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Organization structure and structural change in European manufacturing organisations

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Abstract

The paper considers two approaches to the study of the impact of national cultures on the structure of organizations; viz: culture free and culture bound approaches. After a discussion of the problems of obtaining comparable data in cross-cultural research, the preliminary results of a comparative study of large manufacturing organizations in six countries in Europe are presented. The results suggest that while formal organizational authority structures appear to be culture free reflecting the impact of strategic contingencies, use of coordination techniques, such as regular top management meetings and task forces, is more affected by cultural factors.

Introduction: the convergence debate

The debate on the impact of national or regional cultures on the behaviour of people within organizations has long been a concern of organization theorists. Initial attempts were made to document and explain variations in management practices (e.g. Granick, 1962; Haire et al., 1966; Dore, 1973) and despite considerable theoretical and methodological difficulties (Roberts, 1970; Child, 1981; Adler, 1984; Clark and Mallory, 1992) comparative research using a variety of approaches and instruments has flourished (e.g. Lammers and Hickson, 1979; Hickson and MacMillan, 1980; Hofstede, 1980; Martin and Glisson, 1989; Calori and Lawrence, 1992). Much of this work has centered on the degree of influence exerted by culture on the structure of organizations and the behaviour of people working within them.

Cross-cultural organizational research is concerned with two basic questions: (1) what are the similarities or differences between organizations located in different countries?, and (2) why are they similar or different? Attempting to provide answers to these fundamental questions necessitates the progression through three stages (Child, 1981): (1) the identification of similarities and differences between organizations located in different countires, (2) the isolation of those cultural attributes which account for the observed likenesses and variations, (3) where cross-cultural differences are discovered offer an explanation for the transfer of national cultural to organizations so that they become 'infused with national distinctiveness' (p. 305).

The theoretical debate surrounding the impact of culture on organizations has become polarised around two basic approaches – culture free (similarities) and culture bound (differences). Child and Kieser (1979) have summarized the debate in terms of the following basic questions:

> 'do countries at approximately the same stage of industrial development, and having similar industrial structures, adopt the same approach to the organization and management of their institutions? Or are their distinctive cultural heritages sufficiently entrenched to mean that each society fashions its own unique administrative philosophy'.

The culture free approach is grounded in the convergence debate inaugurated in the 1960's by Clark Kerr and his colleagues at Harvard University (Kerr *et al.*, 1960). They argued that industrialism is world wide. It is based on science and technology which speak a universal language. Science is supranational, independent of the form of government or the culture of a people. Technology spreads out so that the world is apparently divided into countries which are industrialized and those in the process of becoming so. In Kerr's view, this is a

major transition and all countires will participate in the inevitable industrialization. The world-wide diffusion of advanced technology creates a 'logic of industrialism' since it sets up a range of tasks and problems. The pressures towards efficient production will ensure that the most effective ways of tackling these common tasks will inevitably become adopted world wide. As this process continues, organizations *tackling the same tasks*, in whichever culture, will become more and more alike.

Hickson *et al.* (1974) have developed the theme of technological imperatives into a culture free contingency theory of organizational structure. Using the Aston Group measures (Pugh and Hickson 1976) they investigated the relationship between structure (specialization, formalization, and centralization) and context (size of organization, operating technology, and dependence on other organizations) in several countries. They found that whilst there were variations in the levels of the scores between countries, the relationships were similar. This lead to an argument that structure-context relationships will be stable across countries. In other words, 'whether the culture is Asian or European or North American, a large organization with many employees improves efficiency by specializing their activities but also by increasing controlling and coordinating specialities' (Hickson *et al.*, p. 64). Thus, whatever the country and culture, bigger organizations are more specialized and formalized in structure. In addition, organizations which are more dependent on others in their environment take decisions centrally. Pugh (1988) has written 'the general tendencies are clear: increasing size and scale is everywhere monotonically related to increasing bureaucratic structuring of activities' (p. 17).

Donaldson (1986) conducted the first validity generalization study of the Aston data. Using the Hunter-Schmidt meta-analytic technique for correcting correlations, he found that the global correlation between size and functional specialization, based on thirty-five studies in thirteen countries, is $r = 0.61$. This showed no statistically significant variation in the relationship across Western, Middle East and Far Eastern countries. The relationship of size to overall formalization of 0.51 was similarly unaffected by national location, whereas it did vary from 0.60 to 0.43 for manufacturing and service organizations. Donaldson (1986) concludes that increasing organizational size leads to greater bureaucracy and this pattern does differ not according to national location.

