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**Elder Activities:
Patterns, Motives, and Interpretation**

Massachusetts Lifestyles Study III

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2009

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Preface

This working paper is the third of a series of reports on pilot studies concerned with the motivational basis for the activities of older people. This research on the relationship between motivation and activities is part of a larger research agenda pursued by Jeffrey Burr, Jan Mutchler, and Frank Caro on relationships among productive activities of older people. The pilot studies have sought to provide the basis for a survey of a representative sample of older people. The research that is reported here was conducted drawing solely on the internal resources of the UMass Boston Gerontology Institute and Gerontology Department. We are particularly grateful to the Gerontology Department for making research assistants available to assist with the studies.

This paper reports on the research in considerable detail. The aim is to provide a comprehensive picture of the analytic themes that we pursued including those that proved to be less interesting than others.

Introduction

Elders vary greatly in the variety and intensity of their activities. For the first time in their adult lives, many elders enjoy an extended period in which the demands on their time are modest and their health permits a good deal of activity. Some elders respond to the opportunity by taking on extensive and varied activities. Other elders are much less active. The volume and variety of activity among elders during this period may reflect the extent of their motivation to take advantage of opportunities for activity.

Alternately, the patterns of activities of elders may be explained by other forces. Some elders are constrained by health problems in the extent of the energy that they have for activities. They may also be constrained by physical and mental impairments. Other elders experience limited discretion in their activities; for some, the variety of their activities may be sharply constrained because obligations such as the need to provide extensive informal long-term care to a spouse limits them to a narrow set of activities. Older people may also be constrained by their lack of knowledge of opportunities, activity costs, transportation access, and so on.

What elders do with their time has implications for the well being of elders themselves. Available evidence suggests that elders can improve their health through activities as diverse as exercise and volunteering (Rowe & Khan, 1998; Herzog et al. 2002). Activity can be beneficial for both physical and mental health. An enormous amount of research has been conducted that establishes a strong link between physical activity and physical and mental illness, disability, and survival (Manini et al., 2006; U.S. Department of Health and Human Services, 1996).

Elder activities can also have implications for other people and the communities in which they live. Communities benefit when elders take on volunteer roles; employers benefit when elders hold jobs; families benefit when

elders assume caregiving roles (Bass, 1995). In democracies, communities also benefit when elders participate in the political process and are otherwise civically engaged (Burr, Caro, & Moorhead, 2002). Businesses benefit when elders are active as consumers.

We are engaged in a continuing effort to understand the scope of elder activity and the implications of activity for well-being (Burr, Mutchler, & Caro, 2007). We are particularly interested in the forces that encourage or inhibit multiple forms of activity, the ways in which participation in some activities influences participation in other activities, and the cumulative implications of activities for well being. Our interest in multiple forms of activities sets us somewhat apart from Gerontologists who focus on single forms of activity such as volunteering, taking classes, caring for grandchildren, working, or exercising (see Morrow-Howell et al., 2001).

In our first pilot study, we explored the feasibility of measuring general activity motivation and linking that motivation to several forms of productive activity (Caro, Bruner-Canhoto, Burr, & Mutchler, 2005). We used a set of items that we believed to be general activity motivation items. So that we could examine the possibility that general activity motivation is different from motivation to specific activities, we included measures of motivation to volunteer, work, and help within the family. For these measures, we drew upon items that had been used in previous studies. We also measured participation in four activities: volunteering, employment, informal long-term care, and caring for grandchildren.

In our second pilot study we expanded the scope of our inquiry to include general perceived barriers to activity and perceived barriers that were specific to several activities (Caro, Caspi, Burr, & Mutchler, 2008). We also expanded the scope of activities that we studied to include taking classes and exercise. The inclusion of exercise was useful because of the public health interest in the role of exercise in health promotion. In the second pilot we did not include informal

long-term care or helping with care of grandchildren. (Help within the family is often dictated by circumstances and is often obligatory; to contain the scope of the study we concentrated on activities that were more discretionary for older people.) Consequently, in the second study we examined global activity motivation, general perceived activity barriers, motivation to work, perceived barriers to work, motivation to volunteer, perceived barriers to volunteering, motivation to exercise, perceived barriers to exercise, motivation to take classes, and barriers to taking classes. In the second pilot we found that motivation and barriers that were specific to activities were more powerful in explaining activities than were the general activity motivation and barrier measures. At the same time, a narrow general activity motivation measure was helpful in explaining participation in both formal volunteering and paid employment. Eventually, we changed the name to “global activity motivation” (Caro, Caspi, Burr, & Mutchler, 2009).

In the second pilot, we were not fully satisfied with our general (global) activity motivation measure for a number of reasons:

1. Conceptually, we were not able to identify a single underlying theme (latent variable) to the items.
2. We were concerned that some of the association among the items may have been the result of response stereotyping since the direction of all of the survey items was the same.
3. When we subjected the items to factor analysis, a second factor loaded heavily on only four items was associated with activities rather than the main factor with a larger number of items.

In the third pilot study, we sought to strengthen our measurement of global activity motivation and perceived global barriers to activity by calling upon the theory of planned behavior (Ajzen, 1991; Armitage & Conner, 2001). (Use of the theory of planned behavior was particularly helpful in stimulating us

to attending to potential perceived obstacles to activities. Instead of viewing global activity motivation as a single construct, we considered the possibility that it may consist of a series of subscales. We sought to include the following six dimensions: mental health (desire to maintain or improve morale), physical health (desire to maintain or improve physical health), cognitive health (desire to retain or strengthen cognitive abilities), economic (pursuit of financial well being), sociability (desire to interact with other people) and community contributions (altruism). The third pilot study conducted in 2006 served several purposes:

1. We expanded the scope of activities that we measured. In this study we retained paid employment, volunteering, exercise, and learning programs; we added informal learning, hobbies, travel, making financial contributions, attendance at community activities. Our overall rationale in broadening the number of activities included was to acknowledge our premise that elders are not likely to make the distinctions that Gerontologists make between productive activities and other activities. Gerontologists classify activities as productive according to whether or not they make a socially or economically valued contribution. What older people themselves consider to be productive may not correspond with what experts judge to be productive. The manner in which activities compete with or supplement one another may cross productive and nonproductive lines. Further, productive and nonproductive activities may be equivalent in their implications for health (Finlayson & Kaufert, 2002; Glass, Mendes de Leon, Bassuk & Berkman, 2006; Lee & Ishii-Kuntz, 1987).
2. We sought to be sensitive and consistent in measuring the extent of participation in various activities. We reacted to concern that national data sets, notably the Health and Retirement Study (<http://hrsonline.isr.umich.edu/>) and the Americans Changing Lives Study (<http://www.icpsr.umich.edu/cocoon/ICPSR/STUDY/04690.xml#bibliograp>

[hic-description](#)), provide only very gross categories for classifying respondents according to the amount of time they spend on various activities.

3. Sensitive to the importance of social networks for social support and access to community resources, which in turn may be important for participation in activities, we included measures of the strength of interpersonal resources (Herzog, Ofstedal & Wheeler, 2002); Antonucci & Akiyama, 1987). We also sought information on the extent to which respondents engaged in activities alone and with others. Beyond the possibilities for family and friends to encourage participation in some activities, we are interested in the possibilities that group activities have the potential to extend social networks and build friendships. The friendships that are developed through joint activities have the potential to improve well being (Adams, 1993). For the following activities, we asked explicitly the extent to which respondents engaged in the activity with other people: hobbies, light exercise, vigorous exercise, and seeking information.
4. Influenced by Robert Weiss's (Weiss, 2005) research on the interpretation of retirement experiences, we included a section in which respondents rated the importance of various activities. A measure of the importance of an activity would provide a basis for testing the hypothesis that participation in a set of activities judged to be highly important has more positive implications for mental health than participation in activities judged to be of lesser importance.
5. Influenced by the leisure literature (McGuire, Boyd, & Tedrick, 2004) and our experience in studying informal caregiving, we included a set of items rating activities on the basis of the extent to which they are judged to be obligatory. An implicit premise in some of the elder literature is that all elder activities are discretionary. Through a focus group, we learned that

elders sometimes distinguish between activities that are obligatory and those that are discretionary (Caro, Bruner-Canhoto, Burr, & Mutchler, 2005). Activities perceived to be discretionary may have more positive implications for mental health than those activities perceived to be obligatory.

Data Collection and Sources of Respondents

The questionnaire was administered to an opportunity sample of community-residing elders in eastern Massachusetts in 2006. We used opportunity sampling as a low-cost way of refining our measures, with the expectation that we were developing measures that would be administered eventually to a representative sample of elders. Many respondents were recruited from the learning in retirement program offered at the University of Massachusetts Boston and from older volunteers active on campus (101 completed questionnaires were obtained from these two sources). In addition, we recruited 120 older individuals from the community who attended senior centers and senior meal sites in the area. The location and number of participants from each is as follows: Brookline (39), Hingham (15), Newton (13), Sudbury (12), Arlington (10), Somerville-Cambridge (8), Propenzi Manor Meal site (7), Manning Elderly Housing (5), and Quincy (4). The surveys were self-administered paper and pencil questionnaires distributed to respondents in classrooms, senior centers, and meal sites. The total usable questionnaires numbered 214.

