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

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This study tested predictions based on continuity and activity theories, examining effects of continuity and activity variables on positive and negative affect. Retired men and women (N = 368) completed measures of everyday activities and affect, repeating the measures after two years. Activity and affect were largely stable, but current levels of activity variables of frequency, ability, and difficulty predicted changes in positive and negative affect. Changes in affect at follow-up were also predicted by changes in activity variable; increased activity frequency, ability and future intentions predicting higher positive affect and increased ability and lower difficulty predicting lower negative affect. Maintaining same levels of activity usually resulted in maintained affect. The results were interpreted as providing support for both theories.

Key words continuity, activity, positive and negative affect

Research has typically examined frequency of voluntary activity as a predictor of affect (Lybomorsky, Sheldon, & Schkade, 2005: 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 and negative affect by simultaneously examining the effects of continuity and current 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 and 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 stage 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 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; 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 & Beland, 2005).

Characteristics of both activities and individuals influence activity engagement and affect (Nimrod, 2007a; Strain, Grabusic, Searke, & 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).

Research is needed that would examine how both continuity and changes in activity patterns may facilitate adjustment in retirement (Rosenkoetter, Garris, & Engdahl, 2001) 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). 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, e.g. watching television, are usually reported after retirement (Rosenkoetter & Garris, 2001; Rosenkoetter et al., 2001).

The Current Study

The current study employs a new direct measure of continuity to compare the effects of continuity and current voluntary activities on positive and negative affect across time. Voluntary activities refers to non-mandatory activities that involve social, cognitive and/or physical effort (Arbuckle, Gold, Chaikelson, & Lapidus, 1994), are related to retirement satisfaction (Stephan, Fourquereau, & Fernandez, 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 is required to perform these activities, individuals experience varying degrees of difficulty 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 study tested both continuity and activity theories by separating the effects of continuity in activities, current levels, and changes in activities on the positive and negative affect of retired men and women over two 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, a context of greater continuity of chosen activities should enhance affective outcomes beyond those provided by current activity. 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 experiencing difficulty or competence in the performance of continuing activities will have particular salience. The importance of an activity should also increase its salience, particularly in a time of change and re-adjustment**.** Consequently, the first set of continuity hypotheses predict the following: (1) greater continuity in frequency of voluntary activities, which are more important to individuals, which they regard themselves as performing competently, and which they expect to continue performing in the future will increase positive affect; (2) continuing difficulty of performance on activities should increase negative affect.

In contrast to the clear directionality of continuity of activities, discontinuity of activity can be caused by increased or decreased activity levels, resulting in different affect outcomes. In accordance with activity theory, engaging in voluntary activities should generate affective responses (Kahneman & Krueger, 2006; Menec, 2003; Tkach & Lyubomirsky, 2006), with both levels of and changes across time in current activity parameters predicting affect. The second set of activity hypotheses predict that: (3) increased frequency, importance, ability, and intentions to continue activities should lead to reduced continuity but predict greater positive and lower negative affect. Decreases in these four parameters would also lead to reduced continuity, but would predict lower positive and higher negative affect. (4) Increased activity difficulty would lead to reduced continuity but predict greater negative and lower positive affect. Decreased difficulty would lead to reduced continuity and would predict higher positive and lower negative affect.

In addition, the third set of predictions specify the effects of time on activity parameters. (5) 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. (6) 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. (7) Finally, 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 well should be maintained or increased.

Activities generally have stronger effects on positive and negative affect than do demographic variables (Kahneman & Krueger, 2006; Tkach & Lyubomirsky, 2006), but some

demographic variables provide the strongest exemplars of long lasting continuity, such as gender, or the most salient examples of discontinuity, as in the onset of illness. Consequently, it is not surprising that demographic variables have been found to influence psychological well-being in the transition to retirement. Therefore, the study will control for age (Yang, 2008), gender (Fujita, Diener, & Sandvik, 1991), socioeconomic status (Pinquart & Schindler, 2007), perceived financial adequacy (Sumarwan & Hira, 1993), health (Piazza, Charles & Almeida, 2007), marital status (Pinquart & Schindler, 2007) and time since retirement (Atchley, 1999, 2003).

Method

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 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. A total of 368 (85%) retired men and women participated in the two-year study. 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, retirees 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

Only measures relevant to the present study will be discussed. 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 their financial status compared to same-aged people on a seven-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 three years for an older sample (Pushkar Gold, Andres, Etezadi, Arbuckle, Schwartzman, & Chaikelson, 1995).