Those researchers who have argued that culture has no influence on organizations have tended to focus on the macro-level variables: structure-context relationships- rather than the behaviour of people within organizational structure (Child, 1981). Crozier (1964) poses the counter argument

> 'Intuitively, however, people have always assumed that bureaucratic structures and patterns of action differ in different countries of the western world and even more markedly between East and West. Men of action know it and fail to take it into account. But contemporary social scientists. . .have not been concerned with such comparisons' (p. 210).

Whereas the macro-level variables, such as organization structure, appear not to be highly influenced by organizational location, other studies suggest that managers report that culture does affect the day-to-day running of their organization. For instance, Axelsson *et al.* (1991) summarize the culture bound argument as follows:

> 'human preferences and decisions which are shaped by the values within society are refracted through individual personalities. Therefore, the organization and the behaviour of those associated with it must reflect the characteristics of the surrounding culture. There may be structural regularities across national cultures, but they are relatively unimportant in the face of the substantial differences in the ways that individuals interact and in the views they hold of the organizations place in its environment' (p. 68).

There have been numerous studies indicating that the behaviour of people in organizations varies across cultures (Hofstede, 1980; Laurent, 1983; Maurice, 1979; Ouchi, 1981). We shall

briefly present the Hofstede (1980) findings and use them in our subsequent analyses.

Hofstede's (1980) findings are based on two questionnaire surveys which produced a total of over 116,000 questionnaires from over seventy countries. The respondents were all sales and service employees of IBM. This design enables a number of factors to be controlled. All respondents were doing the same task (selling and servicing IBM products) within the same general overall framework. Thus the technology, job content and some formal procedures were the same. Only their nationalities differed. The differences in attitudes and values could therefore be said to be related to cultural differences rather than organizational ones. Indeed, Hofstede argues that the national cultural differences found within IBM are likely to be conservative under-estimates of those existing within the countries at large.

Hofstede identifies four basic dimensions of the differences between national cultures. Each of the national cultures investigated can be rated from high to low on each of the four scales, and is thus given a distinctive classification. The four dimensions are:

1. *power-distance* is the extent to which members of a society accept that power is distributed unequally.
2. *uncertainty-avoidance* measures the extent to which people feel threatened by ambiguous situations and create beliefs and institutions that try to avoid uncertainty.
3. individualism measures the extent to which people believe that their primary concern in life is themselves and their immediate family.
4. masculinity-femininity measures the extent to which achievement, as measured by money and material standards, is given priority over more caring values of nurturing and sharing.

As Axelsson et al. (1991) suggest:

> 'The debate between culture free and culture bound explanations has reached the stage at which it is more constructive to regard them as complementary rather than competing explanations.' (p. 68).

The present study

This paper presents evidence from a cross-national study of organization structures in a way that uses the complementarity of these approaches in that it examines the structuring of manufacturing organizations in six European countries from these two perspectives.

First, it presents data on the types of structures found in these organizations. This essentially uses the familiar categorization scheme of functional, divisional, hybrid etc. used from Chandler (1962) onwards to characterize structure.

Structure, however, is not static, and is changed in response to changes in the contingencies faced by its managers and the choices that they make in efforts to realize strategy. Data are presented on the frequency of structural change and how and why structures have changed. If the convergence view holds then it could be hypothesised (following Hickson *et al.* (1974) 'bold hypothesis') that the organizations across the sample will be converging to the same form, given the same context.

Secondly, the structure of an organization is not just the pattern of reporting relationships depicted by an organigram. It embodies not only the way in which organizations differentiate their task, by function, product, market etc., but how the differentiated tasks are integrated and controlled. Data on the mechanisms that organizations use to integrate their activity at the first level below the CEO will be presented. It is hypthesised, following the culture bound thesis, that major differences will be found in the ways in which tasks are integrated since this is more characteristic of the value system of a culture.

Methods

This paper uses data drawn from the International Organizational Observatory Project (IOO) on the characteristics of manufacturing companies in Europe. The IOO is a group of organizational researchers based in seven European business schools. The group was inaugurated by CRORA [Centro di Ricerca

sull'Organizzazione Aziendale] of the leading Italian business school, Bocconi University. It currently consists of dedicated research teams based at: CRORA, Milan; ESSEC, Paris; ESADE, Barcelona; Saarland, Saarbrucken; Limburg, Maastricht; Uppsala, Sweden and the Open University School of Management, Milton Keynes. (See Appendix 1 for a list of individual participants)

The methodological difficulties associated with cross-cultural organizational research are considerable and should not be underestimated. Indeed, it is our experience that within the 100 discussions concerning methodology are as frequent as those which focus on the interpretation of the results.

