GIVING THE GRID/GROUP DIMENSIONS AN OPERATIONAL DEFINITION

James Hampton

Some may consider any attempt to measure the dimensions of grid and group in quantitative terms to be ill-considered. It is easy for the finer insights and subtler elements of a theory such as this one to be lost or blunted in the process of pressing them into the mould of empirical methodology. All too often, claims to have disproved a theory are based on empirical predictions derived on the basis of naive and literal interpretations. This state of affairs is particularly likely to occur where the original statement of the theory employs figurative and abstract language, and has been largely developed as an interpretative tool for making sense of otherwise meaningless collections of data. In this light, a parallel can be drawn between grid/group analysis and the psychodynamic theories of Freud and the post-Freudians. In both cases new concepts are defined which can bring sense to a bewildering variety of observations (on the one hand cultural and social diversity, and on the other the great variety of normal and pathological mental states involving symbolic meanings). In both cases the richness of the theory can make it difficult to derive critical empirical predictions without making simplifying assumptions. In spite of such objections, the development of an empirical test of the theory of grid/group analysis can be defended on a number of grounds. First, there is the need to satisfy the world of empirical science that the theory is in fact a scientific theory, saying something about the external world, and with testable consequences. If conducted with a proper regard for the inadequacies of existing measuring techniques in the social sciences, and with a sympathetic understanding of the dangers of not doing justice to the theory and its insights, an empirical test can be of value, and its results enable the theory to be developed or modified further. The second reason for pursuing this endeavour is that regardless of whether or not the results of the test may be believed, or may be subject to serious methodological criticism, the very process of expressing the theory in empirical terms can force the researcher to sharpen the theoretical concepts involved and to make them more explicit. In particular, attention becomes focused on various parts of the theory which are as yet unspecified, but for which answers must be found. It is to such problems as

these that the final section of this paper will turn. First, however, the method used and the results obtained will be presented.

The project was conducted by Mary Douglas and the author at University College London. We set out to use a very simple questionnaire technique to examine the grid and group dimensions, and to test a possible relation between a person's social context (as defined by the two dimensions) and the cosmological beliefs and values which he or she espoused. We made two separate surveys, in which the same set of social context questions (with a few minor modifications) were put (a) to a heterogeneous sample of 80 men and women of many different occupations in Britain, and (b) to a sample of 100 professional and managerial men and women in three different urban areas of Britain.

The aim of the project was first to analyse the concepts of grid and group into two sets of basic elements, such that each element would be logically related to the others. These elements then formed the core definition of the two social dimensions (see Douglas 1978 for details). From these definitions we then devised a number of questionnaire items which were intended to measure a person's position on the social dimensions of grid and group. These questions then constituted our measure of the social context of the individual.

It is clearly not feasible to have one questionnaire that can be used for everyone in a complex society. Compromise must be made between relevance to the individual and generalisability. For several reasons we chose to concentrate our questions on the social context of the work-place. For the group dimension, questions about both work-group and home-group strength were included. The second aim was then to demonstrate that these various measures of the two dimensions would be intercorrelated to give some construct validity to the concepts of grid and group. Finally we hoped to be able to show that measures of the individuals' values and beliefs would be correlated with the social context positions on grid and group, in the ways predicted by the theory. We used the term 'cosmology' to refer to this second part of the questionnaire dealing with values and beliefs. In presenting our findings, I shall first deal with the construct validity of the grid and group scales for our two samples, and then describe the results of our attempt to predict cosmological views on the basis of the social context dimensions.

GRID AND GROUP SOCIAL CONTEXT

From the social context questions, 28 grid and 12 group measures were constructed by scoring the answers appropriately (see Table 3.1). (In the second sample, the number of group measures was increased to 14.) If the grid and group dimensions are to form a useful way of summarising the differences between people's answers to the questions, then one may expect measures of the same dimension to be positively correlated with one another, and not to correlate with measures of the other dimension. One way of testing this internal consistency of the dimensions is to correlate each measure with the total scale obtained by summing all the measures. For this test Kendall's nonparametric coefficient of correlation, tau,

