Fluoxetine Supplement; 'Journal', September 1988, 153

DEAR SIRS

Drs Kerwin & Lewis seem to have gone to some lengths to have their views published concerning the above Supplement (*Psychiatric Bulletin*, October 1989, **13,** 565). While they have no doubt been motivated by concern for us "unwary readers", I find their attitude somewhat patronising.

Most psychiatrists are selective about what they read. The Supplement in question was sponsored by a drug company. Ten of the 15 articles concerned a product of that company, four of them were written entirely by employees of that company and they were part authors in another two. I am sure that the reaction of most psychiatrists to such a publication would be to file it away unread. This would explain the editor's comment that three months after the publication of the Supplement, only three readers had expressed disapproval with no additional matter of substance raised since (*Psychiatric Bulletin*, October 1989, **13,** 566).

A further Supplement was issued with the October edition of the *Journal*. This was sponsored by another drug company. Six of the articles concerned a product of that company. Two of them were written entirely by employees of that company and they were part authors of another two. I have already filed my copy away. Any doubts that I might have had about the wisdom of this action were dispelled when I read a paper "subjected to a stringent peer-review process and detailed scientific editing" in October's *Journal* (Tiller *et al*, 1989). This paper showed that the drug in question had no antidepressant effect when compared to diazepam. I am sure that many of the *Journal's* 12 000 subscribers have done the same.

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Reference

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Performance indicators in child and adolescent psychiatry

DEAR SIRS

Following recent pressure for greater 'audit' activity a questionnaire on the completion of the 'Körner' information returns was sent to all members of the South East Thames Regional Child Psychiatry Committee. Replies were received from 18 consultants from all 15 District Health Authorities and from the Special Health Authority.

The District results are summarised below:

Q1. Do you (or your secretary) complete information returns for your District Information Department?

All respondents complete returns, but there were often two types, and uncertainty as to what their Information Department passed on.

Q2. How do you count a 'case'?

Seven counted a 'case' as each child specifically referred (could be more than one child per family). Two counted one case per referral letter. Four counted separately the child as one case and the number of family members seen. One counted family members and/or professionals seen. One counted for new cases the index child only, for later attendances 'all those involved'. One counted by index child whether the child, other family members or professionals were seen. One counted all family members seen. One counted all family members and telephone consultations.

Q3. Do you confine the numbers to those actually seen by a doctor?

In 13 cases numbers were exclusively those seen by doctors; in the five others other professionals were included.

Q4. Would you include one-way screen viewing?

Nine respondents do not include one-way screen viewing, five respondents do, and for four it was inapplicable.

Q5. If you count more than one person per case how do you code non-attendances?

This did not apply for 11. Other replies were: however many people asked/anticipated who have not attended (3), one per family (1), one per 'case' (2), two per 'case' (1).

Q6. How do you estimate clinics held/cancelled?

Two did not know and one does not make this return. All the other answers were different but the main types of situation seemed to be that in a 'dedicated' department whenever it was open could be counted as a session; two hospitals had discrete clinics (but one ignored patients being seen elsewhere); one department had agreed 'notional' clinics; three appeared to be the consultant's entire number of sessions. 'Cancellation' definitions included: 'Secretary records any part of the day when cases are not seen as cancelled clinics'; 'by consultant's presence/absence'; 'if no medical staff at all present and bank holidays'; 'lack of Körner information that day'.

Q7. Do you code under 'GP letters' just that, or other referrals also?

Five returned GP letters only; one all GP referrals, (i.e. including telephone referrals); one all 'health'

referrals; five all referrals; four coded referrals by type; one did not make this return and one did not know.

Q8. Have you tried the alternative College returns? If so what difficulties/advantages did you find?

Eleven had not tried the alternative returns, seven had. The latter found these returns over-complex and time-consuming and with unclear objectives; 'consultations' were particularly difficult to code. On the other hand this method was acknowledged to be more comprehensive and a more realistic reflection of work-load.

The extraordinary situation which these results reveal is presumably a result in part of individuals trying to improve validity, but at the expense of reliability at a Regional level. It was not just the clinicians; the instructions from the District Information Departments were also often at variance with each other, leading to a clear case of GIGO (garbage in garbage out) when the Regional returns are looked at *in toto*, and will produce utterly meaningless 'performance indicators'. The College (Nicol, 1989) has already pointed out at a national level the problems with the current Körner requirements for child psychiatry, although its suggested alternative is not very 'user friendly'. It is hoped that this communication will encourage child psychiatrists to look very carefully at what information returns are being made, how they are being used, and to press for a more uniform and sensible approach.

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Reference

NICOL, A. R. (1989) Performance indicators in child adolescent psychiatry. *Psychiatric Bulletin of the Royal College of Psychiatrists*, **13**, 94–97.

Clinical diagnosis by neural networking using psychometric data

DEAR SIRS

Conventional computer programs function by working sequentially through a series of instructions. A fundamental development has been that neural networks function by parallel processing. Essentially three or more working layers of nodes are created (a node being a point at which calculations take place); an input layer, an output layer, and, between these an intermediate layer or layers (the "hidden layers"). Every node in the input layer is connected with every node in the hidden layer, which in turn is connected with every node in the output layer. The structure immediately evokes the architecture of cerebral neural networks, albeit in a grossly simplified model.

We report experience in using a commercial software package (BrainMaker VI.6 California Scientific Software) to create a neural network which accepted psychometric data and output one of four diagnoses. The data were gathered from the Maudsley Item Sheet (Mark I) which encompassed approximately 14,000 in-patients at the Joint Hospital over the years 1949–1965. Patients over the age of 60 who had had a WAIS performed were identified and their WAIS results and clinical diagnosis were noted. These data had the advantage of offering very thorough clinical assessment and yielded a total of 67 cases of which three were schizophrenic and removed because this number was inadequate for our purpose.

Essentially a network was shaped which accepted 11 scores which were the WAIS subtests excluding the composite scores, and it output one of four diagnoses (see above). Those 64 sets of data were presented and represented to the network. As each data set was input, the correct clinical diagnosis was also shown to the computer so the network could correct its error and back propagate a mathematical correction factor. The parallel with animal training is clear. A typical course of events would be that the network achieved no correct results over the early runs but gradually it would score successful diagnoses and over time the rate of diagnostic success would increase. The network can be preset to various criteria of success and when the given criterion is reached the program stops and the network is considered trained. Then WAIS data used in training, or WAIS data totally unseen, can be shown individually and the neural network asked for a diagnosis. The correctness of the network's diagnosis can then be assessed.

We trained the network on the above data calibrated against 'arteriosclerotic dementia', 'senile dementia', 'presenile dementia', and 'depression'. Subsequent to the years over which Item Sheets I were collected, the diagnoses of senile dementia and pre-senile dementia have been amalgamated into the category 'Senile Dementia of Alzheimer's Type'. We were able to concatenate our data in this way and the network was able to discriminate between the three categories so created with 100% accuracy. In evaluating this success it must be remembered that the crucial test will be its success rate in diagnosing data on which it was not trained. In order not to deplete our data dangerously we saved only four sets and on these unseen facts the network achieved 50% correct diagnosis. (Currently we are seeking new WAIS data to significantly test our trained network.)

We present our experience so far in the belief that we have here an exciting new tool which has discriminated where human agents could not, and moreover