The population from which the samples were taken is defined as the largest 1,000 firms in each country, as ranked by sales turnover, provided they have a production facility in the country of study. The industries covered include: chemical, pharmecutical, electronics, mechanical engineering, automobile production, food and drink. Data are presented from six of the participating countries viz the UK, France, Germany, Italy, the Netherlands, and Spain. The data were collected by each national team through structured interviews and/or through questionnaires with 4–6 senior managers (e.g., directorial heads of functions). In addition, detailed information on various aspect of each organization was obtained from the HR department and published material in company reports, press reports, stockbroker reports, previous studies etc.

The use of the 'key informant' technique to collect data on organizations requires care to reduce the potential of measurement error. Huber and Power (1985) suggest four reasons as to why informants provide inaccurate or biased data:

1. They are motivated to do so.
2. Their perceptual biases result in inadvertent errors.
3. They are unfamiliar with every aspect of the situation being investigated.
4. The question is inappropriate.

Below we briefly report how we approached each interview taking account of their suggestions for improving the accuracy of reports elicited from key informants in addition to the procedural measures outlined by Podsakoff and Organ (1986). In this way the data are free from informant specific-measurement error to the extent possible.

1. *If only one informant, attempt to identify the most knowledgeable person.*
   The instrument was divided into sections with those questions carefully targeted to the most relevant functional head, i.e., all R&D issues were discussed with the R&D director.
2. *Choose informants whose lack of knowledge is likely to be offset by other informants.*
   Additional information was sought where questions might elicit particular interpretations, e.g., description of the organizational strategy. Furthermore, issues with an interpretive element were covered with more than one informant in order to verify the accuracy.
3. *Attempt to motivate informants to co-operate with the research study*
   All information was collected in complete confidence. Where appropriate summaries of the interim research were presented and its applicability to the operations of the particular organization highlighted.
4. *Minimize the elapsed time.*
   Informants were requested to provide data on general rather than specific events.
5. *Consider how the framing of questions impacts on informant responses.*
   This was resolved at the pilot stage.
6. *Use pretested and structured questions.*
   This was resolved in the early stages of the instrument development.
7. *Use tandem interviewing interviewing*
   The majority of interviews were conducted by two researchers.

Adler (1984) identifies two techniques for translating research instruments. Brislin *et al.* (1973) suggest the material, once translated, be back-translated by several bilinguals. The different versions can then be compared, differ-

ences noted and adjustments made. Hofstede (1980) used expert bilingual translators who were familiar with the linguistic and cultural backgrounds of the populations involved as well as with the survey subject matter. We adopted an approach which has similarities to each of those previously described. The original Italian instrument was translated into English. This translation was then checked by our bilingual Italian researchers. In addition, the French, German and Spanish translations of the Italian instrument were translated into English. Any variations were noted and adjustments were made following discussions with our research colleagues in each country.

However, back-translation is a technique which is closely associated with ethnographic approaches to cross-national research. Adler (1984) has defined this as the replication of a research study conducted in one culture in a second culture. The main methodological goal of these studies is replication through the standardization of the research design and implementation. The research is conducted in the same way, with identical units of analysis and instrumentation (except for language). Back-translation supports this since the objective of the process is standardization. As Adler writes 'The two versions must be the same. The rule guiding the translation of ethnographic research is *not* that the two versions have the same meaning in each of the target populations' (p. 39). In contrast, our aim was to achieve the collection of comparative data by ensuring the greatest equivalence between the instruments used in each country. Thus, at the higher level of abstraction each instrument item was conceptually identical, but at the level of operationalizing these concepts (i.e., the question wording), equivalence only was pursued in certain cases. To achieve this the research group graded the questions in the following way:

1. *Strictly equivalent* – the direct translation of the question was used in each country's version of the instrument.
2. *Conceptually equivalent* – the underlying concept was specified. Each country was free to develop a question, or series of questions, which elicited the necessary information to test the concept. For example, information was collected on how organizations classified their various types of employees. The use of an identical scheme in each country would have caused problems since the Italians and Germans both operate within a legislative framework which defines the management hierarchy. British, Dutch, French and Spanish managers are not subject to such legal structures.
3. *Recommended* – these were non-core questions and related to specific research agendas in each country. These were included at the discretion of each research team.

Results and discussion

1. Organizational structures

The structure of participating organizations was characterized by the use of a scheme derived from the ways in which organizations differentiate their overall task at the level below the CEO. This approach was a modification of the work of Galbraith and Nathanson (1979) particularly with the addition of matrix structures.

There were no 'simple' organizations in the study as the sample was drawn form the 1000 largest companies in the respective countries. The following structural types were derived from the organigrams collected during the interviews.

A 'pure functional" form is an organization in which all like administrative activities are grouped within one department. So, say, all the marketing activities for the organization are the responsibility of a single department.

A 'predominantly functional" organization is a hybrid type comprising functions and autonomous units such as regional marketing divisions. The majority of the units are however functionally organized.

