

10: The culture of medical students: Measurement.

"Reading maketh a full man; conference a ready man; and writing an exact man ... Histories make men wise; Poets witty; the Mathematicks subtile; Natural Philosophy deepe; Morall grave; Logick and Rhetorick able to contend".

Francis Bacon, Of Studies.

"What [people require] is not to be taught other people's opinions, but to be induced and enabled to think for themselves ... They cannot read too much. Quantity is of more importance than quality, especially all reading which relates to human life and the ways of mankind; geography, voyages and travels, manners and customs, and romances ... By such reading they would become ... cultivated beings".

John Stuart Mill,
letter to the Rev. H.W.Carr,
7th January, 1852;
in Fletcher (1971; pp 394-5).

"... our knowledge of the history of reading habits, of the statistics and quality of literate response at different moments and in different communities of Western Europe is still rudimentary ... The evidence is hard to come by and harder to assess..."

George Steiner, In Bluebeard's Castle.

Osler ... believed that culture ... was of the utmost value to medical men"

Sir Geoffrey Keynes (1981; p.395)

"In using the word culture I am thinking of the inherited tradition. I'm thinking of something that is in the common pool of humanity, into which individuals and groups of people may contribute, and from which we may all draw if we have somewhere to put what we find".

D.W. Winnicott (1967; emphasis in original)

Summary.

The responses of 1325 medical students and prospective students in the Birmingham, Cambridge and St. Mary's studies to 90 questions concerning interests, hobbies, and cultural activities are analysed. Factor analysis revealed five orthogonal factors which have been labelled as Literary Culture, Low-Brow Culture, Travel, Popular Culture and Non-Literary Culture. A single factor could account for 42.7% of the common variance, and it was shown to load positively on all five factors except Popular Culture, which showed a negative loading.

"Culture is one of the two or three most complicated words in the English language" (Williams, 1976, p.76). This is primarily because it has at least three distinct but overlapping meanings; a global description of the way of life of a society (see e.g. Peterson, 1979); assistance in the development of individuals within a society; and the arts in general as occurring in a society. As applied to an individual, 'cultured' tends to mean an involvement in the arts in their most general sense. Necessarily these meanings all overlap. An individual cannot be 'cultured' if the arts do not exist within a society, and the existence of art-forms is dependent upon the total social and economic organisation of that society. Finally individuals do not just 'have' culture (any more than societies do), but rather it is nurtured within them to a greater or lesser degree by the organisation of the society (see e.g. Eliot (1962), p.24).

When applied to a particular sub-group, such as doctors or medical students, culture can refer specifically either to their specialist knowledge and mores, (qualitative accounts of which may be found elsewhere, albeit primarily for the American system of medical education; Coombs and Stein, 1971; Becker et al, 1961; Merton et al, 1957; Simpson, 1972) or can refer to the extent to which they share the general or common culture of their society. This latter aspect will be considered in the present chapter, in which is described the non-specialist behaviour of medical students, both in relation to the arts and to other activities, in as atheoretic manner as possible, using a questionnaire to assess the 'natural history' of cultural behaviour. The intentions of the chapter are therefore descriptive rather than prescriptive. The statistical methods of factor analysis are used to describe the differences between individuals (and hence to produce descriptions of individual culture). The aggregate behaviour of the

whole group will be described as a way of assessing the sub-culture (and hence its relation to the rest of society). Chapter 11 will describe the changes that occur in the sub-culture as individuals pass through it, and will attempt to account for individual differences in culture and change in culture in terms of background variables.

Although this study is concerned primarily with the culture of medical students, this is not to suggest that the methods or results are only applicable to that group. Rather they have been studied because the origins and nature of their eventual attitudes are of consequence to the subsequent practice of medicine, and they represent a clearly demarcated group for whom an eventual goal in society is obvious. There is little doubt however that the method of study would be applicable with little alteration to any other group of equivalent intellectual ability, and with some modification could be applied to less intellectually able groups.

