

Part II: Attitudes and Culture.

"Universities are not intended to teach the knowledge required to fit men for some special mode of gaining their livelihood. Their object is not to make skilful lawyers or physicians or engineers, but capable and cultivated human beings"

John Stuart Mill, in Cavenagh (1931; p.133).

"A medical man likes to make psychological observations, and sometimes in the pursuit of such studies is too easily tempted ..."

George Eliot, Middlemarch, Chapter 30.

"Thou shalt not do as the dean pleases,
Thou shalt not write thy doctor's thesis
On education,

...

Thou shalt not answer questionnaires

... Thou shalt not sit

With statisticians nor commit

A social science ..."

W.H. Auden
(Under Which Lyre, 1946)

8: The ethical attitudes of medical students: Measurement.

"Chapter 1.

1. Ethics is a department of the Science or Study of Practice.
2. It is the study of what ought to be, so far as this depends upon the voluntary action of individuals.
3. In deciding what they ought to do, men naturally proceed on different principles, and by different methods."

Henry Sidgwick, The Methods of Ethics,

6th edition, 1901.

Summary.

The responses of 1325 medical and prospective medical students in the Birmingham, Cambridge and St. Mary's studies were assessed on a set of 112 attitude questions concerning ethical, moral, social and political attitudes. Factor analysis of the responses suggested the existence of eight independent factors, which are dominated by two super-ordinate factors, which have been labelled 'Libertarianism' and 'Tough-mindedness'. The test-retest correlations over periods of from 1 to 4 years are described.

The nature of ethical problems in medicine is such that very often it is impossible to attain a universal agreement as to right or wrong. Nevertheless it is inevitable that many practitioners will hold views on such matters as a part of their day-to-day working; and indeed Bradley (1983) has suggested that "every consultation has an ethical component". From a psychological viewpoint the important questions concern the origins of such attitudes, the factors determining change in them, and their inter-relation with other attitudes. Whilst in principle it is possible that each single ethical problem is considered in vacuo (ethical atomism), in practice it is the case that large numbers of ethical attitudes tend to cluster together, along with political, moral, social and religious values. Often these associations between attitudes are either obscure in logical terms, or even frankly inconsistent. Nevertheless, that they occur must be taken into account when considering ethical questions in general.

Previous studies of large numbers of attitudes have suggested that the answers to a multitude of attitude questions can be reduced to a relatively small number of dimensions. Thus Eysenck (1954) suggested that there were two major dimensions in politico-social attitudes; "Radicalism - Conservatism" and "Tough-mindedness - tender-mindedness", the latter dimension being named after William James' (1907) description of these philosophical positions. Eysenck noted that an alternative designation of Tough-mindedness would be "Authoritarianism" (after Adorno et al, 1950), and he also pointed out that "Humanitarianism" can be considered as the conjunction of Radicalism and Tendermindedness, and "Religionism" can be considered as the conjunction of Conservatism and Tendermindedness. Arblaster (1984; p.77) has pointed out that political systems per se can be characterised in a two-dimensional system of 'Liberalism vs Totalitarianism' and 'Authoritarianism vs Democracy',

which can be construed as corresponding to Radicalism-Conservatism and Tough-mindedness-Tender-mindedness respectively.

Eysenck (1975) extended his earlier analysis, arguing that on theoretical grounds it might be necessary to split "radicalism - conservatism" into two independent factors, "general conservative-radical ideology" and "socio-economic conservatism v. radicalism", and he produced a factor analysis demonstrating that result. However he also suggested that as many as ten factors might be interpretable, and he gives names to these factors: "Permissiveness, Socialism, Racism, Laissez-faire, Pacifism, Capitalism, Religion, Reactionary Individualism, Human Nature, and Libertarianism".

Himmelweit et al (1981) examined a set of political attitudes and concluded that a five-factor description was adequate, with their being two "supra-families" of attitudes. Although they did not actually name these clusters they say that those "within the first major family ... concern class or economic issues", and those "within the second supra-family ... concern law and order, the need for stricter laws and increase in the powers of the police, etc., views on capital punishment and the law on homosexuality as well as on immigration" (p.140). These two supra-families would therefore seem to be close to Eysenck's two major attitudinal dimensions.

The present chapter will ask how the answers to ethical questions inter-relate; that is, What is the structure of the medical students' ethical attitudes? A necessary concomitant of describing the structure of attitudes is that the questions themselves are presented extensively. In other chapters the development of attitudes, and their correlation with background and other factors will be considered.

It might be felt that the mere description of attitudes to ethical problems is of little use in actually resolving those problems, or determining some sort of 'correct action' for them (following the argument of John Stuart Mill, that one cannot derive what ought to be the case from a consideration of what is the case). Is so then studies of attitudes, such as this (and others of which Dunna and Shaw, 1983 and Young, 1984, will serve as examples) would be 'merely' of sociological interest. That view has however been disputed by Downie (1984) who has argued as a professional moral philosopher that the attitudes of practitioners (and indeed of the rest of the general public) are of interest and importance in determining moral standards since those attitudes in part help to determine the ethical climate for the rest of the profession and of the public; the system is therefore strongly interactionist in that the consensus ethical view of the whole profession itself helps to determine the ethics of individual members of the profession, who of course in a strict sense constitute the profession.

Method.

