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RESIDENTIAL MOBILITY AND PERSONAL WELL-BEING

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Abstract

This research examines the relationship between personal mobility rate (number of lifetime moves/respondent's age) and health status. A contextual analysis is proposed in which the health consequences of relocation depend not only on the immediate circumstances surrounding a move, but also on the broader context of the individual's residential history, current life situation, and aspirations for the future. Two hundred and forty-two adult employees completed an initial survey of lifetime residential history, current residential desirability, employment experience, and perceived housing options for the future. Three months later, a panel group of 121 respondents completed a follow-up survey of emotional and physical well-being. Frequent relocation was directly associated with a greater number of illness-related symptoms, but the impact of mobility rate was largely mediated by psychological factors. Health problems were more prevalent among high-mobility individuals characterized by low rather than high levels of environmental exploratory tendency; among low-mobility persons reporting low versus high levels of residential choice and congruence; and among low residential-quality individuals who perceived future residential options to be unavailable rather than available.

Introduction

With the advent of the automobile, improved mass transit, and telecommunications, the citizens of industrialized nations have become increasingly mobile. Within the United States, nearly 20% of the population changes residence each year and approximately 45% relocates at least once every five years (Long and DeAre, 1981). Comparative data from Australia, Canada, Great Britain, and Japan indicate substantial five-year mobility rates in those nations as well, ranging from 48% in Australia and 44% in Canada to 36% in Great Britain and Japan (Long and Boertlein, 1976).

At what personal and social cost have we purchased our increased freedom from geographical constraints? Some contend that our advanced technology and heightened mobility have eroded the physical and interpersonal foundations of social cohesion and have created communities of placeless, traditionless strangers (cf. Packard, 1972; Toffler, 1970). Consistent with this view, several studies have revealed a diversity of emotional and physical disorders that appear to be associated with moving, including the 'grief syndrome' of psychosomatic symptoms experienced by relocated blue-collar workers (Fried, 1963); the increased rate of coronary heart disease among male employees who have changed residence due to a job transfer (Syme *et al.*, 1965) and the heightened incidence of depression among wives of transferred employees (Brett,

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1980; Seidenberg, 1973); and the greater risk of mortality among relocated, institutionalized elderly persons (Pastalan, 1980; Rowland, 1977).

Other researchers, however, espouse a more sanguine view of residential mobility (e.g. Butler *et al.*, 1973; Fischer and Stueve, 1977; Webber, 1970). They contend that the 'community of limited liability', in which residents' close relationships with family and friends transcend the spatial boundaries of their immediate neighborhood, is a highly viable adaptation to the fast pace of modern life, rather than a symptom of social disorganization (cf. Janowitz, 1967; Suttles, 1972). Consistent with this more positive view of mobility, recent demographic trends within the United States suggest that the majority of mobile Americans change residence voluntarily, without detrimental health consequences, and that only a small proportion of relocated individuals—particularly those constrained by poverty, racial discrimination and physical infirmity—experience adverse consequences of relocation (cf. Fischer and Stueve, 1977).

Fundamental to the second, more optimistic perspective is the assumption that psychological factors, such as the desirability and predictability of relocation, play a major role in buffering the impact of mobility on health (cf. Fischer and Stueve, 1977; Krantz and Schultz, 1980; Schultz and Brenner, 1977). While intuitively plausible, this assumption rests primarily on indirect evidence from studies of environmental stressors other than relocation (e.g. high levels of noise, density) or inferred through a comparison of the findings from separate mobility studies. Rarely have the hypothesized psychological mediators of the mobility–health relationship been assessed directly within the same investigation (the experimental studies by Pastalan (1980) and Schultz and Hanusa (1977) are exceptions to this trend). Therefore, an important methodological objective of the present research was to provide a direct assessment of several psychological factors that presumably moderate the relationships between residential change or stability and personal well-being.

At a theoretical level, the present study examines several propositions drawn from a *contextual* analysis of mobility and health. Rather than viewing relocation as an acute, isolated life event whose effects depend mostly on the immediate circumstances surrounding a move, we instead analyze mobility within the broader context of the individual's life history, current residential experience, personal predispositions toward environmental change, and aspirations for the future (cf. Hormuth, 1983; Michelson, 1977; Wapner, 1981). Thus, our analysis highlights both the spatial and temporal context of environmental experience (cf. Stokols, 1982; Stokols and Shumaker, 1982).

The *spatial context* of environmental experience refers in our analysis to the multiple settings (e.g. home, work, commuting, and recreational domains) that comprise a person's daily or weekly routine at a particular time in his or her life. We are particularly interested in the individual's perceptions of the quality or congruence of these environmental domains, i.e. the extent to which they support personally important goals and activities (cf. Harrison, 1978; Michelson, 1976; Stokols, 1979). In general, residential moves that culminate in low levels of congruence within important life domains are expected to have the most adverse impact on personal well-being.

The *temporal context* of environmental experience encompasses previous, current, and anticipated events within a person's life history. Through the processes of reminiscence and anticipation, individuals subjectively link their current situation with earlier and future life stages, thereby establishing a psychological context in

which the demands of relocation can be interpreted and resolved. Thus, the disruptive potential of residential change is likely to depend not only on specific features of the post-move situation (e.g. dwelling and neighborhood quality) but also on factors such as the strength of one's subjective attachments to previous residences, personal tendencies toward exploring new settings, and the perceived availability of desirable future environments (cf. Proshansky, Fabian and Kaminoff's {1983} conceptualization of *place identity*, and Stokols and Shumaker's {1981} discussion of the antecedents and consequences of *place dependence*).