The Everyday Activities Questionnaire (EAQ: Pushkar, et al., 1997; Rousseau, Pushkar & Reis, 2005*)* assessed the multi-dimensional complexity of activity engagement by examining important parameters of participants' experience in activities. The EAQ evaluated current engagement in 23 activities, including six items assessing personal and property maintenance and 17 items assessing optional social, leisure, creative, exercise, 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 difficulty and competence and having varying importance in everyday life. Item examples include entertaining friends, cultural activities, and hobbies. Participants rated each item on their frequency of performing the activity, importance of the activity, difficulty and ability in performing the activity, and intention to continue the activity in the future on five-point scales. A count of the number of activities performed provided a range of activities score. 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 reliability coefficients for this sample range from .53 to .68 across two years.

Continuity scores were tabulated for each of five parameters, excluding the range score.[1] Continuity scores were created 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, or 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. [2] Because participants varied on the number of activities they performed at both times, maintained, decreased, or increased scores were converted to percentage scores based on the total number of items performed.

The Positive and Negative Affect Schedule (PANAS) assessed affective components on a 20-item measure consisting of two 10-item subscales measuring participants' experience of positive (PA) and negative affect (NA) in the past few weeks (Watson, Clark, & Tellegen, 1988).

Support for the two-factor structure has been found for young and older adults (Crawford & Henry, 2004). Test-retest reliability for this sample was .65 for positive and .45 negative affect across two years. Positive and negative scores correlated negatively at -.15, $p < .01$ at follow up. The initial positive and negative affect scores were regressed on follow-up scores to control for baseline level, creating residualized affect scores measuring changes in affect across two years. The residualized affect scores were employed in the data analysis.

Plan of Analysis

Data analysis was conducted in two main steps. First, the effects of continuity and current activity on changes in affect across two years were examined by regression analysis. Hierarchical multiple regression analyses examined the effects of the initial affect scores followed by current demographic variables, percentage maintained continuity scores, and current activity levels on positive and negative affect scores at follow-up. Because the continuity scores assessing maintained, increased, and decreased activity levels are percentage scores, they were co-linear and could not be entered into the same regression analysis as predictors.

The initial regression analyses compared the effects of continuity on current activity levels, regardless of whether they reflected stable levels of current activity or different types of change across time. As indicated by the test-retest activity coefficients participants showed substantial variability with increased, decreased and maintained scores on EAQ items. Follow-up analyses were conducted to determine the effects of different types of change in activity scores on affect. Additional regressions were conducted for each activity parameter to obtain residualized activity scores at follow-up, co-varying variance shared with initial scores. The residualized activity scores were then grouped for each parameter as increased, decreased, or maintained at follow-up. To examine the effect of activity change on residualized positive and

negative affect scores at follow-up, ANCOVAs, co-varying any demographic variables that had predicted affect scores in the first set of regression analyses, tested the differences between groups. These were followed by tests of individual difference with Bonferroni adjustment for multiple comparisons, testing for significant differences between groups.

Results

MANOVA comparing the mean EAQ scores revealed a significant change across time**,** F (6, 362) = 6.66, $p < .001$; Partial $\eta^2 = .09$. Univariate analyses indicated the mean number of activities and future intention scores, F (1, 367) = 10.08, $p < .01$; Partial $\eta^2 = .03$, and F (1, 367) = 16.58, $p < .001$; Partial $\eta^2 = .03$, decreased significantly. Ability scores increased, F (1, 367) = 10.98, $p < .001$; Partial $\eta^2 = .02$. Mean frequency, importance, and difficulty activity scores did not differ across time. Negative affect scores significantly increased, F (1, 367) = 9.20, $p < .001$; Partial $\eta^2 = .03$, but positive affect scores did not change significantly. Continuity scores of EAQ items indicated many more maintained than increased or decreased activities (See Table 1).

Hierarchical regression analyses were performed to determine if the activity scores had effects on residualized affect scores after co-varying the initial relevant affect score in the first step and current marital status, gender, education, self-perceived financial adequacy, illness, age and duration of retirement in the second step. The continuity activity scores were entered in the third block and current activity scores were entered in the fourth block for levels of frequency, importance, difficulty, ability, and future intentions.

The regression explained 53.4 % of the variance in positive affect scores, F (18, 349) = 22.45, $p < .001$. Total demographic variables did not contribute significantly to positive affect scores, although age had a significant positive effect, $t = 2.10$, $p < .05$ and illness had a

significant negative effect $t = -2.50$, $p < .05$. Continuity scores in the third block significantly increased R^2 with lower frequency continuity, and higher ability and difficulty continuity increasing positive affect, $t = -3.20$, $p < .05$, $t = 2.25$, $p < .025$, and $t = 1.98$, $p < .05$ respectively. The effects of continuity of ability and difficulty were reduced to insignificance in the final block with the entry of current activity scores. Only lower frequency continuity scores continued to significantly increase positive affect, $t = -2.3$, $p < .05$. Current activity levels in the fourth block significantly increased the amount of explained variance in positive affect scores, with higher current frequency and ability activity scores significantly predicting higher positive affect, $t = 3.82$, $p < .001$, and $t = 4.11$, $p < .001$, respectively. Table 2 presents the final results of the regression on positive affect.

