

Edinburgh Handedness Inventory (revised)					
<i>Please mark the box that best describes which hand you use for the activity in question</i>					
	<i>Always Left</i>	<i>Usually Left</i>	<i>No Preference</i>	<i>Usually Right</i>	<i>Always Right</i>
Writing					
Throwing					
Scissors					
Toothbrush					
Knife (without fork)					
Spoon					
Match (when striking)					
Computer mouse					

Note (2 pp.): “A major revision of the Edinburgh Handedness Inventory”

By Dr. Stephen M. Williams, Colchester, Essex, United Kingdom. Version 1.1

Most of this Note is contained in the above proposed revision of the Edinburgh Handedness Inventory ¹. The rest is mainly description of and justification for the changes, which also alter the procedure for arriving at a Laterality Quotient. This can be used to identify mixed-handers :- as anyone having an *LQ* between fifty and minus-fifty ².

It is now about forty years since Oldfield's article, and it has inspired a mass of work (already Google Scholar records nearly ten thousand citations of it). This might, but should not, have the effect of stultifying development of the test instrument. This corpus of work should be taken as supplying evidence of ways to improve the inventory.

The biggest change in the revision here proposed is the discarding of three of the original Edinburgh activities (opening box; broom; drawing) and the adding of a new one (computer mouse).

It is recommended that drawing still be used as a *substitute* for writing (in the context, say, of possible dysgraphia) –these two activities are very highly (about 0.90) correlated. To include both adds little to no new information and risks straining the testee's cooperativeness.

Opening box and broom have been discarded on the basis of somewhat more sophisticated statistical evidence ^{3,4,5}. For example, numerous factor-analytic studies find a single (“Handedness”) factor, and the loadings on it of these two activities are low outliers. (In the studies where multiple factors have been found the samples tend both to have been selected for handedness and to have been questioned about many more activities than ten.)

Computer mouse as an addition is a suggestion due to Dragovic. This item of equipment can be configured so that the index finger and middle finger do the same as usual, but using the left hand. This must surely be one major unimanual activity in today's world.

Other changes proposed amount to adopting the Likert-scale format that has become standard in the years since Oldfield trialled his inventory. Each category of response gets its own column, which is verbally labelled, making it possible to reduce the instructions to a single sentence of sixteen words. There is no doubt that the Edinburgh format confuses many respondents. For this revision the

layout is laterally compatible, with the response “always left” on the left. This also makes life easier for the respondent and it is strange to see it neglected in some laterality work.

In Likert fashion, the responses are coded “-50” (always left), “-25” (usually left), “0” (no preference, or blank row), “25” (usually right), “50” (always right). Then the eight rows are summed, giving a score LQ^* between -400 and +400. Dividing by 4 gives an Edinburgh-like LQ ranging from -100 (complete left handedness) to +100 (complete right handedness). With LQ^* mixed handedness becomes -200 to +200. From my everyday observations over a number of years, it is possible that the mixed handedness group divides into two :- a clumsy and a co-ordinated group. At a first guess the clumsy group would be defined as $LQ^* = -200$ to -1 and the co-ordinated group as $LQ^* = 0$ to 200 .

Notes

1. Oldfield, R. Carolus (1971). The assessment and analysis of handedness: The Edinburgh inventory. *Neuropsychologia* **9**, 97-113.
2. Dragovic, Milan (2004a). Categorization and validation of handedness using latent class analysis. *Acta Neuropsychiatrica* **16**, 212-218.
3. Dragovic, *ibidem*.
4. Dragovic, Milan (2004b). Towards an improved measure of the Edinburgh Handedness Inventory: A one-factor congeneric measurement model using confirmatory factor analysis. *Laterality* **9**, 411-419.
5. Williams, Stephen M. (1986). Factor analysis of the Edinburgh Handedness Inventory. *Cortex* **22**, 325-326.