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THE ASSESSMENT AND ANALYSIS OF HANDEDNESS: THE EDINBURGH INVENTORY

R. C. OLDFIELD

M.R.C. Speech and Communication Unit, Edinburgh University, Scotland

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Abstract—The need for a simply applied quantitative assessment of handedness is discussed and some previous forms reviewed. An inventory of 20 items with a set of instructions and response- and computational-conventions is proposed and the results obtained from a young adult population numbering some 1100 individuals are reported. The separate items are examined from the point of view of sex, cultural and socio-economic factors which might appertain to them and also of their inter-relationship to each other and to the measure computed from them all. Criteria derived from these considerations are then applied to eliminate 10 of the original 20 items and the results recomputed to provide frequency-distribution and cumulative frequency functions and a revised item-analysis. The difference of incidence of handedness between the sexes is discussed.

1. INTRODUCTION

THE AIM of the present communication is to propose a simple and brief method of assessing handedness on a quantitative scale for use in neuropsychological and other clinical and experimental work. Apart from judgements by individual clinicians based on a few informal enquiries or observations, and absurdities such as that of PARSON [1] who held that " . . . handedness is caused by eyed-ness . . .", and thus considered it necessary only to determine eye-dominance to establish the handedness of an individual, two approaches have been adopted in the past for assessment of a quantitative kind. Both of these are exemplified by the work of DUROST [2]. The first consists in having the subjects perform various standard unimanual tasks, generally of a semi-novel kind, with left and right hands. Performances can be scored for time and/or error and an index of handedness calculated. The second approach calls for answers to questions about the subjects' practice in performing a number of habitual everyday acts in which the roles of right and left hands are, supposedly, sharply distinguished. Conformity to the practice of the majority of the population is regarded as the norm, and an index such as $(R-L)/(R+L)$ is computed, where R is the number of acts performed in the "normal" way and L the number performed "the wrong way round".

The first approach, using as it does tasks which in the precise form presented are unfamiliar to the subject and which he is given little or no opportunity to practice, produces a distribution of indices which, while not symmetrical, is roughly bell-shaped and has an outstanding mode not far from the neutral point, and sometimes (e.g. DUROST [2]) another small one near the left-hand end. That is to say, the right-left differences displayed by such methods are relatively small and certainly do not correspond with the gross disparity between the two hands which is manifest in well-established tasks. By bringing such tasks

into consideration, as is done in the second method—that of the inventory—a very different distribution of indices is found. This takes the form of an unsymmetrical U, sometimes with a small mode near the left end (which presumably reflects the partial adaptation of left-handed people to the constraints of right-handed implements.)

The presumed advantage of the first approach is that it is "behavioural" and free from the potential unreliability of subjects reporting about activities some of which they may not often perform, or which, on the other hand, may be so habitual that they take little conscious detailed account of what they do. Its disadvantages are that it is time-consuming: that performances may be affected by subjects' differing experience of tasks bearing some relation to the specific ones used, and that it may not be free from influences of sex, age and culture which cannot easily be identified. For these reasons we have adopted the second, inventory, method. (It should not be forgotten, however, that for certain special purposes—such, for instance, as the study of the development of handedness in the child—this approach may be quite inappropriate and something resembling the previous, behaviouredly based one, may be essential).

Inventories of this kind have been devised and used by a large number of previous workers, e.g. DUROST [2], HULL [3], HUMPHREY [4] and ANNETT [5]. As well as containing questions about the more obvious unilateral activities such as writing and drawing, they usually include a variety of other items rather randomly drawn, as it sometimes seems, from the individual's repertoire of manual behaviour. The set of answers obtained may be regarded as a structured, standardised *description*—if on an arbitrary basis—of the individual's handedness characteristics, or as a *sample* from his total set of habits for the calculation of some single index of laterality.

In this latter case a number of further questions present themselves. To what extent, for instance, can any particular selection of items be regarded as a "fair" sample? Should all the items be given equal weight? How far are some superfluous in the sense that there is a high correlation between the answers to them and those to other items? To such questions there are no immediate or obvious answers, and it may be noted, for instance, that the aim of securing statistically 'clean' and independent data for calculation of a general measure might conflict with that of getting a significant picture of the individual's laterality behaviour. Answers, for example, to the two questions "With which hand do you write?" and "With which hand do you draw?" are very highly correlated, and one or other is redundant in a statistical sense. Yet it might often be of interest to know about a person that, though writing with his left hand, he draws with his right.

The usefulness of having a single laterality index, even though upon what must in the nature of the case be an arbitrary basis would, however, seem unquestionable. Contemporary interest in "indeterminate" handedness and its relation to incomplete cerebral dominance make it desirable for comparable handedness data from separate sources to be available, especially as the relevant case material is generally small in quantity. ZANGWILL's [6] discussion of speech and handedness affords an apt illustration of this point. In seeking to clarify, in a quantitative way, the questions of incidence of aphasia in right and left hemisphere lesions he is forced to draw upon seven different sources to amass a total of 93 cases, while in his specific references to handedness in this connection he has recourse to five different sources to collate information about 15 left-handed writers. Discussing the question of recovery from aphasia in right- and left-handers he tabulates 160 cases from LURIA's [7] work; but is constrained to remark (p.12, fn.) "Luria's criteria

(of handedness laterality) are somewhat miscellaneous and include a variety of morphological, physiological and psychological characteristics, not all of which have been accepted as valid indications of sinistrality".