Matrix structures are used when there is a need to maximize the coordination of both functions and some other form of differentiation i.e. product, project or client. These forms

of organization have an explicit dual authority structure with both functional and the 'other' managers jointly coordinating activities.

A 'predominantly divisional' structure, another hybrid, has the majority of units organized by product, market etc. but retains a minority which are functionally organized. Such as Finance or HRM.

Organizations are fully divisional when all of the activities are organized according to product, product group, geographic region, markets or customers/clients, with no functional sprecialisms at the top level.

One other category was used by some of the research groups in that some companies were still holding companies as well as operating in their own right.

Table 1 presents the data collected throughout Europe between 1988 and 1990 expressed and percentages of the samples. The data show that the dominant form of organization is either functional or divisional if the 'hybrids' are included, with one or two exceptions. The Dutch report no divisional types within their sample. The French sample is dominated by Divisional structures and the Spanish by Divisional and 'others' which in this case are predominantly holding companies. The Italians report a significant proportion of functional types or derivatives and all the countries report the existence of matrix types with the exception of Spain. However the proportions are not particularly high, between 7 and 10% of the respective samples . The exception to this is the case of the Netherlands where matrix structures account for some 20% of the albeit small sample, it is 3 organizations.

Table 1. Structural type by country

	Country					
	GB	NL	D	F*	E*	I
Functional	33	65	23	30	33	50
Predominantly Functional	13	15	0	3	0	11
Matrix	8	20	10	8	0	7
Predominantly Divisional	29	0	16	0	0	17
Divisional	16	0	24	47	45	15
Other	0	0	3	12	22	0
Missing Data	0	0	24	0	0	0
Number	24	15	61	60	95	115

* 1988 Data

Using Hofstede's characterisations of the national culture in relation to work, it is possible to set up a simple hypothesis in the culture bound approach with regard to these differences.

Let us posit that:

[i] divisional structures are set up in order to allow a greater degree of decentralization of decision-making than is possible in functional structures

[ii] that decentralization is more likely to be congruent with those cultures who score low on Hofstede's Power-Distance Index (HPDI) than with those countries whose cultures score highly;

then **Hypothesis 1** may be set up:

that countries with a low power-distance index will have a greater preponderance of divisional structures over functional structures, compared with those cultures with a high PDI.

The results are shown in Table 2. Hypothesis 1 has to be rejected. It is clear that the occurrence of both types of structure appears to be equally likely across the whole range of the PDI cultural dimension.

The data indicate an apparent similarity of structural types across the 6 countries and thus support in a rough and ready fashion the convergence approach. But they do not give any indication of the *processes* of convergence. To capture this a section of the research project asked for data on recent structural changes taking place within the previous year in the sample of organizations and the reasons why such changes took place.

2. Structural changes

One view, perhaps best exemplified by Chandler and subsequent researchers in that tradition, is that structural change is triggered by an organization's inability to fully realize strategy owing to administrative deficiencies caused by a mismatch between the new strategy and the

Table 2. Overall structure of firms characterised from the organization chart abbreviated from Table 1

	GB	D	NL	I	E	F
PDI	35	35	38	50	57	68
%	46	23	80	61	33	33
Functional and predominantly functional structure						
%	45	40	0	32	45	59
Divisional and predominantly divisional structure						
N	24	61	15	115	95	60

existing structure. Thus structure follows strategy. This argument was taken to its furthest extent in regard to the growth of the Global corporation, by Galbraith and Nathanson (1979) who indicated how different growth strategies resulted in different stages of organizational forms. This is reproduced in an abbreviated form here as Figure 1. We could thus hypothesize that any changes in form will be related to these strategies. For example a switch to a holding company from say a divisional form would be indicative of a strategy of unrelated diversification.

Figures 2 to 5 depict graphically the shifts in organizational forms of those organizations that changed.

Figure 2 gives the results from the UK data set. While 17 firms changed structure, only 5 actually shifted structural type. One shift from matrix to predominantly divisional was undertaken by 2 firms.

The first organization changed in order to emphasise the product lines and to encourage customer focus and to downplay regional differences; the dimensions of their matrix were geographic and product and as the developing literature on matrix structures indicates even if

