

British Cohort Study 1970

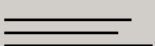
JIG-CAL Occupational Interests Dataset

16 Year Survey (1986)

USER GUIDE

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1 Acknowledgements

Grateful thanks are due to Dr. S.J Closs, formerly of the Applied Psychology Unit (and later the Department of Business Studies) at Edinburgh University, who devised the JIIG-CAL Occupational Interests Questionnaire used in the BCS70 Age 16 Survey. Although his JIIG-CAL Guide is now no longer available, his 1978 article published in the Journal of Occupational Psychology supplied the precise algorithm for constructing the 'scores' from which this dataset was derived.

Data management was carried out by Jon Johnson. Input of the data was carried out by Tamara Shaw and Gemma Hanvey, and supervised by Gemma Seabrook.

2 Introduction

This document provides a guide to the additional variables deposited in 2014 by the Centre for Longitudinal Studies relating to an important instrument used in the BCS70 16-year Survey, the JIIG-CAL Occupational Interests Questionnaire. Though the survey was conducted in 1986, the variables relating to this questionnaire ('Document D') had never previously been released. The data supplement those already available from the [UK Data Service](#) for other elements of the 1986 survey. A summary of the newly-deposited variables is given in Appendix 1. Before using these data you are advised to consult the main documentation for the 1986 survey and that for BCS70 as a whole, available from the [CLS website](#).

3 British Cohort Study 1970 (BCS70)

BCS70 is a continuing, national longitudinal study which began as the British Births Survey when data were collected about the births of 17,198 babies in England, Scotland and Wales in one week in 1970 (Northern Ireland was initially included, but these children were not followed up at subsequent ages). Since the birth survey there have been eight other major data collection exercises designed to monitor the health, education, social and economic circumstances of the members of this birth cohort living in Great Britain. These were carried out in 1975 (age 5), 1980 (age 10), 1986 (age 16), 1996 (age 26), 2000 (age 30), 2004 (age 34), 2008 (age 38) and 2012 (age 42). Sub-samples have also been studied at various ages: for example at age 21, a survey of a 10 per cent representative sample focused on basic skills difficulties.

From its original focus on the circumstances and outcomes of birth, the study has broadened in scope to map all aspects of health, education and social development of their subjects as they passed through childhood and adolescence. The 5-year and 10-year sweeps were called The Child Health and Education Survey (CHES) and administered by the Institute of Child Health at the University of Bristol. In later sweeps, the information collected has covered the cohort members' transitions into adult life, including leaving full-time education, entering the labour market, setting up independent homes, forming partnerships and becoming parents.

4 BCS70 16-year Survey

The [1986 Survey](#) was carried out by the International Centre for Child Studies, Bristol and named "Youthscan". In this sweep, many survey instruments were employed, including parental questionnaires, school class teacher and head teacher questionnaires and medical examinations. The cohort members also kept two four-day diaries (one for nutrition and one for general activity), and undertook educational assessments. Most of the data gathered during this survey are already available via the [UK Data Service](#).

5 Data Capture

Data was input from digital scans of the paper tests into forms set up in Microsoft Access. Input was validated on entry (using database constraints) and **10%** were double entered.

6 JIIG-CAL Occupation Interests Questionnaire

The JIIG-CAL Questionnaire ('Job Ideas and Information Generator - Computer-Assisted Learning') is an interest test in which the subject is asked to make 'preference' choices between pairs of occupational activities, at the same time being asked whether he or she 'likes' each activity or not. It is a later version of the test outlined in the APU Occupational Interests Guide (Closs, 1975), differing from that prototype test in having six 'grouped' job interest categories rather than eight, and in not differentiating participants by sex in the activity alternatives presented.

The JIIG-CAL version used here in 1986 gave participants six graded sheets (A-F) of thirty paired activities, out of which they were asked to choose two consecutive sheets to complete, depending on the level of qualifications and/or training necessary for those tasks. Those who envisaged themselves doing work requiring few or no qualifications could choose sheets A & B; those envisaging degree-level qualifications or higher might choose sheets E & F, etc. These six sheets are displayed in Appendix 2, with an explanatory sentence for each about the level of training and/or qualifications required.

The occupational activities presented are designed to fall into one of six 'types':

- 1 Scientific/practical
- 2 Working with living things
- 3 Business/commerce
- 4 Artistic leanings
- 5 Caring for people
- 6 Communication activities

These types are not made explicit to the participants (although some would not be difficult to guess from the work described: e.g. ("Advise farmers on the problems of rearing animals"). Note that these six types are different from those in the earlier version outlined in the APU Manual (Closs, 1975), which had eight categories: scientific; social service; artistic; natural; general service; computational; literary; practical.

Each of the graded sheets A-F contains thirty 'pairs' of choices (i.e. 60 activities).

The alternatives are carefully balanced as follows on each sheet:

- each of the six 'types' in para 4.3 features exactly ten times
- no pair can contain two activities of the same type
- each type is paired exactly twice with each other type

The idea behind asking the participant to express both a 'forced' preference between the two components of each pair, as well as a 'like/dislike/don't mind' judgement on each individual activity is as follows. The forced preference helps to distinguish the 'types' of occupation towards which the participant is most inclined. However, in each pair the subject may not particularly like either, despite being forced to make a choice; alternatively they may like both: likes and dislikes cannot be inferred from statements of preference. On the other hand, it has been observed (Closs, 1978) that some people tend to be universal 'likers' and some 'dislikers' or 'indifferents'. Forced preferences help to overcome the problems associated with such extreme styles of response.

A total of 3,475 respondents completed the questionnaire. This is a relatively low response rate within the total of cohort members present at age 16. Unfortunately, as with other elements of the survey which were administered by teachers, activity was restricted due to the 1986 NUT industrial action in protest at government measures being taken in the sphere of education at the time.

7 Why are these results being deposited so much later than the rest of the BCS70 16 year data?

The 1986 Survey was the last follow-up to be organised by Bristol University. Soon afterwards the administration of the whole cohort was transferred to the Centre for Longitudinal Studies in London (formerly the Social Statistics Research Unit, City University), where the study became known as BCS70. This process involved a large removal of historic paper questionnaires, keyed-in data, extensive records of contact details, etc.