A measure of hand laterality, then, simply applied and widely used would be of considerable value. In the absence of any firmly based knowledge of the underlying mechanism of handedness, the only way of providing such a measure is to adopt a set of inventory items and a scoring and computational convention, and apply these to an adequate sample of individuals. The resulting frequency distribution (together with its percentage cumulative function from which, say, deciles could be derived), is then available as a meaningful background for the quantitative assessment of further individuals. Further, the respective contributions of the separate items to the index as a whole may be examined.

2. METHOD, PROCEDURE, SUBJECTS

In the course of a search for left-handed musicians by OLDFIED [8] a modified version of HUMPHREY's [4] inventory was used, twenty items being selected from it. With further very slight changes this was employed in the present investigation. The whole inventory, including instructions, is shown in Appendix I. As to the choice of items, it seems probable that no selection could be exempt from criticism. The present set of questions, however, proved capable of answer by a very high percentage of our population of undergraduate subjects.

The twenty items relating to the use of the hands were used in calculating for each subject a *Laterality Quotient* (L.Q.) in accordance with the expression

$$H = 100.\frac{\sum_{i=1}^{20} X(i, R) - \sum_{i=1}^{20} X(i, L)}{\sum_{i=1}^{20} X(i, R) + \sum_{i=1}^{20} X(i, L)}$$

$$-100 \leqslant H \leqslant +100 \qquad (1)$$

where $X(i, R)$ and $X(i, L)$ are the numbers of +'s for the ith item in the Right and Left columns respectively. The reason for this apparently ponderous notation will appear later in connection with the item-analysis. In practice, to calculate the L.Q., all that has to be done is to add all the +'s for each hand, subtract the sum for the left from that for the right, divide by the sum of both and multiply by 100.*

The subjects used were male and female undergraduates. Copies of the inventory were sent to departments of psychology in several English and Scottish Universities, which distributed them chiefly in first-year classes. One thousand one hundred and twenty-eight forms were returned by 394 males and 734 females. The mean age of the male subjects was 21.3 years, *SD* 3.1 years and that of the females 20.7 years, *SD* 3.6 years. There is no significant age-difference between the sexes. As a sample of the whole adult population this forms a narrow age-group, but it was thought that by the age of 20 handedness would be fully developed and stabilized. Socio-economic categories are, obviously, not representative of the whole population and the sample is evidently highly atypical as regards intelligence and cultural levels. (Further investigations to secure data for a balanced sample of the whole population are now being planned.)

3. RESULTS A

The results of this stage of the investigation will be only briefly reported, since they form but a half-way house to a more refined and practical treatment.

(a) *Subjects' own assessment of their handedness*

One hundred and two ((25.9%) of the males and 122 (16.6%) of the females claimed that they had some tendency to left-handedness. This difference between the sexes is highly

* It should be noted that this formula is *not* the same as that given in OLDFIELD [8]. The reasons for the alteration are technical, and need not be given here.

significant ($\chi^2 = 13.86$, $p < 0.001$) which is, of course, in keeping with previous findings using various criteria of left-handedness. Perhaps the most notable feature of these self-assessments is that they tend to underestimate the degree of departure from strong right-handedness. Of all subjects whose L.Q.'s lay between +31 and +40 for example, only about half admit to some tendency to left-handedness Yet L.Q.'s within this range indicate a very marked deviation from truly right-handed behaviour, so far as the inventory items indicate, and it seems probable that the criteria of left-handedness which many people adopt relate to well-marked features such as writing, drawing and the use of a knife. Other deviations and reversed preferences are regarded as incidental, and not indicative of what is generally regarded as a distinct peculiarity. It would follow that, especially where research or clinical interest centres on "mixed" or "indeterminate" handedness, a simple question such as "Are you at all left-handed?" is unlikely to elicit the required information.

(b) Laterality quotient

It is clear that, to gain a true picture of the distribution of handedness in the general population, weighting of the data to take account of the disparity in the sex-composition of our group of subjects is necessary. In Fig. 1, which shows the distribution of Laterality

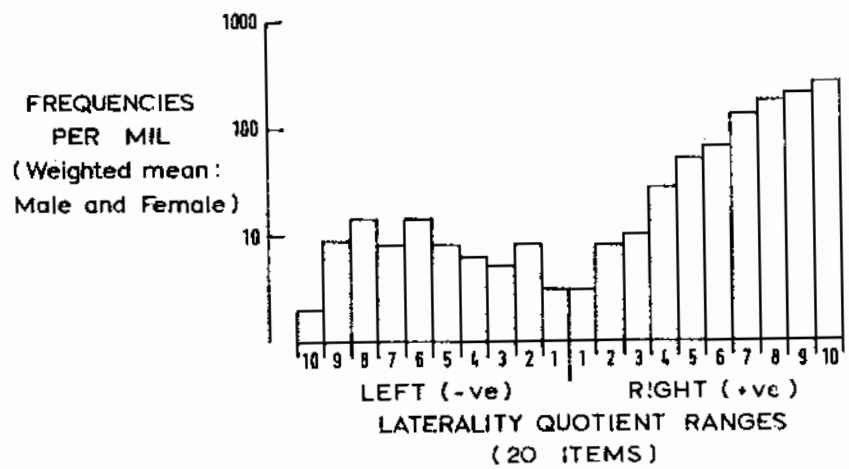

FIG. 1. Distribution of laterality quotient for original 20-item inventory.