A pilot survey was carried out in the medical school of the University of Birmingham during 1974 (McManus, Daniels, and Cruickshank, unpublished). That questionnaire contained 66 questions on ethical, moral and political attitudes, and was completed by 330 students. All the questions were original with the sole exception of eight questions devised by Dean (1972) concerning attitudes towards General Practice. On the basis of the pilot study a more extensive questionnaire was developed containing 112 separate ethical questions (including those of Dean, 1972), each of which could be answered on a four-point Likert-type scale ("Definitely Yes", "Probably Yes", "Probably No", and "Definitely No")

(see e.g. Walton, 1967). These ethical questions were included in three separate studies:

1. The Birmingham study. In total 1008 questionnaires were completed by 817 students, of whom 191 completed the questionnaire on two separate occasions, separated by intervals of from 1 to 4 years. Since the purposes of the present study are primarily to examine the structure of attitudes, all 1008 responses are included in the analysis.
2. The Cambridge Study. 164 questionnaires were completed, which represents a response rate of 58.6%.
3. The St. Mary's study. The questionnaire was completed by all but one of the applicants interviewed at the school during the winter of 1980-1981, and by 7 of the 13 applicants given a place without interview that year. 344 questionnaires were completed in all.

Statistical analysis was by means of the Statistical Package for the Social Sciences (SPSS) (Nie et al, 1975; Hull and Nie, 1981).

Results.

Overall 1516 questionnaires were completed by 1325 students. Not all students answered all questions and hence sometimes totals differ from these values. Three students answered none of the ethical questions, and one answered only four of the ethical questions. For the remaining 1512 questionnaires, a mean of 102.7 questions was answered (median = 106.7; SD = 11.95; 5th percentile = 79; range = 23 to 112).

Two separate types of question can be asked of these data. The first concerns means, and takes the form, "How many people agreed or disagreed with a particular view-point?". Such questions are inherently unsatisfactory since they are heavily dependent upon the idiosyncrasies of the particular wording of the questions, a slight change often producing substantial changes in response pattern. Little emphasis should therefore be put upon absolute proportions of responses. Nevertheless relative judgements may still be made, concerning differences between groups of individuals who agree or disagree with particular statements. The second type of question that can be asked considers variances, covariances or correlations (all of which are essentially independent of means) and take the form, "Do people who answer Yes on one question also tend to answer Yes on another particular question?". Such questions are rather more useful as an analytical starting point. In particular they allow the potential, via the statistical techniques of factor analysis, of reducing the apparently inchoate results of 112 separate questions to a more limited and manageable set of values which encapsulate the essence of the responses of an individual. To take an extreme case, if the responses to two questions correlate perfectly then either alone tells all there is to know about the other. The problem is therefore to determine the optimum number of dimensions for describing the answers to the 112 questions.

A principal factor analysis (option PA2 of SPSS) was carried out on the 100 x 100 Pearsonian correlation matrix generated from the first 100 of the 112 questions (this circumvention was necessary since for computational reasons SPSS limits analyses to 100 variables). Correlation matrices were generated using 'pair-wise' deletion of missing values. A similar analysis was then carried out for the last 100 of the 112 questions. Examination of the eigen-values for these analyses by

means of the 'scree-slope' technique (Cattell, 1966) suggested that a total of eight independent factors were found in the correlation matrices. The 100 questions with the highest communalities on the first eight factors in the two analyses together were then subjected to further analysis. It was clear from the scree-slope analysis (figure 8-1) that the first two of these factors were of much greater importance than the other six. Two separate principal factor analyses were therefore carried out; the first looked for eight independent factors, which will be called factors 1 to 8; the second looked for just two superordinate factors, which will be called factors I and II. After extraction of factors a Varimax rotation was carried out to simplify the interpretation of factors, and a set of scores was computed for each subject on the ten derived factors (by the FACSCORE option, up to half of the variables being permitted to be missing, missing values being replaced by population means). Each score was standardised so that across all questionnaires analysed a mean score of zero and a variance of unity was produced. Together factors 1 to 8 account for 30.7% of the total variance in the responses to the questions, and factors I and II accounted for 48.1% of the common variance in the eight main factors.

Tables 8-1 to 8-8 summarise factors 1 to 8. For each factor is shown the questions which have absolute loadings of greater than .2 on that factor, a loading being the correlation of that item with the underlying factor dimension. Positive loadings indicate that high positive scorers on the factor are more likely to answer Yes to that question, and negative loadings that high positive scorers are more likely to answer No. Not all questions load on a single factor, and where this is the case the other 'significant' loadings (i.e. absolute loading greater than 0.2) have also been indicated. A few questions, which are indicated by an asterisk, and which did not come within the top

100 communalities, have been included despite having loadings of less than 0.2, since otherwise these variables would have been omitted completely from the tables; they have been placed in the table(s) on which they have the largest loading. Tables 8-1 to 8-8 also show the number of students who answered a particular question, and the percentages who made each of the four possible responses. It should be remembered that two variables having similar loadings on a factor need not have similar distributions of answers in each of the response categories, since one is a function of means and the other of correlations. The numbers adjacent to questions indicate their position on the original questionnaire, and hence the order in which they were presented.

Table 8-9 shows the relationships between the eight main factors and the two superordinate factors. It is clear that factors 1 to 5 share substantial variance with factors I and II, each of the five showing slightly different patterns of correlation. However with the possible exception of factor 1, all five factors contain a substantial proportion of variance which is unique to themselves, and unaccounted for by factors I and II. If an oblique factor structure were contemplated then factors 1 and 4 would be related, as would factors 2 and 5, with factor 3 being related to each of the two clusterings; in other words, questions within a cluster could be construed as measuring different aspects of the same thing. Factors 6,7 and 8 show no relationship with factors I and II and thus must stand in their own right as assessing truly independent sets of attitudes.

The most difficult aspect of factor analytic studies is 'reification' - the identification and naming of factors. In a strictly mathematical sense absolute identification is impossible since any arbitrary rotation may be applied to the factors and yet leave their relative positions unchanged. Nevertheless the pragmatic advantages of naming are enormous, since it allows conceptual identification and analysis, despite the inevitable idiosyncrasies of interpretation which might arise. In practice it is often difficult to find names which adequately describe a complex set of attitudes, and usually it is necessary to concentrate only on those items with high loadings in order to name a factor.