The regression on negative affect explained 32.2% of the variance, F (18,349) = 9.21, $p < .001$, with all four blocks significantly increasing accounted variance. In the demographic variable block, only illness significantly increased negative affect, $t = 2.27$, $p < .05$. Continuity scores significantly increased explained variance, with higher difficulty continuity decreasing negative affect, $t = -4.12$, $p < .001$, but this effect was reduced to insignificance with the entry of the current activity scores. Higher current frequency levels predicted lower negative affect, $t = -1.93$, $p < .05$, while higher current difficulty levels increased negative affect, $t = 3.34$, $p < .001$. Table 3 presents the final results of the regression on negative affect.

To clarify the effects of continuity and changes in activity on positive and negative affect, ANCOVAs tested the effects of the residualized activity scores on residualized affect scores at follow up, co-varying demographic variables that had predicted affect scores in the regression analyses. Specifically, these analyses co-varied the effect of age and illness on positive affect scores and illness on negative affect scores when examining effects of activity change on affect

change. Tests of individual difference with Bonferroni adjustment for multiple comparisons compared residualized affect scores among groups with increased, decreased, or maintained residualized activity scores.

As indicated in Table 4, changes in frequency, ability, difficulty, and future intention residualized activity scores had significant effects on residualized affect scores. Increased activity scores predicted increased positive affect and decreased activity scores predicted decreased positive affect for frequency, $F(2, 363) = 3.42$, $p < .001$; Partial $\eta^2 = .02$, ability, $F(2, 363) = 9.35$, $p < .001$; Partial $\eta^2 = .05$, and future intentions, $F(2, 363) = 3.83$, $p < .001$; Partial $\eta^2 = .02$ respectively. Increased difficulty scores predicted decreased positive affect, $F(2, 363) = 4.39$, $p < .05$; Partial $\eta^2 = .03$. Increased difficulty scores also predicted increased negative affect and decreased difficulty scores predicted decreased negative affect, $F(2, 363) = 8.35$, $p < .001$; Partial $\eta^2 = .05$. Increased ability scores predicted decreased negative affect and decreased ability scores predicted increased negative affect scores, $F(2, 363) = 5.99$, $p < .00$; Partial $\eta^2 = .03$. Residualized importance scores had no effect as positive affect scores were greater for the group with higher importance scores than for the group with lower importance scores at both initial 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. Although these groups did not vary significantly on affect scores on four out of six initial comparisons, the changes in activity produced a pattern of significant differences in affect scores at follow-up between the increased and decreased activity variable groups on five comparisons. Affect scores for the maintained activity groups usually fell between the other two groups and did not differ significantly from the groups with more favourable affect outcomes on five out of six comparisons at follow-up. . Only increased ability scores produce significantly lower negative affect than maintained activity scores do.

Discussion

Using a novel methodology, this study provided a stringent direct comparison of continuity and activity theories longitudinally, examining how activity characteristics influence affect by co-varying the effects of demographic variables and teasing apart the effects of continuity, levels of and changes in current activity. The emerging picture reveals that continuity of activities and affect is dominant, but the results provide some support for both theories' predicted effects on positive and negative affect with continuity and current activity explaining comparable amounts of variance in positive and negative affect changes across time. Although continuity of frequency, ability and difficulty predict positive affect in the penultimate regression stage, these effects largely disappear in the final stage with only lower continuity of frequency and higher current frequency and ability predicting higher positive affect. Similarly, continuity of difficulty predicts decreased negative affect in the penultimate regression step, but only higher current frequency reduces and higher current difficulty increases negative affect in the final stage. Rotating the entry of the activity and continuity scores produces the same pattern of results.

Consistent with the hypothesis that adults have established preferences of voluntary activity that maintain psychological well-being (Atchley, 2003), the research indicated significant affect and activity stability (Agahi, Ahacic,& Parker, 2006; Lucas, 2008). Although time differences in affect and activity mean scores were small, test-retest reliability levels indicated substantial individual variation in activity across time and the pattern of changes was meaningful. As predicted, retirees decreased their number and intentions to continue activities, and as predicted, 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 positive affect 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.