Though research had been published on the cohort in the 1970s-80s during the Bristol administration, the data had not been systematically documented and deposited at the UK Data Archive, to facilitate general access by researchers worldwide.

After the transfer to London, a thoroughgoing exercise was undertaken throughout the 1990s to check, document and deposit at the UK Data Archive the keyed-in data from the sweeps up to and including age 16, whilst also arranging fieldwork to conduct further sweeps at ages 26 (1996) and 30 (2000). But the keyed-in data for the sweeps up to and including age 16 were found not to have been stored and documented in a systematic way, and certain elements appeared to be missing. One such element was the dataset containing the results of the 16-year JIIG-CAL Occupational Interests Questionnaire ('Document D' in the list of 16-year instruments 'A-T').

There was a delay until funding became available to key-in the data once more from the completed paper questionnaires for Document D. This process was undertaken in 2014, following which a series of categorised occupational preference scores was derived, according to the principles laid down by the originators (see Closs, 1978).

8 Processing JIIG-CAL Occupational Interests preference statements

The subject of the test is asked to make 'preference' choices between pairs of occupational activities. But there is an initial problem with analysing the results, since this 'ipsative' method (Cattell, 1944) of forcing a choice between paired alternatives produces results which cannot be soundly factored using the correlation methods typical of Likert-scale data (Clemans, 1966), as the originator of the questionnaire has pointed out (Closs, 1996).

However, it is possible to combine these ipsative preference results with the 'like/dislike' responses to produce a score between 0 and 100 which preserves the ordinal information of the preference scores, whilst making apparent the subject's likes and dislikes, thus enabling interpretation of the correlations of these scores with independent variables.

The algorithm to produce this 0-100 score was outlined in detail by the JIIG-CAL originator (Closs, 1978), and has been used to produce the derived variables in the dataset which is the

subject of this Guide. These derived variables are listed in the table below along with their corresponding source variables in the dataset:

Summary variable	Like/Dislike source variables	Preference source variables
SCOREPRA	T01FACE, T03FACE, T06FACE, T08FACE2, T11FACE, T16FACE2, T18FACE, T21FACE2, T23FACE, T26FACE2, T31FACE, T33FACE2, T36FACE, T38FACE2, T41FACE, T46FACE2, T48FACE, T51FACE2, T53FACE, T56FACE2	PREF01, PREF03, PREF06, PREF08, PREF11, PREF16, PREF18, PREF21, PREF23, PREF26, PREF31, PREF33, PREF36, PREF38, PREF41, PREF46, PREF48, PREF51, PREF53, PREF56
SCORELIV	T01FACE2, T04FACE2, T07FACE, T10FACE2, T13FACE, T16FACE, T19FACE, T22FACE2, T25FACE, T28FACE2, T31FACE2, T34FACE2, T37FACE, T40FACE2, T43FACE, T46FACE, T49FACE, T52FACE2, T55FACE, T58FACE2	PREF01, PREF04, PREF07, PREF10, PREF13, PREF16, PREF19, PREF22, PREF25, PREF28, PREF31, PREF34, PREF37, PREF40, PREF43, PREF46, PREF49, PREF52, PREF55, PREF58
SCOREBUS	T02FACE2, T04FACE, T05FACE2, T09FACE2, T12FACE, T19FACE2, T21FACE, T24FACE, T27FACE2, T30FACE2, T32FACE2, T34FACE, T35FACE2, T39FACE2, T42FACE, T49FACE2, T51FACE, T54FACE, T57FACE2, T60FACE2	PREF02, PREF04, PREF05, PREF09, PREF12, PREF19, PREF21, PREF24, PREF27, PREF30, PREF32, PREF34, PREF35, PREF39, PREF42, PREF49, PREF51, PREF54, PREF57, PREF60
SCOREART	T06FACE2, T07FACE2, T09FACE, T11FACE2, T14FACE, T17FACE, T22FACE, T24FACE2, T26FACE, T29FACE2, T36FACE2, T37FACE2, T39FACE, T41FACE2, T44FACE, T47FACE, T52FACE, T54FACE2, T56FACE, T59FACE2	PREF06, PREF07, PREF09, PREF11, PREF14, PREF17, PREF22, PREF24, PREF26, PREF29, PREF36, PREF37, PREF39, PREF41, PREF44, PREF47, PREF52, PREF54, PREF56, PREF59
SCORECAR	T03FACE, T05FACE, T10FACE, T12FACE2, T14FACE2, T18FACE2, T20FACE2, T25FACE2, T27FACE, T29FACE, T33FACE, T35FACE, T40FACE, T42FACE2, T44FACE2, T48FACE2, T50FACE2, T55FACE2, T57FACE, T59FACE	PREF03, PREF05, PREF10, PREF12, PREF14, PREF18, PREF20, PREF25, PREF27, PREF29, PREF33, PREF35, PREF40, PREF42, PREF44, PREF48, PREF50, PREF55, PREF57, PREF59
SCORECOM	T02FACE, T08FACE, T13FACE2, T15FACE, T15FACE2, T17FACE2, T20FACE, T23FACE2, T28FACE, T30FACE, T32FACE, T38FACE, T43FACE2, T45FACE, T45FACE2, T47FACE2, T50FACE, T53FACE2, T58FACE, T60FACE	PREF02, PREF08, PREF13, PREF15, PREF17, PREF20, PREF23, PREF28, PREF30, PREF32, PREF38, PREF43, PREF45, PREF47, PREF50, PREF53, PREF58, PREF60

The need for Closs algorithm to generate these scores is illustrated by the following example, comparing results for three participants:

Ahmed			Louise			John		
Interest Type	Pref. Score	Like minus Dislike Score (L-D)	Interest Type	Pref. Score	Like minus Dislike Score (L-D)	Interest Type	Pref. Score	Like minus Dislike Score (L-D)
Scientific/practical	16	20	Business/commerce	17	18	Communication activities	16	-1
Work with living things	13	19	Artistic leanings	15	20	Artistic leanings	16	-19
Business/Commerce	10	17	Communication activities	13	14	Caring for people	11	-18
Artistic leanings	9	18	Caring for people	7	-5	Work with living things	8	-17
Caring for people	7	17	Scientific/practical	6	-19	Business/commerce	7	-20
Communication activities	5	19	Work with living things	2	-20	Scientific/practical	2	-20
Total	60	110		60	8		60	-95

Taking the preference scores alone, we could easily assume that Louise and John, with scores of 15 and 16, had virtually the same interest in Artistic activities. But the L-D scores show that Louise likes all 20 of the artistic activities offered, whereas John dislikes all but one. On the other hand, according to the L-D scores, Ahmed likes everything more or less equally, but when the choices are forced, his preferences become clear.