Respondent Characteristics and Activities

Respondent characteristics are summarized in Table 1. The average age of respondents was 73.4. Respondents ranged in age from 55 to 93; 83% were 65 years of age or older. Approximately 85% were female and slightly over one-third were married. The sample was relatively well-educated with more than three-fourths reporting some education beyond high school. Reflecting the racial characteristics of the older population in Massachusetts, respondents

were overwhelmingly white (95%) (Gerontology Institute, 2006). Forty percent of respondents reported that they were in excellent or very good health, and more than half reported no difficulty walking more than short distances. More than three quarters of respondents drove automobiles, even though more than 60% rated public transportation in their area to be good or excellent, and almost as many (59%) reported that they can use public transportation to get to many places that interest them. Approximately one third of respondents reported being religious to a large extent, and approximately one-quarter rated themselves as very active in religious groups. Computer use was extensive among respondents; 67% have computers with internet access in their homes. Most respondents were long-time residents of their communities, with 85% living in the same residence for 10 or more years. Over 60% have grandchildren and slightly over half have a grandchildren under age 18.

Table 1. Respondent Characteristics (n=214)
Percentages

Age	73.4 (mean)
Female	84.4%
Married	36.5
Education beyond high school	78.4
White	95.3
Excellent or very good health	39.7
Currently drives car	76.6
Religious (to a large extent)	37.6
Active in church (very)	26.8
Has computer with internet access	66.5
Lived in community 10+ years	85.5
Has grandchildren	62.6
Has grandchildren under age 18	53.7
Very difficult or somewhat difficult to pay bills	21.5

Most respondents reported adequate financial resources for their regular expenses. To estimate adequacy of financial resources, respondents were asked “how difficult is it for you and your family to pay your monthly bills?” Over 75% responded “not very difficult” or “not difficult at all.” Only 1% reported “very difficult” to pay monthly bills.

Respondents reported extensive activities (Table 2). Just over one-quarter were employed either full-time or part-time. Nearly 70% volunteered for organizations in the past year, and another 45% volunteered informally by assisting sick or disabled relatives or friends, nearly one quarter cared for grandchildren while an adult child worked, and over one third helped with childcare at times other than when adult children were working. More than two-thirds (66.8%) reported engaging in regular light exercise, and 16.8% reported engaging in regular vigorous exercise. Regular exercising is defined as engaging in physical activity three or more times per week. Almost 90% participated in some type of hobby. Approximately 70% enrolled in learning programs in the past year; the extensive participation in classes is not surprising because nearly half of the respondents were recruited through a learning-in-retirement program.

Table 2. Respondent Activities (n=214)
Percentages

Employed (full or part-time)	25.7%
Formal volunteering (current)	68.7
Exercising (light physical activity 3+ times weekly)	66.8
Exercising (vigorous physical activity 3+ times weekly)	16.8
Took classes (within past year)	70.6
Seek information informally in some way at least once a week	94.9
Seek information informally in 3 or more ways at least once a week	47.5
Helped with childcare for working adult child	23.8
Helped with childcare for other than work	35.5
Assisted sick or disabled relative or friend	45.8

Participate in a hobby	89.3
Took overnight trip in past year	77.1
Made donation to cause or charity in past year	92.1
Made 10 or more donations to a cause or charity in the past year	29.4
Has a pet	24.8
Spent 11 or more hours per week doing housework	52.3

Travel in the past year that included an overnight stay was reported by more than three-quarters of respondents. Of those who made overnight trips, 62% made three or more trips. Visiting family, sight-seeing, relaxation, and visiting friends accounted for the majority of reasons given for travel.

Over 90% of respondents had made charitable contributions in the past year and over one-half had made six or more donations. Of those who made charitable contributions, 68% contributed to six or more causes. One-quarter of respondents had pets.

Specific Activities

For some activities, we elicited information beyond basic participation and the degree to which participation was social. In this section we report selectively on the additional information we obtained about those activities.

Learning programs. Among those who participated in formal learning programs, respondents participated in as many as four different types of programs. Of those who enrolled in any learning programs, roughly half participated in two or more different forms of learning programs. Of those enrolled in classes that met at least five times in the year prior to the survey, respondents typically enrolled in 3.6 classes. The fact that 38% of respondents reported participation in college learning-in-retirement programs is not surprising since many respondents were recruited for the study through a learning-in-retirement program. More noteworthy is 25% of respondents took classes through community adult education programs.

Volunteering. Respondents were most likely to volunteer for senior centers or churches or synagogues (27% of those who reported volunteering contributed time in each of these sectors). Among those who engaged in formal volunteer work, 40% volunteered for more than one type of organization. Two-thirds of the volunteers reported having been active as volunteers in each of the past 12 months. The typical volunteer contributed four hours per week. The arithmetic average number of volunteer hours per week was 5.4. Six of the respondents contributed 20 or more hours per week as volunteers.

Employment. Among those who reported paid employment in the prior 12 months, 71% were employed the full 12 months. Another 12% were employed for 10 or 11 months. Those employed typically reported working 15 hours per week. The arithmetic average number of hours employed was 17.7. Only 10% worked more than 35 hours per week.

Grandchildren (grandparenting). Nearly two-thirds of respondents had grandchildren. Among those with grandchildren, 86% had grandchildren under age 18. Among those with grandchildren under 18, slightly over 40% helped with childcare both while their parents were working and at other times. Another 25% helped only when the parents were not working. Nearly one-third of the grandparents were not involved with child care. Typically, those who assisted with childcare do so for four hours per week. The arithmetic average was 6.5 hours. Four percent provided childcare for 20 or more hours per week. Of those with grandchildren under 18, 44% had grandchildren stay overnight in the previous 12 months. Typically, these elders had grandchildren staying with them five nights in the previous 12 months. The arithmetic mean was 8.8. Ten percent of respondents with grandchildren reported hosting a grandchild 30 or more nights during the year.

Informal long-term care (Caregiving). Nearly half (46%) of the respondents assisted relatives or friends who were sick or disabled in the past year. This assistance was beyond the respondents' routine household activities.

The duration of this assistance was highly variable. Nearly half provided this assistance for the full 12 months. Another third provided informal long-term care for three months or less. In most cases, the time commitment was modest. The median hours of assistance per week was three for those helping at least one hour per week. The arithmetic average was 7.4. One respondent reported assisting 70 hours per week; two more reported assisting 48 hours per week. The types of assistance provided are reported in Table 3. Typically, the assistance provided was “hands off.” Over three quarters reported visiting or providing emotional support. Nearly two-thirds reported helping with shopping, home repairs, errands, or transportation. Only 17% reported assisting with Activities of Daily Living (bathing, dressing, or transfer [getting up from a bed or chair]). Typically, respondents provided two forms of assistance; 6% provided all six types of assistance.

Table 3. Types of Informal Long-Term Care Provided (Among Those Providing Informal Help) (n = 96)	
Bathing, dressing, or transfer	17%
Household chores such as cooking, laundry, or housecleaning	35
Paying bills or helping with medications	31
Shopping, home repair, running errands, providing transportation	62
Making arrangements for services	23
Visiting or providing emotional support	77

Among those who provided informal long-term care, there is a distinct division between those who provided care continuously and those whose involvement was temporary or intermittent. Nearly one half provided care for the previous 12 months; one third provided care for between 1 and 4 months. Typically, the number of hours per week devoted to informal long-term care (caregiving) was modest; nearly one third of respondents who were active in providing help of this kind devoted an average of one or two hours per week when they were providing care. More than two-thirds devoted less than six hours a week to giving care. On the other hand, three individuals reported devoting 48 or more hours per week to informal caregiving.

Housework. We expected that all respondents would spend some time on housework. In fact, the time devoted to housework varied a great deal. One third of the respondents reported spending 6 to 10 hours a week on housework. Approximately 20% devoted 11 to 15 hours. Nearly one third devoted more than 20 hours.

Travel. We were interested in travel largely as a source of stimulation. We asked specifically about trips that involved overnight stays to avoid inclusion of relatively inconsequential day outings close to home. We consciously underestimated travel by excluding day trips. Over three-quarters of the respondents had taken at least one trip that involved an over-night stay. Nearly a third took three to five trips. One-sixth took six or more trips. Travel often had a social quality. Nearly two-thirds of respondents traveled to visit family; approximately 40% traveled to see friends. Sightseeing and relaxation were also common reasons for travel; more than half checked both sightseeing and visiting family as reasons for travel. (Respondents were permitted to give multiple reasons for traveling)

Donations. We inquired about donations (a form of civic engagement) because they are highly valued by non-profit organizations including political campaigns. Nonprofit organizations may value financial contributions more than they value the effort contributed by volunteers. Nevertheless, most studies of productive aging do not include donations as a form of productive activity (see, however, Burr, Caro & Morehead 2002). Over 90% of the respondents had contributed to at least one cause in the year prior to the survey. The frequency of contributions was highly variable. Nearly 60% contributed to six or more causes. Of those who made contributions, nearly one-third donated to 10 or more causes.

Access and Barriers to Activities

We considered several sets of variables that had potential to facilitate or impede participation in activities: transportation, information, health, and social resources. Our expectation is that better access to transportation and information about opportunities facilitates participation in activities; we expected that poor health would be an obstacle to activity. We anticipated that participation in activities often has a social dimension; people often

participate in activities because they value the sociability that is linked to the activity. In addition, other people can provide information about activities, provide transportation to activities, and provide welcome companionship, encouragement, and emotional support for participation in activities.

