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Aging and Performance of Home Tasks

M. POWELL LAWTON,¹ Philadelphia Geriatric Center, Philadelphia, Pennsylvania

Household behaviors must be understood in terms of a hierarchy of behavioral competence within which complexity determines the location of behaviors that can be evaluated in terms of basic health and social-normative criteria. Older people's household behaviors as well as higher-order behaviors are schematized in terms of physical and instrumental activities of daily living (ADL). Data on impairment rates for ADLs and time budget studies are cited to emphasize the importance of the home environment. Other behaviors that represent needs for autonomy, support, and proactivity are discussed, as are research needs, both for development of measures of microbehaviors and for the study of behaviors designed to achieve alternative routes to an instrumental goal whose preferred means of attainment has been disturbed by physical impairment.

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A major question in the discussion of tasks central to the well-being of the older person in the home is whether older people in general are the appropriate focus for such a discussion. It is an old canard at this point to observe that the "elderly" are a heterogeneous group and that any generalization purporting to characterize the older population is immediately suspect. For this view the most satisfactory approach would be to discuss the home living tasks of a large number of subgroups of older people, hoping thereby to do justice to their heterogeneity.

The largest proportion of people older than 65 years does not differ appreciably from younger people in such abilities, but some physical and psychological decrements do become more probable as age increases. A classic and continuing problem in gerontology is to distinguish pathology from normal aging as the origin of measured deficits in function. The line between the two influences is very poorly indicated, if it exists at all; therefore one reason to be reluctant to arbitrarily define a pathological segment of older people as a focus is the sheer difficulty of specifying the criteria for such a designation.

A second reason for broadening our concern is that although a focus on dysfunction is relevant to a minority of older people at any given time, a majority of people who live to extreme old age will experience a period during which some functions become impaired. Viewed in such a longitudinal fashion, consideration of impairment is relevant to a substantial segment of the population. Presumably all of the articles in this special issue on function will consider the variety of age-related changes that have been documented, many of which have been shown to occur in the absence of clinically evident physical disease.
Household behavior is at a level more complex than the cellular, physiological, or organ level and is also more complex than basic sensory, motor, and cognitive functions. One of the facets of complexity is that there may be an increasing number of routes to the same goal as increasing numbers of body and environmental systems become involved in performing the task. Thus pathology or impairment of function at one level—for example, arthritis in a hand—does not necessarily mean an inability to achieve a goal that was formerly achieved without the pathology or impairment—for example, opening a can of tomatoes.

Thus we must inevitably specify the level of action about which we are concerned. In order to put household behavior into perspective, we need to differentiate among goals at four levels of complexity: those that can be realized through optimal functioning at a body system level, those that require coordination at the interface of the body system and the microenvironment, those that integrate microtransactions, and those that express enduring human motivations. These four goal systems are roughly the provinces, respectively, of basic psychology, human factors psychology, clinical psychology, and personality-social psychology.

This discussion will deal primarily with the third level: that is, the molar behaviors conducted in the household that have been called activities of daily living (ADL)—using the toilet, eating, ambulating, dressing, bathing, and grooming—and some of the instrumental activities of daily living (IADL): cooking, shopping, using transportation, using medication, telephoning, housekeeping, doing laundry, and financial management behavior.

It is necessary to denote how these behaviors fit into a larger conceptual framework. The discussion will begin with a description of a structure within which daily behavior may be understood. With this structure as a guide, some of the highlights of knowledge about the most frequent in-home behaviors will be reviewed. Because our knowledge covers a limited number of such activities, the conceptual structure helps us recognize where some of the gaps in knowledge lie. A few research studies will be cited to illustrate the richness of the knowledge that is potentially available from the study of residential behavior. Finally, some problems worthy of the attention of human factors research will be identified.

A STRUCTURE FOR SPECIFYING A TAXONOMY OF BEHAVIORAL COMPETENCE

Figure 1 shows a schematization of a behavior hierarchy, with five gross categories of behavior arranged in order from left to right according to a hierarchy of complexity, in the sense of increasing involvement of different systems of person and environment (Lawton, 1982a). These five categories were specified in an effort to subsume all behaviors that are capable of being evaluated by normative standards. Within each of the five categories, a within-groups hierarchy of complexity is also suggested, a complexity that depends more on intracategory relationships than on between-category complexity differences. The notations within each category are illustrative only; these entries are meant to show by example the types of behaviors that might be included and to suggest that every type of behavior may be assessed in terms of the competence with which it is performed. For example, the “memory” entry in the cognition column denotes that any of a variety of existing memory tests could be used to assess this function. By contrast, the “exploration” entry in the time use column suggests that it should be possible to derive an instrument to measure exploratory behavior as a personality trait or as an overt behavioral response.

