

STUDY OF THE IMPACT ON HOUSEHOLDS OF RELOCATION FROM A HIGHWAY RIGHT-OF-WAY

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Interviews taken at 228 households displaced by right-of-way acquisition for Interstate 90 on the west side of Cleveland were analyzed to study the effects of relocation. The 228 interviewees were included in a random sample of 730 households drawn from the 2,333 families that had been re-located for this project. Independent variables considered were age, income, occupation, education, and anomia, a social psychological measure of attitude. A sufficient number of black households were not available to consider the influence of race on the relocation experience. Unfavorable attitudes toward relocation were found to attenuate with time at a rate inversely proportional to age and length of residence at the pre-relocation address and directly proportional to income and educational attainment. Relocatees displayed the same tendency to maintain or upgrade the social status of their neighborhoods as did an independent sample of voluntary movers. Median monthly housing expense increased by \$52.50 after relocation. More than half of those who had been tenants became owners after relocation. Only 5 percent of the relocatees changed jobs because of being relocated, and a third made longer trips to work. The impact of relocation impinges most heavily on the poor and the elderly, if such impact is defined as the total expenditure of economic, physical, and psychic resources necessary to adjust to a new residence and location.

• ACCESSIBILITY to economic and cultural opportunities is a necessary condition for a healthy society. Until comparatively recent times highway builders were comfortable in the assumption that they were contributing to social welfare by improving the mutual accessibility of points in physical space. Highway engineers are shocked and dismayed to find the validity of their traditional decision-making processes questioned by protest groups from urban areas (1, 2). Fellman, a sociologist, grants the good intentions of highway planners (2) but charges them with negligence in understanding the nature of neighborhoods and the individual feelings and problems of neighborhood residents. Within the past decade strong citizen reaction against proposed urban freeways has developed from San Francisco to Washington, D. C., and from Cleveland to New Orleans.

The traditional standard of economic efficiency in highway location and design has been the "benefit" to highway users as compared to the "cost" of the project including purchase of right-of-way. Both cost and benefit have been considered from the viewpoint of the accountant. That is, cost and benefit are defined respectively as amortized expenditures by the highway agency and annual operating cost savings by highway users, based on operating costs prevailing prior to a proposed improvement. Although the application of the so-called benefit-cost ratio by no means guarantees that the minimum cost location will be selected in any given instance, there has been a tendency, as De Leuw (3) notes, for engineers to emphasize low construction costs and minimize right-of-way costs. De Leuw attributes this tendency to long experience of highway organizations with limited budgets. It is also well to remember that the highway construction program was for many years located largely in the rural areas where maximizing the

number of miles of pavement built annually was regarded generally as a socially desirable goal.

Unfortunately neither highway costs nor benefits are uniformly distributed among the population. Location of an urban highway in accordance with a benefit-cost ratio in its traditional form virtually ensures that the route will traverse areas containing low-cost housing inhabited by people relatively low on the socioeconomic scale. Because access to private automobile transportation is a monotonically increasing function of income, this means that the burdens of relocation must often be borne by that segment of the population least likely to participate in the benefits of the highway improvement that displaces them. In an era when differences are already all too apparent between life styles and opportunities of the poor and those of the affluent, the displaced household may perceive a further incursion upon its domain by an "improvement" primarily for the use of others.

It is important to realize that the social and economic climates in which current urban projects are being performed are entirely different from conditions that prevailed in former times when roads were welcomed by rural people as a way out of enforced isolation. We must face the "relocation dilemma" as it has been labeled by Smith (4). The renewal of our cities requires among other things an effective transportation network. Whatever may be its merits as an urban transportation vehicle, the private automobile is surely an important factor in the American economy. Furthermore, the automobile has acquired a unique importance not related to its primary function. The automobile frequently serves as a symbol of wealth, status, and power. It would seem in fact that this unique love of man for machine would tend to offset carefully constructed rational arguments about the disadvantages of the automobile or the desirability of alternative modes of intraurban travel. It is, therefore, to be expected that the private automobile will retain its primacy as an urban transportation mode for the foreseeable future. Given the inadequacy of a street system conceived in most large cities before the ascendancy of the automobile, it will therefore continue to be necessary to develop the urban highway network. Such construction is essential to provide physical accessibility. On the other hand, the destruction of dwellings in crowded cities already beset by housing shortages cannot necessarily be dismissed as an unavoidable evil essential to progress. Disruption of the lives of thousands of individuals must be given due consideration.

The Federal-Aid Highway Act of 1968 was the first substantial legislative effort to alleviate the economic impacts of enforced relocation for highway construction. Although the implementation of this act has done much to relieve financial burdens on relocatees, it would appear that existing legislation does not sufficiently recognize that financial problems are not the only hardships that result from relocation. Especially among the elderly, the necessity for social and psychological adjustment to new surroundings can be a process so difficult that some relocatees have attributed to it serious illness, or even death of a spouse.