Transportation. Overall, our respondents reported very good access to transportation. Approximately three-quarters drive automobiles. Over 60% reported positively about their access to public transportation. Over one-third agreed with a statement that they had someone on whom they could count to provide a ride when needed. Of those who do not drive, over 60% reported good access to public transportation. Nearly two-thirds reported no problem with transportation. However, a small minority had significant transportation problems. Five percent reported having major transportation problems. Among those who do not drive and do not have good access to public transportation, nearly one-third of the respondents do not have someone on whom they can count to provide a ride when it is needed. This group with very limited transportation access constitutes 7% of the sample.

Information. Respondents reported making regular use of a variety of sources of information to keep up with current events (Table 4). The most common sources of information were newspapers, conversations with friends and relatives, and television. A majority also listed radio, magazines, and books. Over one-third reported regular use of the internet. Two-thirds reported regular use of at least five of the information sources. Over 80% reported that they have good information about activities available in their communities.

**Table 4. Regular Sources of Information about Current Events
(Percentages)**

Newspaper	92%
Conversations with friends and relatives	87
Television	90
Radio	66
Magazines	65

Books	63
Internet	38

Respondents had good access to computers and the internet. Two thirds had computers with internet access (Table 1). Over one-half believed that they have good skills in using e-mail and the internet. However, one-third reported a lack of skills in using e-mail and the internet.

Health. Approximately 40% of respondents considered themselves in excellent or very good health. Nearly half rated themselves in good health. Only 12% of the respondents reported fair or poor health. Over 20% reported spending a great deal of time taking care of health care needs; over 20% also reported having some difficulty walking more than short distances. Over 10% of respondents avoid going out when it is raining.

Social resources. As indicated previously, activity often has social dimensions. Among those who have hobbies, for example, half reported engaging in the hobby with other people at least half of the time. The social nature of hobby activities is evident among those who were very active in hobby activities. Among the majority that engaged in a hobby three or more times a week, half reported engaging in hobby activities with other people. Among those who engaged in light physical activities such as walking, two-thirds reported doing so with other people at least half of the time. Among those who engaged in vigorous physical exercise such as aerobics, running, swimming, or bicycling, two-thirds also reported doing so with other people at least half the time. In fact, among those who engaged in vigorous exercise frequency of exercise was linked to social exercise. Those who exercised with other people, engaged in vigorous physical activity more frequently. Even among those who sought information informally by watching television, listening to radio programs, searching the internet, watching DVDs, attending public events, or visiting libraries, approximately 40% did so with other people at least half of the time.

Respondents typically reported strong social resources. Roughly two-thirds of the respondents indicated that they had friends or relatives who frequently

asked them to do things with them, who were available as companions, who were welcome sources of advice, and who were frequent sources of suggestions about interesting activities.

Most respondents had extensive communication with family members. Eighty percent had children. Among those with children, 90% talked to children or were in e-mail communication at least once a week. Approximately half saw their adult children at least once a week. Half were in communication with other relatives at least once a week. Respondents also had extensive contact with friends and neighbors. Three-quarters talked to friends and neighbors at least once a week. Respondents were in contact with other people in diverse ways. The most common way was talking to people in the neighborhood (79%). Half or more of the respondents were in contact with other people through letters or e-mail communication, entertaining visitors, visiting the homes of others, running into friends and neighbors while shopping, attending church services, or participating in social, fraternal, or religious groups, visiting a senior center, etc. A majority of respondents were in contact with other people in at least six of ten ways listed.

Inter-Correlations Among Activities.

We examined patterns of correlation among activities. These patterns are of interest because participation in some activities may foster participation in other activities, may interfere with participation in other activities, or the activities may be correlated because they share linkage to other variables (Mutchler, Burr, & Caro, 2003; Burr, Choi, Mutchler, & Caro, 2005; Burr, Mutchler, & Caro, 2007). The association among pairs of activities is shown in Table 5. Some of the activity pairs are correlated in a statistically significant manner. We are particularly interested in the extent to which the clustering of activities is along the lines of the activities that Gerontologists classify as productive. The number of these associations is modest. One such positive association is

between volunteering and caregiving (helping the sick and disabled; see also Choi et al., 2007). Caring for grandchildren was associated with two variables often omitted from lists of productive activities: frequency of donations and frequency of housework. Volunteering was associated with variables generally not classified as productive: light exercise and taking classes. Similarly, frequency of donations was associated with frequency of hobby activity and frequency of travel. Working was associated with having a pet. Some associations were found among non-productive activities. As expected, frequencies of light and vigorous exercise were correlated since those who report frequent vigorous exercise tend also to report frequent light exercise. Travel frequency was associated with hobby frequency and taking classes.

In sum, we did find some correlations among the activities. Some of these correlations were among productive activities; some of the inter-correlations were among activities that straddled productive and non-productive activities, and some of the inter-correlations were among activities that are generally not considered productive. Overall, the classification of which activities are productive and which are not productive did not seem to be linked in any way to the associations found among pairs of activities. Of the possible pairs of productive activities, 20% were associated. Of the possible pairs of productive and nonproductive activities, 19% were associated. Of the possible pairs of nonproductive activities, 17% were associated.

Table 5. Intercorrelations Among Activities, (n=210)

	Volunteer	Working	Care for grandchildren	Help sick & disabled	Donation frequency	Light exercise freq.	Vigorous exercise freq	Learning program	Hobby freq	Pet	Travel freq	Housework freq
Volunteer	1.00											
Working	0.02	1.00										
Care for grandchildren	0.05	0.07	1.00									
Help sick & disabled	0.20**	0.08	0.07	1.00								
Donation frequency	0.11	-0.08	0.14*	0.08	1.00							
Light exercise frequency	0.14*	0.11	0.01	0.07	0.18	1.00						
Vigorous exercise frequency	0.04	0.06	-0.01	0.07	0.11	0.28***	1.00					
Learning program	0.20**	-0.01	0.01	0.03	0.24**	0.22**	0.07	1.00				
Hobby frequency	0.03	-0.02	0.04	0.11	0.26**	0.19**	0.09	0.27	1.00			
Pet	0.11	0.16*	0.01	0.03	0.02	-0.04	-0.02	0.06	0.05	1.00		
Travel frequency	0.20**	0.11	0.18**	0.00	0.34***	0.16*	0.12	0.23**	0.29***	0.10	1.00	
Housework frequency	0.00	0.02	0.15*	-0.03	0.05	0.07	0.05	0.01	0.13	0.10	0.12	1.00

*** p < .001

** p < .01

• p < .05

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Obligatory and Discretionary Activities

An assumption that underlies some of the literature on activities of older people is that many if not most of their activities are discretionary (McGuire, Boyd & Tedrick, 2004). The circumstances of older people are sometimes contrasted to those of people in midlife who, because of extensive work and family obligations, have little discretionary time. While many older people have sources of income that free them of the obligation to work, older people may continue to be engaged in ways that result in their feeling obligated to undertake activities of various kinds. Consequently, much of

their activity may not be discretionary. We asked respondents to rate the degree to which they felt obligated to take part in each of a set of diverse activities. The ratings were on a 5-point scale anchored by "not at all" and "to a great extent."

In most categories, respondents tended to report some obligation to engage in the activities. Respondents often checked that they felt obligated "to a great extent" to engage in several diverse activities. More than 60% reported feeling obligated "to a great extent" to both vote in local elections and to keep in touch with close family members. More than 60% reported feeling obligated "to a great extent" to:

- Take care of sick or disabled family members
- Keep up with current events
- Exercise regularly

Volunteering, which is at the center of much of the literature on productive aging, tended to receive middle or high obligation ratings. Nearly half rated volunteering at or near the top in the obligation scale. At the same time, many of the dimensions received higher obligation ratings than did volunteering. A majority of respondents rated giving money to good causes at or near the top in the obligations ratings. Taking classes "to keep your mind active" received somewhat higher ratings than both volunteering and contributing to good causes. Nearly 60% rated taking classes at or near the top of the obligation scale. Exercise was also given a higher rating than volunteering. Nearly two-thirds rated the obligation to exercise at or near the top of the obligation rating scale. Housekeeping was seen as even more of an obligation. More than two-thirds gave housekeeping a rating at or near the top of the obligation scale.

One predicted exception to the tendency to rate activities as obligatory was "keep up with the soap operas on television," where 86% checked "not at all." Another predicted exception was "hold a job," for which nearly two-thirds checked "not at all." Nearly 40% checked "not at all" for "take care of your

grandchildren when their parents need relief." However, when we considered only those with grandchildren, only 16% indicated no obligation at all to care for grandchildren when the parents need relief. Approximately one-third indicated that they have no obligation at all to attend a weekly church service.

Importance of activities. Ratings of importance of activities are another potential means of understanding activity motivation. People judge some activities to be more important (or meaningful) to them than others. People also vary among one another in their assessments of importance of activities. We hypothesize that people generally engage more often in activities that are important to them. At the same time, we expect that people engage in some activities frequently although they are relatively unimportant to them and that they may engage in other activities only rarely that are highly important to them. The particularly interesting questions for research are what explains frequent participation in activities that are relatively unimportant and what explains infrequent participation in activities that are judged to be highly important.

To estimate the extent to which various activities were central to the interests of respondents, we asked them to rate the importance of each of a list of diverse activities. The activities were rated on a four-point scale: "not important," "somewhat important," "important," and "very important." Respondents could also select "does not apply."

The ratings varied greatly by type of activity. The family items (staying in contact with family members and interacting with family) received very high importance ratings. More than half rated both of these items as "very important." Other activities rated as "very important" by a majority of respondents were "keeping up with current events" and "reading for pleasure." More than 40% gave "very important" ratings to both exercising and reading for pleasure.