Figure 1. A hierarchy of behavior (from Lawton, 1982b, p. 351). Reprinted with permission from Human Factors.

even though there may be a focus of activity at present. This discussion of behavior at a greater length (Lawton, 1982a) and to perceive the wider roles. For the present, however, these discussions will be anchored conceptually.
Even though there may not be such an instrument at present. This conception was treated at greater length (Lawton, 1972) and elaborations made regarding how behavioral competence is related to environment (Lawton, 1982a) and to perceived quality of life and psychological well-being (Lawton, 1983).

For the present, household behavior may be anchored conceptually within this scheme. Safety- and security-enhancing behaviors pertain to basic health. Functional health in terms of ADL and IADL is the core topic of this article. Residential behavior is closely related to cognitive competence, however, in that the home and its objects may afford or impede the input of environmental information. The home is also the locus of many discretionary uses of time, including home
decoration, decisions about space use, maintenance beyond the necessary level, and leisure or hobby activities. Finally, the home is also the locus for family behavior and for other types of social interactions.

Many of the examples used to construct Figure 1 have been taken from the intermediate, or clinical, goal level. However, some examples from the more micro levels of health, functional health, and cognition are indicated. It is very important to note that the human factors level is also connoted and can be easily accommodated by the behavior hierarchy when linked with an environmental taxonomy, particularly in the functional health and time use domains. Finally, accomplishment of the goals at the clinical level contributes to accomplishments at the macro level. Three such goals will be discussed later: support, autonomy, and proactivity.

With household behavior thus anchored within a larger framework, the next section will review some knowledge about such behaviors.

**THE PREVALENCE AND QUALITY OF HOUSEHOLD BEHAVIORS**

A beginning point for understanding household behavior is parametric data about its prevalence. The time budget is the appropriate method by which to collect such data. Unfortunately, we do not have nationally representative data on how older people allocate their time to different activities. The closest we have are data from local convenience samples, one of independent older people recruited from an earlier community random sample and the other of the recipients of in-home services and from institutional waiting lists (Moss and Lawton, 1982; see Table 1).

It is noteworthy that 82% of all waking-time behaviors occurred in the home. About one-third of the waking day was spent in the activities of daily living on which this discussion is focused. It is instructive to compare the independent and the impaired; the latter group's activities are heavily weighted toward personal care and away from instrumental activities. The only major difference between these groups in discretionary behaviors is the higher level of inactivity (rest and relaxation) among the impaired. Notable is the 3.5 h devoted to television by both groups.

These data tell us nothing about whether some activities are underrepresented or about their quality. Nonetheless it is reasonable to ask whether attention to the task requirements and environmental manipulanda of the instrumental activities might raise their frequency of performance by the impaired

| TABLE 1 |
|----------------------------------|-----------------|-----------------|
| **Mean Minutes Reported in Selected Activities in a** | **Independent** | **Impaired** |
| **24-Hour Day** | **Residents** | **Community** |
| Obligatory activities | | |
| Personal and health care | 53 | 71 |
| Eating | 77 | 77 |
| Shopping | 22 | 13 |
| Housework, home maintenance | 68 | 38 |
| Cooking | 69 | 45 |
| Helping others | 10 | 7 |
| Social agency | 2 | 9 |
| Discretionary activities | | |
| Family interaction | 59 | 51 |
| Social interaction (nonfamily) | 54 | 59 |
| Religious activity excluding services | 10 | 7 |
| Reading | 59 | 52 |
| Radio | 28 | 33 |
| Television | 205 | 210 |
| Recreation and hobbies | 44 | 32 |
| Rest and relaxation | 128 | 200 |
| Gap | 24 | 31 |
| Sleeping | 456 | 452 |
| Environmental context (during waking hours) | | |
| in home or yard | 790 | 858 |
| Mean age (years) | 75.2 | 79.0 |
| % female | 54 | 77 |
| N | 426 | 164 |

Recomputed from Moss and Lawton (1982). Table 2. Means adjusted for age, sex, race, education, income, and household composition.