Quotients in our undergraduate population for the 20-item inventory, frequencies *per mil* are shown (on the basis of equal weighting for the sexes). It will be noted that the ordinates are plotted on a logarithm to the base ten scale in view of the great discrepancy between right-handed and left-handed frequencies. The L.Q. ranges have for convenience been labelled −10 to +10: thus +5, for instance, represents the range +41 to +50. This convention will be adhered to throughout this communication. The total number of subjects involved is here 1109, the discrepancy representing cards rejected by the computer due to punching errors or irregularities.

Little need be said about this particular distribution. A mode is evident at about −70, while no second mode is apparent on the right-handed side. This mode towards the left-handed end may be the result of some adaptation by left-handed people to a world predominantly organized for the right-handed.

4. ITEM ANALYSIS AND SELECTION

One of our present aims is to devise a means of quantitatively assessing hand laterality which, besides being quick and easy to use, can be applied as universally as possible so that meaningful comparisons may be made between patients and other subjects of both sexes and of differing national, cultural, and socio-economic backgrounds. A glance at the 20 items so far considered sufficiently indicates the unsuitability of a number of them from this point of view. The British, for instance, have the odd habit of using their knife and fork at meal times simultaneously, and strongly enforced etiquette enjoins the holding of knife in the right, and the fork in the left, hand. Cricket bats are not commonly used in Parisian suburbs, and many inhabitants of Manhattan apartment blocks find little use for rakes. While most men make shift to sew on indispensable buttons, the use of needle and thread is unquestionably far more prevalent among the female sex.

Criteria such as these must clearly play a part in an appropriate selection of items, even if their application is somewhat a matter of conjectural and individual judgement. But another set of considerations of a more quantitative kind arises when we study data for individual items in their relation one to another and to the Laterality Quotient computed from them all.

Correlation between items

It is clear that if the data between any two items correlate very highly over the subject-population, two consequences may emerge. The first is that of the two items one must be regarded as redundant; the second that if, nevertheless, neither is rejected from a set of items whose total number is not much greater than say 10 the effect will be to weight the laterality quotient in the sense of attributing extra importance to acts such as those to which the pair of items relate. In our set of 20 items, for instance, *writing* and *drawing* are in fact highly correlated, and the question must arise whether to reject one of them or to retain both. We might follow the former course in an effort to secure independance of measures from the various items; we might, on the other hand keep both. One reason for doing so would be to retain the possibility of detecting those undoubtedly infrequent, but potentially interesting, cases in which one hand is used for writing and the other for drawing. We would thus be sacrificing some degree of quantitative correctness in the interests of qualitative portrayal. Another reason for retaining both might be that we judge the use of the hands in representational or symbolic tasks as particularly important facets of our concept of handedness, and therefore deliberately weight our quantitative estimate of laterality in keeping with this.

Computational limitations in fact render virtually impossible the production of a complete correlation matrix for the 20 items over the total subject population. Calculations effected in terms of Kendall's *tau* for parts of the total population proved unrevealing and the results will not be reported or discussed here.

A more promising approach to an item-analysis is in the second course suggested above. This is the study of the individual contribution of the different items to the Laterality Quotient value. Such an item-analysis may be conducted in the following form.

With notation similar to that of equation (1),

Let $X(i, j, h, R)$ and $X(i, j, h, L)$ be respectively the Right and Left scores of the jth subject (of the n_h) in the hth Laterality Quotient range, for the item i.

We compute the quantity λ_i where

$$\lambda_i = 100. \frac{\sum_{j=1}^{n_h} \{X(i, j, h, R) - X(i, j, h, L)\}}{\sum_{j=1}^{n_h} \{X(i, j, h, R) + X(i, j, h, L)\}} \qquad (2)$$

$$-100 \leqslant \lambda_i \leqslant +100.$$

That is, instead of—as in computing the L.Q.—summing the $X(R)$ and $X(L)$ scores *for all items* for *each subject*, we sum, *for each item*, the $X(R)$ and $X(L)$ scores *for all subjects* whose L.Q.s place them in each of the L.Q. ranges. In simpler, if looser, terms we compute the set of "Laterality Quotients" for each *item*.

It will be appreciated that, in consequence of the small frequencies of the middle L.Q. ranges, the corresponding values of λ may be unreliable or even indeterminate.

Figure 2 shows the plotted values of λ for each of the 20 original items, the abscissa representing ranges of L.Q. computed from all 20. One or two points of interest may be noted.

(i) *Writing and drawing*. During the last 30–40 years a policy of "permissiveness" has prevailed in British schools with regard to the hand used for writing and drawing. The effect of this is reflected in the λ graphs, virtually all subjects with L.Q.<0 returning left hand scores for these items: a curious, and unexplained feature of the graphs is, however, the dip in both between $+30$ and $+70$. The higher values of λ between $+30$ and 0 could, on the other hand, be merely the consequence of the inherent unreliability of estimates of λ based on the small groups of subjects in these L.Q. ranges. It is clear that the results for writing are very highly correlated with those for drawing.

