

correctly identified in relation to the identity of the previous drink.

The analyses presented are rather simple in that they make no distinction between the different malts or blends, or between the different tasters in the two groups. The data do not suggest, however, that a more thorough analysis would have led to considerably different findings.

One possible explanation for the observed result is that malt and blend whisky indeed cannot be distinguished, but this is not the only possible conclusion. An important alternative is that the design of the experiment has not allowed a fair test of the hypothesis, for the reasons suggested above. Also, although the four "regular" drinkers in this trial were not very good at distinguishing the two types of whisky, the suggestion that this is *proof* that the drinks *cannot* be distinguished should be scotched: a different group might have done very much better. Lastly, I am puzzled by the comment about compliance—it is hard to imagine lack of compliance in a trial of this nature other than perhaps overindulgence.

In view of these uncertainties perhaps the trial should be

repeated on a different group, with fewer whiskies and short sessions of just a few tastings per individual. Whether it would be ethical to submit further subjects to these experimental procedures in view of the present results I leave to the judgment of others.

Finally, a word on a completely different type of statistical analysis. Although it sounds relevant, measure theory is inappropriate here, but I should like to draw attention to a little known statistical technique that might be used. The authors have used non-parametric methods, but they might have tried the non-metric method of anagrammatic decomposition.⁴ Applied to *uisgebeatha*, this yields "Best: Haig, eau."

¹ Fisher RA. *The design of experiments*. 8th ed. Edinburgh: Oliver Boyd, 1966:11-26.

² Box JF. R A Fisher and the design of experiments, 1922-1926. *American Statistician* 1980;**34**:1-7.

³ Fleiss JL. *Statistical methods for rates and proportions*. 2nd ed. New York: Wiley, 1981:217.

⁴ Represent PT. Anagrammatic decomposition, or I go to mop Canadian matrices. *Bulletin in Applied Statistics (BIAS)* 1981;**8**:57-61.

In defence of the whisky drinker on the Clapham omnibus

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We enjoyed both the lyricism and depth of experience contained in Professor Howie's critique of our work. Our choice of whiskies, which has aroused most of his attention, was intended to be one that could be freely available across the bar. Though there are some hostelrys south of the Tweed where a rich selection of both blends and malts can be found, most proprietors remain ignorant of the wealth of variety that is available. Their indifference is justified if our results are to be believed. Springbank—previously unknown to Sir James Howie but an old friend of one of us—was chosen so that the astringent character of some Island whiskies would not assault the taste buds of our subjects. The blends are popular and probably good value for money. Unlabelled "real whisky" was not available because, for public consumption, we pay lip service to the idea that Customs and Excise officers are above reproach.

It is standard practice for experts to present that penumbra of information which is associated with Scotch whiskies and which the long experience of the cynical one of us, who makes his home less than a day's march from Glenlivet, tells him has little to do with taste. One is tempted, in the face of our evidence, to enter into the sort of debate which whisky enthusiasts so much enjoy: "Glendronach is not what it was when I first knew it in the 'fifties (HAFD thinks) but is making a come back." "The 'evaporation'—that whisky which is lost to production in any Banffshire distillery town but appears in unmarked bottles in the back room—has unique qualities." "The locals are the best judges." But all this, though it may be the stuff that dreams and good conversations are made on, has little to do with the whisky drinking equivalent of the man on the Clapham omnibus, which includes most, if not all, of us. Our hypothesis is that if we did repeat the work, even using such a distinguished authority as Sir James and the varieties he recommends, we would still get the same results. Perhaps he would care to join us?

Poor discrimination

We are grateful to Douglas Altman for filling in the gap in our knowledge concerning the "tea tasting" experiment. We doubt, however, that if we reported "overwhelming success" in this or any other experiment without other numerical evidence this would be accepted by the *BMJ*'s statistical referees, including himself. Our subjects did know to expect equal numbers of tasting of each whisky; the order was completely randomised but there was no washout period.

The statistical analyses are admittedly unsophisticated. The point we wished to make was that the discriminatory powers were poor (as your expert has shown), but the relative success of the regular drinkers in choosing blended was simply due to the frequency with which they responded to "blended." Our 2×2 tables are constructed slightly differently and the χ^2 values are therefore at variance (see our table II).

To turn to the design of the experiment, it used to be said, frequently with great macho in this establishment, that malt could be differentiated from blend. In other words, malt had a unique property obviously not appreciated by our volunteers. Also the whiskies were chosen partly as an educational exercise—certainly for SJDC this was true.

As to the interpretation of compliance ("action in accordance with request," *Concise Oxford English Dictionary*), we felt that at times our subjects' minds strayed from the matter in hand, no doubt to thoughts more ethereal, which is, of course, the intention of the distillers.

Finally, in the best traditions of the Surgical Research Society, this is research in progress, but to continue along the lines your experts have suggested we now feel a grant is needed. We are hopeful that those who believe

"... malt does more than Milton can

To justify God's ways to man,"

will rally to the cause of science.