Pushkar, D., Chaikelson, J., Conway, M., Etezadi, J., Giannopolous, C., Li, K., & Wrosch, C. (2010). Testing continuity and activity variables as predictors of positive and negative affect in retirement. *Journal of Gerontology: Psychological Sciences, 65B(1)*, 42–49, doi:10.1093/geronb/gbp079. Advance Access publication on October 29, 2009.

Testing Continuity and Activity Variables as Predictors of Positive and Negative Affect in Retirement

Dolores Pushkar,[1] June Chaikelson,[2] Michael Conway,[1] Jamshid Etezadi,[3] Constantina Giannopoulus,[2] Karen Li,[1] and Carsten Wrosch[1]

[1]Centre for Research in Human Development, Psychology Department, [2]Psychology Department, and [3]Department of Decision Sciences and Information Management & Centre for Research in Human Development, Concordia University, Montreal, Quebec, Canada.

This study tested predictions based on continuity and activity theories, examining effects of continuity and change in activity parameters on positive affect (PA) and negative affect (NA). Retired men and women (N = 368) completed measures of everyday activities and affect, repeating the measures after 2 years. Continuity of activity parameters and affect was dominant, although number of activities decreased and ability in activities and NA increased. Changes in activity predicted changes in affect across time. Increased activity frequency, ability, ease, and future intentions predicted higher PA, and increased ability and ease in activity predicted lower NA. Maintaining same levels in activity parameters usually resulted in maintained PA. The results were interpreted as providing some support for both theories.

Key Words: Activity—Continuity—Positive and negative affect.

RESEARCH has typically examined voluntary activity patterns in retirement in relation to affect (Stephan, Fouquereau, & Fernandez, 2008), usually in the context of continuity or activity theories. The current longitudinal research tests the assumption that multiple activity characteristics influence positive affect (PA) and negative affect (NA) by directly examining and comparing the effects of continuity and change in activity parameters describing the subjective experience of performing voluntary activities.

Continuity and Activity Theories

Continuity theory assumes that maintaining patterns of preferred levels of central voluntary activities established earlier in life helps older people to maintain psychological well-being (Atchley, 1976, 1999, 2003). Continuity in important activities in life domains is hypothesized to help maintain the qualities that people attribute to themselves, help them to adapt, and express their identity appropriately across their life stages (Atchley, 1999; Hoppmann, Gerstorf, Smith, & Klumb, 2007; Markus & Nurius, 1986). Comparing present and past identity is also an important aspect of the Selection, Optimization, and Compensation Model (Baltes & Baltes, 1990), which emphasizes activity-management processes to adapt successfully to aging. In the major life transition of retirement, it is not necessarily continuity of specific activities that is important, but rather that individuals achieve continuity in preferred levels of voluntary engagement in socially and cognitively meaningful activities that they regard as important; that they perform competently, with ease or manageable levels of difficulty; and that they intend to continue performing.

In contrast, activity theory emphasizes current activities and the importance of finding new satisfactory activities to replace discarded activities as a source of psychological well-being (Havighurst, 1963). Meaningful activities can provide psychological benefits, including a sense of control, life satisfaction, and happiness (Antonucci, 2001; Heckhausen & Schulz, 1995; Lyubomirsky, Sheldon, & Schkade, 2005; Nimrod & Kleiber, 2007; Tkach & Lyubomirsky, 2006). Greater activity engagement is linked with emotional, cognitive, and social competence (Pushkar, Arbuckle, Conway, Chaikelson, & Maag, 1997) and larger social networks (Bourque, Pushkar, Bonneville, & Béland, 2005).

Characteristics of both activities and individuals influence activity engagement and affect (Nimrod, 2007a; Strain, Grabusic, Searle, & Dunn, 2002). Researchers have attempted to identify the salient dimensions and types of activity that predict psychological benefits with varying results. For example, Menec (2003) reported that overall activity levels were related to happiness, better functioning, and reduced mortality for older adults, but different classes of activities were linked to different benefits, varying with characteristics such as gender (Iwasaki & Smale, 1998) and activity type (Lennartsson & Silverstein, 2001; Nimrod, 2007a). Generally, engaging in chosen physical and social activity produces physical and psychological benefits (Litwin & Shiovitz-Ezra, 2006; Stobert, Dosman, & Keating, 2006).