A concern of many psychologists and sociologists over a number of decades has been the creation of psychometric tests (of intelligence, personality, etc..) which are culture-free. The present study takes a diametrically-opposite view and attempts to measure culture itself in a direct manner. As such it could be used to ask whether indeed any other test is free of cultural effects, and to assess whether culture is an independent determinant of success (see e.g. DiMaggio, 1982). In passing it may be noted that Cattell and Warburton (1967) described three tests which have a similar although more limited basis than the present, in which they assess what they call 'High-brow tastes' (test T.27), 'Reading preferences' (test T.5) and 'Book preferences' (T.25). These tests have been criticised by Kline (1983) precisely because they are not culture-free (which would seem desirable if, as Cattell and Warburton

claim, they are to be regarded as personality tests); such criticism cannot be offered in the present case since the intention is not to assess personality but rather to assess culture itself. Whether culture relates to personality, as Cattell and Warburton suggests, will be considered in the following chapter.

Method.

A pilot survey was carried out in the medical school of the University of Birmingham during 1974 (McManus, Daniels and Cruickshank; unpublished). A questionnaire was distributed to all medical students in all years but the final one. Amongst other questions the students were asked about their cultural interests and leisure activities. On the basis of that pilot study a more extensive questionnaire was developed which was distributed to three separate groups of students:

1. The Birmingham study.
2. The Cambridge study.
3. The St. Mary's study.

Response rates in the studies were almost identical to those described in chapter 8 on the structure of ethical attitudes. The questionnaire (see appendices to chapter 1) contained items assessing the manner in which leisure time was spent, the hobbies and interests of the student, an assessment of reading habits, and a list of the countries which the student might have visited. 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 subjects. Not all subjects answered all questions and hence totals often differ from these values.

The results can be considered in two forms. Firstly one may consider the absolute responses of the students i.e. How many did or did not take part in particular activities? Although of substantive interest in defining the culture of the group as a whole, these results are not easy to interpret, for several reasons. There is no method of checking on the reliability of an individual's responses, inaccuracies perhaps occurring because of misunderstandings of questions, or even due to wilful distortion. For the interpretation of population results as a whole it is also necessary to be sure that the sample is unbiased, and this is difficult to guarantee, particularly when response is both entirely voluntary and by post, as in the Birmingham and Cambridge samples. Nevertheless the absolute results are not without interest, and are reported here in some detail, partly to allow adequate interpretation of the later correlational studies, partly because of their own intrinsic interest, and partly to form a basis for subsequent comparative studies.

Tables 10-1 to 10-5 summarise the questions which students were asked. Table 10-1 concerns general activities and interests, while Table 10-2 considers newspaper and journal reading, Tables 10-3 and 10-4 consider the fiction and non-fiction authors whom the student has read, and Table 10-5 considers the student's travel habits. For each set of questions is given the number of students producing a valid response (N), and the percentages replying in each of the possible response categories, which are given at the top of each column. Below the names of the response categories (in brackets) are the scale values that the responses

were given for the purposes of calculating correlations. The column marked 'Trend by year of study' shows the results, for those in the Birmingham study only, of a correlation (using Kendall's tau statistic) of the response categories against the year of study of the student (first to fifth). '+' responses indicate that the behaviour increased in frequency with increasing year number, while '-' values indicate a decreasing frequency. The statistical significance of effects is indicated by the number of symbols i.e. '(-)' and '(+)': $p < 0.1$; '- ' or '+ ': $p < 0.05$; '---' or '+++': $p < 0.01$; '----' or '++++': $p < 0.001$. 'NS' indicates Not Significant, and N/A indicates Not Applicable. The remaining columns in the Tables will be considered later.

Although most of the Tables are self-explanatory, some further comment will be of use. Table 10-1 summarises a number of questions designed to cover a broad range of interests and activities, from watching television and going to the pub, to attending opera and ballet. The major constraint in choosing the items was that the questions should not be too lengthy, and that most students should be able to answer some of them in a positive manner. Table 10-2 assesses the newspapers and journals that the student read, either regularly or irregularly. 'The Star' newspaper, which came on the market after the questionnaire was first distributed in Birmingham, was only included as a separate item in the St. Mary's survey. Prior to that it is probable that a number of students have confused it with the 'Morning Star' (the official newspaper of the Communist party). 'The Listener' and 'New Society' were not included on the early questionnaires, and are only present for the St. Mary's sample. Tables 10-3 and 10-4 were designed to cover, in a fairly systematic way, a broad range of reading material, both fiction (24 authors; Table 10-3) and non-fiction (16 authors; Table 10-4). In addition Table 10-1 reports two broad questions on the number of books