TABLE 3.1   Indices of grid and group dimensions used in questionnaires

GRID		Index	Value for high grid
A Competition	1	Short of time at work	Never
	2	Useful in work to have a speciality	No
	3	Job future	No change
	4	Work involves outside contacts	No
	5	Job is a competitive one	No
B Insulation	6	Can choose hours of day to work	No
	7	Promotion given by explicit criteria (e.g. seniority)	Yes
	8	See people from work in free time	No
	9	Rules and regulations at work	Yes, and important
	10	Make decisions and get informal feedback	No
	11	Responsibility limited to well-defined areas	Yes
	12	Work in a hierarchical organisation (more than three levels)	Yes
	13	Segregated facilities at work	Yes
	14	First names used at work	No
	15	Would you invite your boss home?	No
	16	Stop thinking about work when get home	Yes
C Autonomy	17	Can choose use of time at work	No
	18	Can take time off when you want	No
	19	Can decide to waive rules	No
	20	Can choose those who work with you	No
	21	Have a boss	Yes
	22	Work involves originality	No
D Control	23	Supervise others' work	No
	24	Make decisions affecting others	No
	25	Work involves responsibility	No
	26	In charge of distributing resources to co-workers	No
	27	Make rules for others to follow	No
	28	Could find another job of same type easily	No

Note: In the second survey, indices 13 and 25 were poorly correlated
with the other measures, and were excluded from the scale

TABLE continued

TABLE 3.1   (continued)

GROUP		Index	Value for high group
A At work	1	Work as part of a close team	Yes
	2	Reluctant to leave job because of friends	Yes
	3	Don't take time off for sake of others	Don't
	4	Unwritten rules at work involving co-operation	Yes
	5	Have drinks with colleagues regularly	Yes
	6	Have lunch with work group	Yes
	7	Help out others at work if have some misfortune	Yes
	8	Have collections and parties when people leave	Yes
B At home	9	Family in same business and help out	Yes
	10	Close-knit family	Yes
	11	Work colleagues in home social network	Yes
	12	Family and friends know each other	Yes
	13	Friends know and see each other	Yes
	14	Belong to clubs with regular meetings	Yes

Note: (a) In the first survey indices 3 and 4, and 7 and 8, were
            scored together.
       (b) In the second survey, indices 5 and 10 were poorly
            correlated with the others and were excluded in creating
            the scales for home and work group.
       (c) In addition, indices 8 and 9 were excluded from the
            overall scale of group for the same reason.

was used (Siegel 1956). For the first sample of people, all the
part-whole correlations were positive both for grid and for group,
and all but four were significantly greater than zero beyond the
0.05 level. For the second sample, only one measure failed to have
a significant positive correlation with the scale total. Further-
more, there was no significant correlation between the scales of
grid and group (Kendall's tau = -0.039 for the first sample, and
-0.11 for the second). The correlational structure of the measures
therefore gives good support for the independence and internal
construct validity of the two scales.
   A more exacting test of the correlational structure was under-
taken using the technique of factor analysis. The level of
structure in both samples was relatively low. For the first sample
three main factors emerged. These were a strong grid dimension and
two weaker group dimensions, one involving work-group questions,

and one the home-group. In the second sample, there were again
three interpretable factors: a strong grid factor, and then a
weak group factor with some grid measures loading on it, and finally
a factor concerned with stability. This third factor was strongly
reflected by questions concerning how long people had been in a job,
how long they intended to remain, and whether they were reluctant to
leave and not seeking career advancement. The measures of group at
home showed little consistent structure in this second sample. It
is likely that the whole sample was weakly organised as to group
and also that the questionnaire technique is less adapted to
eliciting strong-group behaviour. It appears that grid is a much
easier dimension to measure using a questionnaire technique than is
group. Grid comes out as a strong consistent factor, differentiating
between people, both in a sample of mixed occupations, and in one
restricted to professional and managerial people. Comparison of the
factor analyses of the two samples reveals that it is the same set
of questions which load most strongly on the grid factor for both
samples. One can conclude that the grid dimension is largely
independent of class differences, since the same pattern is found
in a sample of heterogeneous occupations, as in one of high-status
ones. The group dimension produced less clear results, and ideally
one might want to use observational and sociometric techniques to
achieve a better measure of a person's position on the group
dimension.

COSMOLOGY

We can now turn to the problem of predicting cosmological views
from the social context measures. In the first survey a traditional
type of attitude scale was constructed. Forty statements were
presented to the subjects who had to indicate their agreement/
disagreement on a 5-point Likert scale (Likert 1932). The state-
ments were such that people in different quadrants of the social
context grid/group map might be expected to agree with and disagree
with different sets of statements. The results were disappointing.
When each item of the cosmology was considered separately, only 9
of the 40 items came out as significantly correlated with the
social context scales in the predicted direction. Another 7 had
one of the scales correct, and either a zero correlation on the
other predicted scale, or else a significant correlation on the
other where none was predicted. The lack of independence among
the highly intercorrelated cosmology statements makes the interpre-
tation of this number as a significantly positive result rather
dubious. The only result which appeared to be illuminating was
that people in the high-grid half of the sample made fewer 'No
opinion' responses than those in the lower half (chi square = 3.94,
significant at 0.05). There was also an insignificant trend for
people in the low-group half to make fewer 'No opinion' responses.
This result is in accord with our expectations that the high-grid/
low-group corner has an unquestioning, passive cosmology. It would
appear that the remaining corners were likely to question the
assumptions behind the attitude statements and not feel able to
agree or disagree with them.

