EFFECTS OF NEW ROADS ON HOUSING TURNOVER

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INTRODUCTION

A new road will have an effect on the local environment. Environmental changes, changes in noise, visual intrusion, air pollution levels, etc., can in general be measured or assessed using standard methods. The reaction of the community to these changes however is not known.

Various Social Surveys have been undertaken to improve our knowledge of the community reaction to noise and, in the case of one TRRL Survey, to a decrease in noise (1)

Two main Social Survey methods have been used to date:

i) Intrusion Studies, as typified by the Heathrow Noise Surveys (2)
ii) Self-rated Attitude Studies, as typified by the TRRL National Noise Survey (3)

We have reservations about the applicability of the results of Social Surveys and have strong theoretical objections to the use of Intrusion Studies.

A type of Social Survey method which in our view does not have as many drawbacks as the two mentioned above is an "Active Response" Survey. This type of survey involves recording the reactions that individuals make in response to a stimulus. In the case of a new road as a stimulus this action could range from keeping the windows closed to moving house. The ultimate practical response that an individual can make to an adverse local stimulus is to move.

Historical records relating to these actions do not generally exist, as few continuous before, during and after studies relating to the construction of a new road have been undertaken. There are, however, Electoral Registers which can be considered as an historical record of property occupancy.
It was hoped to confirm the hypothesis that new roads have an effect on housing turnover. This was performed by examining the Electoral Register for the affected and unaffected areas in an attempt to relate the two.

In addition, it was hoped that turnovers could be correlated with some physical variable associated with the new road, i.e. noise level, noise change or distance from the road. If this was the case then it would be reasonable to assume that this factor may be dominant when it comes to assessing a new road.

In this paper I will describe the results we have obtained from studying the housing turnover in the area of the M23 Motorway. This work was partially funded by a Department of Transport research contract.

**RESULTS**

The raw data indicated that there was considerable variation from year to year in the turnover, both in the study and control area. The
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simplest form of analysis was to look at the study area and compare it with the control area. Figure I shows how the ratio of turnovers in the study and control areas vary with time. In figure I we identified 3 time zones, zone 1 prior to publication of the motorway line order, zone 2 between publication and the opening of the road and zone 3, post opening. Mean value in each time zone are also shown in the figure. The turnover in the study area is significantly different from that in the control areas for time zones 2 and 3.

We examined this effect by studying the change in turnover with distances, final noise level and change in noise level of these are shown in Figures 2, 3 and 4.

DISCUSSION AND CONCLUSION

In undertaking this work we have concluded, as others have done, that Inrusion studies are theoretically invalid because they involve the numerical averaging of preferences (4). Attitude studies succeed in reporting the range of values individuals ascribe to a stimulus. Reporting of these individual responses in the form of a distribution, i.e. the percentage annoyed, the percentage moderately annoyed and the percentage highly annoyed produce a group response which is valid and useful. However, care must be taken in applying these results elsewhere in location and time.

This Active Response study has a number of advantages over the Attitude Type studies:

(i) there is no subjective contribution of question choice,
(ii) the movement, can be considered as the extreme practical method of reducing the impact,
(iii) it has a temporal component (the effect of a new road is studied before, during and after construction),
(iv) the whole population is surveyed.

The results appear to show that, as we would expect, there is a depression in turnover pre-opening, which may be due to the uncertainty of the motorway impact. This effect is commonly known as "blight". Also the increase in turnover post-opening is similar to the effect we have previously note (5) where we found an increase in turnover with increasing noise.

This study does not explain the factors which cause disturbance. However, it would, if positive, form a firmer basis on which to found any practical measures for assessing noise impact.

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Fig. 1: The ratio of (study/control) turnovers throughout the study period.

Fig. 2: The effect of distance on housing turnover.
Fig. 3 Effect of noise change on housing turnover

Fig. 4 Effect of design year noise level on housing turnovers