In the present study, mobility is defined as the number of residential moves made by an individual during his or her lifetime, adjusted by chronological age. Although residential relocation is associated with obvious inconveniences and emotional demands (cf. Holmes and Rahe, 1967), we predicted no main effects of personal mobility rate on well-being. Rather, our emphasis on person-environment congruence and the temporal dimensions of environmental experience suggested a pattern of interactive effects. Specifically, among those individuals in our sample who had a high rate of lifetime mobility, the most adverse health outcomes were expected to be manifested by those reporting: (1) low levels of choice in moving to their current residence, (2) low levels of congruence within their current residential and work domains, and (3) low levels of environmental exploratory tendency. Moreover, among individuals reporting low levels of residential choice and congruence, health problems were expected to be greatest among (4) those who had spent most time in their current residence, and (5) those who perceived attractive residential options to be unavailable rather than available. Finally, the longitudinal design of our survey permitted a prospective analysis of the life circumstances associated with residential change. Based on the contextual analysis outlined earlier, we predicted that (6) individuals expressing low levels of residential choice, congruence, and attachment during the first phase of the survey would be most likely to have changed residence by the time of the second testing session.

Method

Subjects

A longitudinal survey was administered during the mid-summer of 1980 (Phase 1) and approximately three months later (Phase 2). A multistage cluster-sampling design was used to identify 318 prospective participants from among all non-faculty employees at a university in California. To maximize the diversity of respondents within the limitations of a university population, a random sample of organizational units was drawn from among all academic and non-academic departments listed in the campus telephone directory. Subsequently, a stratified sample of employees was selected from each target unit so as to represent all job categories and status levels (e.g. clerical, managerial) within the department. Departmental samples were proportional in size to the number of employees within the various target units. Through these procedures, 242 unpaid volunteers were recruited for participation in the survey (completion rate = 76%).*

*Of the 318 persons included in our initial sample, 19 (6%) refused to participate and another 57 (18%) could not be contacted due to their vacation schedule, illness-related absence from work, or recent termination of employment.

The Phase 1 sample consisted of 47 males and 195 females. The Phase 2 sample consisted of those individuals who had participated during Phase 1, were still employed at the university three months later, and agreed to complete our second questionnaire. Of the original respondents, 22 had quit their jobs between Phases 1 and 2. An attempt was made to contact these individuals but most had left the area and could not be reached. From among the Phase 1 respondents remaining at the university (220), 121 (26 males and 95 females) agreed to complete the Phase 2 questionnaire.†

Procedure

Prior to the distribution of Phase 1 questionnaires, a letter was sent to the administrative heads of all target departments informing them about our proposed research. Subsequently, we met with each of these individuals to discuss the purposes of the research and to request their assistance in providing a listing of all departmental staff by job titles. These employee rosters provided the basis for selecting stratified samples within each unit.

Prospective respondents were contacted by phone and asked to complete a Survey of Residential and Work Environments. Questionnaires were delivered in person to those who agreed to participate. At that time, they were informed that a member of the research team would return within two to three days to pick up the completed questionnaire and to discuss any questions they might have about specific survey items. These procedures were repeated during the fall when all Phase 1 respondents were recontacted by phone and asked to complete the follow-up questionnaire.

Measures and analyses

Several of the measures incorporated in our survey were administered at both Phases 1 and 2 whereas the remainder were administered at Phase 1 or Phase 2, only. Those items included in both questionnaires were used to assess the test-retest reliability of several independent variable measures that had not been used in prior research. The test-retest reliability of our health criteria was not assessed since respondents' scores on these items were expected to vary between Phases 1 and 2 (e.g. as a function of residential congruence and length of residence). Also, most of these measures had been used extensively in prior research, as noted below.

Repeated measures. Our index of personal mobility rate (number of lifetime moves/respondent's age) was derived from a residential history chart completed by respondents at the beginning of both questionnaires. Respondents were asked to list, in reverse chronological order, places they had lived during their lifetime. They also indicated approximate length of residence, type of dwelling (e.g. apartment, home,

† On several demographic dimensions, the Phase 1 and Phase 2 samples were quite comparable to each other and to the population of non-faculty staff at the university. The sex composition of these three groups, respectively, was: 20% male–80% female, 21% male–79% female, and 24% male–76% female. The percentages of Caucasian and non-Caucasian individuals were 79%–21%, 81%–19%, and 78%–22%. For both Phase 1 and Phase 2 samples, income ranged from \$4,500–\$35,000 with a median level of \$12,500–\$14,500. The educational levels of Phase 1 and Phase 2 respondents ranged from grammar-school-only to professional degree (e.g. M.A., Ph.D.), with 1–3 years of college as the median for both groups (median income and educational levels were not available for the entire non-faculty staff population). The Phase 1 sample, however, was younger (range = 20–67 years, median = 35) than the Phase 2 sample (range = 22–67 years, median = 38). Median age for the population was 34 years.