AGING AND HOME

Reading and writing, surprisingly, are shown activities, the ergonomics of further attention. Skills required for the recreation are very infrequent in activities—especially for just on and only a tiny fraction of the home.

A second relevant question is who are those on ADL's these behaviors are used by the satisfactory person, a behavior is a crucial determinant of the person's ability to live in residence. It must be noted, however, that another important amount of attention to behavior measurement techniques in these activities than for the study and social behavior can.

Many approaches to have been devised since for ADL (Katz, Jackson, and Jafle, 1963; and Brody, 1969). The national sample study for Health Statistics, and Fulton, 1987) Health Interview questions were asked in anonymous frames of reference the respondent experiencing the task and the respondent receives help.

Table 2 shows the prevalence of impairments as well as the group of skills thought relevant to work. The reliability of microlevel movements and the relationship to remain to be investigated.
impaired; the latter easily weighted toward from instruc- tional major difference discretionary behav- ior inactivity (rest and impaired. Notable is vision by both groups. ing about whether represented or about is it reasonable to do the task require- ment manipulation of tasks might raise their experience by the impaired

closer to that of the independent older person. Reading and watching television, not surprisingly, are shown to be important activities, the ergonomics of which warrants further attention. Special attention is required for the recreational activities, which are very infrequent in comparison with other activities—especially among the impaired—and only a tiny fraction of which occurred in the home.

A second relevant question is, How competently are household behaviors performed, and by whom? Virtually the only available data are those on ADL and IADL. The focus on these behaviors is understandable because the satisfactory performance of such behaviors is a crucial determinant of the older person's ability to maintain community residence. It must also be acknowledged, however, that another reason for the great amount of attention to these behaviors is that measurement technology is much better for these activities than for those in the time use and social behavior categories.

Many approaches to measuring these skills have been devised since the original scales designed for ADL (Katz, Ford, Moskowitz, Jackson, and Jaffe, 1963) and IADL (Lawton and Brody, 1969). The best data come from a national sample studied in the National Center for Health Statistics (Dawson, Hendershot, and Fulton, 1987; Kovar and LaCroix, 1987) Health Interview Survey, in which questions were asked in terms of dichotomous frames of reference: whether or not the respondent experiences difficulty in performing the task and whether or not the respondent receives help with the task.

Table 2 shows the prevalence of these ADL impairments as well as similar rates for a group of skills thought to be especially relevant to work. The relationship between such microlevel movements and the more extended sequences of the ADL behaviors remains to be investigated. It should be noted

that neither list is by any means exhaustive. Faletti (1984), for example, includes personal security and emergency communications in his list. Many more remain to be studied.

A HUMAN FACTORS APPROACH TO THE STUDY OF HOUSEHOLD BEHAVIOR

The level of generality involved in representing the quality of performance of a large family of discrete behaviors by a dichotomy or trichotomy of rated independence is clearly unacceptable if we are to attempt to

<table>
<thead>
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<tr>
<td>Percentages of 65 + Population with Activity Limitations</td>
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<tr>
<td>Self-care activities*</td>
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<td>Eating</td>
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<td>Home management activities*</td>
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<td>Using telephone</td>
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<td>Managing money</td>
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<td>Preparing meals</td>
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<td>Doing light housework</td>
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<td>Shopping</td>
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<td>Walking up 10 steps</td>
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<td>Standing 2 hours</td>
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<td>Stooping, crouching, kneeling</td>
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<td>Reaching up over head</td>
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<td>Reaching out to shake hands</td>
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<tr>
<td>Grasping with fingers</td>
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<tr>
<td>Lifting or carrying 0.3 kg (25 pounds)</td>
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<td>Lifting or carrying 3.7 kg (10 pounds)</td>
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* From Dawson, Hendershot, and Fulton (1987). Tables 1-8, from the Supplement on Aging to the National Health Interview Survey.

b Percentages of people ages 65-74 who have worked since age 45. From Kovar and LaCroix (1987), Table 1, Supplement on Aging to National Health Interview Survey.
improve the quality of the designed environment. Nonetheless the behavioral competence schema allows every intermediate-level behavior to be successively differentiated in terms of microlevel behaviors and microenvironmental features. That is, every generic category listed by example within the boxes of Figure 1 may be represented by a concrete example (e.g., recreation: television watching), and that behavior may in turn be broken down into component person-environment transactions. Perhaps the best example of such elaboration was the research of Faletti (1984) in his study of meal preparation behavior (see Czaia, preface to this issue).