The failure of the social context dimensions to predict the
cosmology responses could be due to several factors. In particular
it was felt that indicating agreement or disagreement with an
abstract, general statement is not a very meaningful task. Fishbein
(1966) has pointed out that the more specific a particular attitude
statement can be made, then the more reliably will measured attitudes
reflect behavioural intentions. For the second sample therefore an
attempt was made to find questions which were more personally
relevant and direct.
   Twenty-six questions were devised for the second cosmology
questionnaire. Once again they were chosen with the aim of
differentiating the four cosmological patterns predicted by the
grid/group theory for the four quadrants of the social context map.
However, because the first sample had cast some doubt on the
correctness of the previous predictions, and because the actual
connection between social context and cosmology is not central to
the theory of grid and group, no firm predictions were made as to
the way different cosmological areas would respond. At an early
stage in the development of a theory it is often wiser to allow
the patterns to emerge, if they will, so that they can form the
basis of further predictions and so that the theory can be modified
in their light if they prove to be reliably replicable. Thus while
we expected certain responses to be associated with certain grid/
group positions (and this motivated our choice of the questions),
our prediction was merely that there would be some significant
mapping of social context on to cosmology.
   The method adopted for testing the association between social
context and cosmology was to draw up a table for each cosmology
question, showing the distribution of answers of each type across
the four quadrants of the social context map. In order to do this,
cut-off points had to be placed on the social context grid and group
dimensions in order to divide the sample into high and low scorers.
Before this was done, the two social context scales were made more
internally consistent by excluding those social context measures
which had more negative correlations with the other measures in
their scale than positive ones. The result of this manipulation
was to remove two of the 28 grid measures and 4 of the 14 group
measures. This 'cleaning up' of the scales had a marked positive
effect on the number of cosmological questions which were associated
with the social context scales.
   Obviously the more manipulations and tests that are performed,
the greater is the chance of finding associations, and hence the
less significance attaches to all the results found. It was felt
at this stage of the project to be more useful to bring out the
trends in the data than to know the exact probability of the trends
being entirely due to chance factors. Because the survey was of an
investigative, piloting kind, two other manipulations were examined
to see how they might bring out further associations. First the
group variable was divided into questions about home group, and
questions about work group. (Earlier analyses had suggested that
the connection between the two sets of questions was not strong.)
These two new group dimensions, labelled home and work, were also
'cleaned up' by excluding measures with more negative than positive
correlations with other items. They were then used in place of the

group dimension proper so that altogether three maps of social context were produced - grid x group, grid x home, and grid x work. The second manipulation was to adopt three levels for the cut-off point on each dimension - a high, a central and a low criterion, dividing the sample approximately in the ratios of 1:2, 1:1, and 2:1 respectively along each scale. In this way it is possible to pick out effects where a cosmological response is typical only of people at the extreme end of one of the social context dimensions.

RESULTS

Two kinds of test were made, one for main effects of the social context dimensions on the cosmology results, and one for other possible deviations from randomness that involve the interaction of the two dimensions. For example, in a cosmology question with a simple Yes/No response, the pattern of answers for a main effect of one dimension might look like one of those in Figure 3.1. Inter-

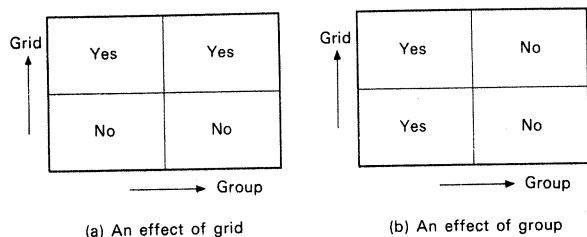(a) An effect of grid   (b) An effect of group

FIGURE 3.1 Examples of main effects

actions would have one of the forms shown in Figure 3.2. In Figure 3.2(a) and (b), opposite corners respond alike, thus removing any overall main effect of either dimension. In Figure 3.2(c) a main effect of (say) grid is only found at high group and vice versa.