condominium), ownership or rental status, and with whom they lived (e.g. parents, friends, spouse, children) at each place.*

Subsequently, respondents completed several items regarding their subjective attachment to previous residences (e.g. whether or not they missed earlier environments and, if so, the degree to which they missed friends and relatives from those places) and their perception of the availability of future residential options (e.g. whether they believed attractive alternative environments were realistically available to them). Also, they completed an environmental evaluation chart in which the perceived desirability of several residences (e.g. their least and most favorite places, their current residence, the place they lived in just prior to the current residence) were rated on seven-point scales (where 1 = undesirable, 7 = most desirable). From these ratings, a comparison level measure (Thibaut and Kelley, 1959) of current residential quality was computed to reflect the difference in perceived quality between one's current and most recent, previous environments. Also, respondents reported current levels of satisfaction with and attachment to their present dwelling, neighborhood, and city on a series of five-point Likert scales.†

As an index of residential congruence, respondents were asked to rate their level of satisfaction with respect to 19 dimensions of their present residence on five-point Likert scales (ranging from very dissatisfied to very satisfied). Five items pertained to features of the dwelling, viz. 'usable interior space', 'floorplan', 'exterior space', 'exterior appearance', and 'investment value'. Fourteen items pertained to neighborhood characteristics such as 'air quality', 'noise level', 'freedom from crime', 'quality of schools', and 'proximity to workplace'. Respondents also rated the importance of each dimension to them on five-point scales ranging from 'unimportant' to 'very important'. For each dimension, a satisfaction (-2 to $+2$) by importance (1 to 5) product was computed. The sum of these products provided an overall measure of residential congruence (cf. Stokols, 1979).‡

Three five-point Likert scales inquired about whether the individual liked or disliked moving to new places, preferred to explore unfamiliar places or to be in familiar surroundings, and was comfortable or uncomfortable meeting new people. Respondents' scores on these items were summed to yield an index of environmental exploratory tendency.§

Two five-point scales were included in both questionnaires to assess perceived quality of personal health: 'In general, how has your health been lately?' (1 = poor,

* Test-retest reliability of the measure of lifetime moves: $r(107) = 0.90$, $P < 0.001$; for length of residence in current dwelling, $r(108) = 0.96$, $P < 0.001$. Analyses of test-retest reliability for all residential variables (e.g. mobility, congruence, perceived availability of residential options) are based on the responses of residentially stable subjects, i.e. those individuals who completed both Phase 1 and Phase 2 questionnaires and did not change residence between the two testing periods ($n = 111$). Variations in degrees of freedom across analyses reflect missing cases.

† For each level of environment (dwelling, neighborhood, city), individual items inquired about the respondent's feelings of satisfaction with, and attachment to, the current residence, and about how disruptive it would be for the individual to move from that place. Average test-retest reliability for the nine scales was 0.69.

‡ Test-retest reliability of the residential congruence measure: $r(109) = 0.37$, $P < 0.001$. The lower reliability of this index, as compared with our other repeated measures, may be attributable to the large number of subscales incorporated in the congruence measure. Respondents were asked to rate the quality and importance of 19 dimensions of their dwelling and neighborhood. A congruence measure derived from fewer subscales may have yielded greater test-retest reliability.

§ Test-retest reliability of the environmental exploratory tendency measure: $r(109) = 0.71$, $P < 0.001$.

5 = very good) and 'In general, how energetic have you felt lately?' (1 = never have any energy, 5 = always full of energy).

Phase 1 measures. The initial questionnaire included a set of demographic items pertaining to age, sex, education, income, ethnicity, marital status, and number of children. Also, respondents completed four five-point Likert scales pertaining to various attributes of their neighborhood (e.g. ease with which strangers can be identified, degree to which one feels a part of the neighborhood). These scales were adapted from Riger and Lavrakas' (1981) Neighborhood Integration Scale. Respondents' scores on the four items were summed to yield an overall sense-of-community measure.

Perceived residential choice was assessed through a series of items concerning 'reason for moving to where you now live' (adapted from Stokols *et al.*, 1978). Respondents were asked to rate on five-point scales the importance (1 = not at all important, 5 = very important) of several factors which may have influenced their decision to move to their current residence (i.e. 'only dwelling I could find', 'only dwelling I could afford', 'liked the dwelling', 'liked the neighborhood', 'liked the city', 'dwelling was a good value for the money', 'dwelling was close to work'). A summary index of residential choice was computed by subtracting respondents' ratings of the 'push' factors (only dwelling they could find or afford) from those of the 'pull' factors (attractive features of the dwelling, neighborhood, and city).

Several items pertaining to employment history and job satisfaction were included in the final section of the questionnaire. Respondents rated the desirability of their present job in relation to previously held positions, and the availability of attractive employment options. Two five-point Likert scales assessed overall satisfaction with one's current job (1 = not at all satisfied, 5 = very satisfied) and the relative importance of the job compared to other aspects of one's life (1 = not at all important, 5 = very important). The product of the job satisfaction (-2 to +2) and importance (1 to 5) scores yielded a summary measure of job congruence. As an index of job involvement, an additional seven-point item assessed how often the individual arrives early or stays late at the office to work on job-related tasks (ranging from 'never' to 'more than once a week').