Adjustment in Retirement

A longitudinal research perspective is useful in explaining the transition to retirement, with loss of employment roles and status and the gaining of significant unstructured time, often for the first time in adulthood (Kim & Moen, 2002). Psychological outcomes vary in retirement, particularly in the early transition period (Lo & Brown, 1999; Pinquart & Schindler, 2007), with improved morale reported in some studies (Gall, Evans, & Howard, 1997), decreased

morale and health problems in others (Dave, Rashad, & Spasojevic, 2006), and other studies reporting both (Wang, 2007). A significant proportion of retirees, with some estimates as high as 30%, reported experiencing adjustment difficulties (Braithwaite & Gibson, 1987; McGoldrick & Cooper, 1994).

In view of findings that only a minority of retired individuals greatly expand or change their activity patterns in this new life stage (Long, 1987; Verbrugge, Gruber-Baldini, & Fozard, 1996), research is needed that would examine how both continuity and changes in activity patterns may influence adjustment in retirement (Rosenkoetter, Garris, & Engdahl, 2001). Finding activities to replace the work-imposed time demands that are satisfying and important to self can be difficult (Trépanier, Lapierre, Baillargeon, & Bouffard, 2001). Levels of obligatory activities may be maintained later in life, but decreasing personal resources reduce optional activities (Nimrod, 2007b; Schindler, Staudinger, & Nesselroade, 2006). Significant decreases in activity levels, including meaningful activity commitments (Jonsson et al., 2000) and increased levels of passive activities, such as watching television, are usually reported after retirement (Rosenkoetter & Garris, 2001; Rosenkoetter et al.).

The Current Study

The current study employs a new measure of continuity to examine patterns of continuity and change in voluntary activities across time. Voluntary activities refers to nonmandatory activities that involve social, cognitive, and physical effort (Arbuckle, Gold, Chaikelson, & Lapidus, 1994), are related to retirement satisfaction (Stephan et al., 2008), and can overlap with the social affiliation or active leisure items classified as happiness-increasing strategies (Tkach & Lyubomirsky, 2006). Individuals vary in the number of these activities they select, their frequency of performance, perceived importance, and intentions to continue performance. Because effort and skill are required to perform these activities, individuals experience varying degrees of difficulty or ease and competence in their performance. Consequently, rather than assessing the effects of different types of voluntary activities, the current research examines the effects of activity parameters reflecting the experience of activities.

The first set of predictions specifies the effects of time on activity parameters. (a) In line with previous findings of decreased range of activities in retirement, it is predicted that number of different activities performed and intentions to continue them will decrease. (b) Based on continuity theory, which hypothesizes that individuals have preferred levels of voluntary activity, and based on the findings of continuity of earlier activities in retirement, activity frequency is expected to be stable. (c) In accordance with the Selective Optimization and Compensation (SOC) model, it is predicted that more difficult voluntary activities are most likely to be discontinued and activities that individuals believe are important and that they perform competently should be maintained or increased.

The study tested both continuity and activity theories by separating the effects of continuity and change in activities on the PA and NA of retired men and women for a period of 2 years. According to continuity theory, more satisfying and meaningful voluntary activities are likely to be selected and retained over time, functioning as a personal history, within which the meaning of current activity engagement is interpreted. Consequently, greater continuity of chosen activities should enhance affective outcomes. Although new activities may create extra affective arousal by enacting self-reinvention innovation (Nimrod & Kleiber, 2007), greater continuity of activities should indicate their centrality, particularly in the context of a major life transition and the general pattern of decreased activity with age. Difficulty and ability in activity performance have been found to be significantly related to health, emotional, and social competence factors (Pushkar et al., 1997). For older people entering the traditional hallmark stage of aging, it is expected that performing competently and with ease in continuing activities would be a source of reassurance and have particular salience. The importance of an activity should also increase its salience, particularly in a time of change and readjustment.

The second set of hypotheses is based on continuity theory. (d) Greater continuity in frequency of voluntary activities, which are more important to individuals, which they regard themselves as performing competently with ease, and which they expect to continue performing in the future, will increase PA. (e) Continuing ease and ability of performance in activities should decrease NA.