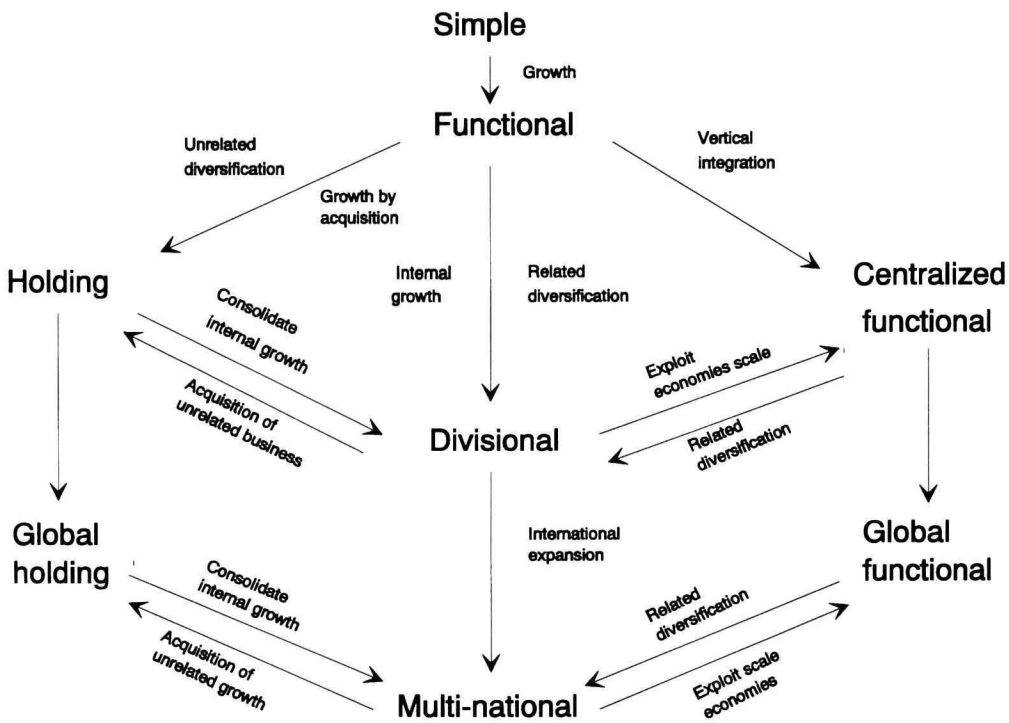

Fig. 1. A summary of stages model (based on Galbraith and Nathanson, 1979, Fig. 5.10, p. 279)

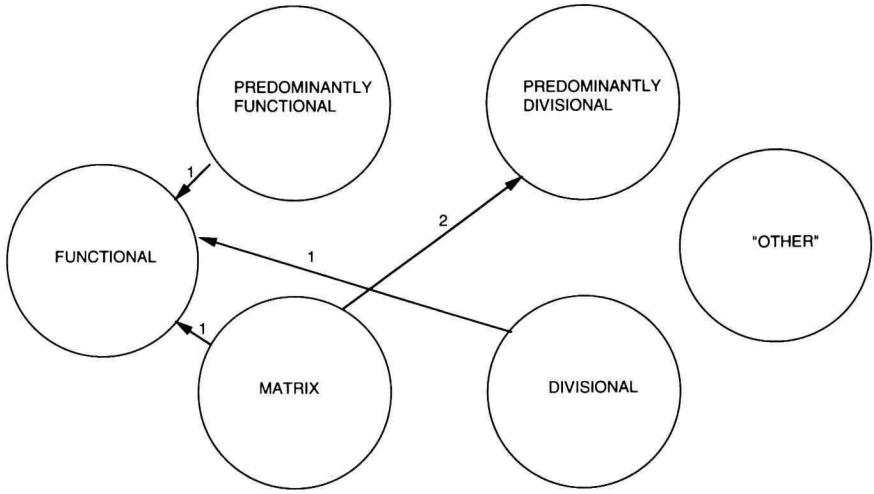

Fig. 2. Change in structure Great Britain

there is an equal balance of power between the managers along each dimension a tendency exists for one to gain power at the expense of the other. The introduction of product divisions was a clear attempt to redress this.

The second organization to shift from matrix to predominantly divisional again aimed to get closer to its customer. This was also the reason given for the one firm that shifted from divisional to functional. A similar reason accounts for the other company that switched from divisional to functional. The final company's switch from a divisional to functional was a result of rapid and dramatic downsizing of its operations. This is a reverse move along the Galbraith and Nathanson model. It shows the impact of changes in contingency on structure via strategy.