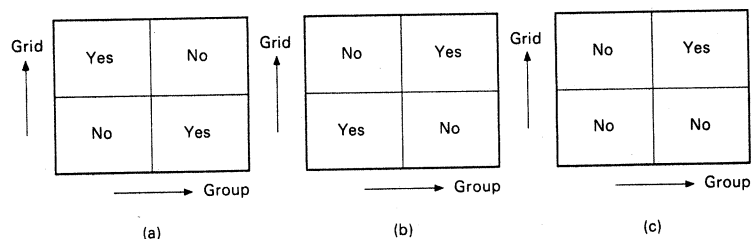(a)   (b)   (c)

FIGURE 3.2 Examples of interactions

Chi-square tests were used. For the main effects tests, a 2 x 2 chi-square test corrected for continuity was applied to the cross-tabulation of the social context dimension (e.g. grid, high v. low) with the cosmology question (e.g. yes v. no to a particular question).

TABLE 3.2 Cosmological responses associated with the grid x group social context map

High grid low group		High grid high group	
Question	Response	Question	Response
Are you in favour of children being given corporal punishment in schools?	YES	How far back does your oldest surviving friendship go (not counting family)?	(LONGER THAN AVERAGE)
Should the state care for the chronically sick or elderly, regardless of whether they have families that could look after them?	NO	Should the state care for the chronically sick or elderly, regardless of whether they have families that could look after them?	YES
Do you think it is an advantage or a disadvantage to be unusual in appearance?	DISAD-VANTAGE	Do you think it is an advantage or a disadvantage to be unusual in appearance?	ADVANTAGE
Has good or bad luck played a large part in your life?	YES	Has good or bad luck played a large part in your life?	NO
Which things are really important in the upbringing of a child? - Developing personality as an individual?	UNIMPORTANT	Which things are really important in the upbring of a child? - Developing personality as an individual? - Acquiring skills and qualifications for a job?	UNIMPORTANT UNIMPORTANT

TABLE continued

TABLE 3.2 Continued

Low grid low group		Low grid high group	
Question	Response	Question	Response
Are you in favour of children being given corporal punishment in schools?	YES	How far back does your oldest surviving friendship go (not counting family)?	(LONGER THAN AVERAGE)
Should the state care for the chronically sick or elderly, regardless of whether they have families that could look after them?	YES	Should the state care for the chronically sick or elderly, regardless of whether they have families that could look after them?	NO
Do you think it is an advantage or a disadvantage to be unusual in appearance?	DISAD-VANTAGE	Do you think it is an advantage or a disadvantage to be unusual in appearance?	ADVANTAGE
Has good or bad luck played a large part in your life?	NO	Has good or bad luck played a large part in your life?	YES
Which things are really important in the upbringing of a child?		Which things are really important in the upbringing of a child?	
– Developing personality as an individual?	IMPOR-TANT	– Developing personality as an individual?	IMPOR-TANT
		– Acquiring skills and qualifications for a job?	UNIMPOR-TANT
In your favourite kind of meal, do you prefer traditional or exotic food?	TRADI-TIONAL	In your favourite kind of meal, do you prefer traditional or exotic food?	EXOTIC

TABLE 3.3 Cosmological responses associated with the grid x home social context map

High grid low home		High grid high home	
Question	Response	Question	Response
How far back does your oldest surviving friendship go (not counting family)?	(SHORTER THAN AVERAGE)	How far back does your oldest surviving friendship go (not counting family)?	(LONGER THAN AVERAGE)
Are you in favour of the censorship of adult films?	YES	Are you in favour of the censorship of adult films?	NO
Are you in favour of the fluoridisation of public water to give people healthier teeth?	NO	Which things are really important in the upbringing of a child?	
		– Developing personality as an individual?	UNIMPOR-TANT
Should people suffering from incurable diseases have the choice of a painless death?	NO	How many days a year do you reckon you have to miss work due to illness?	(MORE THAN AVERAGE)
		Do you celebrate your birthday with a party?	YES
		Should people in middle age aim to look younger than they are?	NO

Low grid low home		Low grid high home	
Question	Response	Question	Response
How far back does your oldest surviving friendship go (not counting family)?	(SHORTER THAN AVERAGE)	How far back does your oldest surviving friendship go (not counting family)?	(LONGER THAN AVERAGE)
Are you in favour of the censorship of adult films?	NO	Are you in favour of the censorship of adult films?	YES
Should people suffering from incurable diseases have the choice of a painless death?	NO	Should people in middle age aim to look younger than they are?	YES
Do you celebrate your birthday with a cake with candles?	YES	Do you celebrate your birthday with a cake with candles?	NO
		Which things are really important in the upbringing of a child?	
		– Developing personality as an individual?	IMPORTANT