Only about 20% rated volunteering and contributing to charities as “very important.” While family activities, keeping up with current events, reading for pleasure, exercising, and taking classes were all rated more important than volunteering and contributing to charities, those activities were rated more highly than doing household chores and watching movies.

Relatively little use was made of the “not applicable” category. In the following activity areas, less than 5% checked “not applicable”: exercising, staying in contact with family members, keeping up with current events, watching movies, interacting with family, reading for pleasure, doing household chores, and contributing to charities. A majority checked “does not apply” for employment; nearly half checked “not applicable” for caring for grandchildren; a quarter indicated that caring for sick or disabled friends or relatives did not apply to them.

Importance and obligation. Conceptually, we make a distinction between activities perceived by individuals as important to them and activities they consider obligatory for them. Taking classes, for example, may be perceived to be highly discretionary but at the same time highly important to an individual. On the other hand, people may attach more importance to activities that they perceive to be obligatory. Those who hold jobs, for example, may also consider working to be highly important to them.

Importance ratings tended to be strongly correlated with ratings of obligation (Table 6). For this comparison, we excluded those who rated an activity to be “not applicable.” On 6 of 11 forms of activity for which parallel items were included in the importance and obligation rating scales, the correlation coefficients for the parallel items were $r = .66$ or greater. The activities with the particularly strong correlations between importance and obligation ratings were exercising, staying in contact with family members, taking care of grandchildren, taking classes, and engaging in spiritual activities/attending church weekly. The activities with the weakest associations

were “helping friends and relatives who are sick and disabled” and “doing household chores/keeping your home neat and clean.”

Table 6. Association of activity importance ratings and obligation ratings (Pearsonian correlation coefficients)		
Importance	Obligation	Correlation coefficient
Learning (taking classes)	Take classes to keep your mind active	.74
Exercising	Exercise regularly	.73
Working (paid work)	Hold a job	.72
Caring for grandchildren*	Take care of your grandchildren when their parents need relief *	.68
Staying in contact with family members	Keep in touch with close family members	.67
Engaging in spiritual activities	Go to a religious service every week	.66
Volunteering	Volunteer for good causes	.59
Contributing to charities	Give money to good causes	.57
Keeping up with current events	Keep up with current events	.49
Doing household chores	Keep your home neat and clean	.40
Helping sick or disabled friends or relatives	Take care of immediate family members who are sick or disabled	.37

*Analysis limited to those with grandchildren under 18 years of age

Obligation, importance, and activity. We examined the relationship between perceived obligation to participate in specific activities, ratings of importance of activities, and actual activities to determine how closely they are related. We expected positive relationships, in part, because we expected that to some extent people engage in activities because they consider them to be obligatory. We also expected that people engage in activities because they consider those activities to be important for any reason. We are also aware of the possibility that causality runs from activity to importance ratings. To some extent, people may judge an activity to be important because they are

engaged in it. "Because I do it, it must be important." Through engaging in an activity, they find qualities that they appreciate. They may also be reducing cognitive dissonance (Festinger, 1957).

Simple cross-tabulations show that both perceived obligation and importance ratings were consistently strongly correlated with actual activity. Among those who were employed, for example, a majority gave obligation to work a "4" or "5" rating; among those not working, less than 3% gave "4" or "5" ratings to obligation to work. (Perceived obligation was scaled from "1" to "5"; "4" and "5" ratings indicate the strongest perceived obligation). Among those employed, two-thirds rated working as "very important" or "important" to them. In contrast, among those not employed, only 5% rated working as "very important" or "important" to them.

Among those who were active as volunteers, 61% gave obligation to volunteer a "4" or "5" rating. Among those not volunteering, only 11% gave obligation to volunteer a "4" or "5" rating. Similarly, among those volunteering, 60% rated volunteering as "very important" or "important" to them. Among those not volunteering, only 12% rated volunteering as either "very important" or "important" to them.

Among those taking classes, 73% gave obligation "to take classes to keep your mind active" a "4" or "5" rating. Among those not taking classes, only 25% gave obligation to take classes to keep your mind active a "4" or "5" rating. Among those taking classes, 77% rated taking classes as "very important" or "important" to them. Among those not taking classes, only 14% rated taking classes as "very important" or "important" to them.

Among those who contributed to six or more causes, 77% gave obligation to give money to good causes a "4" or "5" rating; of those who contributed to five or fewer causes, 43% gave obligation to give money to good causes a "4" or "5" rating. Among those who contributed to six or more causes, 79% rated contributing to charities as "very important" or "important" to them. Among

those who contributed to 5 or fewer causes, 35% rated contributing to charities as "very important" or "important" to them.

Among those with grandchildren under age 18 who cared for a grandchild in the past year, 76% gave obligation to "take care of your grandchildren when their parents need relief" a "4" or "5" rating. Of those with grandchildren when their parents need relief a "4" or "5" rating. Of those with grandchildren under age 18 who did not care for a grandchild in the past year, 50% also gave obligation to take care of your grandchildren when their parents need relief a "4" or "5" rating. Among those with a grandchild under age 18 who cared for a grandchild in the past year, 72% rated caring for grandchildren as "very important" or "important" to them. Among those with grandchildren under age 18 who did not care for a grandchild in the past year, only 22% rated caring for grandchildren as "very important" or "important" to them.

Among those who assisted sick or disabled friends or relatives in the past year, 82% gave obligation to take care of immediate family members who are sick or disabled a "4" or "5" rating. Among those who did not assist sick or disabled friends or relatives, 46% gave this activity a "4" or "5" obligation rating. Among those who provided this assistance, 74% rated helping sick or disabled friends or relative as "important" or "very important." Among those who did not provide this assistance, 27% rated help of this kind "important" or "very important."

Among those who did housework for more than 10 hours per week, 73% gave "keep your home neat and clean" a "4" or "5" obligation rating. Among those who did housework 10 hours per week or less, 64% also gave "keep your home neat and clean" a "4" or "5" obligation rating. This is the only instance in which the difference between frequency of activity and perceived obligation was not statistically significant. Among those who did housework for more than 10 hours per week, 49% rated "doing household chores" as "very important" or "important." Of those who did household chores for less than 10 hours per

week, only 28% rated doing household chores as “very important” or “important.” In this instance the difference is statistically significant.

Among those who engaged in light exercise nearly every day, 84% gave “exercise regularly” a “4” or “5” rating. Among those who did not engage in light exercise nearly every day, 56% gave “exercise regularly” a “4” or “5” rating. Among those who engaged in light exercise nearly every day, 83% reported that exercising was “very important” or “important” to them. Among those who did not engage in light exercise nearly every day, 64% rated exercising as “very important” or “important” to them. The difference is statistically significant.

Among those who engaged in vigorous exercise three or more times a week, 100% gave “exercise regularly” a “4” or “5” obligation rating. Of those who did not engage in vigorous exercise three or more times a week, 59% also gave “exercise regularly” a “4” or “5” obligation rating. Among those who engaged in vigorous exercise three or more times a week, 100% rated exercise as “very important” or “important.” Among those who engaged in vigorous exercise less than three times per week, 65% rated vigorous exercise as “very important” or “important” to them.

As expected, participation in activities was consistently associated with ratings of importance of activities (Table 7). In other words, respondents tended to participate more frequently in the activities they considered to be more important to them. In every case, the association was statistically significant. However, the strength of the association varied a good deal. In part, the strength of the association was simply a result of the manner in which questions were structured. When respondents were asked about frequency of activity, the associations with importance rating tended to be stronger than when respondents were asked categorically whether or not they participated in an activity. The strongest association was between our measure of active in religion and importance of spiritual activities ($r = .69$). The measure of active in religion combined two items: a subjective rating of being a religious person and rating

of degree of activity in a religious congregation. The weakest association was between importance of interaction with friends and frequency of contact with friends and neighbors ($r = .17$). The association between importance rating and activity was relatively high for both paid employment and participation in learning programs. The associations were weaker for light exercise, volunteering, help to the sick and disabled, care for grandchildren, participation in hobbies, and housework.

Table 7. Correlations of Participation in Activities and Ratings of Importance of Activities

Activity	Data type	Correlation Coefficient	n	Significance
Exercise				
Light exercise	Grouped frequency	.32	189	***
Vigorous exercise	Grouped frequency	.47	189	***
Volunteering				
Volunteering (categorical)	Binomial	.36	166	***
Volunteer hours/year	Continuous	.43	166	***
Volunteer types	Count	.39	166	***
Paid employment				
Employment (categorical)	Binomial	.51	84	***
Employment hours	Continuous	.60	84	***
Learning programs				
Learning programs (categorical)	Binomial	.50	167	***
Learning program types	Count	.51	167	***
Help the sick or disabled				
Help the sick or disabled (categorical)	Binomial	.24	134	**
Number of care hours per year	Continuous	.30	134	***
Care for grandchildren				

Care for grandchildren (categorical)	Binomial	.25	92	*
Care hours per year	Continuous	.33	92	*
Contributions causes	Grouped freq.	.41	17	***
			6	
Travel	Grouped freq.	.46	17	***
			9	
Active in religion	3 pt. scale	.69	16	***
			8	
Hobby				
Hobby (categorical)	Binomial	.26	17	***
			7	
Hobby frequency	Grouped freq.	.40	14	***
			0	
Housework	Grouped freq.	.31	19	***
			6	
Family contact	Grouped freq.	.41	18	***
			5	
Friend/neighbor contact	Grouped freq.	.17	17	*
			8	

* < .05

** < .01

*** < .001

The findings suggest that perceived importance of activities drives participation in some activities more than others. When activities are highly discretionary and highly variable in their salience, the link between activity and rating of importance may be very strong, as seen here in the case of religious activity. When participation in an activity is heavily affected by circumstances, it is not surprising that the association between importance ratings and activity are weaker. In the case of helping the sick and disabled, for example, need for care on the part of a spouse has a major influence on whether or not individual older people are involved in the activity. The same is the case for care of grandchildren. Only a portion of older people have grandchildren living close to them who are in an age range where a grandparent might plausibly be asked to provide child care. Older people may also engage in some activities with

only minor investment. Contact with friends and neighbors and categorical involvement with a hobby may fall into that category.