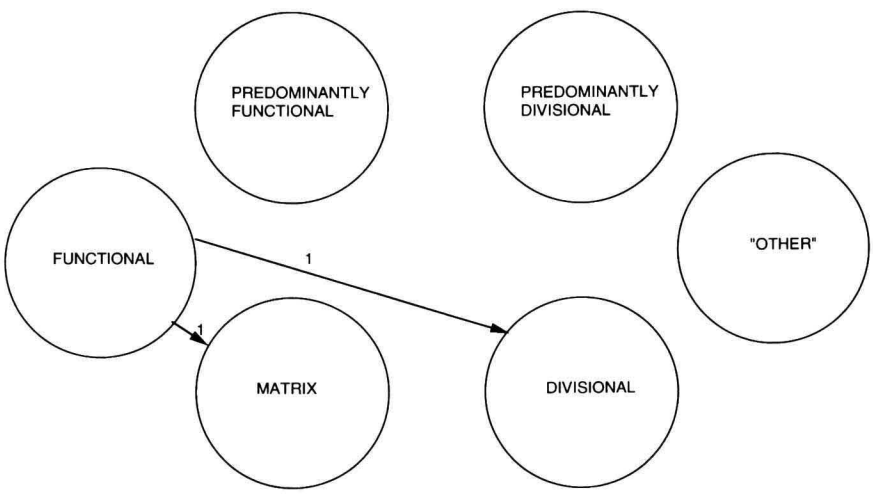

Fig. 3. Change in structure The Netherlands

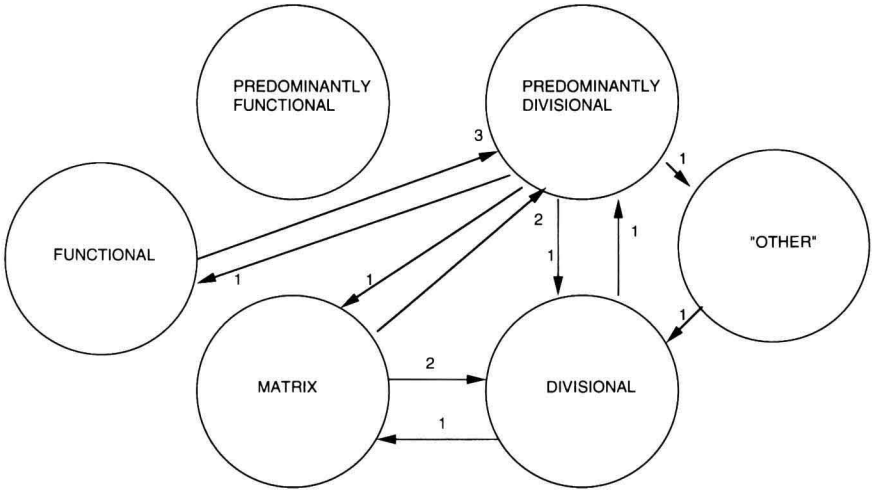

Fig. 4. Change in structure Germany

Unfortunately such data do not exist except at a very general level for the other countries in the study. For example in The Netherlands (Fig. 3) only 2 companies switched structural type. The first structural shift reflected a change in product market strategy, i.e. to divisional. The second structural shift reflected changes in product and distribution technology.

The German organizations in the study exhibited a very complex picture of structural change with a clear shift away from the functional type (see Fig. 4). In France the picture is also confused but does indicate a general shift to the divisional form (see Fig. 5). Changes in both these countries would both appear to be characteristic of an expanding economy. At this

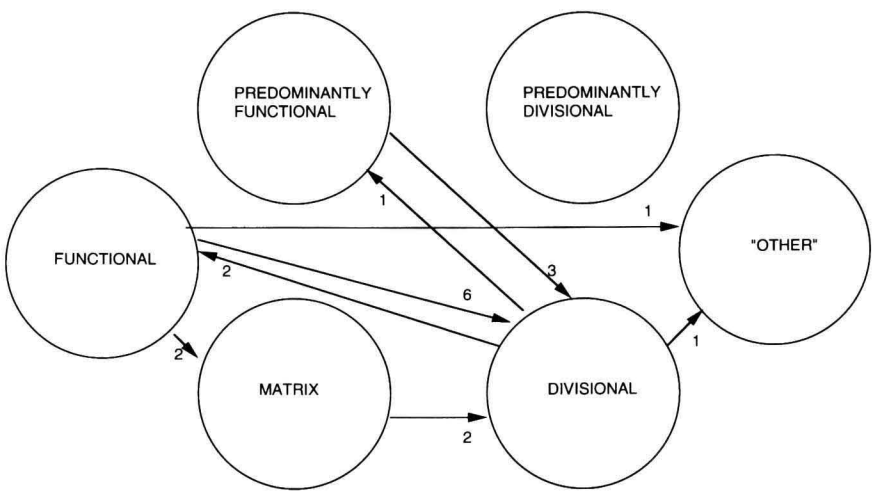

Fig. 5. Change in structure France

Table 3. Relative importance of change drivers

Reasons	Country			
	GB	NL	D	I
Change of Ownership	LO	LO	LO	LO
Change of Management	HI	LO	HI	MED
Change of Strategy	HI	MED	HI	HI
Increased Diversification	HI	LO	HI	LO
New Market Entry	MED	LO	HI	LO
Change in Manufacturing Technology	MED	LO	HI	MED
Change in Distribution Methods	MED	HI	HI	MED
Other	LO	HI	HI	LO

point in time this is the limit of the explanations we can offer. More careful analysis of the full data set is required following to exploratory nature of the hypotheses derived for the current paper.