In accordance with activity theory, engaging in voluntary activities should generate affective responses (Kahneman & Krueger, 2006; Lyubomirsky et al., 2005; Menec, 2003; Tkach & Lyubomirsky, 2006), with changes across time in current activity parameters predicting affect. The third set of hypotheses focuses on activity theory and predicts that (f) increased frequency, importance, ability, ease, and intentions to continue activities should lead to reduced continuity but predict greater PA and lower NA compared with decreased activity parameters.

Activities generally have stronger effects on PA and NA than do demographic variables (Kahneman & Krueger, 2006; Tkach & Lyubomirsky, 2006), but some demographic variables provide exemplars of change, such as age (Yang, 2008) and onset of illness (Piazza, Charles, & Almeida, 2007) and are associated with affect. Therefore, the study will control for age and illness when assessing the effects of change and continuity on affect.

Methods

Sample and Procedure

A total of 446 retired men and women participated in the first wave of a study on adjustment in retirement. Of these, 13 were eliminated because of missing data or difficulty in

Table 1. Participant Means and Standard Deviations for Study Variables at Initial and Follow-up (N = 368)

	Initial	Follow-up
Variable	*M* (*SD*)	*M* (*SD*)
Positive affect	37.45 (6.31)	37.74 (6.72)
Negative affect	15.25 (5.70)	16.20 (5.70*)
Age	59.02 (4.98)	61.14 (4.97)
Financial rating	4.82 (1.27)	4.90 (1.24)
Numbers of illnesses	4.26 (2.86)	4.42 (4.06)
Activity ratings[a]		
Frequency	3.17 (0.41)	3.17 (0.41)
Importance	3.86 (0.50)	3.85 (0.47)
Ability	3.84 (0.50)	3.91 (0.48*)
Ease	3.65 (0.37)	3.69 (0.43)
Future intentions	4.20 (0.31)	4.14 (0.45*)
Number of activities performed	13.07 (1.86)	12.80 (2.04*)

	Continuity mean percentages	Correlations between current and continuity EAQ scores
Frequency	74%	−.11
Importance	72%	.56**
Ability	73%	.55**
Ease	88%	.78**
Future intentions	83%	.59**

Notes: [a]Mean scores for participants' ratings of frequency and future intentions are based on all activity items. Mean scores for participants' ratings on importance, ease, and ability are based on the number of activity items participants regularly performed at 5 = 3 or more times a week, 4 = weekly, or 3 = monthly. EAQ = Everyday Activities Questionnaire.

*p < .01; **p < .001.

following directions, leaving a sample of 433. At follow-up, 35 could not be contacted, 22 withdrew due to health problems or time pressure, 7 were removed due to difficulty answering questionnaires or missing data, and 1 was deceased. Consequently, a total of 368 (83%) retired men and women participated in the 2-year study. Multivariate analysis of variance (MANOVA) comparisons of initial demographic and affect variables revealed no significant differences between those who participated or not at follow-up. Participants were originally recruited through a large corporation, retiree associations, and newspaper advertisements. Inclusion criteria were retirement from at least 20 years of full-time employment, no current employment over 10 hours a week, and fluency in English or French. Small group testing was conducted at Concordia University with participants receiving $50 for each session. Men composed 49% and women, 51% of the sample; 37% were currently unmarried and 63% were currently married. Participants had a mean of 14.91 years of education (*SD* = 2.46) and had been retired for a mean of 1.85 years (*SD* = 1.76). The mean number of years employed was 34.10 (*SD* = 6.57). Table 1 gives means and standard deviations for initial demographic and affect variables.

Measures

Participants completed a brief demographic interview, indicating gender, age, education, retirement age, occupation, marital status. The demographic measure included a Tri-Form rating (Pushkar, Arbuckle, Rousseau, & Bourque, 2003) of perceived adequacy of financial status compared with same-aged people on a 7-point scale, with higher scores indicating better financial status.

The Seriousness of Illness Rating Scale (Wyler, Masuda, & Holmes, 1971) assessed health using a shortened version eliminating items unlikely to occur in older samples. Participants indicated the conditions with which they had been diagnosed from a broad range of illnesses. Total higher scores reflected more illness. Test–retest reliability was .71 across 3 years for an older sample (Pushkar Gold et al., 1995).