Social Resources and Activity

We hypothesized that those with stronger social networks would be more likely to be engaged in activities that tend to be done with other people. We also expected that activities that tend to be done with other people tend to strengthen social networks. We developed a social resources scale based on items concerned with having friends or relatives who initiate activities, which are available as companions, whom the respondent is comfortable with as sources of advice, and who provide suggestions for activities. The items were presented in a standard Likert scale format. The social resource scale developed by adding the four items had a Chronbach's Alpha value of .80.

At a bivariate level, the social resources measure is positively correlated with a number of activities. Those with stronger social resources report that they are in more frequent communication with children, see their adult children more often, communicate with relatives other than children more often, and communicate with friends and relatives more often. Strength of social resources is not associated with use of mass media as a way of keeping up with current events, but it is associated with keeping up with current events through conversations with friends and relatives. Social resources are not associated with use of the mass media for enjoyment but are positively associated with use of the internet and going to concerts. Those with stronger social resources are more likely to do things with other people for enjoyment ($r = .33$). Having stronger social resources is associated with entertaining visitors at home, visiting the homes of others, talking with people in the neighborhood, running into friends and neighbors while shopping, and participating in social, fraternal, or religious groups. However, social resources are **not** associated with visiting a senior center, attending church services, or attending community events. Those with stronger social resources are more likely to engage in activities that involve

contact with people ($r = .18$). Social resources are associated with participation in activities. Those with stronger social resources, for example, are more likely to volunteer for an organization. Those with stronger social resources also tend to travel more often. Those with stronger social resources are not more likely to exercise. However, those with stronger social resources are more likely to exercise with other people when they do exercise. Those with stronger social resources are **not** more likely to be employed or to be enrolled in learning programs. In sum, at least at a bivariate level, social resources are linked to some activities in ways that we expected.

Activity Motivation

As indicated previously, we approached global activity motivation as a multidimensional construct. We were interested in the possibility that there may be multiple forms of motivation that would help to explain participation in more than one activity and might explain overall activity level. We were also interested in the possibility that some of these motives would operate in a positive direction and others might have a negative influence. We included items to address six dimensions: mental health (seeking to maximize morale) , physical health (seeking good health), cognitive health (seeking to maximize cognitive performance), economic (seeking financial well being), sociability, and altruism (seeking to help others).

The items were mixed in the sequence of their presentation to minimize response stereotyping. Some of the items were also deliberately reversed in their wording. A total of 30 items were included to tap these dimensions. We employed the following steps in developing subscales: 1) factor analysis, 2) screening for face validity, and 3) reliability analysis using Cronbach's alpha. Principal components factor analysis identified 10 potential factors, most of which were very weak. We examined the items with factor loadings above .50 within each of the factors. We looked then for substantive themes that might account for the association among the items. Using only the items that met a

face validity criterion for belonging together, we then performed a reliability analysis using Cronbach's alpha. Using the criteria suggested by DeVellis for using Cronbach's alpha in developing summary measures, we sought alpha values of .65 or above. The findings that we report below on the association between activity motivation subscales and activity represent a first step in establishing construct validity.

We identified the following subscales (see Appendix 1 for details):

1. **Seek challenge** consisting of 3 items (alpha = .79)
2. **Avoid frustration** consisting of 3 items (alpha = .60)
3. **Need Income** consisting of 2 items (alpha = .57)
4. **Seek mental stimulation** consisting of 3 items (alpha = .65)
5. **Sociable** consisting of 2 items (alpha = .74)
6. **Contented** consisting of 2 items (alpha = .67)

The items included in each of the subscales are listed in Appendix 1. Because of its theoretical importance, we also included **altruism (Give back)** as a single item measure. We expected that "challenge seeking," "needing income," "seeking mental stimulation," "seeking social interaction," and "altruism" would be positively associated with activity. We expected that "frustration avoidance" and "contentment" would tend to be negatively associated with activity.

Because of the mixed method used in developing the activity motivation subscales, there is no assurance that the subscales are independent of one another. The correlation matrix reported in Table 8 indicates that there are several statistically significant correlations among the subscales. "Seeking challenge" is associated with "seeking mental stimulation" and "altruism." Appreciation for sociability is linked to both "seeking challenge," "contented," and "altruism." "Seeking mental stimulation" is inversely associated with motivation to "avoid frustration."

Table 8. Correlation Matrix for Activity Motivation Subscales (n=210)

	Challen ge	Avoid	Need income	Mental stimulation	Sociable	Contente d	Altruis m
Seek challenge	1.00						
Avoid frustration	-0.15*	1.00					
Need income	-0.11	0.14*	1.00				
Seek mental stimulation	0.54***	0.29***	-0.10	1.00			
Sociable	0.42***	-0.02	-0.10	0.18*	1.00		
Contented	0.09	0.06	-0.10	0.04	0.42***	1.00	
Altruism	0.51***	-.13	-.04	0.29***	0.28***	.13	1.00

*** p<.001

** p<.01

*p<.05

The activity motivation subscales that we identified through this process correspond only roughly to the subscales that we sought to develop. Three of our subscales correspond to the original dimensions: mental stimulation, financial well-being, and sociability. As indicated above, we included altruism as a single item scale.

We explored the relationship between the activity motivation subscales and a count of activities. We used the count of number of activities as a rough estimate of the extent of overall activity. Strictly speaking, the count is a measure of diversity of activity rather than overall activity because the measure does not consistently take into account the amount of time devoted to various activities. The measure of overall activity consisted of the following 12 activities: volunteering, working, helping grandparenting, caregiving, civic engagement, 11 or more hours per week devoted to housework, light exercise daily, vigorous exercise three or more times per week, caring for a pet, participating in an educational program, engagement in a hobby three or more times per week,

and overnight travel three or more times per year. On average, respondents participated in 5.1 of these activities with a standard deviation of 2.2. To estimate the effects of the activity motivation subscales on the count of number of activities, we used ordinary least squares regression. We included the following background variables in the regression models: age, gender, level of formal education, marital status, self-reported health, religiosity, computer access at home, driving status, and social resources. Religiosity is a two-item measure consisting of self-reported status as a religious person and membership in a religious congregation. Social resources is a four-item scale concerned with friends and relatives who initiate activities, who are available as companions, who are comfortable sources of advice, and who provide suggestions for activities.

We report results on three regression models: 1. the activity motivation variables by themselves, 2. background variables by themselves, and 3) activity motivation variables combined with background variables (Table 9). The set of activity motivation variables accounts for 15% of the variation in the activity count. The background variables themselves account for 30% of the variation in the activity count. When the activity motivation scales are combined with background variables, the adjusted R-squared is 5% greater than the adjusted R-square for the model with only the background variables. Three of the activity motivation subscales are associated with activity count at the $p < .001$ level. Motivation to seek challenges is significantly associated with activity count in both models 1 and 3. Contentment is inversely associated with activity count in model 1, but the association is no longer significant in the combined model. Motivation to be mentally stimulated is inversely associated with activity count only in the combined model. In the combined model, five background variables are significantly associated with activity count: education, being married, health, religiosity, and having a computer at home.

Table 9. Ordinary Least Squares Regression of Activity Motivation Subscales and Background Variables as Predictors of Count of 12 Activities (n=210)

	Mode I 1		Mode I 2		Mode I 3	
	Coef.	P> t	Coef.	P> t	Coef.	P> t
Seek Challenge	1.064	0.000			0.582	0.016
Avoid frustration	-0.094	0.564			0.066	0.654
Need income	0.092	0.511			0.166	0.197
Seek mental stimulation	-0.315	0.158			-0.511	0.015
Sociable	-0.091	0.688			-0.127	0.535
Contented	-0.585	0.002			-0.285	0.099
Altruism	0.133	0.434			0.236	0.124
Age			-0.031	0.086	-0.021	0.253
Female			0.492	0.176	0.492	0.166
Education			0.345	0.001	0.283	0.010
Married			0.690	0.019	0.742	0.011
Religiosity			0.263	0.004	0.233	0.011
Health Drive			0.564	0.000	0.465	0.004
automobile			0.285	0.373	0.453	0.155
Use personal computer			0.641	0.038	0.686	0.027
Social Resources			0.243	0.116	0.230	0.138
Constant	4.363	0.000	0.579	0.748	0.020	0.992
R squared	0.178		0.335		0.398	
Adjusted R- squared	0.150		0.305		0.348	

We then examined how the activity motivation subscales are associated with particular activities. We ran a series of logistic regressions with specific activities as dependent variables. In these regressions, we ran full models in which the activity motivation subscales were combined with background variables. A summary of results is reported in Table 10. The full regression results are reported in Appendix 2. The table shows a complex set of relationships

between explanatory variables and the 12 activities. Our major interest here is on the role of the activity motivation measures on the activities. Each of the activity motivation variables was related to at least one activity at the 10% level. Motivation to be challenged was significantly associated with three of the activities (light exercise daily, out of town travel three or more times per year, and 11 or more donations per year) and marginally associated with another (extensive housework). Need for income was significantly positively associated with working and having a pet and positively associated with volunteering at the 10% level. Need for income was significantly negatively associated with frequent hobby activity and negatively associated with participation in a learning program at the 10% level. Desire for mental stimulation was negatively linked to three activities: light exercise, vigorous exercise, and frequent travel. In the case of frequent travel, the association is significant at the 5% level; the associations with exercise are at the 10% level. Being content is marginally associated with four activities. In the case of having a pet, the link to contentment is positive. In the other cases (volunteering, light exercise, and frequent travel), the association is inverse. Preference to avoid frustrating activity is positively associated with paid employment and inversely related with vigorous exercise. Sociability is associated with only one activity (frequent hobby) and that relationship is both inverse and significant only at the 10% level.

