

Correspondence

TAYLOR AND CHAVE'S "MENTAL HEALTH AND ENVIRONMENT"

DEAR SIR,

Mental Health and Environment by Lord Taylor and Sydney Chave was reviewed in the *Journal* for September, 1964 (p. 736). It is the report of a survey of the population of a new town, referred to by the fictitious name of "Newton", which has the benefit of carefully planned social facilities. The results of this survey are compared with data from the general population with a previous survey (Martin *et al.*, *Brit. J. prev. soc. Med.*, 1957) of the "Outlands" housing estate, a new community "with good housing and poor social and economic planning", and with a survey of "Oldfield", a London borough from which a large number of people moved to "Newton". The following conclusions are drawn concerning the incidence of mental health in these populations:

1. There is a sub-clinical neurosis syndrome (consisting of "nerves", depression, irritability, and sleeplessness) which is suffered by just over 30 per cent. of the population irrespective of the environment; the evidence for this is that the incidence is nearly the same at Newton (33 per cent.), Outlands (35 per cent.) and Oldfield (31 per cent.). In its extreme form this syndrome merges into clinically diagnosed neurosis. The fact that it is independent of environment suggests that its origin is constitutional or in the distant past.

2. The psychosis rate at Newton is lower than that of the general population but at Outlands it is higher. This implies that psychosis, unlike the sub-clinical neurosis syndrome, is a product of the immediate environment, and can be reduced by adequate social planning.

These conclusions have very important implications concerning both the aetiology of mental disorders and the possible role of social planning in the control of mental illness; in particular, they provide a vindication of the planning that went into Newton. However, the statistical arguments leading to these conclusions are open to criticism:

1. It is invalid to conclude from a sample of only three communities that the incidence of the sub-clinical neurosis syndrome does not vary with environment. Such a sample is, for instance, readily compatible with a bimodal distribution of frequencies in

the population of communities, one mode being at about 30 per cent.

2. There is a more detailed statistical criticism that is even more damaging. An objection considered by the authors to the conclusion about different psychosis rates is that the nearest mental hospital is 40 miles from Newton, but only 20 from Outlands; this might mean that G.P.s are more likely to send psychotics to hospital from Outlands, which would vitiate the results since they consist largely of data on in-patients from the communities studied. If this objection were valid, a compensatory increase in out-patient rates at the local general hospital at Newton, or a greater proportion treated by G.P.s, would be expected. The former is not found, but G.P.s *do* report a higher psychosis rate at Newton, compared with Outlands or the general population (p. 115); this result is wrongly dismissed by the authors as being based on too small numbers. There are 16 cases reported by G.P.s at Newton, giving an incidence rate of 5.7 per 1,000. The incidence rate at Outlands is 4.9 per 1,000, and in the general population 2.8 per 1,000. From these data it can be shown that, in spite of the authors' dismissal, the incidence rate reported by G.P.s at Newton is significantly higher than the incidence rate in the general population. We can calculate χ^2 by estimating the expected frequency of psychosis at Newton from the general population rate. Since this rate is approximately half that at Newton, the expected frequency is approximately half the observed frequency; i.e. the expected frequency is 8.

The expected and observed frequencies of G.P.s' patients for whom psychosis is not reported are very large, so that $\frac{(O-E)^2}{E}$ for such frequencies is negligibly small.

Therefore:

$$\chi^2 = \frac{(16-8)^2}{8} = 8 \text{ d.f.} = 1$$

This is significant at beyond the 1 per cent. level. Hence we may conclude that there is a compensatory increase in the incidence of psychosis reported by G.P.s, and the objection arising from the relative distances of the nearest mental hospitals has not been dealt with.

The comparison of in-patient rates is also open to question. It is reported that there are 144 psychiatric in-patients from Newton, compared with an expected

frequency of 168 calculated from the general population rates. This is accepted as a clear indication of a lower rate at Newton. But:

$$\chi^2 = \frac{(168 - 144)^2}{168} = 3.43 \text{ d.f.} = 1$$

which is not significant at the 5 per cent. level.

Thus, when a simple statistical analysis is substituted for some rather careless intuitive reasoning it appears that the right conclusion from the survey is not that the psychosis rate is lower at Newton than in the general population but, if anything, the reverse.

From these objections it appears that neither of the main conclusions drawn by Taylor and Chave concerning the incidence of mental health are valid, and their book adds little new to our knowledge of the aetiology of mental illness.

I should like to thank the University of Durham Research Fund Committee for a grant towards clerical assistance; and also those with whom I have discussed some of the points raised in this letter.

A. W. STILL.

*Department of Psychology,
University of Durham.*

DEAR SIR,

At first sight Mr. Still's criticisms appear weighty, but on examination they lack substance.

We review below the main findings of our study, the conclusions we have drawn from them, and Mr. Still's criticisms.

1. *The Sub-clinical Neurosis Syndrome*

We took three disparate communities—an old town, a new town and an out-county housing estate—and conducted a survey in each of them. We found that 31 per cent., 33 per cent. and 35 per cent. respectively, of the adults in these areas showed this syndrome, in the terms in which we had defined it. We then commented as follows (p. 50), "the striking feature here is not the difference, but the similarity in the prevalence in the three areas. The 'sub-clinical neurosis syndrome' is exhibited by about a third of the population whether they live in Newton, Outlands or Oldfield. Such a finding suggests that we are dealing here with a phenomenon in which constitutional or long-standing factors are more important than immediate environment."

We went on to show that the figure was not affected

by length of residence in the area but was definitely age and sex linked. The indicators of this syndrome enabled us to identify a group in the population who were more lonely, bored and discontented than the rest, who made fewer friends and participated less in leisure-time activities, although in terms of their income and of their contacts with their kinsfolk they did not differ from those around them.

We concluded (p. 168) that "if our findings are generally confirmed (and we must emphasize the importance of using the same techniques of estimation in each area), this means that a third of the population are born with, or develop, nervous symptoms and are more prone to neurotic illness than the remaining two-thirds. This proneness is shown by the excessive exhibition of one or more of the following symptoms—'nerves', depression, undue irritability or sleeplessness.

"Our evidence is, then, that the sub-clinical neurosis syndrome is not a product of the immediate environment. It is constitutional, in the sense that it represents a deeply embedded pattern within the nervous system."

We hold that the facts we have adduced entirely support this conclusion. The burden of proof must therefore lie with the critic who, rejecting this conclusion, suggests that further surveys in other communities would reveal a different distribution of symptoms. If the three communities which we studied had been similar in character, the criticism might be valid. But since they were as dissimilar as could be found among urban populations, the probability that further investigations conducted in the same way elsewhere would produce radically different findings is very small.

Such evidence as has come to light since the publication of our study confirms this view. Hare and Shaw (1965) compared the prevalence of mental disorders in the populations of a new housing estate and a ward in an old borough. They found no significant difference between these populations in the rates for neuroticism (both as measured by the Maudsley Personality Inventory and as assessed by interviewers), for "nervous disturbance" (whether severe, moderate or mild), for neurosis, or for such symptoms as dizziness, debility and headaches under treatment by general practitioners. They conclude: "The findings confirm previous reports that in any population there tends to be a group of persons prone to both physical and mental ill-health."

Hare and Shaw's work provides further confirmation of the hypothesis that immediate environment is less important than long-standing constitutional factors in the development of neurosis and its symptomatic precursors.