Factors 1 and 4 are clearly related in that both load on factor I. Factor 1 seems to be primarily concerned with the issues of abortion, infanticide, euthanasia, suicide and contraception. Factor 4 is dominated by the problems of personal drug usage, homosexual freedom and the control of pornography. Both are concerned with the freedom of the individual, and therefore it is intended to call factor 4 "Personal libertarianism" and factor 1 "Vital libertarianism" (since it is primarily concerned with the relationship between the individual and questions of life and death).

Factors 2 and 5 are related in that each loads heavily on factor II. Factor 5 is primarily concerned with economic matters, being in favour of private practice, high wage differentials, and commercial competition, and against high taxation and wealth re-distribution; it is therefore called "economic conservatism" (although "economic tough-mindedness" or even simply "Capitalism" (following Eysenck) would be reasonable alternatives). Factor 2 is primarily concerned with the relationships between individual problems and society, and positive scores indicate a

tough response e.g. in favour of capital punishment and harsh treatment of criminals, compulsion in dealing with genetic problems and contraception, and a lack of sympathy for sociological and psychological problems; it is therefore called "Social Tough-mindedness".

Factor 3 loads on both factor I (positively) and II (negatively). Scrutiny of the items in table 8-3 suggests that the items are fairly heterogenous, and the best simple description of this item is probably "Liberalism" (i.e. libertarian tendermindedness, or humanitarianism as Eysenck (1954) suggested).

Factors I and II may also be named. The emphasis on liberty in factors 1, 3 and 4 suggests that factor I is best labelled "Libertarianism". The emphasis upon firmness in factors 2 and 5 (and on compassion in the negative loading on factor 4) suggests that factor II is best labelled "Tough-mindedness".

Factor 6 is the most difficult of the factors to name. It seems to be primarily concerned with medical problems, and since a high score seem to indicate a concern with controlling either the practice of medicine itself, or its application to society, the best, albeit somewhat unsatisfactory, name seems to be "Medical control".

Factor 7 is concerned only with Sex Education, and will be so called. High scorers are in favour of increased sex education.

Factor 8 consists almost entirely of questions from Dean's (1972) questionnaire on attitudes to general practice, and can simply be called "General Practice". High scores indicate sympathy with the needs of general practice.

Since a number of Birmingham students were tested on two occasions, over intervals of one to four years, it is possible to gain some idea of the test-retest stability of the attitudinal dimensions; the correlations are shown in table 8-10. On most items the correlations are sufficiently high to mean that the scales are empirically useful. It should be remembered that in part a low correlation may reflect a genuine change in attitudes rather than simple unreliability of the instrument, particularly given that on some scales there are changes in the mean values over the intervals. This is particularly the case with factors 1, 4, 8 and I, in which the test-retest correlation declines linearly with the interval between testing, suggesting that the factor being assessed is more of a 'state' than a 'trait' measure (i.e. it is not a fixed aspect of personality but is changing as the person develops). The question of change in these scores will be developed more fully in chapters 9 and 13.

Discussion.

In this chapter has been described the results of administering a questionnaire on ethical, social, and political attitudes to over 1300 medical students, and the inter-relations of the responses to those questions, deriving eight factors and two super-factors which contain a high proportion of the total variance in the responses. It must be stressed however that in extracting these factors it is not implied that no other dimensions are important, only that such other factors are sufficiently isolated within the context of the questionnaire to make them indistinguishable from background variation. A more extensive study might reveal them.

The eight separate attitudinal dimensions may be summarised:-

1. Vital Libertarianism. This factor concerns the relationship between individuals and matters of life and death. High scorers are more sympathetic to abortion, infanticide, euthanasia, suicide and contraception.
2. Social Tough-mindedness. This factor is concerned with the relationship between the problems of individuals and the response of society; high scorers are in favour of capital punishment, harsh treatment of criminals, compulsion in dealing with genetic problems and contraception, and they show a lack of sympathy for sociological and psychological problems.
3. Liberalism. This factor includes a miscellaneous range of general items, although it excludes many which would come under the conventional heading of liberalism, but which here appear in other factors (such as 1, 2, 4 and 5). High scorers feel that doctors sometimes impose ethical and political views on patients, that science has dehumanised medicine, that politics is relevant to medicine, that a detailed knowledge of anatomy is not essential for all doctors, that environment is more important than genetics in determining intelligence, that not all forms of advertising are acceptable, and that racism might explain the lack of promotion of doctors of Asian origin. In some sense this factor might be labelled 'Humanitarianism'.
4. Personal libertarianism. This factor is primarily concerned with individual freedom, and high scorers are sympathetic to the problems of homosexuals, to personal drug usage, and the availability of pornography.

5. Economic conservatism. This factor primarily concerns economic matters, high scorers being in favour of private medical practice, larger wage differentials and commercial competition, and are opposed to high taxation and wealth re-distribution.
6. Medical control. This factor is primarily concerned with the control of medicine and its applications. High scorers are in favour of stricter control of barbiturate prescription, and of ECT, would welcome more information about medicine in the newspapers, are in favour of patients being given more information about their illnesses, and are sympathetic to sociological and psychological aspects of medicine.
7. Sex education. High scorers are in favour of earlier sex education.
8. General practice. High scorers are sympathetic to the needs of general practice.

In addition, two orthogonal super-ordinate factors were derived: I, labelled as 'Libertarianism', correlated positively with factors 1, 3 and 4; II, labelled as 'Tough-mindedness' correlated positively with factors 2 and 5 and negatively with factor 3.

It must finally be emphasised that the present approach does not say that there is any necessary logical, philosophical, ethical or causal link between the various items in each of the factors, but rather it merely says that these items are psychologically related in so far as knowing a person's attitude on one item will allow a better prediction of the other items than chance would suggest.

Figure 8-1: Shows the eigen-values of the first 35 factors plotted against the factor-number. A best-fitting scree-line has been plotted by eye.