Table 10. Summary of logistic regressions showing effects of activity motivations and background variables on 12 activities, n = 210

	Volunteering	Working	Help grandchildren	Help sick & disabled	Light exercise daily	Frequent vigorous exercise	Learning program	Frequent Hobby	Has Pet	Travel often	Donate often	Extensive housework
Seek challenges					*					*	*	‡
Avoid		**										
Need income	‡	***					(-)‡	(-)*	**			
Seek mental stimulation					(-)‡	(-)‡				(-)*		
Sociable							(-)‡					
Contented	(-)*				(-)*				‡	(-)‡		
Altruism	**	‡				**						(-)*
Age		(-)**			(-)‡	(-)‡					**	
Female			*		(-)‡		**					‡
Education							***			*	*	
Married			**			(-)		*				
Religiosity	*				‡		**			*		
Health		*		‡	*	**		‡				
Drive		*							‡	‡		
Computer at home							‡			***		
Social Resources	*			‡		(-)‡		*				

(-) Inverse relationship

*** p < .001

** p < .01

* p < .05

‡ p < .10

Four activities (volunteering, working, daily light exercise, and frequent vigorous exercise) are associated with three motivation measures. Five activities (frequent vigorous exercise, frequent hobby, having a pet, frequent travel, and extensive housework) are associated with two of the motivation measures. Only helping grandchildren and helping the sick and disabled are not associated with any of the motivation measures.

In general, inclusion of the activity motivation measures is clearly helpful in regression models explaining specific activities. In the case of frequent vigorous exercise, for example, pseudo R-squared for the model with background variables only is 14%. The addition of the motivation variables brings the pseudo R-squared up to nearly 20%. Similarly, in the case of volunteering, the addition of the motivation variables brings the pseudo R-squared up from 4% to 15%. In the case of employment, the addition of the motivation variables pseudo R-squared up from 11% to 38%. (This boost in R-squared is artificially high because one of the work motivation items include the phrase "income from a job.") In the case of frequent travel, the pseudo R-squared increases from 23% to 31% when the motivation measures are included in the regression models. For frequent donations, the pseudo R-squared increases from 7% to 15% when the motivation measures are added to the logistic regression models.

The direction of some of the relationships between activity motivation and specific activities was unexpected. Somewhat puzzling is the inverse relationship between motivation to be mentally stimulated and frequent travel. The three most frequently given reasons for out-of-town travel were visiting relatives, sight seeing, and relaxation. Perhaps these activities tend not to be mentally stimulating. On the other hand, frequent travel was positively associated with desire to be challenged. At least the logistics associated with travel may be challenging. The association between employment and preference to avoid frustration also invites some explanation. Desire to avoid frustration is positively associated only with paid employment. One possibility is that frustration is an

unwelcome aspect of paid employment. Employed older people would prefer to avoid that frustration, but they continue working for other reasons such as the need for income. The frustrations associated with working could be especially aggravating if the elder prefers not to be working and/or sees age peers as having the privilege of not working. In the case of other activities, respondents may have had enough control over their participation so that they can avoid unwelcome frustrations associated with the activity. Consequently, avoidance of frustration was not a salient motivation for them.

The absence of a relationship between the activity motivation measures and the two helping-within-the-family activities (care of grandchildren and help to the sick and disabled) may be explained by the strong role that situations play in these activities. In the current sample, 46% do not have a grandchild younger than age 18. Consequently, nearly half did not have the opportunity to care for grandchildren. We ran a logistical regression for care of grandchild in which the analysis was limited to 111 cases in which respondents had a grandchild younger than age 18. None of the motivation measures approached statistical significance. With the analysis limited to such a small number of cases, we are reluctant to rule out the possibility of an effect that would appear with a larger sample.

In the case of the possibility of helping the sick and the disabled, we have no information on the extent to which respondents had relatives who were candidates for informal helping. If such information were available, we would have had a basis for exploring the possibility that in cases where there was need for informal caregiving and the participation in informal caregiving were discretionary, motivation might have made a difference.

As predicted, contentment was inversely associated with a number of activities (volunteering, light exercise, and marginally with frequent travel). Of note is the fact that these three activities are all discretionary. Of interest is the fact that contentment is positively associated (although marginally) with having

a pet. Perhaps the routine involved in caring for the pet is highly compatible with the passive approach to activity that underlies the contentment measure.

Altruism is associated not only with volunteering but employment (marginally) and frequent vigorous exercise. Altruism is inversely associated with extensive housework. The reason for the positive link to vigorous exercise is not clear. Perhaps those who are community minded tend to pursue vigorous exercise so that they will be able to sustain their ability to be helpful to the community. It may also be the case that those who are more community minded have less interest in investing energy in housework. Of note is the lack of a relationship between altruism and frequent donations. We expected that those who were more community minded would contribute to more causes.

Discussion

The survey proved to be useful from a number of perspectives:

- We obtained rich descriptive information on a wide variety of activities; respondents reported activity in many domains. These activities go far beyond the activities classified by Gerontologists as productive. We showed that the paired associations among activities cross the productivity classification. The classification of some activities as productive appears to be unrelated to the degree to which pairs of activities are correlated.
- We made progress in measuring motivation for activity and in demonstrating a link between activity motivation and both the count of total activities and the likelihood of participating in particular activities. This research suggests that instead of concentrating on a single global activity motivation measure, it may be more useful to identify a modest set of distinct activity motivation dimensions that cut across specific activities. We found evidence of several broad motives that are each linked to more than one activity. The association between these motives and activities is specific to particular motives. In some instances the

explanation of the association between a motive and specific activities is intuitive. It is not surprising, for example, that those who seek challenges tend to travel frequently and are more likely to make donations frequently. Similarly, it is expected that those for whom earning money is important are more likely than others to be employed or that those who are more community minded are more likely than others to volunteer. Some of the influences appear to be indirect. Need for income, for example, leads to more time devoted to paid employment with less time available for hobbies and educational programs. In some cases, the absence of a relationship is puzzling. Since seeking challenges is associated with frequent participation in light exercise, why is there no relationship between seeking challenges and frequent vigorous exercise? Why is altruism not associated with making frequent financial contributions?

More work is needed on development of these broad motivation measures. For some of the measures, more items are needed. The need for additional items is most acute for the altruism measure for which we had a only single item. Some of the scales have only two items. The fact that their alpha values are only marginally acceptable is not surprising in light of the small numbers of items. The fact that we were able to work with seven scales with only 16 items is encouraging. We could add eight to ten items without placing a significant additional burden on respondents. Replication of the research on a larger, more representative sample would provide a stronger basis for establishing a link between the motives and specific activities.

- We showed how the strength of social networks can be measured through what we call social resources and that this measure is primarily associated with participation in a set of informal activities.

- We were able to explore the contributions of ratings of importance of activities and rating of the extent to which respondents judged activities to be obligatory.

Practice Implications

A better understanding of motives that bridge activities of older people can be useful for professionals who encourage older people to be active . These professionals work in settings that include senior centers, retirement communities, and learning in retirement programs. Mental health professionals who work with older people may also benefit from a better understanding of the motives that link activities. In addition, understanding of these connections may be helpful to self-directing older people and family members who provide support. A better understanding of the diverse contributions of activities may lead older people to be more active and more selective in their activity choices. The fact that global activity motives are linked to multiple activities suggests that older people may be flexible with respect to activity options. When activity organizers know that there are multiple activities that are likely to provide fulfillment for a particular activity motive, they have reason to expect that older people will be somewhat flexible when they are provided with limited activity options. In this way, activity organizers can more readily identify a set of activities that will simultaneously satisfy a group of older people with diverse interests. At the same time, the findings suggest that activity organizers make efforts to understand the preferences of older people on the multiple dimensions examined here. More specifically, it may be useful for activity organizers to be sensitive to the extent to which older people are seeking improved morale, seeking to maximize their health, seeking to strengthen their cognitive skills, concerned about improving their financial status, seeking to help others, seeking challenges, and seeking social opportunities. At the same time, it is useful for

activity organizers to recognize the contentment dimension and the desire to avoid frustrations that generally detract from participation in discretionary activities.

Further development work on the measures introduced here is needed to achieve the scale reliable that is needed if the measures are to be used for clinical purposes. On the other hand, administration of the measures of motives and the activity inventory to groups may be useful in planning group activities.

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Appendix 1.