The Closs algorithm to combine the scores involves two steps: the first is to identify a 'neutral point' (Z) for the participant within his or her profile of scores, which will correspond to the middle of the scale and will take the value 50. One might expect an L-D score of zero to be the neutral point: this would be appropriate if the participant gave an equal number of Like and Dislike responses. But in the above example, none of Ahmed, Louise or John have a score of zero. Nevertheless we might imagine a hypothetical neutral point between the lowest positive score and the highest negative one. For Louise this would be between the 'Communication activities' score of 14 and the 'Caring for people' score of -5. So for her the neutral point must lie between the preference scores of 13 for 'Communication activities' and 7 for 'Caring for people.' The precise formula for its location takes into account the participant's degree of consistency in making preferences, and the general pattern of liking and disliking (Closs, 1978).

The first formula in the algorithm:

$$Z = \frac{R_{\max}}{2} - \left(\frac{\sum Y_i}{t \times Y_{\max}} \times \frac{X_{\max} - X_{\min}}{2} \right), \quad (1)$$

where:

Z = value within range of possible preference scores corresponding to the estimate of the neutral point.

Y_i = the i th L-D score.

Y_{\max} = the maximum possible L-D score.

X_{\max} = the largest obtained preference score.

X_{\min} = the smallest obtained preference score.

R_{\max} = the maximum possible value of $X_{\max} - X_{\min}$.

t = the number of types of interests.

The second step is to position the scores in relation to Z by adding or subtracting a proportion of 50, analogous to converting raw scores to deviations from their mean. This proportion is arrived at by a formula which takes into account both the 'distance' of the preference score from Z and a weight determined by taking the value of the corresponding L-D score and dividing it by its maximum possible value.

The second formula in the algorithm:

$$T_i = 50 + 50 \left(\frac{X_i - Z}{R_{\max}} + \frac{Y_i}{Y_{\max}} \right) \div 2, \quad (2)$$

where T_i = the summary score value of the i th Guide score; Z , X_i , Y_i , R_{\max} and Y_{\max} are as previously defined.

Thus applying the Closs formulae, the 0-100 score arrived at for Louise would be as follows:

Louise			
Interest Type	Pref. Score	Like minus Dislike Score (L-D)	Summary Score (0-100)
Business/Commerce	17	18	81.9
Artistic leanings	15	20	81.9
Communication activities	13	14	71.9
Caring for people	7	-5	40.6
Scientific/practical	6	-19	21.9
Work with living things	2	-20	15.6
Total	60	8	

(note that in this case the preference score in favour of Business/commerce is exactly cancelled out by a more favourable like-dislike score in Artistic leanings. The 'mid-point' 50.0 score here was deemed equivalent to a theoretical Preference score of 9.5).

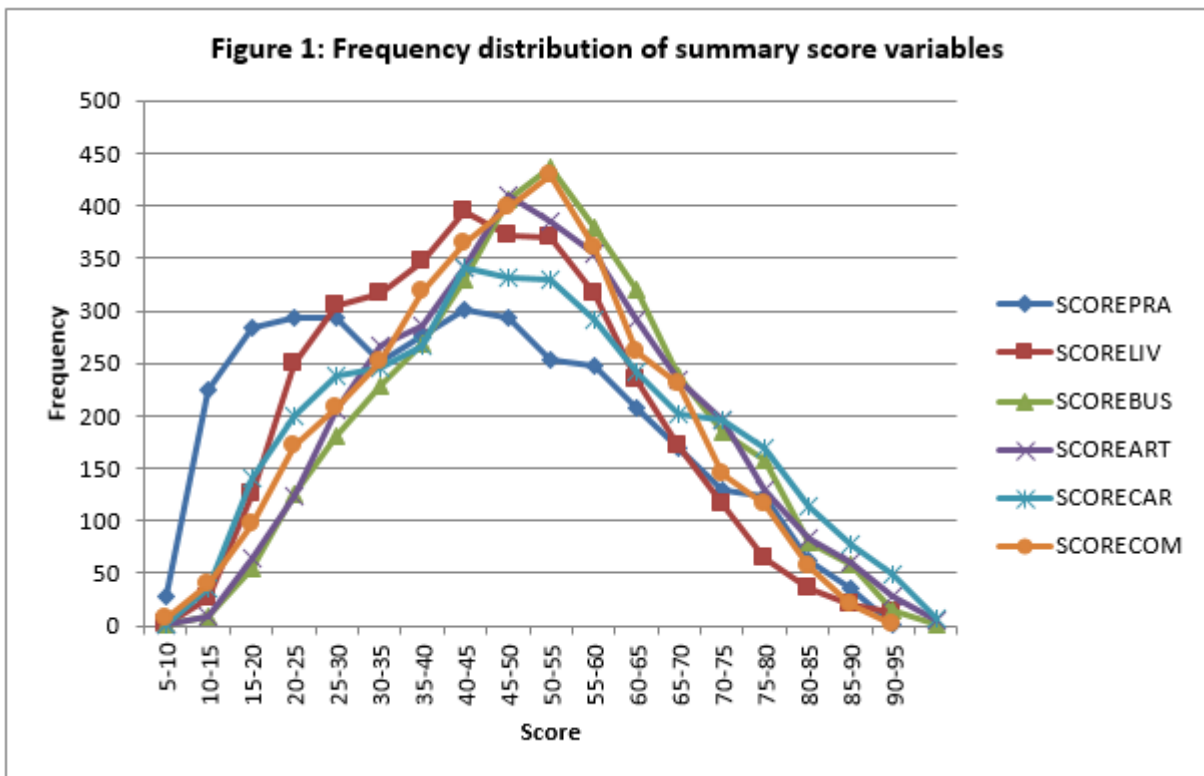
Having produced the scores in the range 0-100, the summary outcome variables type1 to type6 are derived by grouping these scores in bands along 1986 JIIG-CAL guidelines:

- 0.0-26.0: 1 Strong dislike
- 26.0-42.0: 2 Dislike
- 42.0-57.0: 3 Neutral

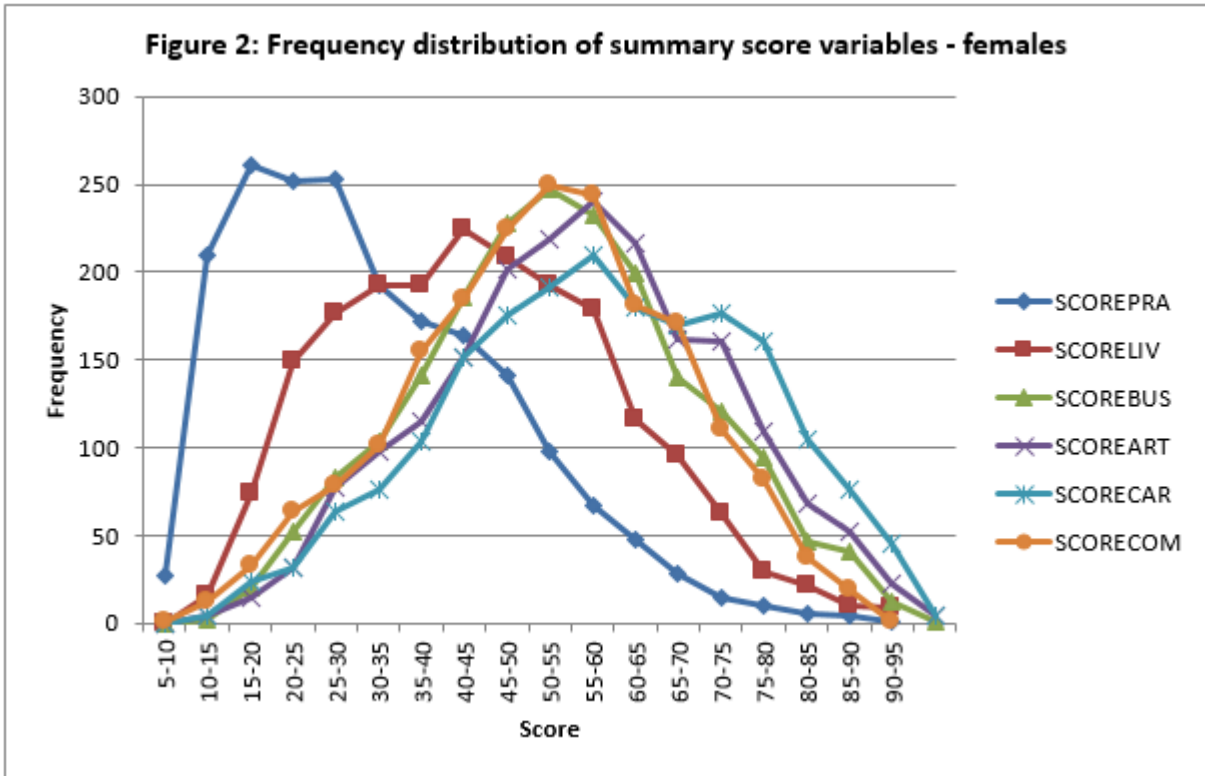
- 57.0-74.0: 4 Like
- 74.0-100.0: 5 Strong Like

9 Distribution of the data

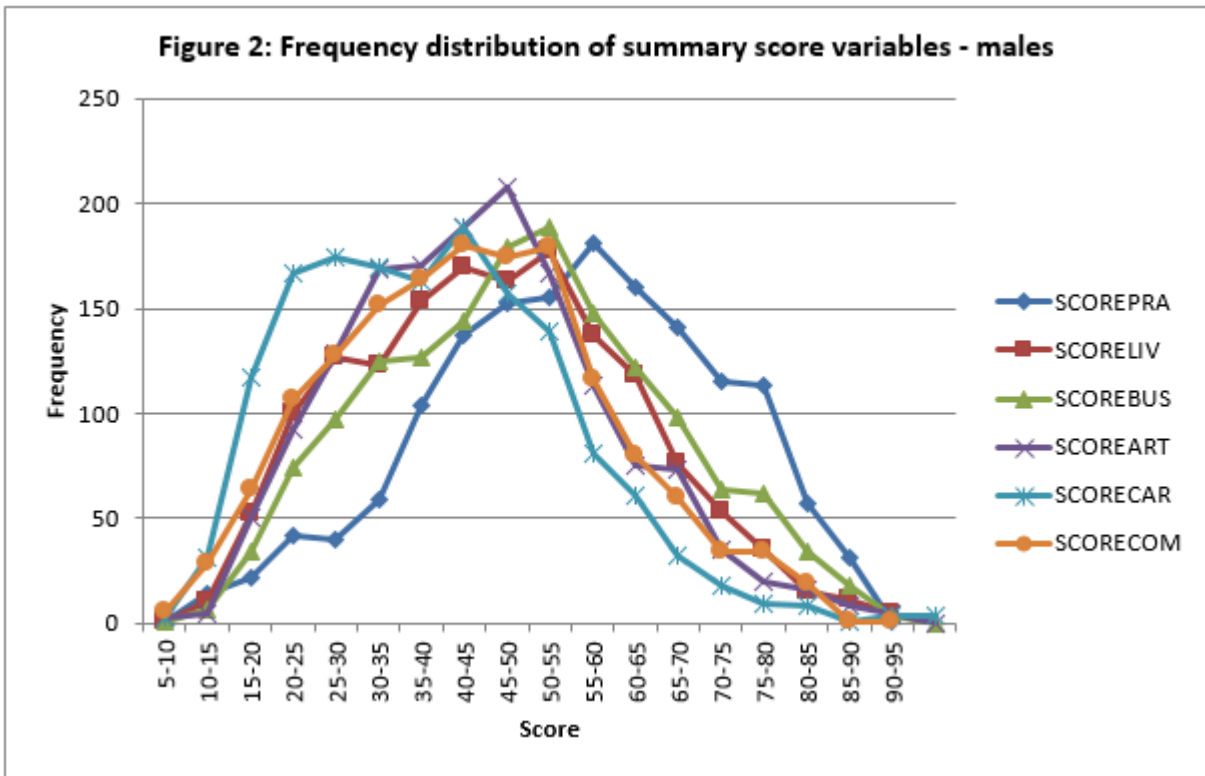
As can be seen from figure 1, the distributions of the six summary score variables (SCOREPRA-SCORECOM) are fairly similar to one another, with the exception of the practical/science and living things preference categories, which are more positively skewed, indicating a less favourable attitude toward these kinds of occupations. Much of this can be attributed to the strong negative attitude toward these categories among females, which is made more apparent due to the sex imbalance in the sample (1950 females compared with 1525 males). Figures 2 and 3 display the distribution of the data for females and males respectively, and show that the attitude towards practical/science-based occupations is very negative for females, but it is actually the most preferred category for males. Females also appear to show a slight preference toward caring occupations, but this enthusiasm is not shared by males, for whom it is the least popular category.