Phase 2 measures. In addition to the repeated measures of overall health and energy, the follow-up questionnaire incorporated several additional indices of health status including a five-point Likert index of morale: 'In general, how have your spirits been lately?' (1 = very low, 5 = very good). On another set of items, adapted from Marx *et al.* (1975), respondents were asked to assess their health situation over the preceding three months in terms of (1) the number of occasions on which they were ill or injured with different health problems; (2) the number of days on which they had these health problems; (3) the number of days on which health problems were severe enough to cause the cancellation of planned activities (aside from employment duties); (4) days of work missed due to health problems; and (5) the number of visits to a doctor or hospital for health problems. They then completed a 30-item symptoms checklist assessing the frequency (over the preceding three months) of several physical and emotional conditions (1 = 'did not have this condition', 2 = 'had this condition sometimes', 3 = 'had this condition often'). The items included in this checklist were based on a composite of Langner—22 Psychiatric Symptoms scales (Langner, 1962) and the PERI Demoralization Index (Dohrenwend *et al.*, 1980), developed by Dooley and Catalano (1981). Respondents' scores on the 30 items were

summed to yield an overall index of illness-related symptoms.

Data analyses. Two primary sets of analyses were conducted. First, the main and interactive effects of residential mobility and residential choice, congruence, and exploratory tendency were examined in separate analyses of covariance (ANCOVAs). Two-level factors based on median splits of the Phase 1 independent variables were used in the ANCOVAs. Phase 2 indices of health status served as the principal dependent measures. Second, factors associated with residential change between Phases 1 and 2 were assessed through a discriminant analysis comparing residential 'movers' and 'stayers'.

For the ANCOVAs, only those respondents who had not changed residence between Phases 1 and 2 were included since the occurrence of a move between the two testing periods was expected to have altered the individual's standing on key independent variables (e.g. perceived residential choice and congruence). Of the 121 respondents comprising the Phase 1/Phase 2 panel, 10 had changed residence but remained employed at the university between the two test periods. For the analyses comparing residential movers and stayers, the data from all panel subjects ($n = 121$) and those Phase 1 respondents who had changed both residence and workplace by Phase 2 ($n = 22$) were utilized. Movers were defined as any respondents who had changed residence between Phases 1 and 2 ($n = 32$), irrespective of whether they were still employed at the university by Phase 2.

Results

Internal validity

The design of the present study precluded random assignment of subjects to different levels of the independent variables. Several strategies, however, were used in an effort to enhance the internal validity of the research. First, the survey was administered to a panel group on two different occasions, thereby insuring the temporal separation of major independent and dependent measures.* Second, the reliability of newly developed survey and observational measures was assessed as described earlier. Third, the orthogonality of all predictor variables incorporated within each ANCOVA was checked through a series of correlational tests. The results of these tests are reported only in those instances where the ANCOVA factors were significantly correlated. Fourth, demographic covariates were incorporated in the analyses to control for socioeconomic and age-related sources of variation in the dependent measures. Respondents' age, educational status, and income were employed as covariates in those ANCOVAs not incorporating the mobility factor. In the mobility analyses, only education and income were used as covariates since the derivation of the mobility index was based on an adjustment for respondent's age.

The results presented below are organized into three main sections: (1) unpredicted main effects of the independent variables on health status; (2) interactive effects

*In this research, we have treated Phase 2 measures of personal well-being as dependent variables. Alternatively, health could be viewed as a causal factor that influences personal mobility rate, exploratory tendencies, and perceived residential quality. The relative validity of this alternative model could be assessed in future time-series research by employing cross-lagged panel analysis or causal modeling procedures. These procedures were not used in the present study, however, due to the small number of assessment periods ($n = 2$) and the small size of our panel sample ($n = 121$).

relevant to our first five hypotheses; and (3) the discriminant analysis of residential movers and stayers, specified in Hypothesis 6.

Main effects

Two unpredicted main effects of mobility rate on well-being were found: Highly mobile persons reported less sense of community at Phase 1 $\{F(1,206) = 7.36, P < 0.007\}$ and a greater number of illness symptoms at Phase 2 $\{F(1,99) = 4.29, P < 0.041\}$ than less mobile individuals. In addition, persons reporting low choice in moving to their current residence rated themselves as less energetic $\{F(1,236) = 18.11, P < 0.001\}$ and less healthy $\{F(1,236) = 20.23, P < 0.001\}$ at Phase 1 than did those expressing higher choice.

A significant relationship between residential desirability and health status was observed for two separate measures of housing quality. On the summary index of residential congruence, low-congruence individuals reported lower levels of energy $\{F(1,235) = 12.44, P < 0.001\}$, health $\{F(1,235) = 6.10, P < 0.014\}$, and sense of community $\{F(1,202) = 30.01, P < 0.001\}$ at Phase 1 than did high-congruence persons. Also, low-congruence respondents rated themselves as being in poorer spirits $\{F(1,104) = 4.19, P < 0.043\}$ at Phase 2 than their high-congruence counterparts. And on the comparison level measure of current (vs previous) residential quality, low residential-quality persons reported themselves to be in poorer health $\{F(1,100) = 4.57, P < 0.035\}$ and as having had a greater number of illness occasions by Phase 2 $\{F(1,98) = 4.96, P < 0.028\}$, than did high residential-quality individuals.

