

Debate

AN ASSOCIATION BETWEEN TONGUE-ROLLING PHENOTYPES AND SUBJECTS OF STUDY OF UNDERGRADUATES

A Comment

M. MEDYCKYJ AND L. M. COOK

Department of Zoology, University of Manchester

Azimi-Garakani & Beardmore (1979) presented results indicating an association between tongue-rolling and subjects of study of undergraduates. Their survey was conducted at the University College of Swansea, and the data suggest that the ability to roll the tongue is highest among life science and lowest among arts students. There is a genetic basis to tongue-rolling; an association of this sort could arise if preferred subject area is also influenced genetically. The association may be via linked genes in gametic disequilibrium or could arise if the neural control of the character is an indicator of other neural differences which predispose a person to favour one kind of discipline rather than another. In view of the interest in, and sensitivity of, questions of the genetic basis of personality and intelligence it is important to examine the evidence for such claims with care. The best support would come from an independent repeat survey which produced the same result.

Following the methods of Azimi-Garakani & Beardmore a sample of 1042 students was canvassed at Manchester University. The results are classified into four tongue-rolling categories and by sex, subject area of study and type of residence while at the University. The results are shown in Table 1. There is no heterogeneity between classes in the frequency of rolling versus non-rolling ($\chi^2_{15} = 9.27$, uncorrected for discontinuity). The overall frequency of rollers of all kinds is 74.4%, as in the largest category in the Swansea study (the applied and physical science group). The frequencies of tongue-rolling in the life science, applied and physical science, social and economic science and arts categories are 72.3, 74.9, 75.0 and 74.5% respectively. There are fewest rollers in the life sciences, as in the Swansea study, but the differences are completely trivial. Similarly, the Manchester results show no indication that tongue-rolling varies with place of residence, though this did appear to be the case in the Swansea study. The results therefore fail to support any of the associations found by Azimi-Garakani & Beardmore.

Table 1. Distribution of tongue-rolling phenotypes in male and female undergraduates reading different subjects and living in a hall or other type of residence, data from Manchester University, 1980

Subject	Sex	Residence in		R	S	H	r
		hall					
Life science	M	+		11	1	0	2
	M	—		42	1	1	16
	F	+		6	0	0	5
	F	—		64	1	1	26
Physical and applied science	M	+		31	1	0	7
	M	—		108	9	0	43
	F	+		6	0	0	0
	F	—		27	3	0	12
Social and economic science	M	+		19	3	0	9
	M	—		101	10	2	39
	F	+		10	1	0	3
	F	—		64	5	1	21
Arts	M	+		14	2	0	8
	M	—		51	7	1	19
	F	+		28	0	0	7
	F	—		132	9	2	50

R—roller, S—shallow roller, H—hemi-roller, r—non-roller.

Reference

AZIMI-GARAKANI, C. & BEARDMORE, J.A. (1979) An association between tongue-rolling phenotypes and subjects of study of undergraduates. *J. biosoc. Sci.* **11**, 193.

A Reply

C. AZIMI-GARAKANI AND J. A. BEARDMORE

Department of Genetics, University College of Swansea

It is difficult to make comparisons between the data presented in the original article by Azimi-Garakani & Beardmore and that of Medyckyj & Cook. This is because in Medyckyj & Cook's work we do not know that (1) all students were typed by the same investigator; (2) the criteria used for distinguishing phenotypes were the same; (3) the methods of collection of students were comparable.

The proportions of different types (subject groups) of students are different in the two studies though this would not be expected to have a significant effect. It is probably also true that the geographical origins of students in the two samples are