There must thus be added a new dimension to highway engineering decisions. As Smith (4) suggests, social costs must be included in the accounting of project costs and benefits. Smith recognizes that the true social cost of a route through a neighborhood containing "better quality" homes may be less than that of an alternate where property acquisition costs may be lower. The political implications of such a decision are clear to any experienced highway official. In an era when protest and confrontation seem to be increasingly commonplace means of exercising political power, the real problem of the highway official may well be to develop rational, equitable plans amid the tumult and the shouting. One thing is clear: Today's highway engineers and administrators must possess a far deeper understanding of people and their problems, particularly those problems that result when one is uprooted from one's home for the benefit of the community.

More specific, it is incumbent on highway engineers and administrators to learn more about social costs or nonuser effects generated by urban highway construction and to have 2 important goals in mind:

1. The long-range objective of incorporating into location and design decisions a realistic evaluation of adverse social effects of proposed projects so that alternatives

can be compared on the basis of total social cost; and

2. The immediate objective of finding ways to improve the processes of property acquisition and relocation of residents to minimize adverse social, psychological, and economic impacts on persons directly affected by these processes.

This paper describes information collected and conclusions reached in an attempt to contribute to the achievement of this latter objective.

DESCRIPTION OF THE STUDY

There were 2 principal data sources employed for this study of residential relocations from the right-of-way of the proposed route of Interstate 90 on the west side of Cleveland. One such source was the collection of case records in the files of the Ohio Department of Highways. Data on 730 households were extracted from those files. This sample was selected from among the 2,333 households displaced by purchase of right-of-way for construction of I-90 between West 160th and West 25th Streets in Cleveland, together with approximately 200 households similarly displaced for construction of I-71 in the vicinity of West 130th Street.

Clearance of right-of-way for portions of the I-90 project was begun about 4 years prior to the study. Right-of-way acquisition was still in progress, but most of the households had been relocated for a period ranging from 1 to 4 years at the time of the study. No construction had been undertaken on the I-90 project between the Cleveland corporation limit and West 25th Street, a distance of about 6 miles. Some construction was in progress in the neighboring municipality of Rocky River, which abuts the city of Cleveland on the west. I-71 was complete and open to traffic throughout the Cleveland metropolitan area. Relocation of households from the I-71 right-of-way was completed about 6 years prior to the study.

Names of relocatees along I-90 indicated the presence of a wide variety of ethnic backgrounds. There are, however, few Negroes on Cleveland's west side and none among the relocatees from I-90. The I-71 study area was selected to include some black relocatees in the investigation. This area was not a completely black neighborhood, and most of the black households had relatively high incomes; but there was no other location in the Cleveland metropolitan area that offered a better opportunity for study. The great majority of Negroes in Cleveland are situated on the east side, where freeway development has been virtually halted.

The 730 households, all of whom moved before the provisions of the 1968 Federal-Aid Highway Act were in effect, were grouped in 10 clusters. It has been pointed out that the neighborhood on I-71 was selected for its ethnic characteristics. Fifty property parcels were randomly selected from this region. Another cluster of 50 parcels was randomly selected in the suburban community of Rocky River because there was no other portion of the proposed I-90 alignment possessing a substantial group of single-family residences valued at more than \$30,000. A third randomly selected cluster of 50 parcels was located in the vicinity of West 25th Street. This region contains a Puerto Rican community and a transient, low-income population including a high proportion of individuals.

The remaining 7 clusters of property parcels were chosen by dividing the I-90 alignment between Rocky River and West 25th Street into 26 segments, each about 1,000 ft long. Each 10-station segment embraced from 2 to 5 city blocks, depending on the freeway orientation, and included from 40 to 75 property parcels. The clusters to be sampled were randomly selected from the 26 segments just described. A table of random numbers was employed in the selection of all clusters to ensure randomness in the mathematical sense of the word.

The principal source of study data was a survey that resulted in 228 completed interviews of households from among the 730 originally selected from the random sample. Interviews were conducted by Cleveland State University students.

A low percentage of successful contacts was anticipated from the experience of other relocation studies. House (5) reported 55 percent success in attempts to contact 81 families displaced from a Milwaukee expressway project, and Rudolph (6) was able to interview 68 percent of 130 households displaced from an urban renewal project in

Akron, Ohio. Thursz had available a population of 186 households for his study of relocation from an urban renewal project in southwest Washington (7). He completed 98 interviews or about 53 percent and noted that many of the households not contacted could not be located even though addresses had been obtained.

The 496 names of relocatees listed in current Cleveland directories were the portion considered "available for interview" out of the total random sample of 730 relocatees. It was anticipated that a success rate of about 50 percent would yield the desired 250 interviews for an approximate 10 percent sample.

Interviewers made a total of 330 personal contacts with relocatees or with former neighbors or employers of relocatees. There were 45 relocatees who refused to be interviewed, and 27 cases in which former neighbors or employers had no knowledge of the current address of the relocatee. There were, in addition, a number of relocatees who were not home on the occasion of 3 visits to their homes. The number of completed interviews was thus about 69 percent of the personal contacts made and about 46 percent of the total of those available for interview. About 83.5 percent of relocatees with whom contact was made agreed to be interviewed.

Attempts were made to describe attitudes of relocatees as functions of 5 basic variables: age, income, occupation, education of household head, and score of household head on the Srole anomia test, a well-known instrument used by social psychologists. Design of the interview schedule was adapted from that used by Thursz (7) in his southwest Washington urban renewal study. It was hoped that data and results will thus be sufficiently comparable to those of earlier work to contribute something to the development of urban planning theory even though the present study was designed primarily to inform highway officials and to assist them in their day-to-day operations.