read each year, both fiction and non-fiction. The fiction authors were chosen to cover the entire range from James Joyce to Harold Robbins, with nineteenth century and earlier authors being included, along with a number of modern and classic foreign writers. Several authors of greater specific appeal to women were included, as also was a science-fiction writer. The list was designed so that very few of the students would have read none of the list, even if perhaps, as in the possible cases of Jane Austen, George Orwell, or Aldous Huxley, it was in the form of a single work on a school examination syllabus. The non-fiction authors were chosen to cover a broad range of subjects, from politics and philosophy to art history and economics, including a number of 'alternative' writers, and some who are frankly populist in their approach, as well as a few classics such as Darwin and Mill. An error in the list of authors in Table 10-4 was the inclusion of C.S. Lewis; the intention had been to include a modern popular theologian, but in so doing we forgot his extensive writings for children, which probably dominate the response to the question (and also account for the poor trend by year of study).

Of greater interest and methodological justification than the absolute results of the questions, is the study of the inter-relations between items, and their use as a method of analysis of individual differences in culture.

Tables 10-1 to 10-5 contain a total of 90 separate questions. The inter-relations between the responses to these questions were studied by means of a principal factor analysis, followed by a Varimax rotation of the significant factors. The correlation matrix was calculated by the method of 'pairwise' deletion of missing values. The first ten eigen-values of the correlation matrix were 8.96, 3.85, 3.16, 2.68, 2.37,

2.05, 1.99, 1.87, 1.77 and 1.68. Examination of these values by the 'scree-slope' criterion (Cattell, 1966) suggests that only the first five factors are significant, and that the first factor is more important than the rest. The first five factors together account for 23.4% of the total variance in the matrix, with the first factor alone accounting for 42.7% of the common variance. After Varimax rotation these five factors accounted for 26.1%, 23.3%, 20.1%, 16.8% and 13.7% of the common variance. Tables 10-1 to 10-5 show the loadings of each of the questions on the five Varimax factors (labelled 1 to 5), absolute loadings of greater than 0.2 being arbitrarily labelled as 'significant' to assist in factor identification.

The identification and naming of factors.

Despite reification, the naming of factors, being the most difficult part of factor analysis, often not being carried out with any degree of total certainty, names for factors are nevertheless necessary in order to allow theoretical prediction and conceptual understanding, as well as for ease of handling, and as long as their provisional and perhaps uncertain nature is accepted, should not be unduly misleading.

Factor 3 is the easiest to identify. It loads most heavily on the travel items and has almost no loadings on the items in the other tables. It may therefore be called Travel. Of interest is that it loads primarily on European countries and North America. The countries of Africa, Asia and South America show poor loadings, perhaps because travel to these places is not so easy, and is often undertaken through necessity rather than choice (e.g. to visit parents or other relatives, or perhaps for elective study). The intermediate status of Russia, which is becoming more accessible for tourism, perhaps confirms this view. A

number of studies have attempted to classify motives, reasons and effects of foreign travel as a multi-dimensional scheme (see Pearce, 1982). Two major dimensions, of the traveller as 'exploitative or non-exploitative' and as being 'low contact or high contact with local culture' emerge fairly readily. It is possible that a more detailed analysis of the present type of data might also reveal separate dimensions within the overall pattern of foreign travel.

Factors 1 and 2 both show large numbers of loadings on the literary questions, although their patterns are different. Factor 1 contains more properly literary and cultural references (particularly in the non-fiction section), while factor 2 contains many more popular items, or items which are readily available (for instance, on 'railway bookstalls' rather than in specialist bookshops; for an historical perspective see Williams (1961; p.55)). The discrepancies between Erich von Daeniken and Desmond Morris on the one hand, and Galbraith, Gombrich and Popper on the other show this difference well. Of interest in the other tables is that factor 2 also loads heavily with reading many books, particularly fiction, whereas no such relation is found for factor 1 (see table 10-1); the emphasis in factor 1 is on quality rather than quantity. Other activities discriminate relatively poorly between the factors, with the exception of newspaper reading, where factor 1 loads positively on 'The Guardian' and negatively on 'The Daily Telegraph', whereas factor 2 shows no such relationship. Factor 1 also loads more heavily on the more literary weeklies such as 'New Society' and 'The Listener'. As a result of these correlations factor 1 is named Literary Culture, whilst factor 2 is named, perhaps a little contentiously, Low-brow Culture (although it may be noted that DiMaggio, 1982, referred to a 'Middle-Brow' factor).