Note: Category 5-10 includes score 5 to 9.99, category 10-5 includes score 10-14.99 etc.



Note: Category 5-10 includes score 5 to 9.99, category 10-5 includes score 10-14.99 etc.



Note: Category 5-10 includes score 5 to 9.99, category 10-5 includes score 10-14.99 etc.

10 References

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2. Clemans, W.V (1966) An analytical and empirical examination of some properties of ipsative measures. *Psychometric Monographs*, **14**. Richmond, VA: Psychometric Society.
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11 Appendix 1 - Variables in the dataset

Variable name	Variable description	Value Range
BCSID	BCS70 Individual case Identifier	-2 No answer
Sect1	Which of sheets A-F chosen as 'Section 1' (subsequent one is then automatically 'Section 2')	A-E
T01face	Like/dislike first of the paired activities in Section 1, Question 1	-2 No answer -1 Dislike 0 Don't mind 1 Like
T02face-T29face (28 consecutive variables)	Preference between the two paired activities in Section 1, Questions 2-29	-2 No answer -1 Dislike 0 Don't mind 1 Like
T30face	Like/dislike first of the paired activities in Section 1, Question 30	-2 No answer -1 Dislike 0 Don't mind 1 Like
T31face	Like/dislike first of the paired activities in Section 2, Question 1	-2 No answer -1 Dislike 0 Don't mind 1 Like
T32face-T59face (28 consecutive variables)	Like/dislike first of the paired activities in Section 2, Questions 2-29	-2 No answer -1 Dislike 0 Don't mind 1 Like
T60face	Like/dislike first of the paired activities in Section 2, Question 30	-2 No answer -1 Dislike 0 Don't mind 1 Like

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Table 1 – continued from previous page

Variable name	Variable description	Value Range
T01face2	Like/dislike second of the paired activities in Section 1, Question 1	-2 No answer -1 Dislike 0 Don't mind 1 Like
T02face2-T29face2 (28 consecutive variables)	Like/dislike second of the paired activities in Section 1, Questions 2-29	-2 No answer -1 Dislike 0 Don't mind 1 Like
T30face2	Like/dislike second of the paired activities in Section 1, Question 30	-2 No answer -1 Dislike 0 Don't mind 1 Like
T31face2	Like/dislike second of the paired activities in Section 2, Question 1	-2 No answer -1 Dislike 0 Don't mind 1 Like
T32face2-T59face2 (28 consecutive variables)	Like/dislike second of the paired activities in Section 2, Questions 3-29	-2 No answer -1 Dislike 0 Don't mind 1 Like
T60face2	Like/dislike second of the paired activities in Section 2, Question 30	-2 No answer -1 Dislike 0 Don't mind 1 Like
Pref01	Preference between the two paired activities in Section 1, Question 1	1 Prefer 1st 2 Prefer 2nd
Pref02-Pref29 (28 consecutive variables)	Preference between the two paired activities in Section 1, Questions 2-29	1 Prefer 1st 2 Prefer 2nd

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Table 1 – continued from previous page

Variable name	Variable description	Value Range
Pref30	Preference between the two paired activities in Section 1, Question 30	1 Prefer 1st 2 Prefer 2nd
Pref31	Preference between the two paired activities in Section 2, Question 1	1 Prefer 1st 2 Prefer 2nd
Pref32-Pref59 (28 consecutive variables)	Preference between the two paired activities in Section 2, Questions 2-29	1 Prefer 1st 2 Prefer 2nd
Pref60	Preference between the two paired activities in Section 2, Question 30	1 Prefer 1st 2 Prefer 2nd
Scorepra	Score on practical/science-type work, derived by combining like/dislike scores and preferences (according to S.J.Closs algorithm)	0-100
Scoreliv	Score on working with living things, derived by combining like/dislike scores and preferences (according to S.J.Closs algorithm)	0-100
Scorebus	Score on business/commerce-type work derived by combining like/dislike scores and preferences (according to S.J.Closs algorithm)	0-100
Scoreart	Score on 'artistic leanings'-type work derived by combining like/dislike scores and (according to S.J.Closs algorithm)	0-100
Scorecar	Score on caring-type work derived by combining like/dislike scores and preferences (according to S.J.Closs algorithm)	0-100
Scorecom	Score on communication-type work derived by combining like/dislike scores and preferences (according to S.J.Closs algorithm)	0-100

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Table 1 – continued from previous page

Variable name	Variable description	Value Range
Type1cat	Type 1 Practical/Science work: Like/Dislike on scale 1-5	1 Strong Dislike 2 Dislike 3 Neutral 4 Like 5 Strong Like
Type2cat	Type 2 Working with living things: Like/Dislike on scale 1-5	1 Strong Dislike 2 Dislike 3 Neutral 4 Like 5 Strong Like
Type3cat	Type 3 Business/Commerce work: Like/Dislike on scale 1-5	1 Strong Dislike 2 Dislike 3 Neutral 4 Like 5 Strong Like
Type4cat	Type 4 'Artistic Leanings'-type work: Like/Dislike on scale 1-5	1 Strong Dislike 2 Dislike 3 Neutral 4 Like 5 Strong Like
Type5cat	Type 5 Caring for People: Like/Dislike on scale 1-5	1 Strong Dislike 2 Dislike 3 Neutral 4 Like 5 Strong Like
Type6cat	Type 6 Communication activities: Like/Dislike on scale 1-5	1 Strong Dislike 2 Dislike 3 Neutral 4 Like 5 Strong Like