CHARACTERISTICS OF THE SAMPLE

Certain comparisons with 1960 census data are possible and indicate the degree to which the sample of relocatees was representative of the population in the census tract of origin. Because some relocatees were moved in 1965 and many were moved in 1966, the use of 1960 census data is not so misleading as it might appear. In any case, no 1970 data were available in time for the study.

Table 1 gives comparative statistics for the census tract of origin, the total random sample of 730 households, and the 228 households interviewed. It is apparent that the total random sample and the group of 228 interviewees are not significantly different in socioeconomic characteristics. Data given in Table 1 indicate that the relocatees are somewhat better educated than the general population in the tracts from which the relocations originated. There is, however, a better agreement between the proportions of those who finished high school than between the proportions of those who completed fewer than 8 grades. About 9.6 percent of the household heads interviewed completed 4 or more years of college. Analysis of data for the census tracts also shows that about 9.6 percent of the total tract population completed at least 4 years of college. It is inferred that the more education one has, the more likely one is to respond to a survey questionnaire.

The U. S. Bureau of the Census defines a person of foreign stock as one who was born outside the United States or one who has at least 1 foreign-born parent. Relocatees were asked whether the head of the house, his father, or his grandfather was foreign born. No comparable data were available from state relocation files. The proportion of the total population of foreign stock can be computed from census data. Results of survey of relocatees include the percentage who had foreign-born household heads, fathers, or grandfathers.

In every tract but one, the median number of rooms per dwelling unit in the current residences of relocatees was larger than the corresponding figures for the census tracts from which the relocations originated. It is apparent that a general improvement has occurred with respect to the size of dwelling units.

The proportion of homeowners among the interviewees was about the same as the corresponding proportion in the census tract of origin. But homeowners are really overrepresented in the group interviewed. For the 730 households in the total random sample, state records show that 58 percent were owners at the pre-relocation address and 42 percent were tenants. The explanation for this discrepancy would seem to be

that tenants are more mobile than homeowners. Relatively more tenants than owners may thus have moved from the Cleveland area or could not for some other reason be located for interview. Relocatees living in apartment houses equipped with telephones in the lobby and electrically operated entrance doors seemed to find it easier to refuse to be interviewed than did those prospective respondents with whom face-to-face contact was possible.

ECONOMIC ASPECTS OF RELOCATION

Median monthly payment being made by relocatees who owned their current residences was about \$132.50. Median rent being paid by tenants in their current location was about \$93.50. Four-fifths of the relocatees stated that their current monthly costs were more than they had paid before being relocated. The median increase of new over old monthly housing expenses for relocatees interviewed was \$52.50.

About 39 percent of the 730 state relocation files sampled contained information on monthly housing expense prior to relocation. For this group of about 285 relocatees, median monthly housing expense (either rent or mortgage payments) was approximately \$79 per month. A total of 131 relocatees paid less than \$75 per month prior to relocation, while only 14 of those interviewed paid less than \$75 per month for their current residences.

Median sale price for new dwellings purchased by relocatees was about \$19,200. Median down payment was about \$13,300. Slightly more than half of the relocated homeowners reported that they were entirely satisfied with the prices paid by the state for their old dwellings.

Relocation seems to have had little effect on employment situations. Sixty-eight percent of the relocatees interviewed stated that they had not changed jobs since being relocated. Of those who had changed their employment, nearly nine-tenths reported that the change was not connected with relocation. Five percent of the relocatees who changed jobs did so because their old jobs were too far from their new dwellings.

One-third of the relocated household heads reported that their trips to work took longer than trips to work prior to relocation. One-quarter stated that their present work trip is about the same duration as it used to be, and about 17 percent said they take less time to get to work than they did before being relocated. Approximately 13 percent had retired since being relocated, and about 1 percent said they were unemployed at the time of their interviews. The remaining interviewees were not sure about the time required to get to work or failed to answer the question.

The predominant change in tenure was from tenant to owner. Over half of those relocatees who were tenants became owners after they were relocated. Only about 10 percent of the relocated homeowners became tenants after relocation, but a few elderly owners moved in with relatives or into institutions.

Tenants were generally younger than homeowners. Fifty-eight percent of the relocatees who were originally tenants were under age 45, while only 20 percent of those who were originally homeowners were under age 45. Furthermore, the tenants seem to have been somewhat more affluent. Two-thirds of the tenants earned \$100 per week or more in take-home pay, while the corresponding proportion among relocated owners was only 49 percent. Actual income differences between relocated tenants and owners may be less than these figures indicate because tenants were somewhat underrepresented.

The inference seems clear, however, that the relocation experience provided an impetus to buy a house among many young families financially able to do so. It is in this sense that relocation is sometimes viewed as a benefit. An improvement in the residential facilities of a household is a benefit, provided that the household can afford such an improvement. There were cases where an enforced move seemed to provide the incentive that a family required to obtain the more desirable residence it needed and could acquire without financial hardship.