The Everyday Activities Questionnaire (EAQ; Pushkar et al., 1997; Rousseau, Pushkar, & Reis, 2005) assessed the multidimensional complexity of activity engagement by examining important parameters of participants' experience in activities. The EAQ evaluated current engagement in 23 activities, including 6 items assessing personal and property maintenance and 17 items assessing optional, social, leisure, creative, exercise, and part-time and volunteer work activities. Only the 17 optional items are presented in this study. They cover a broad range of voluntary activities requiring social and cognitive skills (Arbuckle et al., 1994) and represent self-selected activities providing opportunities for experiencing self in action in effortful activities performed with various degrees of ease, competence, and having varying importance in everyday life. Item examples include entertaining friends, cultural activities, and hobbies. Participants rated each item for their frequency and future intentions of performing the activity on 5-point scales. Frequency ratings were as follows: 5 indicated three or more times weekly, 4 indicated weekly, 3 indicated monthly, 2 indicated less than monthly, and 1 indicted not at all. Participants also rated the importance, ease, and ability of performing the activity on 5-point scales for the activity items they regularly performed, with higher scores indicating greater importance, ease, and ability. Mean activity parameter scores were created for each participant based on all items they rated. Mean activity parameter scores on the EAQ correlate with age, gender, education, health status, and measures of cognitive, emotional, and social competence (Pushkar et al., 1997). The test–retest reliability coefficients for the EAQ parameters across the 2 years were .67, .69, .66, .53, and .61 for frequency, importance, ability, ease, and future intentions, respectively. Cronbach's alphas for frequency and future intentions were .63 and .65, respectively, at initial assessment and Cronbach's alphas, corrected for missing data, were .65, .70, and .65 for importance, ease, and ability, respectively.

Continuity scores were tabulated for frequency, importance, ease, ability, and future intentions by comparing responses on the EAQ items performed at both times. To avoid confounding meaningful changes across time with imperfect reliability, scores were classified according to their consistency on response options representing the

lower, middle, or upper range. Scores were classified as maintained if at both times they were at the midpoint, at the lower response options of 1 or 2, or at the higher response options of 4 or 5. Scores were classified as decreased if they had moved lower across the middle or upper categories at follow-up from initial testing. Scores were classified as increased if they had moved higher across the middle or lower categories at follow-up from initial testing. (A continuity index was also created classifying scores as increasing or decreasing if they did not have the exact same numerical value at both times. Continuity scores derived from the two indices correlated significantly for the five parameters and analyses conducted separately with the two continuity indices produced the same pattern of results.). Because participants varied on the number of activities they performed at both times, the maintained, decreased, or increased scores were converted to percentage scores based on the total number of items performed.

The Positive and Negative Affect Schedule assessed affective components on a 20-item measure consisting of two 10-item subscales measuring participants' experience of PA and NA in the past few weeks (Watson, Clark, & Tellegen, 1988). Support for the two-factor structure has been found for younger and older adults (Crawford & Henry, 2004). Test–retest reliability for this sample was .65 for PA and .45 for NA across 2 years. Positive and negative scores correlated negatively at −.15, $p < .01$ at follow-up. The initial PA and NA scores were regressed on follow-up affect scores to control for baseline levels, creating residualized affect scores measuring changes in affect across 2 years.

Plan of Analysis

Data analysis was conducted in two main steps. The first set of predictions concerning the effects of time were examined on number of activities performed, activity parameters, and affect levels using MANOVA, followed by univariate analyses of variance. Extent of continuity was determined by the percentage of maintained activity parameter scores across the 2 years.

The EAQ activity rating scores were used to test the second and third set of predictions, testing the effects of continuity and different types of changes in activity scores on changes in affect. Regressions were conducted for each of the five activity parameters to create residualized activity scores at follow-up by covarying initial activity scores from follow-up activity scores, thus producing scores measuring changes in the activity parameters across time by removing initial baseline variance. The residualized activity scores were then grouped by terzile split for each individual EAQ parameter as increased, decreased, or maintained at follow-up. To examine the effect of activity changes on changes in affect, the residualized PA and NA scores at follow-up, as described earlier, were employed in the subsequent analyses. Preliminary regression analysis had indicated that the only demographic variables influencing affect scores were age and illness. Consequently, five multivariate analyses of covariance (MANCOVA), covarying age and illness, tested the main effects of the group classification of residualized activity scores for the five EAQ activity parameters on affect change scores. The MANCOVAs were followed by univariate analyses of covariance (ANCOVA) that tested the effects of the increased, decreased, or maintained groups of the five activity parameters on PA and NA. The 10 ANCOVAs were followed by tests of individual difference with Bonferroni adjustment for multiple comparisons, specifying the significant differences between groups. Correlations between current and continuity EAQ scores were performed as an additional test of the continuity predictions.