TABLE 3.4 Cosmological responses associated with the grid x work
social context map

High grid low work			High grid high work	
Question	Response		Question	Response
Which would you rather do given a choice for a 2-week holiday?			Which would you rather do given a choice for a 2-week holiday?	
(Prefer:) GO AWAY TO A FAVOUR- ITE HOLIDAY PLACE THAT YOU KNOW AND LIKE, HAVING BEEN OFTEN BEFORE.			(Prefer:) TRAVEL TO NEW PLACES AND MEET NEW PEOPLE	
Would you like to see the death penalty brought back for terrorist crimes?	YES		Would you like to see the death penalty brought back for terrorist crimes?	NO
Has good or bad luck played a large part in your life?	YES		Has good or bad luck played a large part in your life?	NO
Do you think it is an advantage or a disadvan- tage to be unusual in appearance?	DISAD- VANTAGE		Which things are really important in the upbring- ing of a child? - Developing personality as an individual?	UNIM- PORTANT
Which things are really important in the upbring- ing of a child? - Developing personality as an individual?	UNIM- PORTANT			

Low grid low work			Low grid high work	
Question	Response		Question	Response
Do you have many friends of other generations?	NO		Do you have many friends of other generations?	YES
Would you like to see the death penalty brought back for terrorist crimes?	YES		Would you like to see the death penalty brought back for terrorist crimes?	NO
Which things are really important in the up- bringing of a child? - Developing person- ality as an individual?	IMPOR- TANT		Which things are really important in the up- bringing of a child? - Developing person- ality as an individual?	IMPOR- TANT

For interactions a goodness-of-fit chi-square test was applied to the distribution of each response type across the social context quadrants, using the overall sample distribution as the basis for the expected cell frequencies. By application of these tests, the cosmology responses significantly associated with social context dimensions at the 5 per cent significance level were selected. Tables 3.2 - 3.4 summarise the results for the three maps of social context. The responses typically associated with each quadrant are displayed in that quadrant. (2)

To summarise the results, there were only 8 of the 26 cosmology questions that showed no significant associations with any of the social context dimensions. This failure rate is encouragingly low. Of the significant results, some (for instance on child-rearing and luck) fit well with the cosmologies anticipated by Mary Douglas (1978). Others (for example capital punishment) are less obvious. By using a sample taken from a single socio-economic status bracket, the confounding effects of class can be discounted although one may not generalise the results to other classes. However, there are other possible variables which may be confounded with our social context dimensions, and hence might be responsible for the observed associations. For example, the number of years of education a person has had has been found to be a good predictor of those who are in favour of violent punishments. Future surveys of the kind presented here would have to collect more biographical details of the respondents in order to control for such confounding effects.(3) It must also be remembered that many tests were performed on the data, and so one should not expect all of the results presented here to be reliable. However, considering that the construction of new scales usually involves a long process of perhaps half a dozen or more stages of modifying some questions, and adding or deleting others before reliable results can be produced, the social context scales of grid and group are extremely promising. It was interesting that group at home and at work were differentiated to some extent. This differentiation was borne out in the cosmological themes that were associated with the two group dimensions. They are summarised below:

HOME GROUP

Censorship of films	Education
Fluoridisation of water	Days off work
Voluntary euthanasia	Aim to look younger
Length of friendships	
Birthday parties and cakes	

WORK GROUP

Holidays
Death penalty
Unusual appearance
Luck
Friends of other generations

Finally, an analysis of the 'don't know' responses showed that there were far fewer than in the first sample. There was an insignificant

trend for people in low grid, low group to make more, and people in high grid, high group to make fewer 'don't know' responses.

PROBLEMS AND OTHER ISSUES

The final section will discuss some of the issues and problems which have been raised by undertaking this project. These issues are probably of equal value in the development of grid/group analysis as the results themselves. Five areas will be dealt with.