ANALYSIS OF MOVING BEHAVIOR

A total of 638 "permanent relocation" addresses could be obtained from the random sample of 730 relocatees. Inspection of spot maps similar to the one shown in Figure 1

indicated that the pattern of settlement after relocation was anything but random. Mathematical analysis of these spot patterns also demonstrated this lack of randomness.

Visual inspection of the spot maps made it clear that relocatees tended to settle in the immediately surrounding area. Those who did move more than a mile from their old homes generally moved to one of the western or southwestern suburbs of Cleveland. Few relocatees crossed the Cuyahoga River and its contiguous industrial areas to settle in east-side residential areas. Westsiders they were, and westsiders an overwhelming majority remained.

An insight into the decision processes of the relocatees can be gained by an analysis of the social status of their census tracts of origin and destination. Only the moves that resulted directly from the relocations were considered because data were not available on a sufficient number of subsequent moves.

Each of the 127 census tracts containing one or more relocatees was assigned a socioeconomic rank score in accordance with the Farber-Osoinach method (8). This method has been shown to correlate well with the Shevky-Bell Index of Social Rank and is very much simpler to compute.

Scores are assigned in accordance with the following 4 criteria:

1. Percentage of white-collar workers (census categories 100 to 400),
2. Median school years completed,
3. Median income, and
4. Percentage of nonwhite persons.

The Farber-Osoinach Index of Socio-Economic Rank ranges from a minimum of 0 to a maximum of 10. These ranks were then used to assign each census tract to a social-status category from 1 to 5. Category 1 possesses the highest social status and category 5 the lowest.

Each of the 638 moves that could be traced through state records was then identified with a point in a social-status space defined by the variables from category *i* and to category *j*. There resulted a 5 by 5 matrix of moves (Table 2). Data given in Table 2 have been "normalized" to form a stochastic matrix in which all rows sum to 1 and may, thus, be regarded as a matrix of conditional probabilities. That is, each number represents the probability that a family moved into a tract belonging to social-status category *j* if it is known that the family moved from a tract in social-status category *i*.

Data given in Table 2 show a relatively heavy concentration on the main diagonal and generally larger numbers in positions below the main diagonal than in corresponding positions above it. This situation indicates a tendency for relocatees to select a new residence in the same social-status category as their original homes or to upgrade their residential status. Two hypotheses could thus be offered to explain the residential selections of relocatees:

1. Relocatees tend to select new residences as close as possible to their old homes; and
2. Relocatees tend to move to new areas having a social status equal to or higher than that of their old areas, provided they are financially able to do so.

A similar matrix of conditional probabilities was developed from data on 507 voluntary moves in Toledo, Ohio. These moves were voluntary in the sense that they were known not to have resulted from right-of-way acquisition. The origins and destinations of the moves in Toledo were taken from a 10 percent random sample selected from the pages in the 1967 Toledo telephone directory. Addresses in this sample of 41 pages were compared with addresses in the 1968 directory for persons whose identity could be established unambiguously. Social ranks of the Toledo census tracts were assigned from a study of structural condition of the residences, as determined by the Toledo-Lucas County Plan Commission in an area-wide survey in 1967. The system of social ranking was based on the percentage of dwellings in a census tract in need of major repairs or in a dilapidated condition. A high correlation ($r = +0.6$) was found between social ranks based on structural condition and Shevky-Bell Index of Social Rank computed from 1960 census data. The extent of the similarity between the relocation and the voluntary moves can be appreciated by computing the row means and variances. The results of these computations are given in Table 3.

Table 1. Selected characteristics of sample of relocatees.

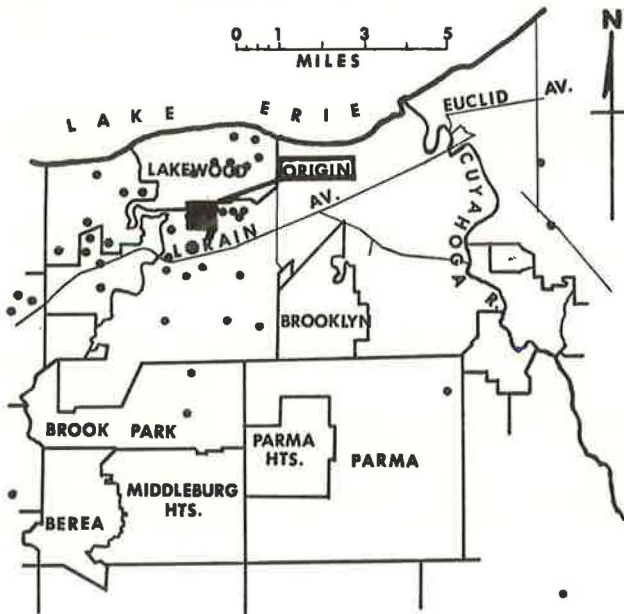
Characteristic	Census Tract of Origin (avg)	Total Random Sample ^a	Interviewees ^b
White-collar workers, percent	51	23	23
Retired, percent	N. A. ^c	17	18
Currently employed, percent	N. A.	67	68
Finished fewer than 8 grades, percent	16	N. A.	6
Finished high school, percent	25	N. A.	30
Foreign birth or stock ^d , percent	33	N. A.	43
Median age of household head, years	N. A.	51.5	54
Homeowners, percent	70	N. A.	75
Median weekly take-home pay, dollars	N. A.	N. A.	131.5

^aN = 730.