Results

MANOVA comparing the mean EAQ scores for the 17 voluntary items revealed significant change across time, $F(6,362) = 6.66$, $p < .001$; Partial $\eta^2 = .09$. Univariate analyses of participant scores indicated that the mean number of activities performed and future intention scores decreased significantly, $F(1,367) = 10.08$, $p < .01$; Partial $\eta^2 = .03$, and $F(1,367) = 16.58$, $p < .001$; Partial $\eta^2 = .03$, respectively. Ability scores increased, $F(1,367) = 10.98$, $p < .001$; Partial $\eta^2 = .02$. Mean frequency, importance, and ease activity scores did not differ across time. NA scores significantly increased, $F(1,367) = 9.20$, $p < .001$; Partial $\eta^2 = .03$, but PA scores did not change significantly. Continuity scores of EAQ items indicated that many more activities were maintained at their initial levels than were increased or decreased (see Table 1). Table 1 also indicates that current levels of activity parameters correlated significantly with their continuity counterparts, with the exception of frequency. Table 2 presents a descriptive profile of mean ratings for each activity item at initial assessment, with the specific activities listed in descending order of number of participants regularly performing each activity three or more times, weekly or monthly.

To examine the effects of continuity and changes in activity on PA and NA, MANCOVAs, followed by univariate ANCOVAs, tested the effects of the predicted activity changes on changes in affect at follow-up. Tests of individual difference with Bonferroni adjustment for multiple comparisons tested the significance of differences in residualized affect scores among groups with increased, decreased, or maintained residualized activity scores.

MANCOVA results indicated that the main effects of the activity groups were significant for frequency, ability, ease, and future intentions, $F(4,726) = 2.92$, $p < .05$; Partial $\eta^2 = .02$: $F(4,726) = 7.40$, $p < .001$; Partial $\eta^2 = .04$: $F(4.726) = 6.05$, $p < .001$; Partial $\eta^2 = .03$: and $F(4,726) = 2.21$, $p < .05$; Partial $\eta^2 = .02$, respectively. The covariate age had no significant effects in the analyses, but illness significantly affected each MANCOVA. Illness significantly affected PA

Table 2. Initial Everyday Activities Questionnaire Profile of Parameters Mean for Activity Items ($N = 368$)

Activity	Number[a]	Frequency[b] mean (*SD*)	Importance mean (*SD*)	Ability mean (*SD*)	Ease mean (*SD*)	Future intentions mean (*SD*)
Radio–TV	363	4.98 (0.14)	3.95 (0.91)	4.33 (0.83)	4.90 (0.33)	4.89 (0.41)
Telephone contact	360	4.69 (0.54)	4.17 (0.83)	3.91 (0.89)	4.85 (0.53)	4.89 (0.44)
Reading	360	4.87 (0.41)	4.44 (0.77)	4.25 (0.81)	4.79 (0.54)	4.89 (0.53)
Physical activity	353	4.77 (0.48)	4.43 (0.70)	3.66 (0.83)	4.47 (0.87)	4.83 (0.47)
Social activity	334	3.96 (0.65)	4.00 (0.84)	3.89 (0.80)	4.58 (0.72)	4.86 (0.51)
Hobbies	274	4.05 (0.71)	3.90 (0.85)	3.66 (0.81)	4.67 (0.65)	4.43 (0.91)
Internet activity	271	4.61 (0.62)	3.48 (1.01)	3.58 (0.97)	4.76 (0.62)	4.50 (0.98)
Cultural activity	268	3.40 (0.56)	3.68 (0.98)	4.01 (0.90)	4.66 (0.74)	4.74 (0.59)
Provide help	258	3.89 (0.74)	3.82 (0.88)	3.90 (0.85)	4.56 (0.71)	4.67 (0.69)
Crafts/creative activity	192	4.17 (0.75)	3.80 (1.02)	3.64 (0.89)	4.69 (0.69)	4.08 (1.18)
Religious activity	157	4.29 (0.72)	3.65 (1.10)	3.46 (0.99)	4.52 (0.83)	3.35 (1.60)
Games	149	3.94 (0.81)	2.92 (1.05)	3.72 (0.76)	4.79 (0.55)	3.92 (1.26)
Volunteering	144	3.83 (0.65)	3.82 (0.97)	3.82 (0.95)	4.51 (0.83)	3.98 (1.13)
Classes	137	4.0 (0.53)	3.75 (0.96)	3.69 (0.96)	4.69 (0.75)	3.89 (1.16)
Travel	131	3.23 (0.48)	3.90 (0.86)	3.86 (0.88)	4.24 (0.97)	4.74 (0.60)
Musical activity	77	4.35 (0.70)	3.44 (1.16)	2.55 (1.14)	4.60 (0.85)	2.43 (1.56)
Paid job	48	4.00 (0.71)	3.49 (1.19)	4.27 (0.68)	4.84 (0.45)	2.79 (1.45)