12 Appendix 2 - Graded Sections A-F of the Occupational Interests Guide

(the questionnaire itself, as presented to participants, is available for download from: <http://www.cls.ioe.ac.uk/page.aspx?&sitesectionid=832&sitesectiontitle=Questionnaires>)

Section A (no qualifications or study needed, training up to 3 months):

	Activity Category	Activity
1	Practical/Science	Repair Holes in roads
	Living Things	Lift potatoes from fields
2	Communication	Show people where to go at exhibitions
	Business/Commerce	Iron and press clothes at a cleaners
3	Caring	Take patients to an operating theatre on a trolley
	Practical/Science	Demolish old buildings
4	Business/Commerce	Put letters into envelopes ready for posting
	Living Things	Put straw into animal cages in a zoo
5	Caring	Make beds in an old people's home
	Business/Commerce	Ask people for membership cards at a sports centre
6	Practical/Science	Load and unload lorries
	Artistic	Write labels and tie them on parcels
7	Living Things	Grow vegetables
	Artistic	Lay tables neatly
8	Communication	Call out numbers at Bingo games
	Practical/Science	Dig with a pick and shovel
9	Artistic	Mix dough for bread
	Business/Commerce	Operate a cash register in a supermarket
10	Caring	Tidy rooms for invalids
	Living Things	Look after animals in a pet shop
11	Practical/Science	Put up scaffolding for building work
	Artistic	Clean silver and brass
12	Business/Commerce	Take money and give change in a shop
	Caring	Do shopping for people too ill to go out
13	Living Things	Clean out hen-houses
	Communication	Take peoples coats at a cloakroom
14	Artistic	Set out goods on display shelves
	Caring	Carry luggage for elderly people
15	Communication	Sell tickets at a railway station
	Communication	Hand out locker keys at a swimming pool
16	Living Things	Take out weeds from flower beds
	Practical/Science	Use a wheelbarrow on a building site
17	Artistic	Alter hems on coats and jackets
	Communication	Take people up in a lift
18	Practical/Science	Fill up cars with petrol and oil
	Caring	Take people in wheelchairs out for walks
19	Living Things	Cut grass
	Business/Commerce	Count packets on store shelves
20	Communication	Tell people on trains when meals will be served.
	Caring	Help disabled children to dress themselves

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Table 2 – continued from previous page

	Activity Category	Activity
21	Business/Commerce	Check parking meters in a street
	Practical/Science	Stack crates in a warehouse
22	Artistic	Set out salads nicely on a plate
	Living Things	Put brand marks on sheep with coloured dye
23	Practical/Science	Empty dustbins
	Communication	Show customers how to use a launderette
24	Business/Commerce	Work a machine to print addresses
	Artistic	Fold and pack clothes in boxes to go to shops
25	Living Things	Feed farm animals
	Caring	Serve tea in a hostel for homeless people
26	Artistic	Polish furniture
	Practical/Science	Oil and grease machines
27	Caring	Play games with sick children
	Business/Commerce	Stick price labels on goods in a shop
28	Communication	Open doors for people at a museum
	Living Things	Trim hedges
29	Caring	Feed patients who can't feed themselves
	Artistic	Wrap gifts in a store
30	Communication	Call taxis for guests at hotels
	Business/Commerce	Sell newspapers

Section B (qualifications usually needed, but some passes might help; training between 2/3 months and a year; study not usually needed):

	Activity Category	Activity
1	Practical/Science	Clean and repair stonework on buildings
	Living Things	Spray fertilisers on crops
2	Communication	Show parties of visitors round a factory
	Artistic	Model new clothes
3	Caring	Keep an eye on children in a playground
	Practical/Science	Fight fires
4	Business/Commerce	Type and send out bills
	Living Things	Milk cows
5	Caring	Visit old people who need help at home
	Communication	Introduce records at a discotheque
6	Practical/Science	Lay paving stones
	Business/Commerce	Sort letters to be delivered by postmen
7	Living Things	Water seeds growing in a greenhouse
	Artistic	Measure and make curtains
8	Communication	Tell people where to wait for appointments
	Practical/Science	Drive a lorry
9	Artistic	Print patterns on cloth
	Business/Commerce	Add up money taken in at a counter
10	Caring	Supervise mealtimes in a children's home
	Living Things	Care for newborn lambs
11	Practical/Science	Repair railway tracks
	Artistic	Inspect samples of cloth for faults
12	Business/Commerce	Operate a duplicating machine in an office
	Caring	Rescue people
13	Living Things	Groom horses at a stable
	Communication	Direct people to the right counters at a store
14	Artistic	Cut and stitch leather to make belts
	Caring	Help injured people into ambulances
15	Business/Commerce	Issue tickets for air flights
	Communication	Get people to take part in holiday camp activities
16	Living Things	Herd sheep
	Practical/Science	Cut wood with a circular saw
17	Artistic	Put make up on actors and actresses
	Communication	Announce guests at a wedding reception
18	Practical/Science	Repair dents and holes in car bodies
	Caring	Look out for swimmers in difficulty at a pool
19	Living Things	Plant flower bulbs in parks and gardens
	Business/Commerce	Give out leaflets at a travel agents
20	Communication	Chat to customers while serving at a bar
	Caring	Mind children for working mothers
21	Business/Commerce	File letters into folders
	Practical/Science	Mind a machine in an engineering factory
22	Artistic	Match pieces of hair and make wigs
	Living Things	Clear land of weeds ready for planting
23	Practical/Science	Drive a bus or a taxi
	Communication	Answer peoples questions at an information desk

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Table 3 – continued from previous page

	Activity Category	Activity
24	Business/Commerce	Check customers' orders at a cleaners
	Artistic	Bake buns and cakes
25	Living Things	Breed birds for sale
	Caring	Help people stranded by floods
26	Artistic	Make lampshades
	Practical/Science	Dig up roads with a drill
27	Caring	Take a mobile shop round hospital wards
	Business/Commerce	Make lists of goods stored in a warehouse
28	Communication	Meet visitors to an office and give them directions
	Living Things	Protect animals and plants on a country estate
29	Caring	Wash hospital patients and help them to dress
	Artistic	Mount pictures in frames
30	Communication	Demonstrate goods in a showroom
	Business/Commerce	Weigh food in a shop

SECTION C ('O' levels or CSE's often asked for, but some jobs could be obtained without them; training 1-3 years, possibly more; usually involves going to college say 1 day/week):