(ii) *Throwing*. In this case λ appears to cross the zero line at $+3$, though there is a subsequent excursion to $\lambda = +100$ at -1. Once again this may be a further instance of the unreliability of λ in the middle L.Q. values, and better estimates might show a true zero crossing point at about L.Q.$=\pm 1$. If so, throwing behaviour would be a good single indicator of handedness.

(iii) *Scissors*. This is an interesting case in as much as scissors are in fact "handed" instruments, though capable of use by the opposite hand. (Left-handed pairs are, I believe, obtainable but are not commonly seen or used.) The λ crossover point is well down towards the left-handed end of the L.Q. scale at -5, and the item is therefore a valuable one in the grading of the L.Q. scale in the middle range.

(iv) *Toothbrush*. The use of this shows, by comparison with other items, an exceptionally sharp change over, λ moving from $+100$ to -100 between L.Q.s $+3$ and $+2$.

(v) *Tennis racket*. This has a change-over point at L.Q. -4. The racket itself is a manually neutral object and, having regard to the frequency of back-handed strokes generally, it is difficult to see any advantage in right-handed, as opposed to left-handed, use of the racket. It is possible that it derives from some indiscernible, subtle features of the play tactics of (generally) right-handed opponents.

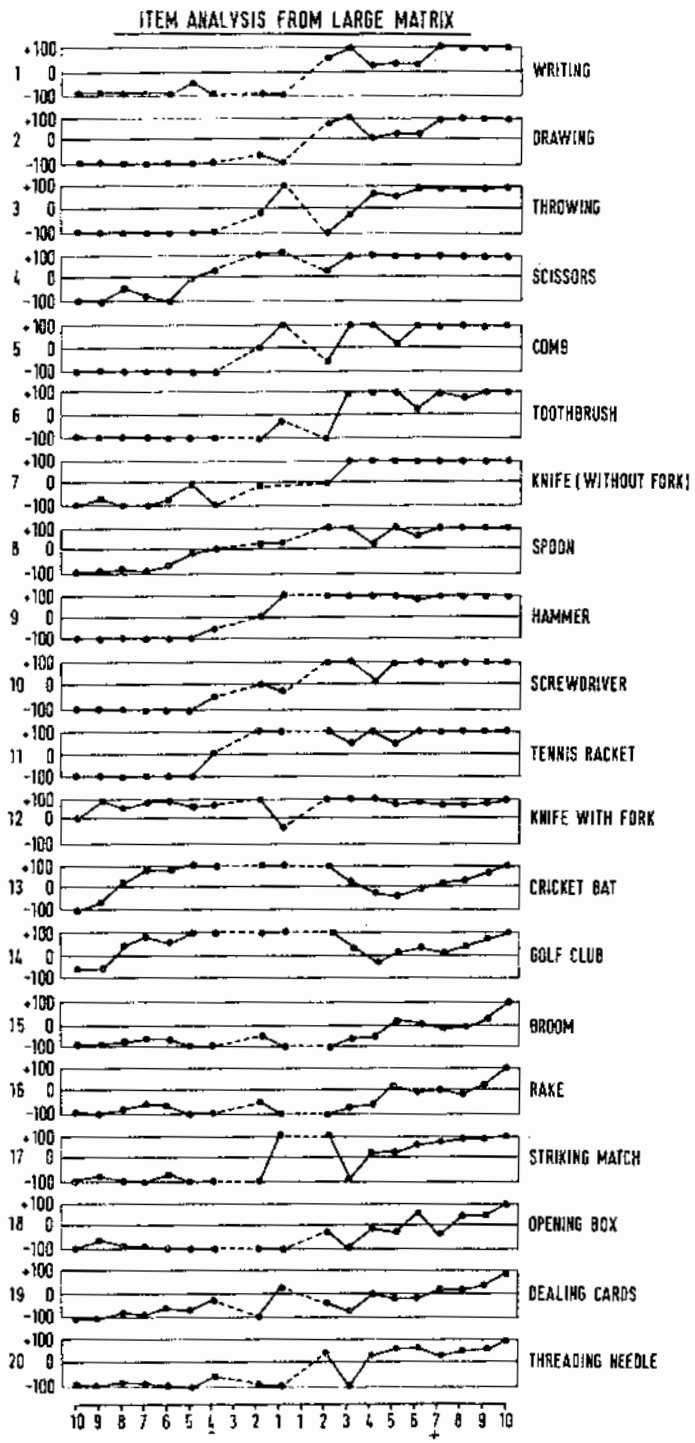

FIG. 2. Item-analysis for original 20-item inventory.

(vi) *Knife and fork*. In spite of the more liberal views now prevalent in Britain regarding the use of the left-hand—as exemplified by freedom to write with it—it would seem that the "proper" use of knife and fork is still firmly inculcated by the authorities who preside over the child's development. As may be seen from the λ-graph, apart from a single, and probably unreliable, deviation at L.Q. -2, and a drop to zero at -10, λ remains firmly near to $+100$ throughout the L.Q. range. It has been suggested to me that in this social conventional prescription there may be an element of practical reason, namely that at a crowded family table reversed use of knife and fork by one individual might prove physically inconvenient and awkward for his neighbours: at all events this item provides an

example of an activity enquiries about which can contribute virtually no information towards the assessment of handedness.