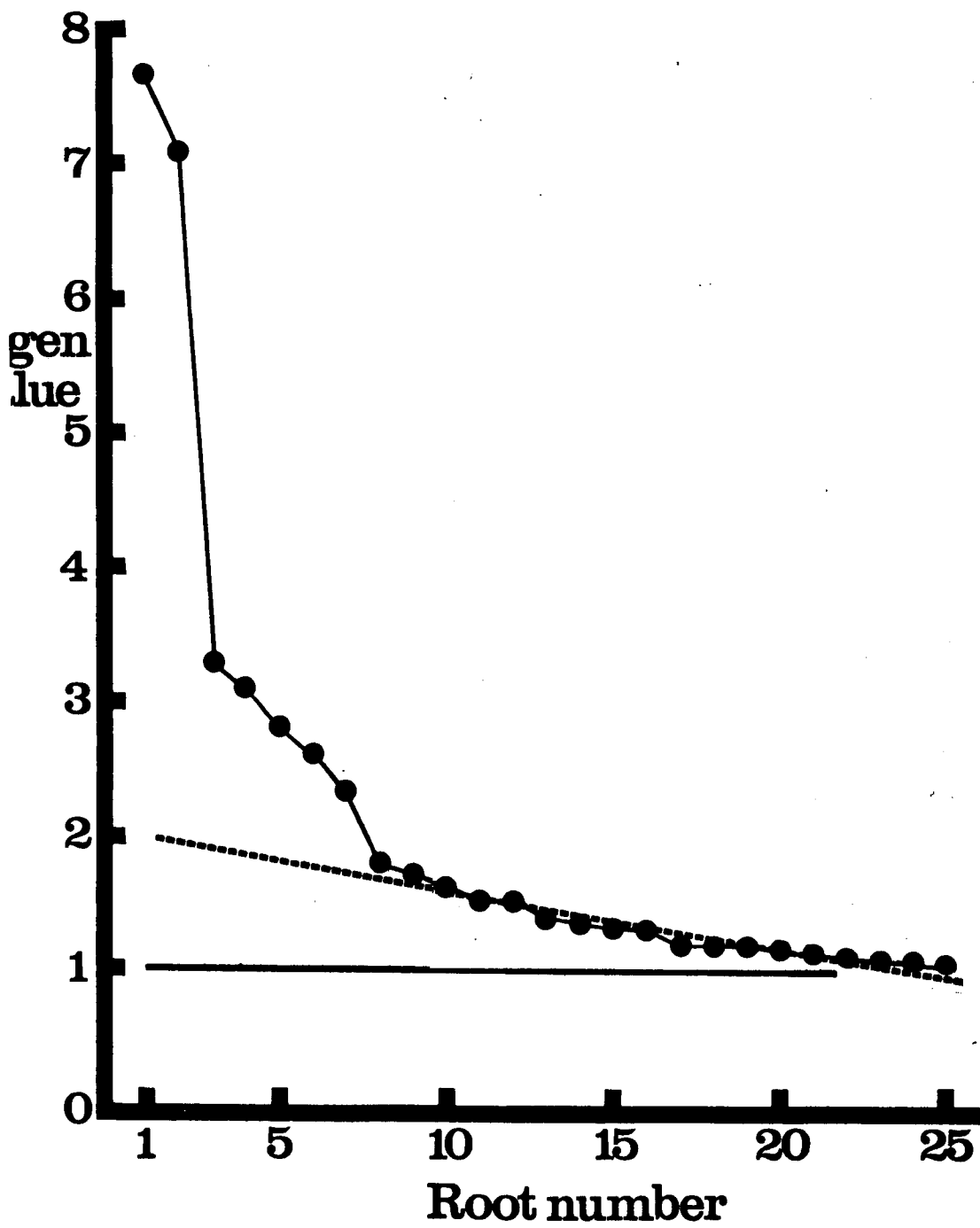


TABLE 10-11. OTHER LOADINGS OF INDIVIDUAL QUESTIONS ON FACTOR 1. The number of respondents answering that question, and the percentages giving each of the four possible responses.

	factor 1 loading	Other loadings			N	Def Yes	Prob Yes	Prob No	Def No
		factor	loading	factor					
32. In which of the following situations in which an abortion has been requested would you think that it should be performed?									
v. A 25-year old woman who has been raped.	.79				1440	63.5	25.6	7.2	3.8
ii. A woman known to be definitely bearing a fetus with spina bifida.	.78				1436	60.5	28.0	6.3	5.2
iv. A 13-year old girl who has been raped.	.77				1450	76.8	17.6	2.4	3.2
vi. An unmarried woman who is pregnant as a result of failed contraception.	.76	4	.24		1440	28.3	34.3	24.2	13.2
iii. A woman who might have had German Measles earlier in pregnancy.	.72				1397	32.1	40.9	19.2	7.8
viii. A 38-year old mother of six.	.72				1422	31.6	29.9	25.0	13.5
vii. A woman who has failed to use any form of contraception.	.64	4	.24		1432	14.3	25.3	34.1	26.3
i. A woman with congenital heart disease who is unlikely to survive the rigours of childbirth.	.64				1460	77.1	19.0	1.8	2.1
Should immediate infanticide be permissible for children born with gross multiple abnormalities?	.47	2	.36		1386	21.9	34.6	23.2	20.3
Should euthanasia be possible if a patient has previously agreed to it whilst in full possession of his faculties?	.42	6	.38	4	1406	24.7	43.2	19.2	12.9
Does the individual have the right to commit suicide?	.32	4	.30	3	1409	43.9	34.0	11.7	10.4
Should euthanasia be possible if a patient has previously made no statement as to his wishes?	.32	1	.30		1404	3.8	19.1	34.3	43.7
Should the following be provided or allowed under the NHS?									
iii. Contraception	.30	4	.22	3	1480	72.2	22.0	3.3	2.5

Do Jehovah's Witnesses have the right to expect that their children will be treated in accord with their own wishes?