Finally, individuals expressing low levels of job congruence at Phase 1 rated themselves as less healthy $\{F(1,98) = 5.76, P < 0.018\}$, less energetic $\{F(1,98) = 6.27, P < 0.014\}$, and in poorer spirits $\{F(1,98) = 4.69, P < 0.005\}$ at Phase 2 than persons reporting higher levels of job congruence.

Interactive effects

Interactions between mobility rate and residential choice, residential congruence, and exploratory tendency. From our contextual analysis of mobility and well-being, we predicted that the effects of personal mobility rate on health would be mediated by certain situational and personal factors, including residential choice, current residential and job congruence, and environmental exploratory tendency. These predictions were examined through a series of 2×2 ANCOVAs, each of which incorporated the mobility index and one of the above factors as independent variables.

As shown in Table 1, low-mobility persons expressing low levels of residential choice reported a greater number of occasions on which they were bothered by health problems $\{F(1,102) = 6.01, P < 0.016\}$, and a marginally greater number of days on which they had such problems ($P < 0.064$), than did those characterized by a higher level of residential choice. Also, low-mobility persons expressing low levels of residential congruence reported illness marginally more often than did those expressing a higher level of residential congruence ($P < 0.07$). No interactions between mobility rate and job congruence were observed.

Significant interactions between mobility and exploratory tendency were found on Phase 1 measures of health and energy. Among high-mobility persons, those with low exploratory scores reported lower levels of health and energy than their high-exploratory counterparts, whereas among low-mobility individuals these trends were reversed {health $F(1,235) = 6.80, P < 0.004$; energy $F(1,235) = 7.40, P < 0.007$ }. A

TABLE 1
*Effects of residential mobility and residential choice on illness occasions
 and illness days*

Residential mobility	<i>n</i>	Illness occasions*		Illness days†	
		<i>M</i>	S.D.	<i>M</i>	S.D.
Low					
Low choice	25	1.88	2.19	4.56	4.85
High choice	30	0.77	1.19	1.97	3.38
High					
Low choice	31	1.16	1.10	2.74	3.94
High choice	24	1.33	1.27	3.21	4.53

Note: Larger means indicate higher scores on the attribute listed.

*Mobility \times choice interaction, $P < 0.016$.

†Mobility \times choice interaction, $P < 0.064$.

check on the orthogonality of the mobility and exploratory tendency factors revealed a significant correlation among the factors $\{r(201) = 0.17, P < 0.008\}$. Within cells correlations further revealed that these variables were significantly related among low-mobility persons $\{r(103) = 0.31, P < 0.001\}$, but not among high-mobility individuals. Therefore, a series of one-way analyses were run focusing on high-mobility persons, only, to assess health differences between exploratory and non-exploratory individuals. Among the high-mobility respondents, non-exploratory individuals gave significantly lower ratings of their health $\{F(1,119) = 4.10, P < 0.045\}$ and energy $\{F(1,119) = 8.23, P < 0.004\}$ at Phase 1, and reported themselves to be in poorer spirits $\{F(1,53) = 3.90, P < 0.053\}$ and (marginally) less energetic ($P < 0.061$) at Phase 2.

Temporal mediators of the relationship between residential quality and health. The role of temporal factors in mediating the effects of current residential quality on health was examined through four separate ANCOVAs. In the first two analyses, length of residence in one's current dwelling was incorporated as an independent factor along with the factors of residential choice and congruence, respectively. In the second set of analyses, the perceived availability of attractive housing options and either the index of residential congruence, or the comparison level measure of residential quality, were employed as independent factors.

As hypothesized, a significant interactive effect of length of residence and residential choice on health was found. Among the short-term residents, a low level of residential choice was not associated with health impairments but, among long-term residents, low-choice individuals reported a greater number of illness occasions at Phase 2 than did high-choice persons $\{F(1,100) = 5.40, P < 0.022\}$. The predicted interaction between length of residence and residential congruence was only marginally significant, but paralleled the preceding finding in that the greatest number of illness occasions were reported by long-term low-congruence individuals while the fewest were reported by long-term high-congruence persons ($P < 0.085$). Also, the amount of overtime spent at work was greatest among long-term low (residential) congruence persons and lowest among long-term high-congruence individuals $\{F(1,103) = 3.85, P < 0.052\}$.

A significant interaction between perceived residential options and residential con-

TABLE 2
Effects of perceived residential quality and availability of residential options on health

Residential quality	n	Illness occasions*		Health†		Spirits‡		Energy§	
		M	S.D.	M	S.D.	M	S.D.	M	S.D.
Low									
No options	19	1.68	1.16	3.89	0.88	3.32	1.11	3.37	0.76
Options	22	1.68	2.28	4.23	0.87	4.09	1.15	3.64	0.90
High									
No options	39	0.90	1.09	4.41	0.79	3.79	1.03	3.67	0.77
Options	27	1.15	1.43	4.41	0.88	3.67	0.92	3.44	0.75

Note: Larger means indicate higher scores on the attribute listed. All health measures are at Phase 2.

*Quality main effect, $P < 0.035$.

†Quality main effect, $P < 0.028$.