^bN = 228.

^cNot available.

^dThe U.S. Bureau of the Census definition of foreign stock differs from that used in this study.

Figure 1. Typical spot map.**Table 2. Probability of moves of 638 relocatees from one social-status space to another.**

Social-Status Category Moved From	Social-Status Category Moved to				
	1	2	3	4	5
1	0.315	0.329	0.198	0.096	0.062
2	0.179	0.589	0.179	0.052	0.001
3	0.055	0.354	0.494	0.042	0.055
4	0.017	0.195	0.363	0.274	0.151
5	0.039	0.073	0.203	0.148	0.537

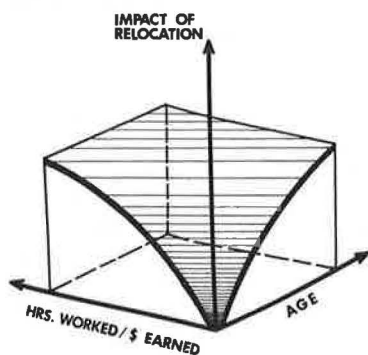
Table 3. Comparison of relocation and voluntary moves.

Social-Status Category Moved From	Mean of Social-Status Categories Moved to		Variance of Social-Status Categories Moved to	
	Relocation	Voluntary	Relocation	Voluntary
1	2.26	2.21	1.40	1.22
2	2.10	1.96	0.56	0.78
3	2.69	2.62	0.74	1.15
4	3.35	3.20	1.02	1.05
5	4.07	4.21	1.39	0.64

Table 4. Attitudes of 228 relocatees toward moving.

Attitude	All Relocatees (percent)	Relocatees With Some College (percent)
Initial		
Strongly disliked having to move	60	56
Somewhat disliked having to move	15	17
Did not care much one way or other	14	20
Somewhat pleased	7	0
Very pleased	4	7
Total	100	100
Present		
Very sorry we had to move	33	22
A little sorry	19	18
Do not care much one way or other	12	10
A little happy	20	30
Very happy	15	20
No opinion	0.4	0
Total	100 ^a	100

*Rounded.

Figure 2. Schematic representation of impact of relocation.

The same tendency toward upgrading the social status of one's residence exists among relocatees and voluntary movers. The similarity of the row means is particularly striking. It seems reasonable to conclude that social-status considerations are equally important to relocatees and to voluntary movers. Although 40 percent of the relocatees interviewed felt that they were not given enough time to find a new residence, it may well be asked whether locations selected after a longer search would have been substantially different in character from that of the neighborhoods actually chosen. It also seems worth noting in this connection that three-quarters of the relocatees interviewed expressed a desire to stay in their current neighborhoods.

There were too few nonwhites in the survey sample to permit a detailed study of the effect of race on the impact of relocation. Those black families who were in the sample all originated from a neighborhood traversed by I-71 near West 130th Street. This neighborhood was racially integrated and unique on the west side of Cleveland.

Only 1 black family that remained near the old neighborhood has moved away, but 6 of the 8 black families who moved to the east side of Cleveland have moved away from the addresses to which they were originally relocated. Four of those that had moved away could not be traced. One black family moved from the east side to a western suburb, and the remaining family moved from a predominately black area to a predominately white area on the east side. It appears that the experience of having lived in an integrated neighborhood may have fostered a dissatisfaction with either a predominately black or a predominately white neighborhood. Those who moved to the east side of Cleveland selected one or the other in approximately equal proportions but have displayed a marked tendency to move again.

NEIGHBORHOOD FACILITIES AND SOCIAL LINKS

Before relocation, only 2 in 10 of the households interviewed reported having to travel more than a mile to food stores. More than 4 relocatees in 10 travel more than a mile to food stores from their current addresses. It is probably because a substantial number of relocatees moved into suburban areas that the shopping trip seems to have become longer for many people. Most suburban food stores are located in shopping centers that were designed to be reached by automobile. Longer shopping trips must therefore be regarded as resulting from suburban living and are a consequence of relocation only to the extent that relocation caused some people to select new homes in the suburbs.

Forty-five percent of the relocatees who attend church reported being farther away from their churches after relocation. Six relocatees in 10 still attend the same church. Only 7 percent of the relocatees dropped out of voluntary organizations when they moved. Half the organizations dropped were church-sponsored social groups, and many of the rest were women's clubs other than church groups. A quarter of those relocatees who dropped out of an organization said they missed the group very much, and another quarter said they missed their former group not at all. The indications are that relocation affects the social lives of wives and children more than the lives of household heads who derive many of their social contacts from employment.

One in 5 relocatees interviewed expressed a definite desire to leave the current neighborhood, but 3 in 4 wanted to stay. The three most frequently cited reasons for wanting to stay in the present neighborhood were neighborhood is clean, "our kind" of people live here, and house is well built or of good appearance. Those who did not want to stay cited the following 3 reasons most frequently: Neighborhood is too dirty, we do not like the people here, and there is too much crime here.