-.13

1371 6.2 19.7 36.9 37.2

the number of respondents answering that question, and the percentages giving each of the four possible responses.

		factor 2 loading	factor loading	factor loading	N	Def Yes	Prob Yes	Prob No	Def No
72. Do you think that capital punishment should be brought back:									
i. for murder of police or prison officers?	.60	5	.44		1434	19.2	22.9	22.2	35.6
ii. for all murders?	.59	5	.27		1440	10.3	13.1	25.3	51.3
iii. for acts of terrorism?	.55	5	.44		1438	30.6	22.6	17.5	29.3
98. Is compulsion preferable to education in decreasing birth rates in the developing world?	.40				1377	3.7	14.5	45.8	36.1
21. Was the introduction of the NHS a retrograde step?	.37				1417	1.4	4.9	30.9	62.7
46. Should immediate infanticide be permissible for children born with gross multiple abnormalities?	.36				1386	21.9	34.6	23.2	20.5
48. Should euthanasia be possible even if a patient has previously made no statement as to his wishes?	.32	1	.30		1404	3.8	18.1	34.3	43.7
40. Should all known carriers of genetic disease be sterilized?	.31	3	-.29		1425	2.5	12.1	38.8	46.5
71. Should mentally ill criminals be treated in prisons rather than in hospitals?	.30				1393	3.8	16.8	47.0	32.4
73. Are people motivated to work only by financial reward?	.28				1462	1.6	18.3	36.3	43.9
24. Is psychosurgery justified on convicted criminals?	.27				1360	3.1	17.8	40.4	38.8
84. Is the purpose of prison to punish rather than to reform or rehabilitate?	.25				1374	12.7	36.9	31.6	18.8
91. Is poverty in this country primarily a result of personal inadequacy?	.23	5	.32		1319	3.4	25.9	47.2	23.5
60. Do you think only pre-clinical medicine should be taught which is directly relevant to clinical medicine?	.21				1434	6.3	16.1	48.5	28.0
83. Would severe statutory prison sentences be the best means of deterring potential rapists?	.19	3	-.18		1415	11.2	26.7	48.8	13.2
*78 Are entrance charges for museums and art galleries desirable?	.18	4	-.16		1455	10.8	27.8	31.9	29.6
*109 Is it of any consequence if racial differences in intelligence are demonstrated?	.12	5	.14		1370	15.0	26.6	35.1	21.3

(continued)

		factor 2 loading	factor loading	factor loading	N	Def Yes	Prob Yes	Prob No	Def No
*36	Do Jehovah's Witnesses have the right to expect a dangerous operation without the administration of blood?	-.15			1380	12.6	24.3	35.4	27.7
45.	Would you welcome more articles about medicine in the newspapers if the articles were responsible and accurate?	-.21	6	.38	1491	63.6	27.9	8.6	1.9
111.	Is co-education desirable in secondary schools?	-.21	3	.20	1409	51.1	39.7	8.9	2.3
107.	Should more consideration be given to social and psychological factors in disease?	-.22	6	.34	1419	28.8	63.4	7.3	0.6
52.	Do you think the GP will play a vital role in the delivery of medical care in the future?	-.22	3	.25	1428	48.2	49.8	7.2	0.7
34.	A doctor has a patient who refuses the first-line treatment offered to him. Is it the doctor's duty to offer an alternative form of treatment?	-.26			1465	37.4	51.3	9.4	2.0
75.	Should the distribution of wealth in this country be made more equal?	-.26	5	-.58	1389	16.1	31.7	36.9	15.3
103	Can sociologists provide insights into medical practice?	-.34	6	.29	1254	15.4	60.2	20.6	3.8
90	Has sociology a valid place in a university?	-.35	6	.24	1326	28.7	52.5	13.5	5.4
102	Should the state provide care and accommodation for the elderly?	-.37			1461	70.8	26.5	2.4	0.3
70	Should insanity be regarded as a mitigating factor in criminal proceedings?	-.40			1365	26.3	54.9	14.9	3.8
80	Should one make all possible efforts to save the life of a person who has taken his tenth overdose in three months and is not psychiatrically ill?	-.40			1447	56.1	24.3	15.5	4.0
79	Should one make all possible efforts to save the life of a first-time overdose?	-.43			1493	88.5	10.7	0.5	0.3

		factor 3 loading	other landings factor loading	factor loading	N	Def Yes	Prob Yes	Prob No	Def No
66.	Do you think that consultants might often put over their own political views under the guise of medical opinion?	.50			1297	15.3	48.7	33.5	2.5
50.	Do you think that there is a tendency for Asian doctors in the NHS to not be given promotion because of their race?	.46			1192	9.2	40.0	48.1	7.6
104.	Do doctors sometimes impose their own moral pre-conceptions upon their patients?	.45			1427	29.5	65.0	5.2	0.4
106.	Have scientific advances in medicine led to a dehumanised attitude to patients?	.40			1429	9.3	48.4	40.0	7.3
25.	Do GPs prescribe psychoactive agents too commonly as a panacea for all ills?	.40			1259	22.6	58.9	16.8	1.8
23.	The Inverse Care Law says that in this country the areas with the greatest medical need have the least medical resources: can this be true?	.37			1334	19.0	53.5	24.8	2.7
44.	Is politics relevant to medicine?	.35			1420	25.8	31.1	17.2	26.0
42.	Is it possible that civilisation will cause more disease than it cures?	.31			1392	9.1	45.4	38.5	7.0
55.	Do you think the GP should play a larger role in the teaching of the medical student?	.31	8	-.38	1403	38.6	48.8	11.4	1.3
41.	Is poverty still a major cause of disease in this country?	.30			1417	10.8	28.9	46.9	13.4
62.	Should teaching of undergraduates at peripheral hospitals be encouraged?	.30			1340	29.8	54.9	14.7	0.7
65.	Should students be encouraged to question views expressed by consultants?	.29	6	.22	1450	44.7	51.5	3.6	0.2
28.	Should the following be provided or allowed under the NHS? iv. Providing heroin for addicts	.28	4	.23	1441	10.2	27.7	29.6	32.5
105.	Is there much in good medical diagnosis that cannot be written down in books?	.27			1358	38.2	53.5	9.3	1.0
26.	Should the following be provided or allowed under the NHS? 11. Cosmetic surgery	.26			1452	16.5	38.2	29.3	16.0
17.	Do you think that the GP tends to develop more interesting relationships with his patients than does the hospital consultant?	.26			1430	35.7	52.5	11.0	0.8
12.	Do you think the GP will play a vital role in the delivery of medical care in the future?	.25	2	-.22	8	48.2	43.8	7.2	0.7
12.	Should greater status be given to ability and experience rather than to educational qualifications?	.25	6	.23	1378	30.9	55.5	12.4	1.2