‡Quality × options interaction, $P < 0.019$.

§Quality × options interaction, $P < 0.040$.

TABLE 3
Mean levels of significant discriminators between residential movers and stayers

Residential stability Between phases 1 and 2	n	Age*		Interest* in moving		Residential† congruence		Attachment† to dwelling		Prior† mobility rate	
		M	S.D.	M	S.D.	M	S.D.	M	S.D.	M	S.D.
Movers	32	27.74	6.94	1.68	0.48	53.26	46.39	8.84	3.52	0.35	0.51
Stayers	111	39.86	11.90	1.24	0.43	75.23	53.90	10.60	2.52	0.22	0.17

Note: Larger means indicate higher scores on the attribute listed. All variables were measured at Phase 1. Means are based upon those individuals participating at Phases 1 and 2 ($n = 121$, 10 of whom had changed residence) and those participating at Phase 1, only, who had changed both residence and workplace by Phase 2 ($n = 22$).

*F at entry into the discriminant equation, $P < 0.001$.

†F at entry into the discriminant equation, $P < 0.05$.

gruence on emotional well-being at Phase 2 was found. Among low-congruence respondents, individuals having no residential options rated themselves as being in poorer spirits than those with options whereas, among high congruence persons, those perceiving no options were in better spirits than those with options $\{F(1,106) = 4.56, P < 0.035\}$.

Similarly, significant interactions between perceived residential options and the comparison level measure of current residential quality were found. Among low residential-quality persons, those with no options were in poorer spirits than those with options whereas, among high residential-quality individuals, those without options were in better spirits than those with options $\{F(1,100) = 5.68, P < 0.019\}$. Also, low residential-quality persons with no options rated themselves as less energetic at Phase 2 than those with options, but this pattern was reversed among high residential-quality individuals $\{F(1,102) = 4.27, P < 0.040\}$. The effects of residential quality and options on health are summarized in Table 2.

Antecedents of residential change

Factors associated with residential change between Phases 1 and 2 were examined in a stepwise discriminant analysis incorporating Phase 1 measures of personal mobility rate, residential congruence and quality, attachment to the current dwelling, sense of community, interest in moving, perceived housing options, age, income, and gender, as predictor variables. Five of these variables significantly discriminated between residential movers and stayers {multivariate $F(6,105) = 7.98$, $P < 0.001$ }: age, interest in moving, residential congruence, attachment to the current dwelling, and prior mobility rate (in order of entry into the discriminant equation). Each of these variables contributed significantly to the discriminant equation, above and beyond those predictors entered at previous steps. The mean levels of each significant discriminant variable are presented in Table 3.

Movers and stayers were significantly different on certain other variables not included within the multivariate discriminant equation. Movers had lived at their current residence for fewer years { $t(139) = 3.45$, $P < 0.001$ }, and reported lower levels of job congruence { $t(139) = 2.16$, $P < 0.032$ } and residential choice { $t(140) = 2.07$, $P < 0.040$ } at Phase 1, than did stayers.

Discussion

In the present study, high mobility rate was directly associated with having more illness-related symptoms and with having a lower sense of community in relation to one's neighborhood. A recent study by Brett (1982) also revealed greater dissatisfaction with social relationships among geographically mobile vs stable employees. These findings suggest that high mobility rate exerts certain direct, negative effects on subjective well-being and social relations. At the same time, however, the mobile employees in Brett's study reported higher levels of satisfaction on certain other dimensions of well-being (e.g. perceived quality of marriage and family life). Moreover, Newman and Owen (1982) found that even *involuntary* relocation is sometimes associated with unexpected improvements in financial and material well-being. Taken together, the findings from the present and earlier relocation studies suggest that the health consequences of residential change are not uniformly negative or positive. The diversity and seeming inconsistency of these findings further suggest that the health effects of mobility vary across different dimensions of well-being and are mediated by several personal and situational factors. Thus, rather than emphasizing the direct links between mobility and well-being, the theoretical analysis outlined earlier focuses instead on the psychological and environmental context of relocation and the specific life circumstances that mediate the health consequences of residential change.

According to the proposed contextual analysis, frequent residential change is a potentially stressful life pattern whose effects on health depend upon the perceived quality of the individual's current situation at home and at work, and on temporal factors such as his or her perceptions of earlier residences, time spent in the current residence, and perceived availability of attractive housing options. Consistent with this theoretical perspective, the findings suggest that the cumulative effects of prior residential mobility (or stability) on health are mediated by current levels of person-environment misfit. Thus, highly mobile individuals characterized by a low level of environmental exploratory tendency reported greater health impairment than ex-

ploratory persons, for whom frequent relocation would be more consistent with personal goals and predispositions. Similarly, the health consequences of mobility rate were mediated by perceptions of choice and congruence associated with one's current residence. Yet, contrary to our predictions, illness incidents were greater among *low*-mobility individuals expressing low levels of choice and congruence, than among their high-mobility counterparts. Presumably, low residential quality is more incongruent with a life pattern of rootedness rather than relocation. That is, because low-mobility residents are more likely to remain in the undesirable situation for a longer period, the impact of low residential quality on well-being may be more pronounced among them than among more mobile individuals.