Item Content for General Activity Motivation Subscales

1. Seek challenge
 - a. I enjoy looking for new experiences.
 - b. I get satisfaction from taking on demanding activities.
 - c. I enjoy taking on new challenges.
2. Avoid frustration
 - a. I prefer to avoid trying to solve complicated problems that are difficult for me to understand.
 - b. I prefer to avoid doing things that open me to criticism.
 - c. I prefer to avoid activities that are likely to be frustrating.
3. Need Income
 - a. My free time is more valuable than the money I could earn from a job (inverse)
 - b. I need the income from a job even if it means less free time for me
4. Seek mental stimulation
 - a. I welcome activities that require me to think a lot.
 - b. I prefer activities that do not require much thinking. (inverse)
 - c. I like to be challenged to keep my mind active.
5. Sociable
 - a. I enjoy spending time with other people.
 - b. I look forward to meeting new people.
6. Contented
 - a. I am content to be with my family and friends.
 - b. I like to take each day as it comes.
7. Altruism
 - a. I like to give back to the community.

Appendix 2

Regressions predicting effects of activity motivation and background variables on specific activities

Appendix Table 1. Predictions of volunteering based on specific activity motivation measures and background variables

Logistic regression	Number of obs	=	210
	LR chi2(16)	=	38.66
	Prob > chi2	=	0.0012
Log likelihood = -111.39193	Pseudo R2	=	0.1479

volunteer	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
chal	1.131713	.3851031	0.36	0.716	.5808806	2.204886
avoid	1.098775	.2151466	0.48	0.630	.7485806	1.612795
needinc	1.334299	.2371723	1.62	0.105	.9417851	1.890404
think	.6867372	.2032029	-1.27	0.204	.3845239	1.226473
social	.7274108	.2061511	-1.12	0.261	.4173937	1.267692
contented	.5551188	.1418761	-2.30	0.021	.3363858	.9160818
altruism	2.041558	.4499589	3.24	0.001	1.325431	3.144607
agea	1.0258	.024885	1.05	0.294	.9781672	1.075751
female	.440572	.2306851	-1.57	0.117	.1578791	1.229445
education	1.06148	.1595728	0.40	0.691	.790588	1.425192
married	1.210946	.4730273	0.49	0.624	.5631486	2.603913
relig	1.301032	.1631494	2.10	0.036	1.01753	1.663523
health	1.085737	.2439518	0.37	0.714	.6989882	1.686472
drive	1.421953	.618166	0.81	0.418	.6065156	3.333714
computer	.9110995	.3756672	-0.23	0.821	.4060653	2.044258
socialres	1.53575	.3219493	2.05	0.041	1.018305	2.316133

Appendix Table 2. Predictions of paid employment based on activity specific motivation measures and background variables

Logistic regression	Number of obs	=	210
	LR chi2(16)	=	91.23
	Prob > chi2	=	0.0000
Log likelihood = -74.097174	Pseudo R2	=	0.3810

working	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
chal	.8265032	.3362392	-0.47	0.640	.3723553	1.834559
avoid	2.42813	.7126987	3.02	0.003	1.365933	4.316329
needinc	5.479832	1.652544	5.64	0.000	3.034393	9.896069
think	1.087295	.3825723	0.24	0.812	.5455647	2.166948
social	1.251013	.4451012	0.63	0.529	.6228893	2.512541
contented	1.340161	.4133187	0.95	0.342	.7322143	2.452877
altruism	1.658581	.4656932	1.80	0.072	.9566164	2.875646
agea	.9140141	.0299875	-2.74	0.006	.8570896	.9747194
female	1.429745	.900501	0.57	0.570	.4160481	4.913305
education	.9920009	.1734138	-0.05	0.963	.7042254	1.397373
married	2.009035	.963648	1.45	0.146	.7846983	5.143662
relig	.8274709	.134269	-1.17	0.243	.6020508	1.137293
health	1.758588	.5041731	1.97	0.049	1.002609	3.084585
drive	5.62345	3.798764	2.56	0.011	1.496227	21.13529
computer	1.439775	.8250419	0.64	0.525	.468302	4.426527
socialres	.9551438	.264513	-0.17	0.868	.5550614	1.643601

Appendix Table 3. Predictions of helping grandchildren based on specific activity motivation measures and background variables

Logistic regression Number of obs = 210
LR chi2(16) = 28.11
Prob > chi2 = 0.0307
Log likelihood = -124.48658 Pseudo R2 = 0.1014

helpgrndchld	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
chal	.776328	.2333199	-0.84	0.400	.4307474 1.399162
avoid	1.175034	.219602	0.86	0.388	.8146466 1.69485
needinc	1.149409	.1836712	0.87	0.384	.8403413 1.572148
think	1.066305	.2780154	0.25	0.806	.6396606 1.777516
social	1.500715	.4127874	1.48	0.140	.8753188 2.572943
contented	1.0187	.2230002	0.08	0.933	.663304 1.564516
altruism	.9364675	.1851312	-0.33	0.740	.6356497 1.379646
agea	.991979	.0228666	-0.35	0.727	.9481587 1.037825
female	3.005939	1.479322	2.24	0.025	1.145713 7.886505
education	1.082863	.1520627	0.57	0.571	.822323 1.425952
married	2.743725	.9886467	2.80	0.005	1.354026 5.559735
relig	1.161223	.1340182	1.30	0.195	.9261412 1.455974
health	1.260157	.255917	1.14	0.255	.8463686 1.876245
drive	1.043267	.426827	0.10	0.918	.4678937 2.326182
computer	1.779908	.7103205	1.44	0.149	.8141464 3.891281
socialres	1.117926	.2222226	0.56	0.575	.7571994 1.650501

Appendix Table 4. Predictions of helping the sick and disabled based on specific activity motivation measures and background variables

Logistic regression Number of obs = 210
LR chi2(16) = 20.79
Prob > chi2 = 0.1866
Log likelihood = -134.69702 Pseudo R2 = 0.0717

helpsd	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
chal	1.180165	.3404619	0.57	0.566	.670475 2.077319
avoid	1.208436	.2154528	1.06	0.288	.8520447 1.713898
needinc	1.237985	.1945677	1.36	0.174	.9097799 1.68459
think	.8408964	.2120976	-0.69	0.492	.5129153 1.378603
social	1.163384	.2920866	0.60	0.547	.7112381 1.902967
contented	.745887	.1562789	-1.40	0.162	.4946848 1.12465
altruism	1.076896	.1986706	0.40	0.688	.7501365 1.545992
agea	.9785718	.0212801	-1.00	0.319	.9377399 1.021182
female	.6631834	.2797465	-0.97	0.330	.2901193 1.51597
education	.9649454	.1274486	-0.27	0.787	.7448646 1.250052
married	.9439874	.326582	-0.17	0.868	.4791642 1.859722
relig	1.073254	.1167694	0.65	0.516	.8671463 1.328351
health	1.396621	.2754108	1.69	0.090	.9489061 2.055577
drive	.7388122	.2831955	-0.79	0.430	.3485446 1.566065
computer	.5935503	.2222911	-1.39	0.164	.2848874 1.236636
socialres	1.434944	.2746055	1.89	0.059	.986144 2.087995

Appendix Table 5. Predictions of light exercise daily on specific activity motivation measures and background variables

Logistic regression	Number of obs	=	210
	LR chi2(16)	=	45.41
	Prob > chi2	=	0.0001
	Pseudo R2	=	0.1652

Log likelihood = -114.74003

lexdaily	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
chal	2.295857	.7721434	2.47	0.013	1.187596	4.438347
avoid	1.218891	.2378357	1.01	0.310	.8315236	1.786715
needinc	.8010971	.143277	-1.24	0.215	.564218	1.137427
think	.6045765	.1716981	-1.77	0.076	.3465072	1.054849
social	1.009599	.2899257	0.03	0.973	.5750561	1.772507
contented	.6164848	.143823	-2.07	0.038	.3902483	.9738762
altruism	1.392399	.3008689	1.53	0.126	.9116673	2.126625
agea	.9758135	.0234394	-1.02	0.308	.9309378	1.022852
female	.4313458	.1977904	-1.83	0.067	.1755955	1.05959
education	1.069769	.1567877	0.46	0.645	.8026679	1.425752
married	.8114517	.3232169	-0.52	0.600	.3717172	1.771384
relig	1.222623	.1475955	1.66	0.096	.9650175	1.548995
health	1.625302	.3647911	2.16	0.030	1.046854	2.523377
drive	.6923821	.2896453	-0.88	0.380	.3049729	1.57192
computer	.5094584	.2097138	-1.64	0.101	.2273628	1.141558
socialres	.9479372	.1960281	-0.26	0.796	.6320564	1.421685

Appendix Table 6. Predictions of vigorous exercise three or more times per week based on specific activity motivation measures and background variables

Logistic regression	Number of obs	=	210
	LR chi2(16)	=	48.19
	Prob > chi2	=	0.0000
	Pseudo R2	=	0.2504

Log likelihood = -72.117487

vigex3plus	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
chal	1.401032	.6256409	0.76	0.450	.5838993	3.361694
avoid	.6561785	.184424	-1.50	0.134	.3782554	1.138305
needinc	.877054	.2097145	-0.55	0.583	.5489003	1.401391
think	.5084538	.186027	-1.85	0.065	.2482127	1.041547
social	1.283641	.5012699	0.64	0.523	.5970954	2.759581
contented	.7238027	.2157018	-1.08	0.278	.4036007	1.298041
altruism	2.793335	.9887189	2.90	0.004	1.395837	5.589993
agea	.9570331	.0324917	-1.29	0.196	.8954232	1.022882
female	1.511405	1.060584	0.59	0.556	.3820107	5.979797
education	.9403764	.1875278	-0.31	0.758	.6361463	1.390101
married	.5879821	.3139483	-0.99	0.320	.2064771	1.674389
relig	1.156287	.1876218	0.89	0.371	.8412937	1.589218
health	2.907015	.9063964	3.42	0.001	1.577777	5.356101
drive	1.523794	.9177496	0.70	0.484	.4680209	4.961207
computer	.982247	.5514055	-0.03	0.975	.326874	2.951624
socialres	.6148885	.172282	-1.74	0.083	.3550612	1.064853