Factor 4 is a very mixed factor. On the activities it shows high loadings for playing and watching sport, for watching television, and going to the pub, going to pop concerts, cinema and parties. High loadings on the newspaper items are found with all the tabloids, and none of the others (with the curious exception of the 'Morning Star' which, as stated earlier, might perhaps have been confused with 'The Star', itself a tabloid). Those few authors who show specific loadings on factor 4 tend to appeal explicitly to the lower end of the popular market (Frederick Forsythe, Harold Robbins, Erich von Daeniken, and, perhaps, Isaac Asimov). In view of the extremely populist aspects of most of these loadings it is probably fair to call this factor Popular Culture, in the sense that it contains many of the most frequent activities of the great majority of the population. It could with some justification also have been called 'working-class culture' in contradistinction to the primarily 'middle-class' content of the items included in the other factors, and following on Williams' (1963; p.313) description of working class culture as "primarily social rather than individual" (see also Hoggart, 1957).

Factor 5 is a compound of several types of item. An interest in playing music is coupled with attendance at opera, ballet and classical concerts. However the other items are not obviously related to music; attendance at art-galleries and museums, reading of both fiction and non-fiction, and spending time on hobbies are also noteworthy. Newspaper reading seems primarily to consist of the three 'serious' dailies, coupled with all three of the weeklies, including the scientific weekly. However the authors show few obvious loadings, and there is no relation to travel. This factor therefore seems to be Non-literary culture. It is possible that a more detailed analysis would separate these items into musical, artistic and other interests.

A General cultural factor.

Analysis of the eigen-values of the correlation matrix suggested that the first factor was of greater importance than the others. It is therefore of interest to ask whether a single factor might represent a common component though all the five factors thus far described. This single factor alone, which will be called C, was extracted by a principal factor analysis, and factor scores for individual subjects were calculated for factor C and for the five Varimax factors. The correlation of C with factors 1 to 5 was .760, .626, .438, -.099 and .201 respectively. These results suggest that a single dimension of 'culture' can be extracted if required, and that this is dominated by literary culture in the form of factors 1 and 2, and has lower loadings on travel and non-literary culture, while factor 4, popular culture, shows, as might be expected, a negative loading on C.

Test-Retest Correlations.

The Birmingham study re-assessed some of the students after an interval of from one to five years. Table 10-6 shows the test-retest correlations of these subjects on the five Varimax factors, and on C. The overall correlations range between .700 and .815, which suggests that reliable factors are being measured. Factors 4 and 5, popular culture and non-literary culture, show significant downward trends in the test-retest correlation on the interval between tests, suggesting that these scales might be assessing factors which are more like state measures than trait measures.

Discussion.

"A sociological discussion of culture in liberal society must begin with the life of those who create culture, i.e. the intelligentsia" (Karl Mannheim, cited by Eliot, 1962, p.37). Whilst the medical profession is generally a part of the intelligentsia, Eliot is quick to point out that mere specialism is not sufficient to guarantee culture; indeed, "a very large number of members of these classes always have been conspicuously deficient in 'culture'" (Eliot, 1962, p.42), a point recognised by Flexner (1925; p.86). To explain this apparent paradox requires that we assess individual differences in cultural life, and observe whether they are responsible for other differences in behaviour. Whilst not denying Eliot's further dictum that "culture is not merely the sum of several activities, but a way of life" (Eliot, 1962, p.41, emphasis in original), we may also follow up his analysis of one of the meanings of culture, and extrapolate it to a method of measurement:

"We may be thinking of refinement of manners - of urbanity and civility .. We may be thinking of learning and a close acquaintance with the accumulated wisdom of the past ... We may be thinking of philosophy in the widest sense - an interest in, and some ability to manipulate, abstract ideas ... Or we may be thinking of the arts ..." (Eliot, 1962, pp22-23).