Table 3 gives in very general terms an assessment of the importance of several drivers of structural change as perceived by our respondents. A weighted average was constructed from responses to a question asking managers to rate the importance of a number of factors affecting the recent structural change. The data includes changes which are both inter and intra type shifts.

In the UK (GB) changes in both management and strategy are the most significant change drivers. In The Netherlands (NL) it is predominantly changes in distribution and in Italy strategy. Germany (D) scores highly on all except change of ownership which seems to have little impact across the sample as a whole.

From the convergence approach, Table 3 shows that all the reasons investigated are relevant to organizations under study with different degrees of strength. The change drivers can be regarded as contingencies affecting the structures. The table underlines how inappropriate it is to regard all national differences in organization structures as being due to the effects of national cultures, without taking account of the particular contingency changes.

3. Integration mechanisms

In the survey top managers are asked to characterise the organization's use of various integration and co-ordination mechanisms at the top level. Is the use of different types of such mechanisms affected by cultural differences?

Let us posit that:

[i] the use of recurrent regular co-ordination mechanisms will reflect a greater need to reduce uncertainty than the use of ad hoc mechanisms, called into action only irregularly

[ii] that regularity of use is more likely to be congruent with those cultures who score highly on Hofstede's Uncertainty-Avoidance Index (UAI) than with those countries whose cultures score low;

then ***Hypothesis 2*** may be set up:

that countries with a high uncertainty-avoidance index will have a greater preponderance of use of regular co-ordination mechanisms compared to ad hoc ones than in those cultures with a low UAI.

Thus, for example, high UAI cultures will make relatively more use of regular weekly and monthly meetings for co-ordination, whereas low UAI cultures will make more use of ad hoc meetings.

The results are shown in Table 4 which lists the percentage of organizations where top managers rate a number of integration mechanisms as "widely used".

It appears that some aspects of Hypothesis 2 are supported. There is clearly a trend in the wide use of ad hoc meetings which occur in a greater percentage of organizations in cultures with lower UAI scores. On the other hand the

Table 4. Intergration mechanisms used at CE level percentage of firms responding 'widely used'.

	GB	NL	D	I	D	F
UAI	35	53	65	75	86	86
ad hoc meetings	75	53	47	47	42	47
weekly meetings	92	58	40	60	80	n/a
monthly meetings	84	46	62	23	21	10
task forces	33	54	51	22	9	16
N	24	15	61	115	95	60

wide use of regular weekly meetings appears to range across the whole spectrum. For example most firms in both the low and high UAI cultures of Great Britain and Spain used them widely.

Wide use of monthly meetings though, appears to be related to PDI scores rather than UAI ones. Many more firms in Great Britain, Germany and the Netherlands widely use these mechanisms than firms in Italy, Spain and France. It may be surmised that the wider use of monthly meetings in low power distance cultures could be related to their size and scope. If monthly meetings are larger, taking in a wider range of managers, then this greater openness would be more congruent with a low PDI culture than a high one.

Task forces also appear to be widely used by many more firms in low PDI cultures, and this again may be due to their inevitable tendency to open out issues to a wider range of involved managers.

Conclusion

This paper identified two approaches to understanding the impact of culture on organizations: culture free (similarities) and culture bound (differences) approaches. Although characterised as the extremes of a continuum, it was also suggested that these two approaches focused on different levels of organizing. Culture free researchers consider macro-level variables – structure-context relationships – whilst the culture bound focus more on the behaviour of individuals with organizations. This paper sought to adopt a combined approach in which changes to organization structure were considered (macro) as well as the mechanisms which integrate the structure (behaviour). The results and subsequent discussion, suggest that global contingencies cause structural changes whilst cultural effects are found to influence the different uses of co-ordination mechanisms. Current evidence would thus seem to show that existing organizational structures and co-ordinating mechanisms are an outcome of the interaction between contingencies with global impact and culture specific imperatives.

References

Adler, N.J. Understanding the ways of understanding: cross-cultural management methodology reviewed. *Advances in International Comparative Management, 1*, 31–36, 1984.

Axelsson R., D. Cray, G.R. Mallory and D.C. Wilson. Decision style in British and Swedish organizations: A comparative examination of strategic decision-making. *British Journal of Management, 2*, 67–69, 1991.

Brislin, R.W., W.J. Lonner and R.M. Thorndike. *Cross-cultural research methods.* London: Wiley-Interscience, 1973.

Calori, R. and P. Lawrence. 1992 – Diversity still remains – views of European managers. *Long Range Planning, 25*, 33–43, 1992.