(continued)

		loading	factor	loading	factor	loading	N	Def Yes	Prob Yes	Prob No	Def No
95.	Should cannabis be legalised in this country?	.24	4	.40			1422	9.4	19.4	33.1	38.2
64.	Is practical experience more important than academic knowledge in the education of medical students?	.24					1354	20.7	56.6	21.0	1.7
26.	Should the following be provided or allowed under the NHS?										
	1) Trans-sexual surgery										
56.	Do you think that the financial reward of the GP is satisfactory relative to other branches of medicine?	.23	4	.30			1446	9.8	28.6	30.6	31.2
51.	Do you think it is more difficult for the GP than for the hospital consultant to keep up to date in medicine?	.22	6	-.24			1213	19.7	53.0	21.4	5.9
88.	Does the individual have the right to commit suicide?	.22	1	.32	4	.30	1412	21.0	58.4	19.3	3.3
75.	Should the distribution of wealth in this country be made more equal?	.22					1408	48.9	34.0	11.7	10.4
77.	Should there be encouragement of profit-sharing schemes for employees?	.21	5	-.58	2	-.26	1389	18.1	31.7	36.9	15.3
107.	Should more consideration be given to social and psychological factors in disease?	.21	6	.23			1406	36.3	58.1	4.8	1.1
111.	Is co-education desirable in schools?	.21	6	.34	2	-.22	1419	28.8	63.4	7.3	0.6
26.	Should the following be provided or allowed under the NHS?	.20	2	-.21			1409	51.1	39.7	6.9	2.3
	iii) Contraception										
63.*	Does repetition provide a useful way of emphasising important points in a curriculum?	.20	1	.30	4	.22	1480	72.2	22.0	3.3	2.5
96.	Do you think that genetics is far more important than environment in determining intelligence?	-.14					1464	31.9	55.5	9.8	2.8
83.	Would severe statutory prison sentences be the best means of deterring potential rapists?	-.18					1396	6.5	29.6	48.1	15.8
98.	Should the consultant be the only person responsible for making decisions about patient management?	-.18	2	.19			1415	11.2	26.7	48.8	13.2
61.	Is a detailed knowledge of anatomy essential for all doctors?	-.19	8	.19			1414	2.4	10.6	52.3	34.7
98.	Do you consider that all forms of advertising are acceptable?	-.21					1448	43.4	36.5	17.1	3.0
108.	Is it reasonable to object to the use of ECT simply because its mode of action is unknown?	-.23					1482	3.7	16.2	41.9	38.2
40.	Should all known carriers of genetic disease be sterilised?	-.24	6	.31			1280	8.0	26.2	45.0	18.8
38.	Should amniocentesis be compulsory for all pregnant women?	-.29	2	.31			1425	2.5	12.1	38.8	46.5
		-.43	6	.35			1482	7.4	29.7	33.5	3.5

the number of respondents answering that question, and the percentage giving each of the four possible responses.

		factor 4 loading	factor loading		factor loading	N	Def Yes	Prob Yes	Prob No	Def No
			3	.24						
95.	Should cannabis be legalised in this country?	.40				1422	9.4	19.4	33.1	38.2
101.	Concerning homosexuality:- iv) Should homosexual couples be allowed to adopt children?	.31	5	-.31		1401	3.1	8.6	32.3	56.1
26.	Should the following be provided or allowed under the NHS?									
	i) Trans-sexual surgery	.30	3	.23		1446	9.6	28.6	30.8	31.2
89.	Does the individual have the right to commit suicide?	.30	1	.32	3	1409	43.9	34.0	11.7	10.4
47.	Should euthanasia be possible if a patient has previously agreed to it whilst in full possession of his faculties?	.27	1	.42	6	1406	24.7	43.2	19.2	12.9
32.	In which of the following situations in which an abortion has been requested would you think that it should be performed?									
	vi) An unmarried woman who is pregnant as a result of failed contraception.	.24	1	.76		1440	28.3	34.3	24.2	13.2
	vii) A woman who has failed to use any form of contraception.	.24	1	.64		1432	14.3	25.3	34.1	26.3
26.	Should the following be provided or allowed under the NHS?									
	iv) Providing Heroin for addicts	.23	3	.28		1441	10.2	27.7	29.6	32.5
10.	Should researchers be allowed to research into differences in intelligence between races?	.23	5	.28		1433	30.4	47.5	16.6	5.6
16.	Should the following be provided or allowed under the NHS?									
	ii) Contraception	.22	1	.30	3	1480	72.2	22.0	3.3	2.5
	Is knowledge an end in itself?	.20				1331	19.2	16.2	28.2	36.4
*	Are entrance charges for museums and art galleries desirable?	.16	2	.16		1455	10.8	27.8	31.9	29.6

* Is it reasonable to remove kidneys for transplantation from any accident victim, post mortem, unless specific written evidence to the contrary is found?