	Activity Category	Activity
1	Practical/Science	Cut and fit glass for windows
	Living Things	Shear sheep
2	Communication	Give advice at exhibition stands
	Artistic	Arrange window displays
3	Caring	Care for handicapped children to give parents a holiday
	Practical/Science	Build walls with bricks
4	Business/Commerce	Make up wage packets
	Living Things	Buy farm animals at markets
5	Communication	Deal with emergency calls and send help
	Artistic	Perform in a variety concert
6	Practical/Science	Repair farm machinery
	Business/Commerce	Prepare bills for goods sold at a warehouse
7	Living Things	Spray fruit trees and bushes to prevent disease
	Artistic	Paint stage scenery
8	Caring	Answer telephone enquiries at an advice bureau
	Practical/Science	Plaster walls and ceilings
9	Artistic	Cut cloth to be sewn into suits
	Business/Commerce	Make up orders and accounts for a mailing firm
10	Caring	Cope with children taken ill at school
	Living Things	Grow vegetables in a market garden
11	Practical/Science	Install electric wiring
	Artistic	Arrange displays of flowers
12	Business/Commerce	Count money to be handed in at a bank
	Caring	Give first aid to people injured in accidents
13	Living Things	Recognise sickness in dairy cows and call in a vet
	Communication	Give city visitors information on events of interest
14	Artistic	Cover old chairs with new material
	Caring	Take care of invalids throughout the night
15	Business/Commerce	Write shorthand
	Communication	Announce events at sports meetings
16	Living Things	Train and exercise greyhounds
	Practical/Science	Dismantle and repair car gear boxes
17	Artistic	Hang paintings in an art gallery
	Communication	Meet and welcome people staying at hotels
18	Practical/Science	Plumb in baths and showers
	Caring	Look after patients at a dentist's surgery
19	Living Things	Assist a vet with the treatment of small animals
	Business/Commerce	Work out shift timetables at a factory
20	Communication	Stop people and ask their opinions for surveys
	Caring	Help people whose relatives have died
21	Business/Commerce	Type letters
	Practical/Science	Fix slates on roofs
22	Artistic	Display sets of costumes for a show
	Living Things	Take charge of the harvesting of farm crops
23	Practical/Science	Weld steel girders for roof supports

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Table 4 – continued from previous page

	Activity Category	Activity
	Communication	Show people round historical buildings
24	Business/Commerce	Work out the cost of posting parcels
	Artistic	Draw and colour maps
25	Living Things	Take cuttings of shrubs for transplanting
	Caring	Teach road safety to young children
26	Artistic	Decorate cakes with icing
	Practical/Science	Lay wooden floors for houses
27	Caring	Deliver meals to old people
	Business/Commerce	Check reports for typing errors
28	Communication	Sort out travel difficulties for tourists
	Living Things	Raise chickens and ducks
29	Caring	Train patients to walk with crutches
	Artistic	Make hats
30	Communication	Greet passengers boarding aeroplanes
	Business/Commerce	Make business appointments for a manager

SECTION D (a number of 'O' levels essential; training 2-3 years, possibly more; studying FT or PT usually quite important):

	Activity Category	Activity
1	Practical/Science	Dismantle and repair cameras
	Living Things	Identify chemicals in samples of soil
2	Communication	Report events of interest in a local newspaper
	Artistic	Draw film cartoons
3	Caring	Fit people with artificial legs and arms
	Practical/Science	Plan the best arrangement of machines in a factory
4	Business/Commerce	Set up a filing system for an office
	Living Things	Grow plants from seed in nurseries
5	Caring	Help with the treatment and cure of drug addicts
	Communication	Lead discussion groups
6	Practical/Science	Maintain and repair a ship's engines
	Business/Commerce	Inspect passports at docks and ports
7	Living Things	Cultivate tropical plants in a botanical garden
	Artistic	Design wallpaper
8	Communication	Answer questions about exhibits in a museum
	Practical/Science	Conduct tests on radar equipment
9	Artistic	Make special costumes for films and stage shows
	Business/Commerce	Arrange loans for people buying houses
10	Caring	Organise play activities for disturbed children
	Living Things	Analyse the fat content of milk samples
11	Practical/Science	Tune racing car engines
	Communication	Create pictures for advertisements
12	Business/Commerce	Keep accounts and give out money at a bank
	Caring	Train deaf children to use sign language
13	Living Things	Organise the planting of a forest
	Communication	Write leaflets describing places of interest
14	Artistic	Make and repair gold jewellery
	Caring	Run dances for hospital patients
15	Business/Commerce	Supervise clerks in an office
	Communication	Perform in advertising films
16	Living Things	Manage the feeding and care of animals
	Practical/Science	Check the progress of work on bridge construction
17	Artistic	Carve sculpture
	Communication	Escort groups of visitors from overseas
18	Practical/Science	Build hifi equipment
	Caring	Encourage people suffering from depression
19	Living Things	Identify blood groups in a laboratory
	Business/Commerce	Take notes of committee meetings
20	Artistic	Act in plays
	Caring	Look into complaints of cruelty to children
21	Business/Commerce	Calculate interest on savings accounts
	Practical/Science	Repair faults in television sets
22	Artistic	Design prints for textiles
	Living Things	Run a farm
23	Practical/Science	Make technical drawings in an engineering firm
	Communication	Introduce acts at variety shows

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Table 5 – continued from previous page

	Activity Category	Activity
24	Business/Commerce	Work out currency exchange rates
	Artistic	Make pottery
25	Living Things	Care for birds affected by oil pollution
	Caring	Nurse mentally ill people
26	Artistic	Plan and cut out paper patterns for clothes
	Practical/Science	Direct site work for new roadways
27	Caring	Train disabled people to play sports
	Business/Commerce	Calculate peoples wages and salaries
28	Communication	Read aloud to an audience
	Living Things	Estimate the age of fish from their scales
29	Caring	Persuade a firm to employ a blind person
	Artistic	Engrave designs on silver ornaments
30	Communication	Organise entertainment for hotel guests
	Business/Commerce	Explain and sell insurance policies

SECTION E ('A' levels or H's would be needed in relevant subjects; training 2-4 years, possibly more; study (FT or PT) forms part of the training):