(vii) *Broom and rake.* These items proved somewhat surprising to the present writer (a strongly right-handed individual). It would seem that holding these tools with the left-hand at the top, and thereby sweeping or raking a region to the right of the operator is fairly widespread. This could, perhaps, be attributed to a general tendency to favour the right half of space so far as perception and attention go. But it should in any case be noted that, as I have found by subsequent casual enquiry and observation, many people use brooms and rakes either way round, changing hands accordingly. This results, so far as the item-scoring is concerned, in a R+, L+, entry, with consequent depression of λ-values even for strongly right-handed subjects.

(viii) *Dealing cards.* Here again it would appear that a surprising proportion of right-handers deal cards holding the *pack* in the right hand. The values of λ fall steadily at the right hand end of the L.Q. scale to cross the zero line at about +6. There is possibly some logic in this—to the present author—"wrong" way of dealing cards inasmuch as the first is dealt to the player on the dealer's left. Again, the personal example of another individual may play a part. One thoroughly right-handed man told me that he had acquired the habit of dealing left-handed by simply copying his father who had first taught him card games.

The above points, taken together, may serve to illustrate the variety and complexity of some of the factors determining the use of the hands in habitual everyday activities. They emphasize, too, the difficulty of choosing a set of items for an inventory designed to give a quick, universally applicable quantitative estimate and qualitative profile of an individual's handedness. In making a choice of 10 items for future use the present author proceeded as far as possible by elimination of what seemed to him the less apt items, on criteria drawn both from the considerations of neutrality as between sexes, (Western) nations, and socio-economic and cultural factors* and on the showing of the item-analysis.

It should be emphasised that *any* set of items afford a view of handedness which is arbitrary, and that any measure of laterality has a validity which can extend no further than the data obtained from a reasonable sample population. Nevertheless such a measure can prove useful for *comparative* purposes, *provided* a standard procedure is adhered to.

The items finally selected, together with the instructions, are shown in Appendix II. (Copies of the Inventory may be obtained at cost price from the author.) The extra two items, relating to feet and eyes, were included with a view to later study and the results are not reported on in the present communication.

5. RESULTS B

Re-computation of the data for the 10 selected items gave the following results.

(i) *Distribution of L.Q.s*

This is shown in Fig. 3. *This distribution is the basic data-set which, in an operational sense, defines degrees of handedness in connection with the inventory.*

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* I had originally included among the 10 chosen items *Tennis-racket*, feeling it desirable to represent games-playing. This item proved answerable by the undergraduate population, since a great majority of young people have at least (if not always with enthusiasm) some experience in its use. Dr. Freda Newcombe, however, who had been using the inventory on a group of patients roughly 30 years older than my undergraduate subjects, found many unable to respond to this item, and on her advice I substituted *Throwing*.

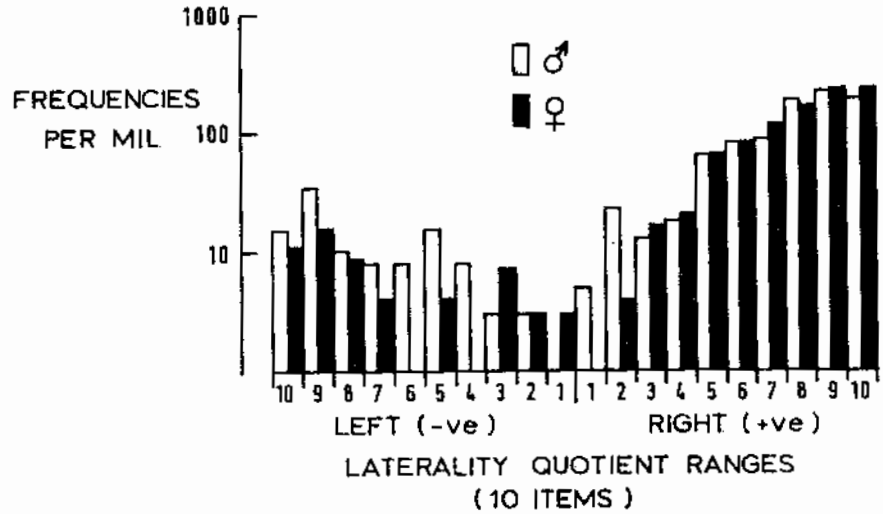

FIG. 3. Distribution of laterality quotient for final 10-item inventory.

(ii) *Sex-differences*

It is, of course, a commonplate that on any reasonable criterion the incidence of left-handedness is smaller among females than among males.* We may take as a criterion L.Q. <0 for left-handedness and in this case we have:

Table 1.

	L.Q. +	L.Q. −	
Males	360	40 (10.0%)	400
Females	667	42 (5.92%)	709
	1027	82	1109
	$\chi^2=6.21$	$p<0.02$	

A more interesting question arises when we ask whereabouts in the L.Q. scale this discrepancy between the sexes occurs. Is, for instance, the greater incidence of left-handers among males due to there being more *very* left-handed ones, or is the difference spread more evenly throughout the scale? Such a question could have significance in relation to the genetic as opposed to the social aspects of handedness. Figure 4 shows that the greater incidence among males is to be found spread throughout the left-handed segment of the scale, though—for what the rather small numbers are worth—it is not uninteresting to note that the greatest discrepancy is by no means to be found at the extreme left hand end.

