It is most unlikely that this would occur with a drug of short duration and the effects will usually diminish the apparent effectiveness of the drug by some of the effects carrying over to the placebo period. Only drugs which produce marked withdrawal effects would be likely to produce spuriously positive results as for example comparing total sleep time on an active and placebo hypnotic when on the night following the hypnotic the placebo period will be affected by withdrawal phenomena. Practice effects though present should, of course, be balanced by balancing the order in the design.

The solution proposed by Dr Millar of using two perfectly matched groups, one of which would be given the active drug and the other the placebo, is in many senses a counsel of perfection and has its own drawbacks. It is not easy to find 13 elderly mentally healthy subjects who are prepared to take a drug which is expected to reduce their memory and to obtain two large samples of this kind would be almost impossible. Furthermore, one would have to match these samples very carefully. Whilst it might be easy to make sure that both samples were equally proficient at the tests without drugs, it is always possible when the trial results were established that the drug response could be related to other differences between the samples e.g. age, sex, previous exposure to alcohol etc., which could not have been controlled from the start. Not only would one need a large sample but the study might have to be repeated on several occasions using different means of stratifying the matching, in order to reject the null hypothesis.

If we can now turn to our own study, we should first apologise for the incorrect t value for the wordlist data which we agree should have been 2.85 instead of 3.007. Although non parametric tests are also applicable we do not agree that the t test was invalid because of differing standard deviations between the samples, as this criticism only applies to unpaired t tests (White, 1979)

The essential point of Dr Millar's paper is that our study did not take account of the effect of the active drug on subsequent placebo performance. It is interesting that in only one of the four tests did the order effect seem important and even on this (story recall) the order effects were not significant. Dr Millar states that the only significant effect of benzhexol present within subject analysis was due to D-P treatment order and that result was a gross overestimation of the true effect.

In attempting to account for these effects his explanations would have the opposite result. As Dr Millar suggests, having the active drug first would impair not only memory but the ability to learn the task requirements and to benefit from practice. This being the case, one would not expect that on the next occasion the test was done, the subject would gain from the previous experience in order to obtain a much better score. Indeed his score would be lowered by the absence of previous practice. On the other hand, those receiving the drug on the second occasions would have learned from their practice with placebo on the first occasion, and therefore one would not expect their performance to have been so depressed. The suggestion that subjects who perform badly on the first occasion would try hard on the second occasion, implies that recall of this type of information can be easily elevated by effort, which is not the experience of most psychologists. Indeed high arousal often leads to poorer learning. When one looks at the figures which relate to story recall, it is interesting to note that the effect of the drug is to reduce recall by 1.14 items, compared to the control group on the first test day and to reduce it by 1.24 on the second test day, a result that suggests that the groups were well matched and that the drug has a consistent effect. Were, however, the drug to have a carry-over effect, a most unlikely circumstance in view of its short half life, the effect would be to diminish subsequent placebo performance and thereby disguise the effect of the drug on memory. In view of the fact that this small trial is being given additional publicity, I think it is only fair to point out that in no way can benzhexol be singled out for this effect which is likely to apply to all the cholinergic blocking drugs used in the treatment of Parkinsonian side effects.

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CANNABIS AND PSYCHOSIS

DEAR SIR,

I read with great interest Professor Edwards' paper (*Journal*, November, 1983, **143**, 509–12) on an interview with a 'patient' describing his psychotic experiences after the use of cannabis in a dose defined as "massive".

I was, though, rather surprised by Dr E.'s comment "whether cannabis can cause more prolonged psychological disturbance is generally today considered much more doubtful".

Since I first encountered the problem in Nigeria and published (1966a, 1966b, 1978) my observations on 230 patients suffering from psychosis occuring after the use of cannabis, I have followed the literature on the subject very closely.

Dr Edwards does not seem to consider valid the "vast literature" referred to e.g. by Täschner (1980) in a recent monograph, comparing patients suffering from psychosis combined with drug abuse with a control group of schizophrenics without drug abuse, reviewing classic studies on "cannabis psychosis" by Beringer (1932) and Stringaris (1939; reprinted 1972), many studies in the English language (Bromberg, 1942; Allentuck and Bowman, 1942; Hekimian, 1968; Bialos, 1970; Bernhardson, 1972; Tennant and Groesbeck, 1972; Chopra and Smith, 1974), and the French study by Defer and Diehl (1964) on 560 cases of cannabis psychosis, to mention only a few of the 259 references, many of which propose that "prolonged psychological disturbances" do occur after cannabis use.

The case described by Dr Edwards in my opinion clearly supports the opinion that "prolonged psychological disturbance" can be caused by cannabis. The author, though, considers this causal connection still doubtful because "there can be no absolute proof that the cannabis was not adulterated". I wonder if the author was not prevented by a common prejudice propagated by many ideologues, that cannabis is innocuous, from realizing that empirically obtained results are never 100 per cent certain but always approximations.

In Dr Edwards' case, as in many others, including my own, adulteration is possible. Considering the complete case history and the literature, it is probable that in this case, as in many others, cannabis has caused "prolonged psychological disturbance" resembling psychosis.

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DEPRESSION—ANOTHER PATIENT'S COMMENTS

DEAR SIR,

I am grateful to Dr R. Morgan, Consultant Psychiatrist of this hospital for drawing my attention to the article "Severe Depression: A Patients Thoughts" by Dr E. George Gray (*Journal,* October 1983, **143,** 319–22). Having gone through a similar experience to Dr Gray I have found his article to be a source a encouragement with points of similarity in our two experiences.

I first found myself in hospital in a deep, dark valley of depression with complete loss of motivation after a change of work and location. That was six years ago during which time I have been in two hospitals for the mentally ill, so that I can like Dr Gray compare two courses of treatment.

In the first hospital I received drugs, electroconvulsive therapy, psychotherapy and occupational therapy. ECT seemed to make little or no improvement, and though I worried what it might be doing to my brain, like Dr Gray I find no obvious deficits in my memory. Conventional psychotherapy and occupational therapy proved to be counter-therapeutic. This was also Dr Gray's experience. In the early days all that I wanted to do was to sleep or when forced out of bed to sit quietly on my own. Only then did I realise how ill I was and that my illness had been coming on for some time. I felt the psychotherapist and some of the doctors I saw adopted a superior and condescending attitude. This was an attitude passed down the line to even the most junior nursing staff. Clearly this did not help my situation.

Dr Gray found occupational therapy to be a very dubious form of treatment. This rings a bell for me. There appeared to be a complete lack of understanding of my desperate predicament and my feelings. I recall being forced into playing Scrabble and bullied into going to occupational therapy to make a stool, saw wood and play Bingo. These were the last things I wanted to do. In spite of my severe depression I still felt I wanted to be useful. Even normally I would not find any pleasure in playing Bingo, least of all at ten o'clock in the morning.

In my present hospital where I have been for nearly a year things are different. Attitudes are different and the treatment of patients and their rehabilitation is based on drug therapy and the philosophy of work. Patients are rehabilitated through working usefully in the workshops or in the day to day life of the hospital. Thus every patient is employed within his capabilities to serve the hospital and community in which he lives.

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