Carried to its logical conclusion, such a methodology would lead to interventions on both the person’s and the environment’s side. Only rehabilitation medicine and human factors attend to this level of detail in the functioning of the person, attention which should lead to better specification of points of application for therapy. Even more important, a systematic study of the transactions themselves should lead into the product design arena.

HOUSEHOLD TASKS IN THE PERSPECTIVE OF MACRO GOALS

As alluded to in the earlier discussion, performing household tasks serves longer-range personal goals. Of course, the competent performance of any task presumably reinforces self-esteem. Because competence at the micro levels of sensory, motor, and information-processing functions shows a statistical decline with age (see reviews in Birren and Schaie, 1990), one may be surprised to find that in general there seems to be no age-related erosion of psychological well-being (evidence reviewed in Lawton, 1982b). Part of the reason such erosion does not occur may be related to the fact that the clinical-level goals can be achieved through routes other than the preferred task sequences characteristic of the unimpaired human system, a topic to be discussed later. Compensations are made, prostheses are utilized, sometimes human assistance is sought, and, most important, an economy of acceptable gains and losses is maintained whereby some goals and their tasks are relinquished gracefully in favor of others that are both highly valued and still within the realm of the person’s expertise. Baltes, Dittmann-Kohli, and Dixon (1984) have called this process “selective optimization with compensation.”

To my knowledge the process of change over time in the way goals are achieved at minimum cost in lost task performance has never been studied. The model of Faletti’s research can be applied in cross-sectional and ultimately longitudinal fashion to highlight how people’s manipulation of utensils, fixed environmental features, and visual displays change or fail to change with sensory, motor, and perhaps cognitive decline.

The means of measuring the ADLs are not yet good enough to differentiate among persons measured as independent by those instruments; they may have altered their task behavior, given up other tasks in order to maintain expertise in another, or substituted prostheses for less efficient body structures—all of these changes having been made while still preserving independence in achieving the end results of self-maintaining behavior. These considerations lead to the identification of potentially productive directions for future research.

TWO DIRECTIONS FOR NEW RESEARCH IN HOME TASK PERFORMANCE

Perhaps because measures of the two types of ADL have been so effective in predicting gross outcomes and changes in state (Manton, 1988), the field of functional assessment has not moved appreciably beyond the point it was 20 years ago. The time seems right for developing similar measures of more molecular components of complex ADLs (microprocesses) by focusing on goal-directed behaviors that can accommodate the individual’s environment.

Molecular Assessment

A tradition exists in research and in rehabilitation that focuses on single-muscle movements, and skill sequences. For example, the ability to make a complete, stable sphere of space with a hand can be a staple for a program for the development of a more sophisticated, computerized gait and balance assessment in institutional settings. Two problems arise in the application of these and many other assessments into more general conceptual frameworks. First, assessment procedures are often full of conceptual rubrics: that is, the assessments are not decomposable into the framework in Figure 1. For example, the answer: functional assessment. The other problem is regarding the salience of the assessment procedures for comprehending the particular individual in question. It is possible that a standard battery of tasks is not the ideal way to establish a decision tree or to make a more individualized assessment, more tailored to the needs of a particular individual. The second problem occurs not only in the scaling of some of the microprocesses through clinical criteria...
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behaviors that can achieve the goals.

Molecular Assessment

A tradition exists in both human factors re-
search and in rehabilitation medicine for a
focus on single-muscle action, limited body
movements, and small stimulus-response se-
quences. For example, range of motion—the
ability to make various movements in a
sphere of space with limbs, trunk, and neck—
has been a staple for evaluation of rehabilita-
tive therapy for years. Both clinical and so-
phisticated, computer-assisted measures of
gait and balance are in everyday use in such
settings. Two problems limit the integration
of these and many other molecular as-
sements into more general functional as-
essment procedures. The first problem is
conceptual: that is, where do the microcom-
petences fit into the overall structure? The
framework in Figure 1 provides part of the
answer: functional health is clearly the larg-
est rubric. The other part lies in decisions re-
garding the salience of the molecular tasks
for comprehending the adjustment of the par-
ticular individual in question. That is, it is
infeasible to consider evaluation of a large
number of microcompetences as a routine
part of the assessment of people in general.
The 12 to 14 ADLs are within reason as part of
standard battery because they are both dis-
criminating and relatively easy to measure. It
is clear that a needed direction for research is
to establish a decision tree to specify when an
elaborated, more detailed assessment in
some particular area of functioning is indi-
cated for a particular individual.