When asked what features of their old neighborhoods they missed, more than 3 relocatees in 10 replied "nothing." Another 2 in 10 missed the companionship of friends or relatives, and the others named a variety of neighborhood characteristics. Nearly 4 relocatees in 10 stated that they had nothing in their new neighborhoods that their old neighborhoods did not possess.

If the loss of old friends and the necessity of making new ones is regarded as a measure of the social impact of relocation, there is no doubt that the poor and the elderly are most affected by the severance of social ties that existed in their old neighborhoods. Sociologists have found that low-income families often rely on the extended family as a

source of social contacts and tend not to make friends outside their circle of relatives. Among the relocatees interviewed, those households in which the weekly take-home pay of the head was less than \$100 were nearly 3 times as likely as more affluent households to have made no new friends after being relocated. Households with heads aged 61 or older were about 6 times as likely to have made no new friends as households with heads aged 30 or younger.

AGE, LENGTH OF RESIDENCE, AND ATTITUDES TOWARD RELOCATION

Six relocatees out of 10 said they strongly disliked having to move when they first learned they must be relocated. Only 5 percent of the relocatees were very pleased about having to move.

Three relocatees out of 10 are still very sorry they had to move, but 15 percent now report being very happy about it. Another 20 percent is now a little happy about moving. The very-sorry group has thus been reduced by 50 percent, while the very-happy group has increased threefold with the passage of time.

It was found that length of residence at the pre-relocation address is a more sensitive variable than age in predicting the impact of relocation on a household. The impact of relocation is defined here to mean the net psychological effect on a household of the economic, social, and physical adjustments made necessary by an enforced move. One way to measure such impact is by observing the number of households or individuals who still harbor distinctly negative feelings toward relocation after the passage of an appreciable period of time.

About 60 percent of the relocatees who had resided at their old homes for 11 years or more strongly disliked having to move when they first learned they were to be relocated. Nearly 40 percent of those families are still very sorry they had to move. On the other hand, about 42 percent of the families who had lived at their old addresses for less than a year said they strongly disliked having to move at first. Less than half of this latter group is still very sorry about being relocated. Furthermore, families who had lived at their pre-relocation addresses for less than a year were about 2½ times more likely to like their new homes very much more than relocatees who had lived at their old residences for 11 years or longer.

Households with heads between ages 31 and 60 were more than twice as likely as families with older or younger heads to be very happy about their relocation at the time of their interviews. Family heads in the 31-to-60 age group were likely to be more affluent than their older or younger counterparts. Therefore, families in this age group were in the best position to select more desirable facilities. Many of those who were able to improve their residential facilities now realize that the enforced move worked to their ultimate advantage. The tendency to be very happy about having been relocated was most marked among household heads between 31 and 45 years of age.

INCOME, OCCUPATION, EDUCATION, AND REACTIONS TO RELOCATION

Relocatees who earned at least \$200 per week take-home pay were distinctly more likely than others to be very happy they had to move. Nearly 60 percent of the relocatees in this income group expressed such a sentiment. Relocatees with relatively high incomes are also somewhat less likely to express unfavorable attitudes toward their new homes than those in lower income groups. More than 4 out of 10 relocatees stated that they had more money worries since relocation, but the size of the household's weekly income seems to have no bearing on the incidence of increased money worries.

About two-thirds of the relocatees earning \$101 to \$200 per week in take-home pay expressed a desire to stay in their current neighborhoods. About 80 percent of all other relocatees, those earning \$100 per week or less as well as those earning more than \$200, said they wanted to stay in their current neighborhoods. The comparatively smaller proportion of relocatees making from \$101 to \$200 per week who want to stay in their present neighborhoods may be due to a combination of a desire for upward social mobility and the economic ability to act on such a desire.

Relocates with professional or technical occupations were markedly less unhappy about their enforced moves than were relocates in general. Eight percent of relocates in this occupational category reported being very sorry they had to move at the time of their interviews. The corresponding figure for all relocates surveyed was 33 percent. Similarly, 25 percent of relocates with professional and technical occupations stated at the time of their interviews that they were very happy they had to move. About 15 percent of all relocates expressed similar feelings.

The inference that professional and technical workers are more geographically mobile than the rest of the population seems to be borne out by their expressions of plans to move. Twenty-five percent of this occupational group stated that they had definite plans to move, compared with 14 percent of all relocates.

Relocates with some college education were more likely than others to hold a favorable opinion of the state's selection of the route for I-90, which caused their displacement. Although initial feelings of the educated were about the same as those of others, current attitudes toward moving may have been affected by this attitude toward the highway. Table 4 gives a summary of attitudes toward moving at the time relocates first became aware of the necessity to move.

Relocates who had attended college were more likely to have developed favorable feelings toward the moving experience. Whether this situation is due to some feeling of satisfaction from having contributed to a civic improvement cannot be answered from the data at hand. Another possible interpretation is that relocates with some college education were likely to be found in occupations that conferred on them sufficiently high status and income to furnish a wide selection of residences. There would thus be a greater probability of finding a new home that would most nearly conform to their wishes.