The important role of temporal factors in mediating the health consequences of relocation is highlighted by several additional findings. First, while low levels of residential choice, residential and job congruence, and housing quality were directly associated with adverse health consequences, these effects were most pronounced among long-term vs short-term residents, i.e. among those persons who had been exposed to an incongruent situation for the greatest amount of time. Moreover, the perceived availability of attractive residential options for the future moderated the impact of residential quality on certain dimensions of health (morale, energy), such that low residential-quality persons with no options and high residential-quality individuals with options reported the lowest levels of well-being. Clearly, feeling constrained to an undesirable residence for lack of options is an incongruent situation. It is not clear, however, why people with attractive options and high residential congruence should experience negative health outcomes. Yet, our data support this apparent paradox. One possible explanation is that being in a positive situation with high awareness of attractive options is psychologically incongruous, in that the approach-approach conflict posed by the salient alternatives makes adaptation and attachment to one's current environment more difficult.

The results from the discriminant analysis of residential change are consistent with our prediction that those individuals reporting low levels of residential congruence and attachment at Phase 1 would be most likely to move by Phase 2. The contributions of these psychological variables to the discriminant equation were significant, even after controlling for respondent's age (the most potent predictor of moving). Interestingly, demographic variables often thought to be associated with moving, such as income level and gender, did not enter into the discriminant equation; though the sex composition and income variation in our sample may have been too restricted to reveal the effects of these variables. Yet, as in earlier research (Fischer and Stueve, 1977), prior rate of mobility was predictive of future residential change (occurring between the first and second phases of the study).

The above findings suggest that residential relocation may often serve as an important coping strategy for redressing undesirable aspects of one's earlier or current life situation. Accordingly, the relationship between residential mobility and well-being is more adequately understood within the context of the individual's life history and future goals, rather than as an acute environmental stressor whose effects on health are uniformly negative.

The findings of this study suggest several directions for future research. First, although the results strongly suggest that psychological processes mediate the impact of residential mobility on health, the specific cognitive, social, and biobehavioral mechanisms of this mediation remain unclear. For example, the present investigation

has not assessed which aspects of frequent relocation are most stressful to people (e.g. severing ties with previous places and social relations, establishing friendships in the new locale). Nor have we examined a wide range of social and biobehavioral mediators of mobility stress, including the role of shared vs autonomous residential change (e.g. relocation of families vs isolated individuals), the influence of 'critical' developmental periods (e.g. adolescence, old age) in moderating relocation effects, and the impact of frequent moving on vulnerable subgroups of the population (e.g. the poor, racial minorities, and persons with chronic health problems). Our findings are further qualified by the composition of the sample, which was entirely comprised of employed rather than unemployed or retired individuals. Also, our sample included a disproportionately large number of females (approximately 80%) who, according to earlier research (Butler *et al.*, 1973), may be more susceptible to the stressful consequences of relocation than males.

Another direction for future research is to assess the interrelationships between home and work domains in mediating emotional and physical well-being. For instance, we found that long-term, low residential-congruence subjects spent the greatest amount of overtime at work. This findings suggests a compensatory relationship between home and work settings in which poor residential quality is associated with greater involvement in the workplace. It is impossible to determine from our data whether the increased overtime at work is a cause of, or response to, low levels of residential quality, and whether greater job involvement serves to buffer or intensify the health consequences of residential incongruity. These and related questions could be addressed in future longitudinal studies incorporating more detailed assessments of residential and work experience.

Residential mobility is one facet of the individual's life history whose effects depend on the temporal and spatial contexts in which relocation occurs. This research offers an appraisal of several psychological factors that mediate the impact of residential change and stability on well-being. Our findings highlight the importance of perceived environmental congruence in moderating the health consequences of mobility; and, at a practical level, they are consistent with those of earlier intervention studies (e.g. Pastalan, 1980; Schultz and Hanusa, 1977) that have emphasized the enhancement of psychosocial processes as a basis for reducing the potentially negative effects of residential change.

References

- Brett, J. M. (1980). The effect of job transfer on employees and their families. In C. L. Cooper and R. Payne (eds), *Current Concerns in Occupational Stress*, 99-136. New York: John Wiley & Sons.
- Brett, J. M. (1982). Job transfer and well-being. *Journal of Applied Psychology*, **67**, 450-63.
- Butler, E. W., McAllister, R. J. and Kaiser, E. J. (1973). The effects of voluntary and involuntary residential mobility on females and males. *Journal of Marriage and the Family*, **35**, 219-27.
- Dohrenwend, B. P., Shrout, P. E., Egri, G. and Mendelsohn, F. S. (1980). Nonspecific psychological distress and other dimensions of psychopathology. *Archives of General Psychiatry*, **37**, 1229-36.
- Dooley, C. D. and Catalano, R. (1981). Does community economic change increase psychological symptoms? Results from longitudinal community surveys. Paper presented at the American Psychological Association Conference, Los Angeles.