However, "no perfection in any one of them, to the exclusion of the others, can confer culture on anybody" (Eliot, 1962, p.23). A related concept may be found in Jay (1984; p.112): "Elitist ... culture is identified with art, philosophy, literature, scholarship, theatre, etc., the allegedly 'humanising pursuits' of the 'cultivated' man. As a surrogate for religion ... [it is] the repository of man's most noble accomplishments and highest values, often in tension with either 'popular' or 'folk' culture". It would seem therefore that any

operational definition of culture must be as broad as possible in its inclusion of the multitudinous facets of cultural life, and must emphasise the reception of culture rather than the more conventional area of sociological interest of the production of culture (e.g. Williams, 1981, p.30). This questionnaire survey has deliberately attempted to widen the range of items as far as possible. It may be felt that we have overly emphasised books and reading, and a few words of justification are necessary. Morgan and Leahy (1934) have shown clearly that the cultural content of general interest reading can be easily and reliably differentiated, thereby making such items an obvious basis for a cultural scale, and Rowntree and Lavers (1951; p.286) suggested that "reading habits ... have a double significance, for what a man reads not only reveals his present intellectual and cultural standards, but also helps to determine what they will be in the future". Moreover, books are an important surrogate for more direct experience; to quote Eliot once more, "our development depends upon the people whom we meet in our lives. (These people include the authors whose books we read, and characters in works of fiction and history) ... We read many books because we cannot know enough people " (Eliot, 1962, pp. 59 and 86). To paraphrase an old saying, one may know a man by the company he keeps on his bookshelves; or as Cronin (1973; p.9) put it in his biography of Napoleon; "[he] was, among other things, a bookworm ... and we know exactly which books and plays moved him. These I discuss in some detail, believing that, like dreams, they throw light on his longings and fears". It should also be noted that in assessing the reading habits of the students in this study the emphasis has been on the type of books that is read, rather than as in the studies of Mann (1974) and Mann and Burgoyne (1969), which tend to concentrate on the quantity of books read. In selecting the authors to include in the questionnaire it is hoped to have avoided, as

far as possible, the Whiggish fallacy described by Williams (1963; p.297); "in judging ... culture, it is not enough to concentrate on habits which coincide with those of the observer". Nevertheless it is necessarily true that no authors have been included of whom the questionnaire compilers were unaware, and in that sense the choices are parochial. In general the study looks at the details of cultural activities rather than taking the approaches of Neulinger (1974), Parker (1976), and Wilson (1980), which tend to concentrate on the quantity of leisure activity in general rather than upon its detailed structure, or the approach of Lueschen (1980) who emphasises just one specific subset of the broad sense of culture, namely sports.

The method of assessing culture has differed from that adopted by two other writers, Richmond (1964) and Montagu (1958), both of whom present a series of general knowledge questions from which a 'cultural score' or 'culture quotient' is derived. An objection to such an approach is that it tends only to reflect items which are learnt (and may perhaps only be reflecting past education, or even indoctrination), rather than reflecting the active, dynamic interests of a person; present enthusiasms may therefore be submerged under the weight of past educational accomplishment, thereby giving little potential for measuring change.

The present method, although it is a questionnaire, retains the ability to ask an individual how he chooses to relate to the culture of which he is a part; to ask which activities he wishes to share in, and which he wishes to reject; to ask what he wishes to know more about and what he finds uninteresting. In so doing the five scales derived retain sufficient complexity that the subtlety of the phenomenon is retained but it is rendered in a form in which it becomes analytically tractable in an

empirical manner.

That a single dimension may be extracted which loads on all five Varimax factors supports those theorists who have argued for the existence of a global entity which distinguishes between individuals who are more cultured and those who are less cultured (e.g. Leavis, 1972; pp88-89; Cowell, 1959, pp 230-233; Williams, 1963, p124).

A difficulty in assessing culture is whether it should be a state or a trait measure. In so far as it can be conceived of as a trait-like attitude of mind ("Culture is what is left after you have forgotten all you have definitely set out to learn", Powys, 1930, p.11), it is also a dynamic, state measure. Measures such as past reading experience tend to be cumulative across life, and hence one would expect older individuals to have higher scores than younger ones. Other measures, such as playing musical instruments, are dynamically changing, in that a person may take up or abandon his pursuit, and hence change is far easier to assess. For such reasons we might expect factors 4 and 5 to be temporally more labile than factors 1 to 3. Nevertheless even with purely cumulative measures, such as those based on reading, it is still the case that if an individual suddenly stopped reading, while his age peers continued to read new works at a constant rate, then the rank ordering of the individual could only fall. Hence changes in such measures are indicative of changes in cultural habits since previous assessment.