Note: [a] Number of participants performing each activity.

[b] Mean ratings of items by participants regularly performing an activity at 5 = 3 or more times a week, 4 = weekly, or 3 = monthly. Higher means indicate greater frequency, importance, ability, ease, and future intentions.

for frequency, importance, ability, and future intentions, $F(1,363) = 6.19$, $p < .05$; Partial $\eta^2 = .02$, $F(1,363) = 5.23$, $p < .05$; Partial $\eta^2 = .01$, $F(1,363) = 4.84$, $p < .05$; Partial $\eta^2 = .01$, and $F(1,363) = 5.31$, $p < .05$; Partial $\eta^2 = .02$, respectively. Illness also significantly affected NA for frequency, importance, ability, ease, and future intentions, $F(1,363) = 15.44$, $p < .001$; Partial $\eta^2 = .04$, $F(1,363) = 13.50$, $p < .001$; Partial $\eta^2 = .04$, $F(1,363) = 14.24$, $p < .001$; Partial $\eta^2 = .04$, $F(1,363) = 9.19$, $p < .01$; Partial $\eta^2 = .03$, and $F(1,363) = 13.75$, $p < .001$; Partial $\eta^2 = .04$, respectively.

Table 3 presents the results of the ANCOVAs for the effects of residualized activity scores on PA and NA change scores. The univariate ANCOVA results for PA indicated that increased activity scores predicted increased PA and decreased activity scores predicted decreased PA for frequency, $F(2,363) = 3.42$, $p < .001$; Partial $\eta^2 = .02$, for ability, $F(2, 363) = 9.35$, $p < .001$; Partial $\eta^2 = .05$, and for future intentions, $F(2,363) = 3.83$, $p < .001$; Partial $\eta^2 = .02$. Increased ease scores predicted increased PA scores and differed significantly from maintained ease scores, $F(2,363) = 4.39$, $p < .05$; Partial $\eta^2 = .03$, but decreased ease scores did not differ on PA from the other two groups. PA change scores for the maintained activity groups usually fell between the other two groups and usually did not differ significantly from the increased group at follow-up. Although the groups did not vary significantly on affect scores on 7 out of 10 initial comparisons, the changes in activity produced a pattern of significant differences in PA scores at follow-up for 4 comparisons. Changes in importance scores had no effect as PA scores were greater for the group with higher importance scores than for the group with lower importance scores at initial assessment and follow-up, $F(2,363) = 3.36$, $p < .05$; Partial $\eta^2 = .04$ and $F(2,363) = 4.02$, $p < .05$; Partial $\eta^2 = .02$, respectively.

Decreased and maintained ease and ability scores predicted increased NA and increased ease and ability scores predicted decreased NA, $F(2,363) = 8.35$, $p < .001$; Partial $\eta^2 = .05$ for ease and $F(2,363) = 5.99$, $p < .03$; Partial $\eta^2 = .0$ for ability. Maintained activity groups differed significantly from the increased ability and ease groups, having higher NA scores at follow-up.