Chandler, A.D. *Strategy and structure: Chapters in the history of the American industrial enterprise.* Cambridge: Mass.: MT Press, 1962.

Child, J. Culture, contingency and capitalism in the cross-national study of organizations. In L.L. Cummings and B.M. Staw (Eds.), *Research in Organizational Behaviour, Vol. 3.* Greenwich, CT: JAI Press, 1981.

Child, J. and A. Keiser. Organizational and managerial roles in British and West German companies: An examination of the culture-free thesis. In C.J. Lammers and D.J. Hickson (Eds.), *Organizations alike and unlike.* London: Routledge and Kegan Paul, 1979.

Clark, T.A.R. and G.R. Mallory. Cross-cultural research: A methodological minefield. Paper to the International Organization Development Association. Coventry, UK: 1992.

Crozier, M. *The bureaucratic phenomenon.* Chicago: University of Chicago, 1964.

Donaldson, L. Size and bureaucracy in East and West: A preliminary meta analysis. In S.R. Clegg, D.C. Dunphy and S.G. Redding (Eds.), *The enterprise in East Asia.* University of Hong Kong, Centre for Asian Studies, Occasional Monograph, No. 69, 1986.

Dore, R. *British factory-Japanese factory.* London: George Allen and Unwin, 1973.

Galbraith, J.R. and D.A. Nathanson. The role of organizational structure and process in strategy implementation. In D.E. Schendel

and C.W. Hofer (Eds.), *Strategic management: A new view of business policy and planning*. Boston, Mass.: Little Brown, 1979.
Granick, D. *The European executive*. New York: Doubleday, 1962.
Haire, M.M., E.E. Ghiselli and L.W. Porter. *Managerial thinking: An international study*. New York: Wiley, 1966.
Hickson, D.J., C.R. Hinings, C.J. McMillan and J.P. Schwitter. The culture-free context of organization structure. *Sociology, 8*, 59–80, 1974.
Hickson, D.J. and C.J. Macmillan (Eds.). *Organization and nation: The Aston program meIV*. Aldershot: Gower, 1981.
Hofstede, G.. *Cultures consequences: International differences in work-related values*. Beverly Hills, Calif.: Sage, 1980.
Huber, G.P. and D.J. Power. Retrospective reports of strategic-level managers: guidelines for increasing their accuracy. *Strategic Management Journal, 6*, 171–180, 1985.
Kerr, C., J.T. Dunlop, F.H. Harbison and C.A. Myers. *Industrialism and industrial man*. Harvard: Harvard University Press, 1960.
Lammers, C.J. and D.J. Hickson (Eds.). *Organizations alike and unlike*. London: Routledge and Kegan Paul, 1979.
Laurent, A. The cultural diversity of Western conceptions of management. *International Studies of Management and Organization, 13*, 75–96, 1983.
Martin, P.Y. and C. Glisson. Perceived structure: Welfare organizations in three societal cultures. *Organization Studies, 10*, 353–380, 1989.
Maurice, M. For a study of the societal effect: Universality and specificity in organization research. In C.J. Lammers and D.J. Hickson (Eds.), *Organizations Alike and Unlike*. London: Routledge and Kegan Paul, 1979.
Ouchi, W. Theory z: How American business can meet the Japanese challenge. Reading, Mass.: Addison-Wesley, 1981.
Podsakoff, P.M. and D.W. Organ. Self-reports in organizational research: Problems and prospects. *Journal of Management, 12*, 531–544, 1986.
Pugh, D.S. The convergence of international organizational behaviour. Invited paper to the British Psychological Society Conference, London. *Open University School of Management Working Paper*, No 2/90, 1988.
Pugh, D.S. and D.J. Hickson. *Organization structure in its context: The Aston Programme I*, Saxon House, 1976.
Roberts, K.H. On looking at an elephant: a review of cross-cultural organizational research. *Psychological Bulletin, 74*, 327–350, 1970.

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Appendix 1

The 100 consists of the following researchers:

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Professor Christian Scholz – University of Saarlandes, Saarbrucken, Germany

Professor Giles van Wijk – Department of Strategy & Management, ESSEC, Paris, France

Professor Joseph Baruel – ESADE, Barcelona, Spain

Dr Nando Pennarola, Dr Vincenzo Perrone, Dr Guiseppi Soda and others – CRORA, University of Luigi Bocconi, Milan, Italy

Dr Olaf Erland, Dr Bertil Markgren and Dr Ivan Snehota – Department of Business Administration, University of Uppsala, Uppsala, Sweden

Dr Marielle Heijltjes, Professor Arndt Sorge, Professor Arjen Witteloostuijn – University of Limburg, Maastricht, The Netherlands.