(a) Objectivity

Perhaps the most obvious problem with using people's own assessment of their social context position is the problem of the subjectivity of their judgment. Interestingly this question appears to interact with the problem of levels discussed below, in that reasonably objective measures (such as the physical environment, regularity of group occasions, codified systems of rules) apply more readily to defining the grid/group position of groups (such as tribes or institutions) than to defining individual positions within a group. Thus it is unclear at present to what extent we define an individual's position in terms of the actual grid/group constraints acting upon him as seen from some perspicacious observer's vantage point, and to what extent it is crucial that the individual is actually aware of the constraints. Measures based on interview or questionnaire techniques can only hope to reflect the social context as it appears to the person in it. This being so, there is also the vexatious possibility that the reported view of the social context is biased by the distorting lens of the person's cosmology. Grid/group position will then have a double effect on the subjective report of that position - first through the actual constraints acting on an individual, and second through the interpretation imposed on them by the cosmological bias. It may be the case, therefore, that the distinction between sociological and psychological explanations of cosmology becomes untenable, since the two form a single interacting system of influences on beliefs and attitudes.

However, there is one kind of psychological explanation of the correlation between social context and cosmology which can be tested. This explanation would run as follows. Individuals differ in their personalities (for purely psychological reasons if such things exist). They therefore will be led to prefer and to choose different kinds of social environment and also different systems of belief which are sympathetic to their personality. Hence if we measure their social environments and cosmologies, we may discover a correlation, but it would be invalid to infer that the social environment generated the cosmology. (I am indebted to David Bloor for pointing out this argument to me.) The argument as it stands may contain serious flaws. What for example is it about a social environment that makes it conducive or sympathetic to the individual? Even so, a longitudinal study of people who have sudden changes in social environment thrust upon them (as, for example, in leaving

university or being conscripted into an army) might be able to show that social environments can be instrumental in altering a person's cosmological viewpoint. The social psychological literature on attitude change may also be relevant here (e.g. Bem, 1967). I return to this question in discussing the position of the individual below.

An interesting piece of evidence on the question of objectivity emerged from the results of the second survey. When the grid measures were divided informally into two sets, one selected to reflect more objective kinds of question, and the other the questions more prone to subjective effects, then it turned out that the more objective questions were better correlated overall with the grid dimension. This evidence however is clearly not sufficient to answer the problems raised.

(b) Cosmology

The measurement of cosmology has raised various questions. One is the extent to which cosmology must be measured in a context-specific fashion. Thus the issues used in order to test the systems of values and cosmological beliefs must be of relevance to the particular context in which the individual lives. If this is not the case then people will respond according to a stereotyped cosmology that does not reflect their own condition - i.e. that is never used for the justification and legitimation of their own actions.

A teasing example of the pitfalls to be avoided here was suggested by Gert Hofstede (personal communication) who has conducted the analysis of a huge multinational survey of attitudes and perceptions about work (Hofstede, 1975-78). He pointed out how the same people would be happy to agree that they preferred their boss to act in an authoritative manner, while at the same time agreeing with the statement, 'Lower levels of management should have more say in the running of the organisation'. It is therefore necessary to distinguish the desired - being the personally relevant judgments of value - from the desirable - the general principles that are seen to apply at a less personal level. The theory of grid/group cosmologies must therefore make explicit just what kinds of value would be predicated as derivable from social context position - leaving open the possibility that there may be other kinds of value, and other media of transmission. A look at typologies of belief and value systems (e.g. Rokeach 1960, Fishbein and Ajzen 1975) could provide some clarification of this issue.

(c) The position of the individual

I have already mentioned a serious problem that concerns the relation between grid/group analysis as applied to groups or societies and the analysis of an individual's position within a society. At present the same conceptual framework is used to deal with both these levels. How far this will be possible is an empirical question that urgently needs attention. To use another

example from Hofstede's work, he found that two dimensions could be positively correlated at one level and negatively correlated at another. Thus for example the dimensions of stress and job satisfaction were negatively correlated within each occupational group - the lower the stress the greater the satisfaction. However, between the occupations the relation was a positive one - the more stressful the occupation, the more job satisfaction went with it.

A second question about the position of individuals concerns the notion of a mismatch between social context and cosmology. Individuals may find themselves launched into a new area of the social map, for one of two reasons. They may have precipitated the move themselves, or they may be the victims of some external changes. In the first case the theory of grid/group analysis ought to consider what are the tensions that will make an individual more or less content with his present position. Is it purely a question of his past history in the grid/group map, or should one also bring in personality variables? This seems to me to be a fruitful possibility for a link with work in psychology. For the other case, where change is forced on a person, the theory should make predictions about how the justifications can be made for a change of cosmology; personality could also play its part here in (i) the degree of inconsistency between old and new cosmologies that can be tolerated, and (ii) the lability of a person's held cosmology, the ease with which it will accommodate itself to the new surroundings. Examples from the psychological literature of these kinds of personality traits are abundant (e.g. Adorno et al. 1950, Fromm 1941, Rokeach 1960). Similarly it would be a fruitful field to link up grid/group analysis with psychological studies of obedience (Milgram 1974) and conformity (Asch 1956) which appear to be concerned with very similar issues.