Finally, initially expecting to perform specific activities correlated with subsequent performance at follow-up, $r(366) = .50$, $p < .001$, indicating that intentions are significantly acted upon across time. Older age and poorer health correlated

Table 3. Positive and Negative Residualized Affect Scores for Increased, Decreased, and Maintained Activity Parameters ($N = 368$)

Parameter	Decreased group mean	Maintained group mean	Increased group mean
Positive affect			
Frequency	–0.192[a]	0.059	0.114[b]
Importance	–0.128	0.036	0.064
Ability	–0.269[a]	–0.011	0.269[b]
Ease	–0.052	–0.138[a]	0.223[b]
Future intention	–0.146[a]	–0.076	0.180[b]
Negative affect			
Frequency	0.137	0.010	–0.151
Importance	–0.054	0.043	0.017
Ability	0.114[a]	0.130[a]	–0.251[b]
Ease	0.207[a]	0.079[a]	–0.286[b]
Future intention	0.061	–0.057	0.001

Notes: Bonferroni adjustment for multiple comparisons was employed, $p < .05$ or better. Groups identified by a different superscript differ significantly. Group *n*s range from 128 to 119 for different parameters.

[a,b] Groups identified by different superscript differ significantly.

negatively with continuity of ease of performance, $r(366) = -.17$, $p < .001$, and $r(366) = -.31$, $p < .001$, respectively.

Discussion

Using a novel methodology, this study provided a stringent comparison of continuity and activity theories longitudinally, examining the predicted effects of time on continuity and change in activity parameters and examining how continuity and change in activity characteristics influence change in PA and NA. The emerging picture reveals that continuity of activities and affect is dominant. Only 13% and 12% of frequency scores increased or decreased across time, with similar or smaller percentages of changes occurring in the other activity parameter scores.

The magnitude of the continuity scores and the stability of the affect scores is consistent with the hypothesis that adults have established preferences of voluntary activity that help maintain psychological well-being (Agahi, Ahacic, & Parker, 2006; Atchley, 2003; Lucas, 2008). Although time differences in affect and activity mean scores were small, the test–retest reliability levels indicated substantial individual variation in activity across time and the pattern of changes was meaningful as provided by the use of covariate analysis of groups. Although the conversion of continuous variables into discrete variables produces some loss of information, the group analysis provided a clear picture of the links between changes in activity and affect. As predicted, retirees decreased their number and intentions to continue activities and frequency of activities did not differ with time. Thus, there did not appear to be greater involvement in existing activities to compensate for the reduced number of activities even in a relatively young sample of retirees. The finding that ability was higher for retained activities suggests improved performance, some dropping of less satisfactory activities and retention of activities that reinforced a sense of competence, supporting both continuity theory and the SOC model. Participants who rated their activities as more important had higher PA than those who rated their activities as less important at both times, supporting the hypothesis that performing more central activities is associated with well-being.

The covariate analyses indicate that although the activity changes across time are small, even after the removal of the effects of the age and illness covariates, they have significant effects in explaining variations in PA and, to a lesser extent, in NA. Although age had no significant effects in the analyses, illness significantly influenced the negative scores and all the positive scores except frequency in each covariate analysis, with magnitudes comparable to the effects of activity parameters. The ubiquitous and larger effect of illness on NA probably partially explains the lesser effect of activity parameters on NA. This underscores that research attempting to determine the influence of activity on other variables should control for the effects of illness.

PA appears to be more influenced than NA by changes in the extent and experience of activity performance. Initial PA scores did not differ among groups who subsequently increased, decreased, or maintained their activity levels, with meaningful significant affect differences appearing at follow-up among the groups. As predicted by activity theory, groups with increased frequency, ability, ease, and future intentions had significantly greater increases in PA, whereas groups with decreases on frequency, ability, and future intentions activity parameters had decreased PA. These results support activity theory.

The group with increased ease scores had greater PA and lower NA scores than the maintained ease group and also had lower NA scores than the group with decreased ease scores. The ease scores indicated generally low levels of difficulty experienced by this relatively young group of retirees. This could indicate that for younger retirees, increasing proficiency is generally rewarding with regard to both PA and NA. But the negative correlations between age and illness and continuity of ease in activity suggest that for older less healthy retirees, performance effort is more salient in dropping activities (Pushkar et al., 1997). Ability and ease or difficulty dimensions of performance have been found to be particularly salient for older retired people, who might have experienced age-related negative stereotypes (Cooke, 2006) or who retired for health reasons. Self-ratings of ability do not correlate with ratings by respondents' spouse (Pushkar et al., 1997), indicating subjectivity in judging how well an activity was performed. Although self-perceived ability reflects conscientiousness scores (Rousseau et al., 2005) and quality of actual performance to some extent, it is likely that it also serves a defensive function (Dunning, Heath, & Suls, 2004).