John Cowper Powys recognised the difficulties of attempting to define (and hence implicitly, to measure) culture. Nevertheless, he suggested that "approaching the subject first from one angle and then from another ... may bring the problem into regions of concrete experience such as would be impossible of attainment even by the most carefully worded theory" (Powys, 1930, p.11).

Table 10-1: Estimate how many hours per week you devote to the following activities:

	N							Trend by year	factor loadings				
		0 (1)	1-2 (2)	3-4 ^A (3)	5-8 (4)	8-15 (5)	15+ (6)		1	2	3	4	5
Watching television	1498	11.9	21.7	26.8	25.5	11.9	2.3	---	-.13	-.10	-.08	<u>.21</u>	.01
Playing sport	1498	17.0	32.0	24.1	19.0	5.9	2.0	---	<u>-.23</u>	.17	.06	<u>.25</u>	.02
In a pub	1498	26.2	28.0	20.8	16.9	6.3	1.7	NS	.05	.11	.14	<u>.40</u>	<u>-.20</u>
On hobbies	1498	13.8	19.4	30.6 ^B	21.6 ^B	11.1	3.5 ^B	NS	.02	.03	.03	-.04	<u>.29</u>

Do you play sport for a team?

	N			Trend	factor loadings				
		No (1)	Yes (2)		by year	1	2	3	4
	1396	62.4	37.6	---	<u>-.21</u>	-.13	.01	<u>.24</u>	-.01

Do you play any musical instruments?

	N					Trend	factor loadings					
		Not at all (1)	Slightly (2)	Adequately (3)	Well (4)		by year	1	2	3	4	5
		at all (e.g. piano grade V)										
	1498	35.4	23.2	16.4	25.0	NS	-.01	-.04	.07	<u>-.29</u>	<u>.28</u>	

Estimate how many times per year you attend the following:

	N						Trend	factor loadings				
		0 (1)	1-2 (2)	2-5 (3)	6-10 (4)	10+ (5)		by year	1	2	3	4
Theatre	1509	18.0	35.7	30.6	11.1	4.6	+++	<u>.20</u>	<u>.27</u>	<u>.23</u>	-.13	<u>.28</u>
Opera	1509	77.0	18.6	3.5	0.5	0.3	+	.12	.04	.14	<u>-.24</u>	<u>.36</u>
Ballet	1509	78.1	19.4	1.9	0.4	0.1	+++	.15	.11	.13	<u>-.28</u>	<u>.32</u>
Pop concerts	1509	36.8	29.8	22.8	6.9	3.7	NS	.02	.19	.14	<u>.36</u>	-.06
Classical concerts	1509	44.5	29.8	16.8	5.2	3.7	+++	.15	.12	.16	<u>-.33</u>	<u>.35</u>
Art galleries	1509	31.9	42.7	18.4	4.8	2.3	++	<u>.25</u>	<u>.27</u>	<u>.27</u>	-.06	<u>.29</u>
Museums	1509	14.3	49.5	27.1	6.2	2.9	(+)	.08	<u>.20</u>	.18	.00	<u>.34</u>
Cinema	1509	5.1	15.6	37.3	24.1	18.0	+++	.08	<u>.22</u>	.17	<u>.22</u>	.00
Football matches	1509	68.7	15.8	7.1	3.5	5.0	NS	-.11	.06	.05	<u>.31</u>	-.11
Cricket matches	1509	66.9	18.7	8.9	2.5	3.0	--	-.11	.15	.08	<u>.28</u>	.04
Parties	1509	3.0	7.6	20.9	24.3	44.3	+++	.01	<u>.26</u>	<u>.23</u>	<u>.29</u>	-.01

Estimate how many non-medical, non-school books you read per year:

	N							Trend	factor loadings				
		0 (1)	1-5 (2)	6-10 (3)	11-20 (4)	21-50 (5)	50+ (6)		by year	1	2	3	4
Fiction	1509	3.0	29.5	24.9	20.4	18.5	5.7	NS	.07	<u>.57</u>	-.01	-.01	<u>.31</u>
Non-fiction	1509	5.3	51.0	23.8	13.9	4.3	1.7	(-)	.05	<u>.36</u>	-.09	.07	<u>.41</u>

Table 10-2: How often do you read the following newspapers or journals?