A final issue concerns the problem of individuals who ostensibly have two quite distinct social contexts - for instance one at home and one at work - with quite different grid/group positions in each. At present the theory assumes that their cosmology will reflect some average position between the two areas of their life, perhaps weighted according to the personal relevance attached to the different activities. Empirical research is needed here to find out how common situations like this are, and how stable they can be. Informal evidence suggests it may be very possible to have, say, a high-group home background, with a relatively low group at work. Should we then expect to see inconsistent and self-contradictory cosmologies emerging for these individuals, or might the resolution of two cosmologies result in a hybrid, eccentric form of cosmology? The ability to maintain two social context positions simultaneously may yet again reflect an individual personality variable.

(d) The problem of the centre

This problem concerns the generality of the grid/group scheme for industrialised societies. The theory is presented as a general scheme for all societies, but for exposition purposes it has been largely described in terms of the four extreme positions, corresponding to the four corners of the diagram as shown on p.4 (Figure 1)

(plus the fifth withdrawn low-grid, low-group cosmology). As such we must ask how many people in a modern society can meaningfully be placed towards one of these extremes, and how many are distributed somewhere around the centre? As this is a question about distributions one might look to a quantitative empirical answer. However, this answer is difficult to give for the following reason. When constructing a measuring scale based on a number of different measures combined in a polythetic manner, the criterion used to identify a meaningful dimension is the strong intercorrelation of the various measures that are intended to reflect that dimension. Thus for instance in our survey research we showed that grid was a valid way of summarising differences in social context because the various grid measures were all intercorrelated. If we then construct our scale by adding these measures, however, this means that the distribution will be determined by the pattern of correlations and will emerge as bimodal, with more people ending up towards the extremes of the scale than in the centre. In other words there is no independent way of motivating the definition of the scale so as to give a meaning to the actual size of intervals along it (an interval scale) as opposed to giving meaning to the rank ordering of items along it (an ordinal scale). With only an ordinal scale for defining social context (and it may be argued there are very few real interval scales in the social sciences), we should then perhaps look to the consistency of cosmologies to tell us what happens in the centre. The question then becomes one of whether the four (or five) cosmologies described by Mary Douglas are the only self-sustaining cosmological positions, such that people will tend to migrate towards one or another, but cannot maintain a stable position in between them. Until we have a good technique for assessing cosmologies this remains a question that is open to speculation but not to direct test. It would indeed be disappointing if it turned out that the majority of the population of a heterogeneous society fell into some central grey area of eclectic, loosely integrated cosmologies, and that the clear-cut areas in each corner were limited to a relatively small proportion of people.

(e) The withdrawn cosmology

As a conclusion, I shall turn to a problem that has been evident for some time - namely the placing of the hermit recluse on the grid/group map. A person who withdraws totally from society cannot be subject to the constraints of grid or group. Hence in her writings Mary Douglas has hesitated between taking him right off the diagram, or putting him in the low-grid/low-group corner. Unfortunately, this corner is then occupied by two very different cosmologies - the one of the successful entrepreneur, the 'big man', who is manipulating the others around him and is in a position of power, and the other for the withdrawn individual who has no interest in meeting others at all.

Alternative solutions to this question have been suggested. Rayner (personal communication) suggests a band of extreme low grid where this withdrawn cosmology will be found, thus placing the entrepreneur slightly higher up the grid dimension. In a previous

paper (Hampton 1976), I suggested taking the hermit off the map altogether, while Thompson (personal communication) would like to see him at the centre of a three-dimensional cube, with grid and group as two of the axes, and power as the third. Indeed the connection of power with the grid/group map is also discussed by Ostrander (chapter 1 of this volume) where he refers to the stable and unstable diagonals. The addition of a third dimension seems to be a good way of dealing with the withdrawn cosmology, but as Thompson's map is a plane drawn within a three-dimensional space, it will not differentiate positions on the grid/group diagram (except in the 'catastrophe regions' where the plane is folded over itself).