Should more health education be used to discourage cigarette smoking?

(continued)

-.15
-.15

1472 31.6 34.9 21.5 12.0
1487 66.1 22.4 8.7 2.8

	factor 4 loading	factor loading	factor loading	N	Def Yes	Prob Yes	Prob No	Def No
38.* Are the powers of the General Medical Council too far-reaching?	-.16	8	-.16	764	2.7	17.8	68.5	11.0
67.* Is practical experience more important than academic knowledge in the education of medical students?	-.20			1378	14.2	27.9	36.7	21.3
43. Should all research on test-tube babies be prohibited?	-.20			1449	4.5	7.2	46.7	41.6
31. Should legislation be used to restrict cigarette consumption?	-.22			1471	20.5	20.1	32.1	27.3
29. Should barbiturate prescriptions be controlled by stricter legal procedures?	-.24	6	.43	1279	22.3	50.9	22.9	3.9
101. Concerning homosexuality:--								
i) Is it pathological rather than just a variation of normal sexuality?	-.26			1173	4.3	23.6	51.6	20.5
iii) Should homosexuals be encouraged to be heterosexual?	-.36			1331	10.1	31.0	42.4	16.6
14. In your opinion does television violence exacerbate teenage crime?	-.45			1418	14.6	47.4	31.5	6.6
13. Is there too much violence on television?	-.54			1446	17.6	42.5	31.4	8.6
5. Is all pornography morally harmful to the individual?	-.65			1455	6.3	12.8	52.5	26.5
6. Should the public display of pornographic material be more strictly controlled?	-.65			1454	21.0	40.4	32.1	6.5
7. Should the availability of pornographic material be more strictly controlled?	-.69			1453	16.4	33.4	40.5	9.6

Table B-5: Shows Loadings of individual questions on factor 5, together with the number of respondents answering that question, and the percentages giving each of the four possible responses.

	factor 5 loading	other loadings				N	Def		Prob		Def	
		factor loading	factor loading	factor loading	factor loading		Yes	No	Yes	No	Yes	No
38. Is private practice acceptable if it is entirely independent of the NHS?	.51					1435	82.9	6.0	28.2	6.0	3.0	3.0
36. Is heavy taxation at high income levels discouraging personal initiative and incentive?	.49					1454	35.9	20.8	39.1	20.8	4.2	4.2
34. Are wage differentials important for encouraging skilled labour amongst manual workers?	.46					1420	34.5	5.9	58.0	5.9	1.6	1.6
32. Do you think that capital punishment should be brought back: ii) for murder of police or prison officers iii) for acts of terrorism	.44 .44		.60 .55	2 2		1434 1438	19.2 30.6	22.2 17.5	22.9 22.6	22.2 17.5	35.6 29.3	35.6 29.3
7. Is private practice acceptable for consultants within the NHS using NHS facilities?	.41					1378	14.2	36.7	27.9	36.7	21.3	21.3
7. Is commercial competition necessary for progress in drug research?	.38					1454	25.2	16.1	52.9	16.1	5.8	5.8
1. Is poverty in this country primarily a result of personal inadequacy?	.32		.23	2		1319	3.4	47.2	25.9	47.2	23.5	23.5
00. Should the consultant be the main person to make decisions about resource allocation and priorities in his own hospital?	.30					1385	9.0	31.9	48.7	31.9	10.5	10.5
10. Should researchers be allowed to research into differences in intelligence between races?	.28		.23	4		1483	30.4	16.6	47.5	16.6	5.8	5.8
Is a strong professional identity necessary for the practice of good medicine?	.28					1362	26.2	20.6	47.3	20.6	5.9	5.9
Do you think that capital punishment should be brought back: 1. for all murders?	.27		.59	2		1440	10.3	25.3	13.1	25.3	51.3	51.3
Is aggression part of human nature?	.23					1485	54.5	3.2	40.8	3.2	1.5	1.5
Should GPs be able to prescribe brand-name drugs when cheaper equivalents exist?	.21		-.21	6		1411	10.5	44.9	23.5	44.9	21.1	21.1
Is it of any consequence if racial differences in intelligence are demonstrated?	.14		.12	2		1370	15.0	35.1	28.6	35.1	21.3	21.3

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Table 8-5: Continued.

	factor 5 loading	factor	loading	factor	loading	N	Def Yes	Prob Yes	Prob No	Def No
*82. Should the doctor-patient relationship be completely confidential, even at the possible risk to other individuals? (e.g. a patient who says that he is sure he is going to murder his wife).	.09					1409	13.4	25.7	49.3	11.6
*30. Should more health education be used to discourage cigarette smoking?	-.18	4	-.15			1487	66.6	22.4	8.7	2.8
22. Are psychiatric hospitals in need of greater funds and resources, if necessary at the expense of other parts of the Health Service?	-.23					1287	8.8	41.6	42.2	7.4
103. Can sociologists provide insight into medical practice?	-.23	2	-.34	6	.29	1254	15.4	60.2	20.6	3.8
90. Has sociology a valid place in a university?	-.24	2	-.35	6	.24	1326	28.7	52.5	13.5	5.4
101. Concerning homosexuality:- iv. Should homosexual couples be allowed to adopt children?	-.31	4	.31			1401	3.1	8.6	32.3	58.1
75. Should the distribution of wealth in this country be made more equal?	-.58	2	-.26	3	.21	1389	18.1	31.7	36.9	15.3