Appendix Table 7. Predictions of participation in a learning program based on specific activity motivation measures and background variables

Logistic regression
 Number of obs = 210
 LR chi2(16) = 62.33
 Prob > chi2 = 0.0000
 Pseudo R2 = 0.2463
 Log likelihood = -95.377346

learnprog	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
chal	1.215044	.4326667	0.55	0.584	.6046258	2.44173
avoid	.820085	.1862215	-0.87	0.382	.5254985	1.279812
needinc	.6919858	.1283883	-1.98	0.047	.4810261	.9954644
think	.9326663	.2872574	-0.23	0.821	.5099877	1.705662
social	.6558407	.2049457	-1.35	0.177	.3554707	1.210021
contented	.9903175	.2656526	-0.04	0.971	.5853824	1.675364
altruism	1.141332	.2553306	0.59	0.555	.7361853	1.769443
agea	.96756	.0260019	-1.23	0.220	.9179161	1.019889
female	4.910778	2.701668	2.89	0.004	1.670556	14.43576
education	1.798737	.3020659	3.50	0.000	1.294265	2.499837
married	1.752207	.7937176	1.24	0.216	.7211188	4.257592
relig	1.607755	.2410283	3.17	0.002	1.198426	2.156894
health	.839753	.2125849	-0.69	0.490	.5112914	1.379224
drive	1.469581	.6697235	0.84	0.398	.6015621	3.5901
computer	2.199368	.9753712	1.78	0.076	.9221656	5.245501
socialres	.9336534	.2165771	-0.30	0.767	.5925633	1.471081

Appendix Table 8. Predictions of participation in a hobby activity three or more times per week based on specific activity motivation measures and background variables

Logistic regression
 Number of obs = 211
 LR chi2(15) = 41.84
 Prob > chi2 = 0.0002
 Pseudo R2 = 0.1439
 Log likelihood = -124.47829

hobby3pw	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
chal	1.298358	.383235	0.88	0.376	.728025	2.315489
avoid	.925572	.1745297	-0.41	0.682	.6395936	1.339419
needinc	.5974992	.1003865	-3.07	0.002	.429859	.8305171
think	1.197083	.3111571	0.69	0.489	.7192373	1.992401
social	.5995193	.1578896	-1.94	0.052	.3577918	1.00456
contented	.9104976	.2001967	-0.43	0.670	.5917249	1.400999
altruism	1.057485	.2093133	0.28	0.778	.7174499	1.558679
agea	1.019103	.0234796	0.82	0.411	.9741071	1.066177
female	2.114816	.9801945	1.62	0.106	.8526087	5.245602
married	2.560444	.9485611	2.54	0.011	1.238719	5.292462
relig	.9947271	.1136283	-0.05	0.963	.7951895	1.244335
health	1.233006	.2548606	1.01	0.311	.8222865	1.848874
drive	.6836681	.2751246	-0.94	0.345	.3106713	1.504491
computer	1.564298	.5947106	1.18	0.239	.7425269	3.295544
socialres	1.524966	.3058434	2.10	0.035	1.029307	2.259306

Appendix Table 9. Prediction of having a pet on specific activity motivation measures and background variables

Logistic regression
 Log likelihood = -103.1967

Number of obs = 210
 LR chi2(16) = 30.88
 Prob > chi2 = 0.0139
 Pseudo R2 = 0.1301

pet	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
chal	.8153615	.2724492	-0.61	0.541	.4235701 1.56955
avoid	1.062692	.224326	0.29	0.773	.7026279 1.607272
needinc	1.672639	.2989278	2.88	0.004	1.178362 2.374247
think	.7344719	.2110467	-1.07	0.283	.4182027 1.289922
social	.9892325	.2901316	-0.04	0.971	.5567366 1.757709
contented	1.576926	.4029267	1.78	0.075	.9556906 2.601987
altruism	.9672249	.2037437	-0.16	0.874	.6400646 1.461609
agea	.9827132	.0262624	-0.65	0.514	.9325646 1.035559
female	.5676878	.2657195	-1.21	0.226	.2268218 1.420804
education	1.273236	.2044451	1.50	0.132	.9294593 1.744164
married	1.659395	.6481541	1.30	0.195	.7717439 3.568011
relig	.9365921	.121972	-0.50	0.615	.7256026 1.208933
health	1.172208	.2715079	0.69	0.493	.7444728 1.845699
drive	2.537373	1.353469	1.75	0.081	.8919533 7.218161
computer	2.140238	1.038507	1.57	0.117	.8268641 5.53975
socialres	.8390202	.1884974	-0.78	0.435	.5401798 1.303186

Appendix Table 10. Prediction of out-of-town travel 3 or more times per year on specific activity motivation measures and background variables

Logistic regression
 Log likelihood = -100.65776

Number of obs = 210
 LR chi2(16) = 89.50
 Prob > chi2 = 0.0000
 Pseudo R2 = 0.3078

travelmore	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
chal	1.984869	.6748771	2.02	0.044	1.019328 3.865002
avoid	1.09689	.2369621	0.43	0.669	.718253 1.675131
needinc	.8224259	.1573688	-1.02	0.307	.5652257 1.196663
think	.5303347	.163572	-2.06	0.040	.2897427 .9707057
social	.8435038	.2462717	-0.58	0.560	.4759572 1.494879
contented	.6352954	.1630123	-1.77	0.077	.3842053 1.050481
altruism	.873554	.1940022	-0.61	0.543	.5652644 1.349982
agea	.96907	.0255062	-1.19	0.233	.9203463 1.020373
female	1.461846	.7682821	0.72	0.470	.5218523 4.095018
education	1.394495	.2226667	2.08	0.037	1.019767 1.906923
married	1.773119	.7143886	1.42	0.155	.8049875 3.905588
relig	1.318671	.1752537	2.08	0.037	1.016272 1.71105
health	1.193197	.2834531	0.74	0.457	.7490361 1.900735
drive	2.477802	1.182281	1.90	0.057	.972561 6.31272
computer	7.085283	3.235137	4.29	0.000	2.895335 17.33866
socialres	1.337286	.3067108	1.27	0.205	.853097 2.096284

Appendix Table 11. Prediction of ten or more donations per year on specific activity motivation measures and background variables

Logistic regression Number of obs = 210
LR chi2(16) = 38.86
Prob > chi2 = 0.0011
 Log likelihood = -107.10921 Pseudo R2 = 0.1536

donl0plus	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
chal	2.327873	.8693957	2.26	0.024	1.119591	4.840156
avoid	.7877693	.1626963	-1.16	0.248	.5255356	1.180853
needinc	.8797777	.1664364	-0.68	0.498	.6072144	1.274686
think	.6588304	.191944	-1.43	0.152	.3722066	1.166173
social	.7163476	.2136022	-1.12	0.263	.3993103	1.285101
contented	.8665031	.2081757	-0.60	0.551	.5410913	1.387617
altruism	.9338865	.2068085	-0.31	0.757	.6050568	1.441425
agea	1.074499	.028617	2.70	0.007	1.019849	1.132077
female	1.603221	.8403846	0.90	0.368	.5738603	4.478995
education	1.465863	.244418	2.29	0.022	1.057217	2.032464
married	.6722225	.279157	-0.96	0.339	.2978726	1.517035
relig	1.168987	.1430967	1.28	0.202	.9196302	1.485956
health	1.058797	.2375662	0.25	0.799	.6820649	1.643615
drive	1.677019	.7660557	1.13	0.258	.6850341	4.105476
computer	2.053409	.8973531	1.65	0.100	.8719568	4.835664
socialres	.9434703	.2084	-0.26	0.792	.6119405	1.454612

Appendix Table 12. Prediction of 11 or more hours of housework per week on specific activity motivation measures and background variables

Logistic regression Number of obs = 211
LR chi2(15) = 15.55
Prob > chi2 = 0.4126
 Log likelihood = -138.19216 Pseudo R2 = 0.0533

housellplus	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
chal	1.614168	.454653	1.70	0.089	.9293854	2.803506
avoid	.8754052	.1540782	-0.76	0.450	.6199989	1.236025
needinc	1.045762	.1593636	0.29	0.769	.7757436	1.409767
think	.8055304	.2002443	-0.87	0.384	.4948623	1.311232
social	1.144974	.2783701	0.56	0.578	.710965	1.843922
contented	.8281302	.1691516	-0.92	0.356	.5549254	1.235841
altruism	.6410762	.1209965	-2.36	0.018	.4428476	.9280366
agea	1.000558	.0213691	0.03	0.979	.9595395	1.043329
female	2.214808	.9641489	1.83	0.068	.9436082	5.198531
married	1.736672	.5986782	1.60	0.109	.8836609	3.413109
relig	.9334595	.1004601	-0.64	0.522	.7559413	1.152664
health	.8295694	.1605443	-0.97	0.334	.5677041	1.212225
drive	1.142913	.4289364	0.36	0.722	.5477172	2.384899
computer	1.132861	.4087758	0.35	0.730	.5585128	2.29784
socialres	1.017619	.1847975	0.10	0.923	.7128676	1.452652