ANOMIA AND REACTIONS TO RELOCATION

Robinson and Shaver (9) define anomia as "... an individual's generalized, pervasive sense of social malintegration or 'self-to-others alienation' (vs. self-to-others belongingness)." Thursz (7) describes the Srole anomia scale less technically as an instrument designed "to measure the degree of hopelessness and social dysfunction or disorganization in a selected population." The scale in its present form was devised by Srole in 1956 and consists of a set of 5 affirmative statements, each one intended to measure 1 aspect of anomia. The Srole anomia test was included in the survey questionnaire. (The term is often spelled "anomie" in the sociological literature.)

The test is scored by counting the number of statements to which the subject expresses unequivocal agreement. The score may thus range from 0 to 5, with the higher score indicating a higher degree of anomia. The validity of the test and the results of various investigators are reported by Robinson and Shaver (9). Anomia has been found to be inversely related to socioeconomic status and negatively correlated with occupational status, income, and education (9).

Not all of the relocates interviewed in Cleveland responded to the Srole anomia test, but 183 complete replies were obtained. Forty-three percent of this group received high anomia scores (3 to 5), and the remaining 57 percent were considered low on the anomia scale with scores between 0 and 2. Some 18.6 percent of the Cleveland relocates received a score of 0. This group may be compared with the 5 percent reported by Thursz (7), who tested a sample of relocates from an urban renewal project in southwest Washington, D. C.

Tetrachoric correlations between Srole anomia score and education as well as occupation were each found to be significant at the 0.01 level. The occupation variable was dichotomized as white collar and nonwhite collar, and the education variable was expressed as completed 8 grades or fewer and at least some high school. Relocates of the white-collar category and those who had completed at least some high school were found to be more likely to score low (0 to 2) on the anomia test. Coefficients of tetrachoric correlation were 0.36 and 0.31 for occupation and education respectively, with standard errors each about 0.11.

Similar correlations were found between anomia and age and between anomia and income. The more affluent were found to be more likely to score low on the anomia

test, as were relocatees under 45 years of age. The general relations reported by Robinson and Shaver (9) were thus confirmed in the sample of Cleveland relocatees.

Relocatees with high anomia scores (3 to 5) were more likely to express definite plans to move from their current neighborhoods ($r_t = 0.31 \pm 0.11$). These same relocatees were also less likely to feel that they "belong" in their current neighborhoods ($r_t = 0.25 \pm 0.11$), and less likely to express satisfaction with their current residences ($r_t = 0.24 \pm 0.12$).

High anomia scores were also associated with a greater tendency to disagree with the state's location of I-90, but not to a statistically significant extent ($r_t = 0.17 \pm 0.11$). Relocatees with low anomia were somewhat more likely than those with high anomia scores to be at least a little happy they had to move. This latter relation is not a strong one ($r_t = 0.13 \pm 0.11$).

It thus appears that high anomia is associated with consistently negative attitudes toward the relocation experience as well as toward the current neighborhood and the current residence. In view of the relations that have been demonstrated between anomia and various components of socioeconomic status, it is clear that the social and psychological impacts of relocation will be relatively more severe on the poor, the elderly, and the poorly educated. This condition is shown schematically in Figure 2. Because income is a continuous variable it has been selected as an index of socioeconomic status.

The impact of relocation can be considered for the present purpose as the total expenditure of economic, physical, and psychic resources necessary for a household to attain a satisfactory degree of adjustment to a new residence, including its location and its environmental characteristics. Figure 2 shows that the impact of relocation increases monotonically with age and with the expenditure of time required for the household head to earn a dollar.

FOREIGN EXTRACTION AND REACTIONS TO RELOCATION

Analysis of the data shows that initial and current attitudes toward moving, attitudes toward the new residences and the new neighborhood, and attitudes toward the location of I-90 are not affected by foreign birth or parentage. For practical purposes, the ethnic background of a relocatee has no bearing on his reactions to relocation, provided that the relocated household is white. There were insufficient data available for this study to produce conclusions about the impact of relocation on nonwhites.

REACTIONS TO RIGHT-OF-WAY PERSONNEL AND PROCEDURES

When asked for further comments about their experiences in selling their properties to the state, more than a third of the homeowners expressed dissatisfaction with state employees. Typical remarks were to the effect that right-of-way personnel were not courteous, were pushy about settlement, or harassed tenants.

Treatment by state employees was a primary concern of about 10 percent of the 141 relocatees who accepted the opportunity to offer general comments at the end of the interview. Some people expressed a feeling of pressure to move. Others felt that their special problems were ignored or that they were being treated as if it were their fault that they were in the way.

A public relations effort in the constructive sense of providing information would probably be helpful in preparing relocatees for their ultimate moves. Two public hearings are now required for federal participation in a project, but right-of-way matters may not receive their proportionate share of attention in these hearings.

A possible solution would be to hold a series of neighborhood meetings devoted entirely to matters of property acquisition and relocation. A series of such meetings is suggested because the problems and interests of elderly residents in an inner-city neighborhood would, for example, be different from homeowners in a middle-class suburban community. More active participation by the public relations office of the highway departments may be desirable for the presentations at such neighborhood meetings.