	Activity Category	Activity
1	Practical/Science	Work out flight speeds and routes for aircraft
	Living Things	Advise on choice of plants and trees for public parks
2	Communication	Make up headlines for newspaper reports
	Artistic	Improve the style and appearance of household goods
3	Caring	Visit sick and elderly people in a parish
	Practical/Science	Draw up plans for building ships
4	Business/Commerce	Manage a branch of a bank
	Living Things	Dissect plants and study their structure
5	Caring	Provide a happy home environment for children in care
	Communication	Write magazine articles
6	Practical/Science	Apply maths to solving problems of traffic flow
	Business/Commerce	Catalogue information in a Government office
7	Living Things	Give advice on methods of pest control.
	Artistic	Design covers for records
8	Communication	Audition people for parts in a play
	Practical/Science	Make calculations for designing bridges
9	Artistic	Do engravings on glass
	Business/Commerce	Arrange for the insurance of ships and aeroplanes
10	Caring	Find foster parents for children
	Living Things	Control the spread of diseases in cattle
11	Practical/Science	Design car engines
	Artistic	Train people to carve sculpture in wood
12	Business/Commerce	Estimate the value of houses
	Caring	Give guidance to people whose marriages are breaking up
13	Living Things	Test food for the presence of harmful bacteria
	Communication	Research information for documentaries
14	Artistic	Create new ideas for jewellery
	Caring	Arrange welfare benefits for families in need
15	Business/Commerce	Estimate the potential market for a new product
	Communication	Announce programmes on radio
16	Living Things	Breed fish on a fish farm
	Practical/Science	Locate and correct faults in computers
17	Artistic	Plan colour schemes for hotel interiors
	Communication	Write the wording for advertisements
18	Practical/Science	Conduct performance tests on diesel engines
	Caring	Calm down a disturbed mental patient
19	Living Things	Develop chemicals for eliminating poisonous plants
	Business/Commerce	Organise advertising campaigns
20	Communication	Direct actors and actresses rehearsing films
	Caring	Train people to overcome speech defects
21	Business/Commerce	Sort out disputes between management and workers
	Practical/Science	Test the strength of metals for use in industry
22	Artistic	Draw and paint illustrations for books
	Living Things	Study methods of improving fruit harvests
23	Practical/Science	Inspect buildings for faults and defects

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Table 6 – continued from previous page

	Activity Category	Activity
	Communication	Introduce speakers at a public meeting
24	Business/Commerce	Monitor office accounts at regular intervals
	Artistic	Create new fashion styles
25	Living Things	Advise farmers on suitable crops for different soils
	Caring	Persuade a landlord not to raise an old person's rent
26	Artistic	Plan a range of curtain materials
	Practical/Science	Design machinery for processing gas
27	Caring	Advise people wanting to adopt babies
	Business/Commerce	Discuss and agree sales targets with managers
28	Communication	Interview people on television
	Living Things	Analyse water supplies to check for pollution
29	Caring	Help ex-prisoners to find jobs
	Artistic	Design uniforms
30	Communication	Report international news events
	Business/Commerce	Give people advice on buying and selling property

SECTION F (2-3 'A' levels or 3-4 H's plus 'O' levels required. Good grades in main subjects often necessary; training 3-5 years, possibly more; degree or equivalent required:

	Activity Category	Activity
1	Practical/Science	Do research on new ways of producing energy
	Living Things	Study the causes of diseases
2	Communication	Take part in debates
	Artistic	Design a series of postage stamps
3	Caring	Help children with learning difficulties
	Practical/Science	Study the structure of atoms
4	Business/Commerce	Reorganise a factory to improve production
	Living Things	Plan the development of a forest area
5	Caring	Look into the reasons for children playing truant
	Communication	Read scripts for books and decide which to publish
6	Practical/Science	Develop processes for extracting chemicals from coals
	Business/Commerce	Check accounts for suspected fraud
7	Living Things	Collect and preserve plant specimens
	Artistic	Plan the restoration of a cathedral
8	Communication	Decide which items should be printed in a newspaper
	Practical/Science	Observe stars with a radio telescope
9	Communication	Plan a course for students at an art college
	Business/Commerce	Estimate the risks involved in insurance schemes
10	Caring	Help underprivileged people with their legal problems
	Living Things	Advise farmers on problems of rearing animals
11	Practical/Science	Calculate orbital heights and speeds for satellites
	Artistic	Draw design styles for houses
12	Business/Commerce	Interpret statistics on imports and exports
	Caring	Teach handicapped children
13	Living Things	Analyse blood specimens for bacteria
	Communication	Write a novel
14	Artistic	Study the painting techniques used by artists
	Caring	Organise training schemes for the disabled
15	Business/Commerce	Prepare graphs of production and sales figures
	Communication	Plan a TV Current Affairs programme
16	Living Things	Go on expeditions to find rare species
	Practical/Science	Apply mathematics to the design of aeroplanes
17	Artistic	Plan and carve sculpture for new buildings
	Communication	Write scripts for radio programmes
18	Practical/Science	Work on developing new metal alloys
	Caring	Organise aid for people affected by disasters
19	Living Things	Estimate the age of rocks from fossil contents
	Business/Commerce	Prepare cases for companies in legal disputes
20	Communication	Review plays
	Caring	Investigate the causes and treatment of delinquency
21	Business/Commerce	Arrange foreign government contracts for exporters
	Practical/Science	Conduct experiments with electricity and magnetism
22	Artistic	Design stained glass windows
	Living Things	Diagnose and treat animal diseases
23	Practical/Science	Devise specialised electronic equipment

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Table 7 – continued from previous page

	Activity Category	Activity
	Communication	Collect and preserve documents of national interest
24	Business/Commerce	Negotiate sales contracts for businesses
	Artistic	Paint portraits
25	Living Things	Breed sheep with better quality wool
	Caring	Run a campaign to improve bad housing areas
26	Artistic	Plan costumes and scenery for opera companies
	Practical/Science	Supervise the design and construction of dams
27	Caring	Prepare reports on children appearing before courts
	Business/Commerce	Manage a large manufacturing company
28	Communication	Give talks and lectures
	Living Things	Trace the migration routes of birds
29	Caring	Diagnose and treat mental illness
	Artistic	Restore and preserve works of art
30	Communication	Translate books and articles into English
	Business/Commerce	Draw up wills for clients