* In general the differential incidence of left-handedness between the sexes, taken together with the unquestionable, if genetically obscure, familial tendency of the condition suggests interesting speculations regarding the possible role of the X and Y chromosomes, which might be subjected to empirical test by determining the handedness of individuals having chromosomal abnormalities. Is, for instance, a greater incidence of left-handedness to be found among the XYY group than among either the XXY (both groups being male) or the normal XY males? The present author is at present collecting such information as may be obtainable about these questions. But, apart from the small numbers of chromosomally abnormal individuals at present available, a number of other difficulties arising from their various psychological peculiarities are bound to make the enquiry a difficult and protracted one.

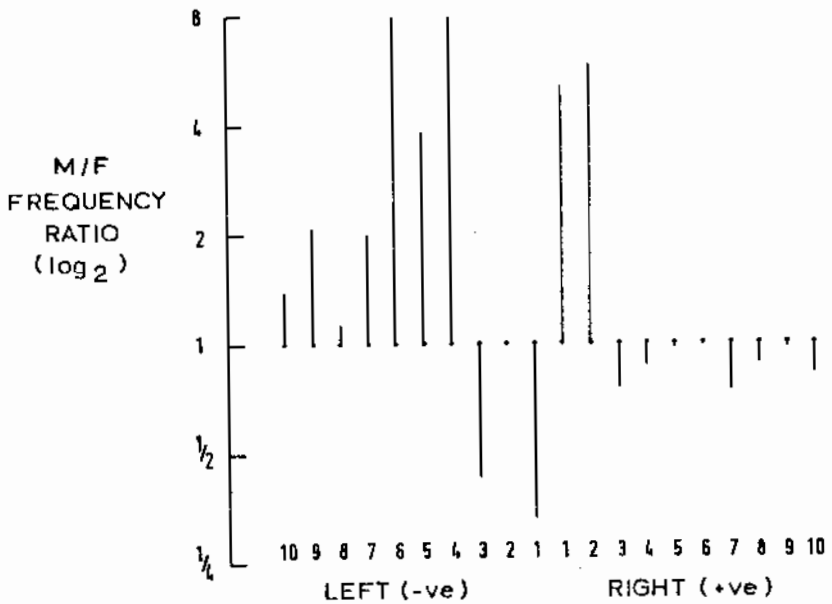

FIG. 4. Distribution of sex incidence discrepancies.

(At first sight it may appear odd that the large ratios in favour of male incidence at the left hand side of the scale are not balanced by correspondingly large ones in favour of females at the right hand end. This is, however, simply due to the fact that the numbers of individuals involved on the left side are small compared with those on the right; thus a very small ratio in favour of females towards the right hand end numerically balances a large ratio in favour of males on the left.)

(iii) *Item-analysis*

Sets of graphs showing λ plotted against L.Q. range for males and females separately are shown in Figs. 5 and 6. These show no features of any striking interest and are included for the sake of completeness.

(iv) *Cumulative frequencies and the establishment of decile values of L.Q.*

It is obviously desirable to relate laterality to proportions of the total population having L.Q.s lying within a given range. But it is at once evident that the type of frequency distribution involved is an extremely awkward one to handle statistically. The difficulty arises from both the U form and the fact that the left hand side contains only about 10% of the total population. Thus if we plot a single cumulative frequency curve from L.Q. -100 to L.Q. $+100$ the decile points are crowded together on the steep rise at the right hand end.

It was therefore decided to divide the total population arbitrarily into two sections with the L.Q. cut at zero, and treat the two parts separately. Thus percentage cumulative curves, shown in Fig. 7, represent the "Right-handed" and the "Left-handed" sections of