A different solution would be to have a third dimension for the grid/group map which, like grid and group, is a measure of social interactions and which would also be independent of them (unlike the power dimension). One would then have a cube in which any position may theoretically be occupied. Thus the hermit and entrepreneur would both be at low grid and low group, but they would occupy positions at different ends of the third dimension. Taking these two examples, it seems that what differentiates them most is the quantity of social interaction in which they are engaged. The entrepreneur represents a high extreme, and the hermit a low extreme. This third dimension (which I shall refer to as activity) may also be fruitfully used to differentiate the other three quadrants of the grid/group diagram. For instance in high grid, low group, a person with much social interaction would be a struggling entrepreneur who was losing the battle to remain at the centre of his networks, while a person with a low level of activity would be the alienated factory worker. In the low-grid, high-group corner, high levels of activity would describe the tightly-knit revolutionary sects (see Rayner, chapter 11 of this volume), while low levels would be exemplified by a monastic order with very little status , differentiation and very little interpersonal communication. Finally for high grid, high group, a high level of activity might describe a large organisation such as an army regiment, or a hospital, whereas low levels might correspond to life in a geriatric ward or in certain kinds of prison, where interaction was very rare, and always with the same few people.

This third dimension is only one possible variable which could prove useful for elaborating the theory of grid/group analysis in different directions. Clearly, caution must be taken in building new parts into a theory which is already rather 'top-heavy' in the relation of theoretical power to empirical evidence. However, the proposed new dimension should not prove difficult to define and measure empirically, and it does appear to follow the logic of the derivation of the grid and group social context dimensions. Thus, to follow Ostrander's characterisation (in chapter 1), grid is how one interacts, group is with whom, and activity is how much.

CONCLUSION

The understanding of how different societies are able to generate widely differing cultural viewpoints is crucial for placing a proper perspective on all our knowledge and beliefs. This paper

has been addressed to those with a proper scepticism about conceptual schemes that interpret the world without stating how the concepts may be operationalised, or making predictions about the outcomes of experiments. It is hoped that the project described here will have gone some way towards demonstrating the feasibility of grid/group analysis, so that fieldworkers may feel encouraged to draw on its insights for the development of their own research, and so contribute further to the development of the theory.

NOTES

1 This research was made possible by a grant from the Social Science Research Council of Great Britain.
2 Whether or not both directions of an association are shown, depends on the level of the criterion dividing high from low which produced the significant result. If it was a central criterion, then both (say) yes-with-high, and no-with-low are shown as typical responses. If it was a high criterion, then only the response associated with the high portion of the sample is considered significant. Similarly for a low criterion, only the no-with-low association would be shown.
3 One might of course argue that grid/group analysis could explain why the previous association had been observed. People might be in favour of violent punishments because an early end to their education led them into a particular grid/group social context. Thus the theory may be able to offer links that will explain previously observed connections between attitudes and social variables.

BIBLIOGRAPHY

ADORNO, T.W., Else FRENKEL-BRUNSWICK, D.J. LEVINSON and R.N. SANDFORD (1950), 'The Authoritarian Personality', New York, Harper.
ASCH, S.E. (1956), Studies of independence and conformity: a minority of one against a unanimous majority, 'Psychological Monographs' 70, whole no.416.
BEM, D.J. (1967), Self-perception: an alternative interpretation of cognitive dissonance phenomena, 'Psychological Review', 74:183-200.
DOUGLAS, M. (1978), 'Cultural Bias', London, Royal Anthropological Institute, occasional paper no.35.
FISHBEIN, M. (1966), The relationships between beliefs, attitudes and behaviour, in S. Feldman (ed.) 'Cognitive Consistency', New York, Academic Press.
FISHBEIN, M. and I. AJZEN (1975), 'Belief, Attitude, Intention and Behaviour', New York and London, Addison-Wesley.
FROMM, E. (1941), 'Escape from Freedom', New York, Farrar & Rhinehart.
HAMPTON, J.A. (1976), Grid-Group Analysis: a tool for cultural comparison, unpublished paper presented at a conference on 'American and European Values' in Jekyll Island, Georgia.
HOFSTEDE, G. (1975-78), Series of fourteen papers published as part of the Working Papers of the European Institute for Advanced Studies in Management, Brussels.

LIKERT, R.A. (1932), A technique for the measurement of attitudes, 'Archives of Psychology', no.140.

MILGRAM, S. (1974), 'Obedience to Authority: An experimental view', New York, Harper & Row.

ROKEACH, M. (1960), 'The Open and Closed Mind: Investigations into the nature of belief systems, and personality systems', New York, Basic Books.

SIEGEL, S. (1956), 'Nonparametric Statistics for the Behavioural Sciences', New York, McGraw-Hill.