you feel nervous or tense at work?" (A37).

The actual computation of the Uncertainty Avoidance Index (UAI) uses mean percent values for question b, and mean scores on five-point scales for questions a and c. These mean scores have been multiplied by 30 (for a) and 40 (for c) to make their range, and therefore their contribution to UAI, roughly equal to the range in percentage values of question b. The actual formula used is:

$$UAI = 300 - 30 (\text{mean score rule orientation}) - (\% \text{ intending to stay less than 5 years}) - 40 (\text{mean stress score}).$$

The constant 300 brings country index values in a range between eight (lowest uncertainty avoidance country: Singapore) and 112 (highest uncertainty avoidance country: Greece). The mean over 40 countries is 64. The theoretical range of the index is from -150 (all think that rules can be broken, no one wants to stay, no one ever feels nervous) to +230 (all think that rules should not be broken, everyone wants to stay more than five years, everyone always feels nervous). Of the theoretical range of the UAI (380 points), 104 points, or 27 percent, are really used for differentiating among countries.

The UAI values for the 40 countries are summarized in Figure 4.1 (first column). The ranking of the countries in Figure 4.1 suggests certain clusters of similar countries, but it differs from the ranking we found for the Power Distance Index in Figure 3.1: For example, many Asian countries score on the lower part of the UAI scale. A comparison between countries' Power Distance Index and Uncertainty Avoidance Index positions will be given in Chapter 7.

### Occupation and Sex Differences in the Scores on the Uncertainty Avoidance Items

The three items comprising the Uncertainty Avoidance Index for countries are uncorrelated across occupations. Therefore, the calculations of occupational Uncertainty Avoidance Index values makes no sense; this in contrast to what we saw for the Power Distance Index (Chapter 3). The statistical analysis shows that an occupation's mean level of rule orientation is mainly dependent on the occupation's average formal educational level (higher-educated occupations tend to show less rule orientation).

An occupation's mean employment stability level is a combined function of (1) the average age of its incumbents (the older, the more stability); (2) their average educational level (the higher, the less stability); and (3) the occupation's percentage of female incumbents (the more women, the less stability).

FIGURE 4.1 Country Uncertainty Avoidance Index (UAI)

| Country        | UAI    |                                  | Country                                 | UAI    |                                  |
|----------------|--------|----------------------------------|-----------------------------------------|--------|----------------------------------|
|                | Actual | Controlling for age <sup>a</sup> |                                         | Actual | Controlling for age <sup>a</sup> |
| Greece         | 112    | 98                               | Finland                                 | 59     | 54                               |
| Portugal       | 104    | 102                              | Switzerland                             | 58     | 62                               |
| Belgium        | 94     | 80                               | Netherlands                             | 53     | 45                               |
| Japan          | 92     | 112                              | Australia                               | 51     | 47                               |
| Peru           | 87     | 91                               | Norway                                  | 50     | 38                               |
| France         | 86     | 73                               | South Africa                            | 49     | 62                               |
| Chile          | 86     | 66                               | New Zealand                             | 49     | 60                               |
| Spain          | 86     | 89                               | Canada                                  | 48     | 55                               |
| Argentina      | 86     | 74                               | U.S.A.                                  | 46     | 36                               |
| Turkey         | 85     | 61                               | Philippines                             | 44     | 45                               |
| Mexico         | 82     | 86                               | India                                   | 40     | 48                               |
| Israel         | 81     | 73                               | Great Britain                           | 35     | 43                               |
| Colombia       | 80     | 77                               | Ireland                                 | 35     | 54                               |
| Venezuela      | 76     | 78                               | Hong Kong                               | 29     | 61                               |
| Brazil         | 76     | 74                               | Sweden                                  | 29     | 23                               |
| Italy          | 75     | 58                               | Denmark                                 | 23     | 32                               |
| Pakistan       | 70     | 82                               | Singapore                               | 8      | 31                               |
| Austria        | 70     | 77                               | Mean of 39 countries                    | 64     | 64                               |
| Taiwan         | 69     | 73                               | (HERMES)                                |        |                                  |
| Germany (F.R.) | 65     | 53                               |                                         |        |                                  |
| Thailand       | 64     | 73                               |                                         |        |                                  |
| Iran           | 59     | 59                               | Yugoslavia <sup>a</sup> (same industry) | 88     | 77                               |

NOTE: Values based on the scores on three attitude survey questions for a stratified sample of seven occupations at two points in time. Actual values and values obtained after controlling for the average age of the country sample.