- Fischer, C. S. and Stueve, C. A. (1977). Authentic community: the role of place in modern life. In C. S. Fischer, R. M. Jackson, C. A. Stueve, K. Gerson, L. M. Jones and M. Baldassare (eds), *Networks and Places: Social Relations in the Urban Setting*, 163–86. New York: The Free Press.
- Fried, M. (1963). Grieving for a lost home. In L. J. Duhl (ed.), *The Urban Condition*, 151–71. New York: Basic Books.
- Harrison, R. V. (1978). Person-environment fit and job stress. In C. L. Cooper and R. Payne (eds), *Stress at Work*, 175–205. New York: John Wiley & Sons.
- Holmes, T. H. and Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research*, **11**, 213–8.
- Hormuth, S. E. (1983). Transitions in commitments to roles and self-concept change: Relocation as a paradigm. In V. Allen and E. van de Vliert (eds), *Role Transitions*. New York: Plenum Press.
- Janowitz, M. (1967). *The Community Press in an Urban Setting*, 2nd ed. Chicago: University of Chicago Press.
- Krantz, D. S. and Schultz, R. (1980). A model of life crisis, control, and health outcomes: Cardiac rehabilitation and relocation of the elderly. In A. Baum and J. E. Singer (eds), *Advances in Environmental Psychology*, Volume 2: *Applications of Personal Control*, 23–57. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Langner, T. S. (1962). A twenty-two item screening score for psychiatric symptoms indicating impairment. *Journal of Health and Human Behavior*, **3**, 269–76.
- Long, L. H. and Boertlein, C. G. (1976). *The Geographical Mobility of Americans: An International Comparison. Current Population Reports, Special Studies, Series P-23, No. 64*. Washington, D.C.: U.S. Bureau of the Census, Government Printing Office.
- Long, L. H. and DeAre, D. (1981). *Population Redistribution: 1960–1980*. Washington, D.C.: U.S. Bureau of the Census, Government Printing Office.
- Marx, M. B., Garrity, T. F. and Bowers, F. R. (1975). The influence of recent life experience on the health of college freshmen. *Journal of Psychosomatic Research*, **19**, 87–98.
- Michelson, W. (1976). *Man and His Urban Environment: A Sociological Approach*, 2nd ed. Reading, Massachusetts: Addison-Wesley.
- Michelson, W. (1977). *Environmental Choice, Human Behavior, and Residential Satisfaction*. New York: Oxford University Press.
- Newman, S. J. and Owen, M. S. (1982). Residential displacement: Extent, nature, and effects. *Journal of Social Issues*, **38**, 135–48.
- Packard, V. (1972). *A Nation of Strangers*. New York: McKay.
- Pastalan, L. A. (1980). Relocation, mortality, and intervention. Paper presented at the American Psychological Association Conference, Montreal.
- Proshansky, H. M., Fabian, A. K. and Kaminoff, R. (1983). Place-identity: physical world socialization of the self. *Journal of Environmental Psychology*, **3**, 57–83.
- Riger, S. and Lavrakas, P. J. (1981). Community ties: Patterns of attachment and social interaction in urban neighborhoods. *American Journal of Community Psychology*, **9**, 55–66.
- Rowland, K. F. (1977). Environmental events predicting death for the elderly. *Psychological Bulletin*, **84**, 349–72.
- Schultz, R. and Brenner, G. F. (1977). Relocation of the aged: A review and theoretical analysis. *Journal of Gerontology*, **32**, 323–33.
- Schultz, R. and Hanusa, B. H. (1977). Facilitating institutional adaptation of the aged: Effects of predictability-enhancing intervention. Paper presented at the American Gerontological Society Conference, San Francisco, 1977.
- Seidenberg, R. (1973). *Corporate wives-corporate casualties*. New York: Amacom.
- Stokols, D. (1979). A congruence model of human stress. In I. G. Sarason and C. D. Spielberger (eds), *Stress & Anxiety, Volume 6*. Washington, D.C.: Hemisphere Press, 27–53.
- Stokols, D. (1982). Environmental psychology: A coming of age. In A. Kraut (ed.), *The G. Stanley Hall Lecture Series, Volume 2*. Washington, D.C.: American Psychological Association, 1982.
- Stokols, D., Novaco, R. W., Stokols, J. and Campbell, J. (1978). Traffic congestion, Type-A behavior, and stress. *Journal of Applied Psychology*, **63**, 467–80.
- Stokols, D. and Shumaker, S. A. (1981). People in places: A transactional view of settings.

- In J. Harvey (ed.), *Cognition, social behavior, and the environment*. Hillsdale, N.J.: Lawrence Erlbaum Associates, 441–88.
- Stokols, D. and Shumaker, S. A. (1982). The psychological context of residential mobility and well-being. *Journal of Social Issues*, **38**, 149–71.
- Suttles, G. D. (1972). *The social construction of communities*. Chicago: University of Chicago Press.
- Syme, S. L., Hyman, M. M. and Enterline, P. E. (1965). Cultural mobility and the occurrence of coronary heart disease. *Journal of Health and Human Behavior*, **6**, 178–89.
- Thibaut, J. and Kelley, H. H. (1959). *The Social Psychology of Groups*. New York: John Wiley & Sons.
- Toffler, A. (1970). *Future Shock*. New York: Bantam.
- Wapner, S. (1981). Transactions of persons-in-environments: Some critical transitions. *Journal of Environmental Psychology*, **1**, 223–39.
- Webber, M. M. (1970). Order in diversity: Community without propriinquity. In R. Gutman and Popenoe (eds), *Neighborhood, City, and Metropolis*. New York: Random House, 792–811.

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