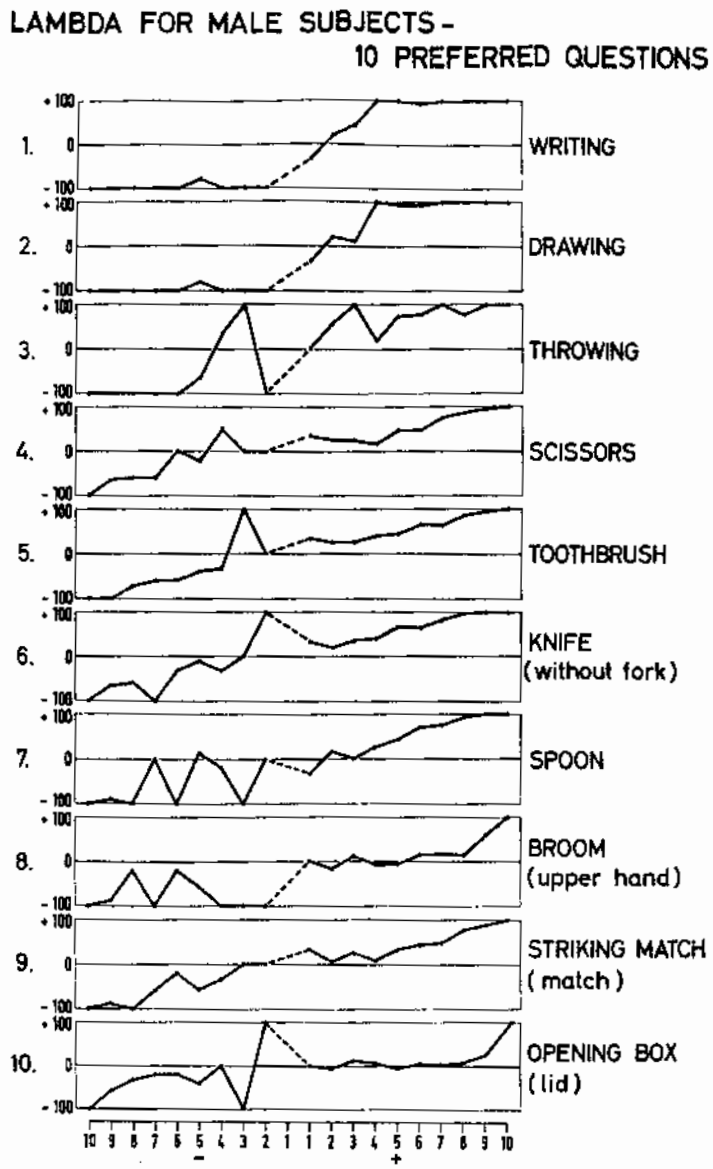

FIG. 5. Item-analysis for males for final 10-item inventory.

the population. Even so, the establishment of decile values presents difficulties. So far as the right-handed section is concerned the points lie nicely on a monotonically ascending curve, and fitting any particular function, with computation of decile values, seemed superfluous. A curve has therefore been drawn by hand and the decile values read off are shown tabulated in Table 2. The situation as regards the left-handed section can be seen, from the frequency distribution, to be less accommodating. This is clearly, in part at least, due to the relatively small numbers involved. There is a fairly evident mode, but other irregularities obtrude and the cumulative points allow no very satisfactory curve to be hand-drawn. Consideration was given to trying to fit a form such as an incomplete Beta-function, but it was finally decided (a) to use the hand-drawn curve shown in Fig. 7 to provide a set of *provisional* decile values (shown in Table 3) and (b) to obtain more data from a further undergraduate population so as to establish larger frequency values for the left-handed section. Steps are now being taken to do this, and corrected decile values will be published in due course.

It is suggested that workers wishing to use the inventory should quote the result as, e.g. "L.Q. = +69, Decile R.4".

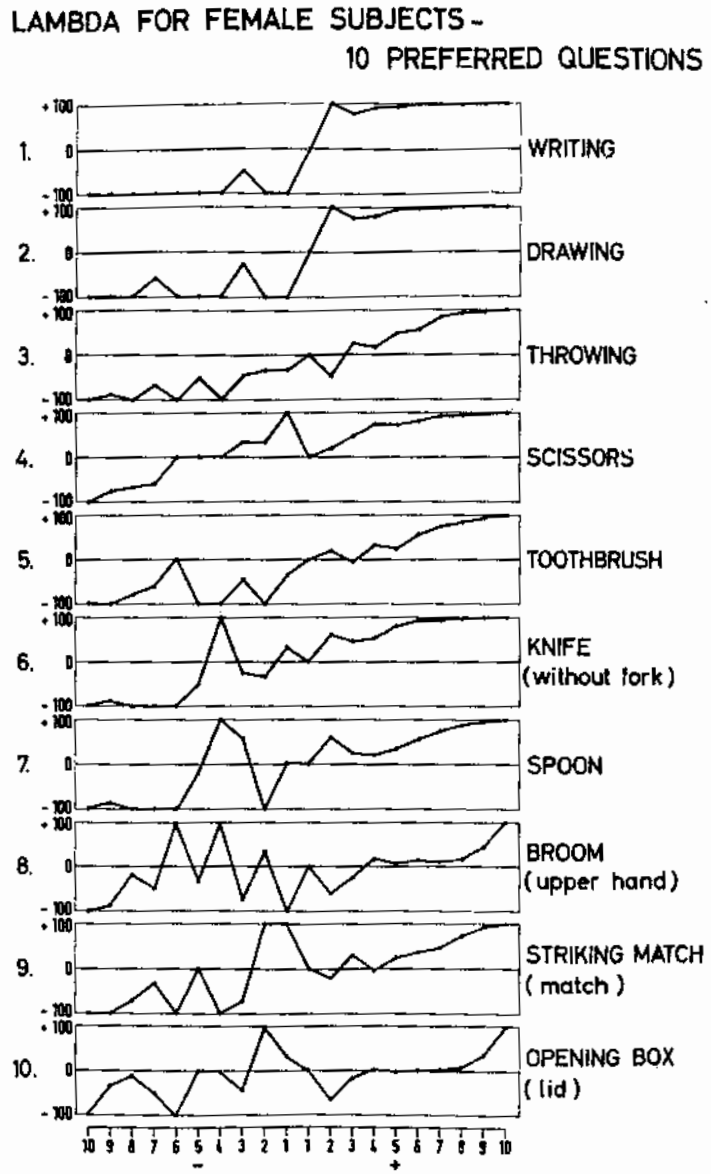

FIG. 6. Item-analysis for females for final 10-item inventory.