The second problem is the psychometric
scaling of some of the microcompetences. Al-
though clinical criteria have often been fairly
clearly stated and the parameters of instru-
mentation made highly precise, the further
path toward psychometric reliability, repro-
ducibility, and predictive validity has been
much less frequently addressed. Even in Fal-
etti's (1984) work, scaling of meal prepara-
tion molecular skills was not addressed.

It is not unreasonable to hope that the same
ardor expressed in the 40-year history of ADL
measurement can be devoted to the develop-
ment of, and the choice rules for using, mea-
ures of microcompetences.

Alternative Ways of Achieving Household
Behavioral Goals

Relatively little attention has been paid in
the technology of functional assessment to
the means by which people reach the goal of
an instrumental behavior. To be able to eat
without assistance may subsume many types
of eating behavior ranging from using only
the fingers to dextrous manipulation of sil-
verware. In some forms of assessment, how-
ever, a deviant means of goal attainment pe-
inalizes one's scores, as when the help of
another person is required for ambulation.

More knowledge regarding overall coping
skills and adaptation would be gained by
studying alternative means people use when
faced with decline in the sensory, motor, or
cognitive functions required for the usual
task performance. Molecular aspects of per-
formance would be observed, and the func-
tions of assistive devices or the help of other
people in affording goal attainment would
also require study.

The sequences leading to final goal attain-
ment would be studied. In general, the alter-
native routes could be categorized as those
involving either accommodation by changing
one's own behavior or assimilation by intro-
ducing changes into the stimulus environ-
ment.

In addition to sensorimotor adaptations
such as using a different hand, an alternative
motion, or different cues, accommodation may well include changing internal criteria for the quality of the consummatory activity. An example would be lessened concern over whether shoes were laced tightly. Assimilation may involve several alternatives focused on the environment. One is a basic person-environment transaction whereby the person actively programs exposure to environmental demands that lie within his or her capability for adequate response (Lawton, 1985). For example, driving an automobile to achieve the goals of entertainment or shopping can still be done even if night driving, rush-hour driving, or bad-weather driving are relinquished. A second alternative means of goal attainment—assistance from another person—has already been mentioned. A third category of assimilation is the use of adaptive physical features of the environment, whether provided as part of a prosthetic regimen or actively constructed by the person (Lawton, 1980). Adaptive features are the stock-in-trade of human factors research, of course. What is new in the present suggestion is that it is worthwhile to devise new measures of household competence that take account of adaptive devices and other alternative procedures and which do not penalize the person’s score for nontraditional means of accomplishment.

One worthwhile approach to understanding this confluence of performance skills and personality strengths/weaknesses might be to ask impaired people to discuss their own processes of accommodation and assimilation. For example, how aware are people of such changes? Adaptation level theory (Helson, 1964) might lead to the idea that the slowness of change of some functions and the need for constancy result in less awareness of such changes by the person than by an external observer. A further question is whether such selective self-awareness is associated with favorable outcomes in self-esteem or psychological well-being.

A different approach might be to elicit the older person’s perceptions of the functions that have been relinquished or changed grossly. One might probe the consequences of giving up personally valued, socially valued, or relatively low-valued functions. The long-range purpose of such inquiry would not only be to assist planning for delivery of services in the present but also to elucidate some basic mechanisms by which the person maintains an optimal level of functioning, as discussed by Baltes et al. (1984).

MAJOR LIFE GOALS ARE SERVED BY RESIDENTIAL TASK PERFORMANCE

The gerontological literature has made much of the strong urge of older people to remain in their homes despite personal impairments and, sometimes, decline in environmental quality so great that it appears foolhardy for them to remain at home. They do so as long as they can maintain a balance between their need for support and their need for autonomy (see Parmelee and Lawton, 1990). In one national survey (Office of Policy Development and Research, 1983), 13.1% of older people who lived alone exhibited at least one major deficit in mobility (Newman, 1985). Those people constitute a high-priority group for community-based in-home services because they are at high risk for institutionalization. New service technologies that could extend these impaired people’s ability to live in their long-occupied homes would be extraordinarily efficient in reducing the costs associated with institutionalization.