	N	Never	Rarely	Moderately often	Usually	Trend by year	-----factor loadings-----				
							(1)	(2)	(3)	(4)	(5)
Daily Express	1458	28.6	45.7	18.2	7.4	-	-.14	-.01	-.04	.39	.12
Daily Mail	1455	26.3	42.5	21.6	9.6	NS	-.07	-.03	-.03	.33	-.06
Daily Mirror	1441	39.4	45.2	12.8	2.7	+	.05	-.06	-.05	.57	.05
Daily Telegraph	1475	16.8	30.4	26.3	26.5	(-)	-.21	.15	.04	.09	.18
The Guardian	1454	28.0	34.7	24.0	13.3	+	.25	.11	.14	.11	.21
Morning Star	1436	89.6	9.7	0.4	0.3	NS	.18	-.04	.02	.24	.08
The Star	317	82.6	15.1	1.9	0.3	N/A	.11	-.03	-.02	.47	.08
The Sun	1452	49.2	37.5	11.9	1.4	+	.04	-.07	.01	.58	-.05
The Times	1459	15.1	37.1	30.6	17.1	+	.07	.19	.21	.04	.22
Local Newspaper	1469	7.4	18.6	37.4	36.7	-	-.10	-.06	-.11	.19	.22
New Society	319	80.9	14.7	2.5	1.9	N/A	.42	-.11	.07	.08	.43
The Listener	323	59.8	27.6	9.0	3.7	N/A	.26	-.01	.03	.16	.49
New Scientist	1463	24.3	35.5	26.4	13.8	-	.00	.00	-.12	.05	.47

Table 10-3: How many works have you read by the following authors? (Fiction).

N	None	One	More than one by year	Trend	-----factor loadings-----				
					(1)	(2)	(3)	1	2
1501	50.6	16.9	32.5	NS	.12	.29	-.02	.19	.01
1501	45.3	25.1	29.6	+	.19	.29	.00	-.28	.28
1501	79.8	11.8	8.4	+	.44	.31	.15	-.11	-.06
1501	83.5	11.2	5.3	+	.49	.29	.11	-.13	.03
1501	88.5	6.1	5.4	+	.29	.17	.06	-.07	.10
1501	64.5	22.7	12.9	+	.19	.28	.06	-.16	.21
1501	59.8	12.5	27.7	+	-.02	.35	.11	.20	-.01
1501	92.5	5.1	2.3	+	.36	.24	.12	-.02	-.06
1501	37.9	26.5	35.6	+	.21	.47	.10	.01	.01
1501	81.7	9.3	9.0	+	.47	.29	.11	-.08	-.12
1501	46.0	29.9	24.1	+	.32	.44	.10	.01	.03
1501	75.8	16.7	7.5	+	.40	.34	.09	.01	.06
1501	36.0	28.4	35.6	+	.17	.42	.11	-.07	.14
1501	95.0	2.7	2.3	+	.33	.15	.04	-.06	-.03
1501	91.3	6.5	2.2	+	.21	.25	.05	.04	.07
1501	87.1	7.7	5.2	+	.31	.15	.06	-.09	.07
1501	13.3	22.5	64.2	+	.13	.43	.11	.01	.01
1501	77.1	12.9	10.0	+	.02	.32	.02	.20	.00
1501	51.3	22.0	26.7	+	.21	.45	.07	-.02	-.04
1501	50.4	23.0	26.6	+	.28	.44	.12	-.03	.00
1501	98.5	0.9	0.6	NS	.27	.06	.04	-.07	.01
1501	69.1	20.2	10.7	+	.28	.38	.10	-.14	.14
1501	82.1	8.7	8.2	+	.18	.24	.09	.03	.08
1501	84.4	11.2	4.4	+	.35	.24	.09	-.07	.13

Table 10-4: How many books have you read by the following authors? (Non-fiction)