	factor 6 loading	factor loading	factor	loading	factor	N	Def Yes	Prob Yes	Prob No	Def No
29. Should barbiturate prescription be controlled by stricter legal procedures?	.43	4	.24			1279	22.3	50.9	22.9	3.9
81. Is ECT (Electro-convulsive therapy) a treatment whose usage should be more strictly controlled?	.40					1108	28.5	46.1	21.6	3.8
47. Should euthanasia be possible if a patient has previously agreed to it whilst in full possession of his faculties?	.38	1	.42	4	-.27	1406	24.7	43.2	19.2	12.9
45. Would you welcome more articles about medicine in the newspapers if the articles were responsible and accurate?	.38	2	-.21			1481	83.6	27.9	8.6	1.9
38. Should amniocentesis be compulsory for all pregnant women?	.35	3	-.43			1046	7.4	22.7	32.5	37.5
107. Should more consideration be given to social and psychological factors in diseases?	.34	2	-.22	3	.21	1419	28.8	63.4	7.3	0.6
108. Is it reasonable to object to the use of ECT simply because its mode of action is unknown?	.31	3	-.24			1280	8.0	28.2	45.0	18.8
03. Can sociologists provide insights into medical practice?	.29	2	-.34	5	-.23	1254	15.4	60.2	20.6	3.8
15. Should more cancer patients be told the true nature of their condition?	.28					1372	24.2	48.1	24.8	1.9
7. Does parapsychology (ESP, psychokinesis, etc.) deserve serious study?	.27					1316	33.2	50.9	12.5	3.4
0. Has sociology a valid place in a university?	.24	2	-.35	5	-.24	1326	28.7	52.5	13.5	5.4
12. Should greater status be given to ability and experience rather than to educational qualifications?	.23	3	.25			1378	30.9	55.5	12.4	1.2
7. Should there be encouragement of profit-sharing schemes for employees?	.23	3	.21			1406	36.3	58.1	4.6	1.1
3. Do patients have the right to full information about their own illnesses?	.22					1455	40.1	42.3	15.1	2.5
5. Should students be encouraged to question views expressed by consultants?	.22	3	.29			1450	44.7	51.5	3.8	0.2
11. Concerning homosexuality:-										
*11. Are homosexuals born rather than made?	.21					1316	3.0	38.4	46.1	12.5
19. Is it likely that criminality will be shown to be a genetic trait?	.16					1324	1.7	22.4	61.2	14.8
18. Are the powers of the General Medical Council too far-reaching?	.16	8	-.16	4	.16	764	2.7	17.8	68.5	11.0
1. Should GPs be able to prescribe brand-name drugs when cheaper equivalents exist?	-.21	5	.21			1411	10.5	23.5	44.9	21.1
i. Do you think that the financial reward of the GP is satisfactory relative to other branches of medicine?	-.24	3	.22			1213	19.7	53.0	21.4	5.9

Table 8-7: Shows loadings of individual questions on factor 7, together with the number of respondents answering that question, and the percentages giving each of the four possible responses.

	factor 7 loading	factor loading		N	Def Yes	Prob Yes	Prob No	Def No
		factor	loading					
92. Should children be given sex education at the following ages:-								
ii. 6 - 9 years?	.91			1421	16.6	26.8	31.9	24.0
i. before 5 years?	.86			1369	7.3	9.1	24.9	58.7
iii. 10 - 12 years?	.53			1432	52.9	35.3	8.0	3.8

Table B-8: Shows loadings of individual questions on factor 8, together with the number of respondents answering that question, and the percentages giving each of the four possible responses.

	factor 8 loading	factor loading		N	Def Yes	Prob Yes	Prob No	Def No
		factor	loading					
54. Do you think the GP deserves as much prestige in the medical profession as does the hospital consultant?	.52			1419	44.1	38.4	14.9	2.8
59. Are GPs as well qualified as hospital consultants?	.45			1248	14.3	38.3	39.2	8.2
52. Do you think the GP will play a vital role in the delivery of medical care in the future?	.31	3	.25	2	48.2	43.8	7.2	0.7
55. Do you think the GP should play a larger role in the teaching of the medical student?	.38	3	.31	1403	38.6	48.8	11.4	1.3
<hr/>								
*38. Are the powers of the General Medical Council too far-reaching?	-.16	4	-.16	6	2.7	17.8	68.5	11.0
99. Should the consultant be the only person responsible for making decisions about patient management?	-.19	3	-.19	1414	2.4	10.6	52.3	34.7
58. Do you think most doctors enter general practice because they would be unable to get a hospital consultant's post?	-.39			1339	1.3	17.3	60.2	21.2
53. Do you think the working environment of the GP is less intellectually stimulating than that of the hospital consultant?	-.46			1439	18.7	45.2	24.3	11.8

Table 8-9: Shows the inter-correlations between the two super-ordinate factors and the eight main factors.

		Super-ordinate factors	
		I	II
		"Libertarianism"	"Tough-mindedness"
1	"Vital liberatarianism"	.827	.159
2	"Social tough-mindedness"	.088	.723
3	"Liberalism"	.307	-.474
4	"Personal Libertarianism"	.483	-.107
5	"Economic conservatism"	.060	.542
6	"Medical control"	.047	-.102
7	"Sex education"	.157	-.122
8	"General practice"	-.023	-.047

Table 8-10: Shows the inter-correlations between the scores of subjects on the eight main factors and two superordinate factors after intervals of from one to four years, and the significance of the linear trend in the correlations across years.

Factor	All subjects	One year	Two years	Three years	Four years	Significance of trend
N	.186	51	45	57	34	
1	.589	.574	.793	.628	.092	p<0.05
2	.608	.773	.547	.475	.648	NS
3	.534	.633	.484	.472	.525	NS
4	.716	.876	.649	.594	.728	p<0.05
5	.656	.635	.421	.779	.605	NS
6	.463	.491	.604	.415	.275	NS
7	.441	.346	.422	.305	.751	NS
8	.412	.694	.437	.139	.251	p<0.001
I	.667	.752	.821	.553	.358	p<0.01
II	.731	.864	.625	.708	.747	NS