There has been tremendous growth in the number of in-home services such as housekeeping, home health care, and delivered meals, among many others. Attention to the physical environment of the home has been much rarer. When available in a community, small repair and maintenance work is typically based in a firm that is not integrated with the community. Such specialization means that many different professionals would be involved in delivering services to a person who could, in many instances, be served more effectively by a single, properly trained professional. Home performance assessments for diagnosing problems in a household or designing household objects to fit the person’s needs. What we need first is a clearer definition of what to look for and then a search for what works. Research in the knowledge base of the physical environment of the home needs to be an explicit part of the knowledge base of the physical environment of the home.

A small project designed and delivered at a residential care center for the mentally ill, a social worker, a social worker, and a psychologist who would design and deliver services to in-home services. The center’s goal was to provide in-home services for the paraprofessional staff members who would provide services to the client who was in an in-home setting. The project was funded by a grant from the National Institute of Aging and was designed to test the feasibility of providing in-home services to people with mental illness. The project was evaluated by comparing the outcomes of clients who received in-home services with those who did not. The results showed that clients who received in-home services had better outcomes than those who did not. The project was subsequently expanded to include other types of in-home services and to be offered in other settings. The results of this study have been used to support the development and implementation of in-home services in other settings.
AGING AND HOME TASKS

small repair and maintenance services are
typically based in a free-standing agency that
is not integrated with other in-home services.
Such specialization is dysfunctional because
many different professionals are required to
travel to deliver a package of services that
could, in many instances, be performed by a
single, properly trained person. In particular,
techniques for diagnosing physical problems
in a household or dysfunctional transactions
with household objects are quite learnable.
What we need first is expertise in knowing
what to look for and what to do. Human fac-
tors research ought to lead the way in provid-
ing the knowledge base for household di-
agnosis and treatment.

A small project done at the Philadelphia
Geriatric Center by a team consisting of an
architect, a social worker, an occupational
therapist, and a psychologist involved visit-
ing the homes of 50 people who were able to
remain in the community because they re-
ceived in-home services (Saperstein, Moleski,
and Lawton, 1985). Many environmental
problems were obvious, such as safety haz-
ards in electric cords, poor illumination on
stairs, and poorly proportioned kitchen work
spaces. Such a project should include a hu-
man factors researcher on the team, with the
express aim of producing a how-to manual
for the paraprofessional human services
worker who might already be in the older
person’s home for purposes unrelated to the
physical environment. Of course, such a per-
son could not become an expert in skilled
building trades, but he or she could learn
when to refer a problem to an expert and
when to handle it alone through some rela-
tively simple physical intervention or object
substitution.

The same research brought to light a phe-

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able in a community.

impairments (Saperstein et al., 1985). About
half of these people had devised a “control
center,” which demonstrated the exercise of
proactivity, the purpose of which was to max-
imize their control over their home environ-
ment (Lawton, 1985). The control center rep-
resented the attempt to maximize the
amount of information, enrichment, and op-
portunity to exercise autonomy in the home
environment, given the major impairments
experienced by these people. The control cen-
ter is almost always in the living room with a
comfortable and maneuverable chair as its
focus. The chair is oriented to allow a view of
the front door, the front yard, and the street.
Equally prominent and handy are the tele-
vision set, radio, and telephone. There are
usually surfaces on either side loaded with pho-
tographs, mail, food, medicine, knickknacks,
and other valued objects.

In our qualitative judgment, the people
who had constructed these control centers
appeared to have maintained substantial self-
respect. The very fact of proactivity in fash-
ioning the center must contribute to the self-
respect. A human factors approach to
enhancing behaviors that contribute to the
sense of competency in the control center and
in the household generally would be a wel-
come addition to the knowledge necessary for
supportive in-home services.

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Functional limitations of individuals age 65 years and


INTRODUCTION

It is generally recognized that physical and psychological changes which accompany the aging process lead to a heightened vulnerability for older adults. Lawton (1980) demonstrated that daily living activities, such as bathing and meal preparation, may be particularly problematic for older adults. Fozard (1981; National Center for Health Statistics, 1987a). For example, studies have shown that older people frequently experience difficulty in such activities as grocery shopping, meal preparation, bathing/showering, and the like. Drury (1987) found that the majority of older adults experience a high rate of accident and injury incidents.

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