<sup>a</sup>For age scores see Hofstede (1980b).

An occupation's mean *stress level* depends somewhat on its hierarchical level (managers higher than nonmanagers). Differences in stress level by occupation have consequences for the physical and mental health of the occupations' incumbents. However, it appears that this health effect is modified by the incumbents' level of job satisfaction. The HERMES data bank supplies interesting data about the stress-satisfaction balance of various types of occupations; these have been described elsewhere (Hofstede, 1978c).

The fact that rule orientation, employment stability, and stress relate quite differently to the demographic factors of educational level, hierarchy, age, and percent female represents another reason why for occupations the three uncertainty avoidance questions should not be integrated into one index.<sup>6</sup>

As far as sex differences in Uncertainty Avoidance go, women and men score equally on rule orientation and stress. On employment stability, women score significantly less "stable" than men; this has nothing to do with their attitude to uncertainty,

but with their family role.<sup>7</sup> The computation of a UAI by sex therefore does not make sense. As a whole, sex and uncertainty avoidance are unrelated.

### Country Uncertainty Avoidance Index Scores and Other HERMES Survey Questions

The average scores by country on several other questions used in the HERMES questionnaire are statistically significantly correlated with the Uncertainty Avoidance Index. First, there is a strong relationship of a country's UAI level and the average age of the HERMES respondents in the country. To check whether the country differences in UAI cannot be due entirely to these average age differences, I have in the second column of Figure 4.1 listed the UAI values that would be obtained if we control for age—that is, if all countries had the same average age. The various country clusters remain essentially the same, but some countries shift somewhat; the separation between the Asian countries (except Japan) and the Latin-Mediterranean countries becomes slightly less sharp. The country differences in UAI certainly cannot be accounted for by an average age artifact. We cannot claim, either, that the age-correlated UAI scores are more "correct" than the uncorrelated ones. The average age of HERMES employees in a country is partly a *consequence* of a high UAI norm. A higher UAI implies, among other things, a hesitation to change jobs; therefore, the average seniority in such a country will be higher and, with it, the average age, which reinforces the tendency to stay. I shall therefore continue to use the "raw" UAI values in order to characterize countries, not the values corrected for age.

In addition to the age question, respondents in high UAI countries tend to differ from those in low UAI countries on the following issues:

- (1) a lower ambition for advancement (A15) and a preference for specialist over manager positions (B9);
- (2) a preference for large over small organizations (C17), and more approval for loyalty to those organizations (C12), while the more senior managers are considered to be the better ones (C11);
- (3) a tendency to avoid competition among employees (B54) and to prefer group decisions (B57) and consultative management (B55) over individual decisions and more authoritative management (note that question B55 is correlated in opposite ways with PDI and UAI);
- (4) dislike of working for a foreigner as a manager (B44);
- (5) resistance against change (C16);
- (6) a pessimistic outlook on the motives guiding companies (C10; in spite of admiration for loyalty to companies);
- (7) finally, the level of overall satisfaction scored (A58) in a country is positively related to UAI.

If in a country there is a high level of uncertainty avoidance as evidenced by the UAI items rule orientation, employment stability, and stress, then we also find that advancement to a manager position, working for small organizations, competition among employees, individual decisions, working for a foreign manager, and a high rate of organizational change tend to be felt as risky situations which fewer people are willing to face. In such countries people are more pessimistic about employers in general, but they produce higher satisfaction scores. This looks paradoxical; it sug-



gests that the satisfaction score levels in a country reflect partly an element of avoidance of "cognitive dissonance" (Festinger, 1957). If people do not consider "leaving the organization" as a feasible alternative they will have a tendency to convince themselves that they like being in it.

The ecological correlation of UAI with a dislike of competition among employees does not mean that there will be, in effect, less competition among employees in high UAI countries; there may even be more. The correlation of UAI with a preference for group decisions reminds us strongly of the Japanese *ringi* system of collective decision-making; in fact, Japan scores very high on UAI, although Japanese HERMES employees do *not* score high on the group decisions item (B57).<sup>8</sup> Group decision-making can be seen as a way of avoiding risk for the individual.