	N	None	One	More than one	Trend by year	-----factor loadings-----				
						(1)	(2)	(3)	1	2
Edward de Bono	1501	89.1	8.0	2.9	+ +	<u>.38</u>	.13	.00	.02	.15
Erich von Daeniken	1501	67.8	18.9	13.3	NS	.03	<u>.21</u>	-.03	<u>.22</u>	.03
Charles Darwin	1501	60.4	33.8	5.9	(+)	.03	.16	.04	.10	<u>.28</u>
Eysenck	1501	86.3	9.1	4.6	+ + +	<u>.34</u>	.14	.03	.05	.03
Freud	1501	83.5	12.7	3.8	+ + +	<u>.32</u>	.19	.11	.07	.09
Galbraith	1501	96.0	3.1	0.9	+ + +	<u>.43</u>	.06	.05	.01	.00
Illlich	1501	94.7	3.9	1.4	+ + +	<u>.47</u>	.06	.07	-.01	-.04
R.D. Laing	1501	90.9	6.1	3.1	+ + +	<u>.49</u>	.15	.11	-.02	-.03
C.S. Lewis	1501	36.1	15.8	48.1	+	.02	<u>.35</u>	.06	-.19	.10
Marx	1501	89.5	9.3	1.3	+ + +	<u>.26</u>	<u>.22</u>	.11	.08	.08
John Stuart Mill	1501	97.0	2.3	0.7	+	<u>.43</u>	-.01	.07	.04	.12
Desmond Morris	1501	57.9	24.2	17.9	+ + +	.17	<u>.29</u>	.11	.12	.04
Karl Popper	1501	95.7	3.7	0.7	(+)	<u>.40</u>	-.01	.06	.02	.10
E.F. Schumacher	1501	95.6	4.1	0.3	NS	<u>.30</u>	.07	.07	-.02	.09
Lyall Watson	1501	90.7	5.9	3.3	NS	.19	.08	.02	.02	.07
Gombrich	1501	98.3	1.5	0.2	+ +	<u>.27</u>	.01	.05	-.09	.05

Table 10-5: Which of the following areas have you visited? Exclude areas you have only passed through.

	N	Never (1)	Once only (2)	More than once year								
				Trend by year	1	2	3	4	5			
France	1496	25.2	23.3	51.5	+	+	+	.02	.11	.52	-.08	.05
Germany	1496	53.8	27.0	19.2	+	+	+	.03	.06	.57	.01	.00
Italy	1496	53.7	26.8	19.5	+	+	+	.07	.07	.59	.01	.01
Switzerland	1496	63.1	22.3	14.6	+	+	+	.01	.12	.60	-.02	-.02
Holland	1496	69.6	21.3	9.1	+	+	+	.04	.05	.51	.03	-.01
Belgium	1496	68.0	19.9	12.1	+	+	+	.01	.05	.56	.10	.07
Spain	1496	62.2	19.5	18.4	(+)			-.01	.05	.37	.02	.02
Portugal	1496	90.4	6.8	2.8	NS			.05	.05	.28	-.02	.05
Greece	1496	77.4	17.1	5.5	+	+	+	.17	.04	.44	.02	-.02
Scandinavia	1496	85.2	9.4	5.3	+	+	+	.09	-.01	.31	-.04	.02
Eastern Europe	1496	86.0	10.6	3.3	+	+		.06	-.01	.40	.03	.04
Middle East / North Africa	1496	83.4	11.6	5.1	+	+		.10	.05	.26	-.01	-.02
Central / Southern Africa	1496	93.5	3.1	3.3	(+)			.10	.02	.07	-.03	.04
India / Far East	1496	90.3	5.2	4.5	NS			.12	-.01	.17	.02	.06
Russia / China	1496	97.0	2.7	0.3	NS			.12	-.01	.17	.02	.06
Australasia	1496	96.8	1.9	1.3	+			.03	.08	.09	-.01	.01
North America	1496	79.4	13.8	6.8	+	+		.10	.08	.20	-.02	.01
South America	1496	97.9	1.6	0.5	NS			.05	.07	.07	.01	.04

Table 10-6: Shows the test-retest correlation for subjects tested at intervals of from one to four years.

----- Test-retest interval -----

	All subjects 190	One year 51	Two years 47	Three years 59	Four years 33	Sig. of trend
actor						
	.795	.815	.762	.813	.794	NS
	.700	.802	.482	.728	.605	NS
	.764	.851	.786	.711	.906	NS
	.717	.589	.649	.683	.549	**
	.725	.885	.739	.614	.620	**
	.815	.910	.730	.770	.835	NS