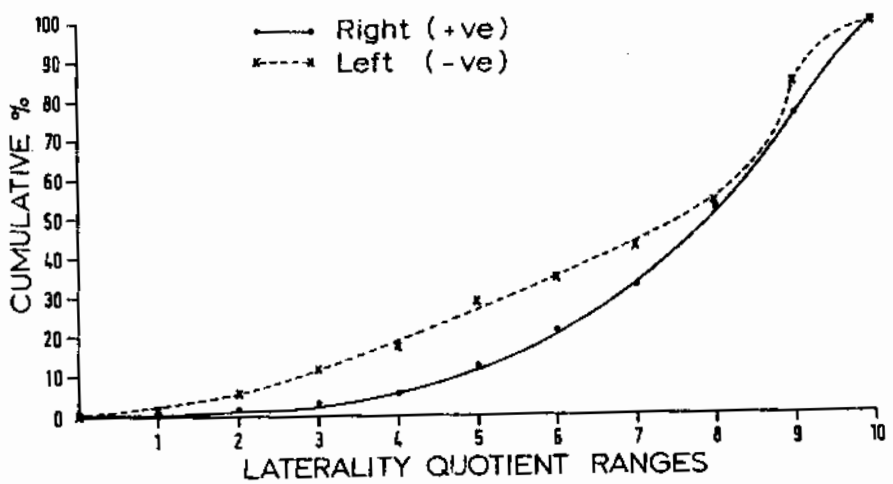

FIG. 7. Percentage cumulative curves, both sexes, for final 10-item inventory.

Table 2. Decile values: RIGHT

Decile	L.Q.
1	48
2	60
3	68
4	74
5	80
6	84
7	88
8	92
9	95
10	100

Table 3. Decile values: LEFT

Decile	L.Q.
1	28
2	42
3	54
4	66
5	76
6	83
7	87
8	90
9	92
10	100

N.B. The values in Table 3 are provisional

CONCLUSION

Little remains to be said in conclusion. Doubtless the inventory is not ideal, but it is simple and provides *one* quantitative measure of handedness backed by a known distribution of values in a reasonable sized normal population. And it gives some insight into the inter-relationship of individual items of the kind used in such devices.

I am far from suggesting that, where manual or cerebral laterality are important issues in a piece of research, the Edinburgh Inventory is a *sufficient* means of assessment of the handedness aspect. But for screening purposes, for assessment where very large populations are involved and for the provision of a standard of comparison in neuropsychological work it may, I hope, prove useful. In these connections, and especially the last, I would urge that the inventory be administered in exactly the form suggested.

It may be observed that the form of the Inventory as shown in Appendix II is not drawn up in a way best suited to ease of data-transfer by card- or tape-punch operators. In fact, in one of the uses to which the Inventory has been put in this Unit a form so adapted was employed—quite justifiably in the particular application in question. But there could be no question that, for widespread use, this altered form would be more difficult to fill in and more liable to involve misinterpretation of the instructions. The simpler form as given here was therefore deliberately retained.

Acknowledgements—I am most grateful to Dr. R. M. CORMACK for statistical advice, and to my colleagues ALASTAIR KINLOCH and MYRNA KAPLAN, the former of whom wrote the necessary programs and saw the calculations through the computer, while the latter did a lot of necessary hand work on the data.

I must also thank those in various Departments of Psychology who collected the data for me, and those undergraduates, whether dextrous or sinister, who filled out the Inventory and thus provided the raw material.

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APPENDIX I

M.R.C. Speech and Communication Research Unit

HANDEDNESS INVENTORY

NAME .....

DATE OF BIRTH .....

SEX.....

Have you ever had any tendency to left-handedness?

YES	NO

Please indicate your preferences in the use of hands in the following activities *by putting + in the appropriate column.* Where the preference is so strong that you would never try to use the other hand unless absolutely forced to, *put ++.* If in any case you are really indifferent *put + in both columns.*

Some of the activities require both hands. In these cases the part of the task, or object, for which hand-preference is wanted is indicated in brackets.

Please try to answer all the questions, and only leave a blank if you have no experience at all of the object or task.

		R	L
1	Writing		
2	Drawing		
3	Throwing		
4	Scissors		
5	Comb		
6	Toothbrush		
7	Knife (without fork)		
8	Spoon		
9	Hammer		
10	Screwdriver		
11	Tennis Racket		
12	Knife (with fork)		
13	Cricket bat (lower hand)		
14	Golf Club (lower hand)		
15	Broom (upper hand)		
16	Rake (upper hand)		
17	Striking Match (match)		
18	Opening box (lid)		
19	Dealing cards (card being dealt)		
20	Threading needle (needle or thread according to which is moved)		
40	Which foot do you prefer to kick with?		
41	Which eye do you use when using only one?		

APPENDIX II

Medical Research Council Speech & Communication Unit

EDINBURGH HANDEDNESS INVENTORY

Surname..... Given Names.....

Date of Birth..... Sex.....

Please indicate your preferences in the use of hands in the following activities *by putting* + *in the appropriate column.* Where the preference is so strong that you would never try to use the other hand unless absolutely forced to, *put* ++. If in any case you are really indifferent *put* + *in both columns.*

Some of the activities require both hands. In these cases the part of the task, or object, for which hand preference is wanted is indicated in brackets.

Please try to answer all the questions, and only leave a blank if you have no experience at all of the object or task.

		LEFT	RIGHT
1	Writing		
2	Drawing		
3	Throwing		
4	Scissors		
5	Toothbrush		
6	Knife (without fork)		
7	Spoon		
8	Broom (upper hand)		
9	Striking Match (match)		
10	Opening box (lid)		
i	Which foot do you prefer to kick with?		
ii	Which eye do you use when using only one?		

L.Q.		Leave these spaces blank	DECILE	

MARCH 1970