Twenty-six percent of the relocatees interviewed reported that they were offered assistance by state personnel in finding new residences. But assistance in finding prospective homes is not the only kind of help that is sometimes needed. What may be

a routine business transaction to a realtor or a right-of-way negotiator can prove to be a complex and confusing ordeal for a relocatee. About 6 percent of those who offered final comments indicated that their primary concern was a lack of information and advice on real estate procedures and legal questions. It is just this confusion or resentment that adds strength to antihighway sentiment in a community and may cripple the development of well-conceived transportation programs. It could be argued, therefore, that some highway funds might be well invested to "defuse" the emotional reactions of property owners who feel that they have been taken advantage of because of their lack of real estate knowledge. One constructive approach might be to prepare a brochure containing a simple description of a typical right-of-way transaction and the process of finding a new home. An actual case history or two, with illustrations, narrating the experiences of "Mr. and Mrs. Smith" might be a suitable approach. The presentation should be aimed at the elderly and at persons of moderate means, for others will probably have no need of this kind of assistance.

Four relocatees in 10 felt that they were not given enough time to "shop around" for new dwellings. When asked what they thought should be done to help other people, which was not done in their own cases, one-third of the relocatees stated that more notice should be given before residents must move.

Not only does the evidence indicate that relocatees would probably not have selected neighborhoods substantially different from their actual relocation sites if they had been given more time, but it also indicates that allowing more time actually leads to other problems. Families living in an area containing some vacant buildings must contend with vandalism. About 11 percent of the relocatees named vandalism as their main concern. The most ready answer to those who feel that they must shop around more is to point out that it would be to their advantage to vacate their houses in the right-of-way at about the same time their neighbors move away.

Problems of the elderly were the primary concern of about 1 relocatee in 8. Relocatees felt that elderly people deserved special financial assistance, that they should be provided with special physical assistance in moving, and that they should be treated more gently. There is evidence to show that relocation may have serious emotional effects on elderly people because of their displacement from familiar surroundings.

The primary concern expressed by about 1 relocatee in 5 was money. Some relocatees were disappointed because they felt that insufficient consideration was given to improvements they had made on older houses. Others felt that they should have received some compensation for the inconvenience of being required to move.

Other matters of financial concern were higher interest rates for new mortgages and higher taxes at new locations. The advent of the relocation allowance under the Highway Act of 1968 and subsequent legislation should help to alleviate a concern expressed by many: "The home may not be worth too much because of age, but in order to buy another like it you need more money."

Relocatees seemed to be more concerned about moving into the same type of neighborhood than with the prices of replacement housing, provided that they enjoyed adequate incomes. This sentiment was verbalized by a number of relocatees and seems to be borne out by the analysis of moving behavior. It would seem, therefore, a mistake to overemphasize the economic aspects of the relocation experience or to assume that financial allowances will relieve more than a fraction of problems experienced by relocatees.

Some relocatees were opposed to expressway construction, and some were concerned only that an expressway was to traverse their old neighborhoods. About 6 percent of the relocatees who offered final comments indicated that their primary concern was opposition either to expressways in general or to I-90 in particular.

"They're doing what they can do. We need more and better roads." Thus spoke one relocatee who represents the 6 percent who offered comments to the same effect.

CONCLUSIONS

Analysis of moving behavior lends support to the following conclusions:

1. Relocatees tend to select residences as close as possible to their old homes;

2. Relocates tend to select new neighborhoods having a social status equal to or higher than that possessed by their former homes, provided that they are financially able to do so; and

3. With respect to the tendency to maintain or upgrade the social status of their neighborhoods, the behavior of relocates is not substantially different from that of an independent sample of voluntary movers.

Unfavorable attitudes toward the relocation experience attenuate with the passage of time, but the rate of attenuation is inversely proportional to age and length of residence at the pre-relocation address. To a lesser degree, the rate at which unfavorable feelings attenuate is directly proportional to income and to educational attainment.

Strictly financial concerns were not necessarily uppermost in the minds of most interviewees. About one-fifth of the relocates mentioned financial matters as objects of their primary concern. But others were primarily disturbed about a variety of non-economic considerations. Relations with state employees and the special problems of the elderly were among the most commonly mentioned matters. It is concluded that the payment of relocation allowances and rent supplements, although necessary and just, cannot in itself relieve the psychic burdens that must be shouldered by relocates. The elderly relocatee is especially in need of sympathetic treatment, substantive assistance in finding a new home, and sound advice.

Relocates with at least some college education were more likely than others to entertain a favorable opinion toward the selection of the alignment for I-90.

Monthly housing expense was substantially higher for relocates as a result of their having moved. Many relocates had substantial equities in their old homes, and they applied the proceeds from these sales to the state directly toward their new homes.

Structural condition of housing currently occupied by relocates was found to be generally satisfactory. The size of new quarters, in terms of median rooms per dwelling unit, seemed somewhat larger than that of pre-relocation dwellings. A few dwellings were found to be deficient with respect to standards for decent, safe, and sanitary housing.

Changes in tenure were predominately from tenant to owner. More than half of the relocates who had been tenants became owners after relocation. The necessity to relocate seems to have provided an incentive to purchase a home among younger households of adequate means.

Relocation had little effect on employment. Only 5 percent of those interviewed changed jobs because of being relocated. About a third of the relocates reported that their trips to work were longer than they had been prior to relocation.

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