#### COMPARING THE HERMES UNCERTAINTY AVOIDANCE INDEX VALUES WITH OTHER DATA

##### UAI and Anxiety: The Lynn Studies

The analysis of national differences in anxiety-related behavior goes back to Durkheim (1897 [1937]). He showed systematic and stable differences in suicide rates between the countries on which he had data, next to systematic differences between other societal categories, such as men and women, married and divorced. Durkheim used his analysis of the suicide phenomenon to demonstrate how a highly individual act could be caused by social forces. He discarded purely psychological explanations: Although some people may be psychologically more predisposed to suicide than others, the force which really determines whether they will commit the act, according to Durkheim, is social. Psychologists have related anxiety to stress. Kahn et al. (1964: part 5) established a link between stress reactions and the personality dimensions of neurotic anxiety, extraversion-introversion, flexibility-rigidity and achievement versus security orientations. Popular wisdom and stereotypes attribute to people from different countries different levels of stress-related behavior, such as aggressiveness, expressiveness, talkativeness, and patience. Tannenbaum et al. (1974: 156ff), in a study of five countries, show differences among countries in levels of "psychological adjustment," which includes depression, resentment, and low self-esteem.

Differences in anxiety levels among countries of subcultures in countries have been revealed by medical studies of body reactions (Hofstede, 1978c). A major source of information on country differences in such reactions is the death rate statistics published by the Statistical Office of the United Nations, and several authors have built theories on the basis of these (for example, Rudin, 1968; Barrett and Franke, 1970).

The most extensive and serious study of country-level medical and related statistics that came to my attention has been done by Lynn (1971, 1973, 1975) and Lynn and Hampson (1975, 1977). In the later version of their work, Lynn and Hampson (1975) factor-analyzed 12 variables for 18 developed countries<sup>9</sup> and found two factors (accounting for 57 per cent of the variance in the data). They labeled their first factor "neuroticism," or "anxiety." It combined the following variables (the figures are factor loadings):

##### Uncertainty Avoidance

- .79 low chronic psychosis (number of patients per 1000 population)
- .78 high suicide death rate
- .69 low caffeine consumption
- .68 high alcoholism (liver cirrhosis death rate)
- .68 low daily calorie intake
- .66 low coronary heart disease rate
- .66 high accident death rate
- .51 high punished crime rate (number of prisoners per 10,000 population).

They labeled their second factor "extraversion," combining:

- .73 high divorce rate
- .65 high murder rate
- .61 high cigarette consumption
- .61 high punished crime rate (also loading on factor 1)
- .60 high coronary heart disease rate (loading on factor 1 with opposite sign)
- .53 high "illegitimacy" (percentage of births extramarital).

Lynn's first factor can also be seen as a "stress" factor. Its negative correlation with the coronary heart disease rate may be puzzling because it has been shown in U.S. studies that stress and coronary heart disease are *positively* correlated (Friedman and Rosenman, 1975). However, this is a correlation across *individuals*; the correlation in the Lynn data is an *ecological* one, across countries, and the two may well have opposite signs. The factors which lead to correlations across individuals are psychological (characteristics of persons); the factors which lead to correlations across countries are sociological and cultural (characteristics of social systems). Jenkins (1971) quotes a number of studies which show that the effects of stress on the cardiovascular system are conditioned by people's ability to show emotions. One study (Jenkins, 1971: 309) shows that mortality from coronary disease in Japan is much lower than among American citizens of Japanese ancestry; this is attributed to the cultural institutions in Japan that encourage the free expression of emotions and provide social support for the individual. This suggests that in certain countries with higher national anxiety levels, social systems have developed which allow for emotions to be expressed and therefore prevent stress from leading to coronary death. Latins are more anxious—but because the Latin environment allows them to be more talkative and expressive, Latins in Latin countries are less prone to coronary conditions. This and other social systems characteristics can overcompensate for the negative effect of stress on the heart.

The statistical analysis shows that Lynn and Hampson's "neuroticism" (anxiety) factor scores for 18 countries are strongly correlated ( $\rho = .73$ ) with the HERMES Uncertainty Avoidance Index (and also with the HERMES stress scores). This high correlation of UAI and "neuroticism" is encouraging for the validity of the HERMES data in general and the Uncertainty Avoidance Index in particular. There is—at least among these 18 countries—a national syndrome which relates to neuroticism, anxiety, stress, uncertainty avoidance, or whatever we want to call it, which differentiates between modern nations and affects HERMES employees as much as anyone else.

Independently of Lynn's work and unaware of it, Millendorfer (1976) did a similar analysis of data on suicides, psychoses, accidents, and divorces from 15 countries and also found differences in stress levels among countries (p. 10). Across the 12 coun-