In support of continuity theory, regardless of initial baseline levels, retaining the same levels of activity, experiencing the same skill in performance, regarding activities as equally important as in the past, and intending to continue pursuing the same optional activities appear to be effective in upholding PA. Doing more and doing better may lead to greater happiness, but doing more does not appear to be necessary to stay happy. In contrast, doing more does not appear to reduce NA, but doing better does. Increased facility of performance, as indicated by ability and ease in performance, reduced NA and decreased facility increased NA. Furthermore, there is no evidence that maintaining levels of facility of performance affected NA levels.

These results are consistent with previous findings relating higher activity levels to happiness (Menec, 2003). Tkach and Lyubomirsky (2006) reported that happiness strategies, which include some overlap with EAQ items, mainly social activity, active leisure, and instrumental goal pursuit, accounted for 16% of happiness scores after covarying the effects of personality variables in a cross-sectional sample. The current findings that naturally occurring increased and decreased voluntary activity characteristics in older people result in higher PA and some lower NA support the findings of Tkach and Lyubomirsky.

Participants generally reported high levels of ease in the activities they performed and as seen in Table 2, the activities performed by most participants required the least effort, attending to mass media in the home, telephone conversations, reading, and social contacts. However, there was greater variability in self-reported ability across time. A large majority, 95%, indicated regularly participating in physical activity, such as walking and gardening; however, the extent of the activity performed was not measured. Individual participation in recreational, helping, and religious activities were engaged in by substantial percentages, indicating active engagement in daily life. Fewer individuals participated in more structured activities, such as taking classes and traveling, that require greater commitment of time, effort, and money. This pattern suggests that even though retirees may lead active lives, they prefer activities that are more individual, flexible, and less controlled by external organizations.

The correlation coefficients between current and continuity EAQ scores indicate the role of activity parameters in influencing the continuing performance of activities. Those who believe their activities are more important, who perform them more competently, and who expect to continue activities are more likely to maintain them in the future, as postulated by continuity theory. Current levels and continuing ease of performance were highly correlated, indicating that those who initially had the least difficulty were most able to maintain higher levels of continuity. Current frequency and continuity of frequency were not significantly correlated, possibly reflecting the decreased range of activities and the effects of ability and ease on affect as determinants on the retention of activities.

Conclusions

This study contributes to activity research theoretically and methodologically. The stringent method employed in this study allows precise comparisons of the longitudinal effects of continuity and change in activity parameters on change in affect in the early stages of retirement. The research also contributes by indicating that the effects of continuity or change are stronger in maintaining PA than in reducing NA. Furthermore, although the research indicates that continuity of activity parameters can help maintain PA, even small significant increases and decreases in activity levels, independently of illness, can cause increasing differences in affective well-being between more and less active groups. The study also indicates the importance of the harmful effects of decreasing activity, a common pattern in retirement (Rosenkoetter & Garris, 2001). The present results were found in a relatively young sample in early years of retirement. With increasing age, the differences in activity and affect are expected to become greater. Future research will test this hypothesis and will also examine the hypothesis that continuity of activities increases life satisfaction by bolstering the stability of identity. This study indicates the importance of a more comprehensive approach to research on activity in relation to affective outcomes. Examination of the history as well as increases and decreases in frequency and other parameters of voluntary activities can further understanding of the ongoing and changing processes that facilitate or hinder the well-being of individuals in the transition to the post-employment stage of life.

Funding

This research was supported by a grant from the Canadian Institutes of Health Research to D.P., J.C., M.C., J.E., C.G., K.L., C.W.

Correspondence

Address correspondence to Dolores Pushkar, PhD, Centre for Research in Human Development, Concordia University, 7141 Sherbrooke West, Montreal, Quebec, Canada H4A 1K1. Email: Dolores.Pushkar@Concordia.Ca

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Received October 21, 2008
Accepted September 20, 2009
Decision Editor: Rosemary Blieszner, PhD