Correlation coefficients for current levels and continuity of importance, ability, and future intention were positive at .55, .55 and .58 respectively. Those who believe their activities are more important, those who perform more competently, and those who expect to continue activities do maintain them, as postulated by continuity theory. Initially expecting to perform specific activities correlates with subsequent performance at .50 at follow-up, indicating that intentions are significantly acted upon across time. Current frequency and continuity of frequency were not significantly correlated, possibly reflecting the decreased range of activities and the effects of ability and difficulty on affect as determinants if activities were retained. Current levels and continuity of difficulty were highly correlated at -.78, the only parameter pair that was negatively correlated, indicating that those who initially had least difficulty were most able to maintain higher levels of difficulty continuity. This finding explains the positive effects of higher continuity of difficult on affect, which is counter to prediction. Variables negatively influencing personal social and physical resources, older age and poorer health, correlated negatively with continuity of difficulty at -.17 and -.31 respectively, while greater financial adequacy increased continuity of difficulty and ability at .22 for both. The linking of higher continuity of difficulty with financial and health resources bolsters the hypothesis that continuity

is linked to psychological well-being. The negative effects of illness on affect could partially be due to the discontinuity caused by disruption of earlier patterns of functioning.

Ability and difficulty dimensions of performance are 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). Finally, in support of continuity theory, the results of group comparisons examining change across time reveal that continuity of activity levels generally maintains affect levels. Regardless of initial baseline levels, maintaining the same level of activity upholds positive affect as well as do increased frequency, ability and intention scores and decreased difficulty activity scores. Similarly maintaining the same difficulty levels reduces negative affect scores as well as do decreased difficulty scores;

The regression analyses provide some support for activity theory, which is supplemented by examination of the patterns of change in activity parameters. Although the changes across time are small, they have significant effects in explaining variations in positive and negative affect. Most initial positive affect scores did not differ among groups who subsequently increased, decreased or maintained their activity levels, but meaningful significant differences appeared at follow-up among activity groups. Groups with increased frequency, ability, and future intentions had significantly greater increases in positive affect while groups with decreases on these activity parameters had decreased positive affect. In addition, groups who had increased ability levels had lower negative affect at follow-up. Increased difficulty predicted

reduced positive affect and increased negative affect. The results support the beneficial effects of increasing activity, performed with increased sense of competence and lesser difficulty. The results also indicate the importance of having goals of retaining an active lifestyle. Finally, these results highlight the harmful effects of decreasing activity, which is the common pattern in retirement (Rosenkoetter & Garris, 2001).

These results are consistent with previous findings relating higher activity levels to happiness (Menec, 2003). Tkach and Lyubomirksy (2006) reported that happiness strategies, which include some overlap with EAQ items, mainly social activity, active leisure, instrumental goal pursuit, accounted for 16% of happiness scores after co-varying the effects of personality variables in a cross-sectional sample. In this study, activity and continuity accounted for 9.4% of positive affect change and 7.9% of negative affect change over two years, after co-varying the effect of initial affect and demographic variables. The accounted for variance in affect change is significant, but small, reflecting that the actual amount of change is small. These findings that naturally occurring increased and decreased voluntary activities in older people result in higher positive affect and lower negative affect are comparable with those of Tkach and Lyubomirsky.

Conclusions

This study contributes to activity research theoretically and methodologically. The method employed in this study allows the more precise comparisons of the longitudinal effects of continuity, current levels of, and changes in activity parameters on changes in affect. The research also contributes by indicating that whether the effects of continuity or discontinuity are beneficial or harmful depends, at least in part, on the activity parameters involved. Further, although the research indicates that continuity of activity parameters can maintain affect, even small significant increases and decreases in activity levels can cause increasing differences in

affective well-being between more and less active groups. These effects 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 with the inclusion of motivation to maintain identity. This study indicates the importance of a more comprehensive approach to the study of activity in relation to affective outcomes. Examination of the history as well as increases and decreases and current levels of 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.

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Footnotes

*1 Because range of activities is a simple count of all activities enacted, it was thought that continuity and directional effects based on a single number activity parameter would be of limited reliability and consequently range of activities was not further analyzed.

*2 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 both with regard to significant effects and amount of variance explained.

Table 1: Means and Standard Deviations for Study Variables at Initial and Follow-up

Variable	Initial		Follow-up		Percentage
	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 Scores					
Frequency	3.17	.41	3.17	.41	
Importance	3.86	.50	3.85	.47	
Ability	3.84	.50	3.91	.48	
Difficulty	1.35	.37	1.31	.43	
Future Intentions	4.23	.39	4.16	.43	
Number of Activities	13.07	1.86	12.80	2.04	
Continuity Mean Percentages					
Frequency					74
Importance					72
Ability					73
Difficulty					88
Future					83

Table 2.

Summary of Hierarchical Regression Analysis for Variables Predicting Positive Affect at Time 2 (N=368)

Variable	*B*	*SE B*	ß	ΔR^2
Step 1 Positive Affect Time 1	.471	.040	.502 ***	.426 **
Step 2 Health and Demographics				.015
Age	.105	.050	.083 *	
Gender	.338	.533	.027	
Marital Status	-.117	.542	-.009	
Education	-.091	.096	-.037	
Financial Status	-.005	.209	-.001	
Number of Illnesses	-.159	.064	-.102 *	
Retirement Length	-.042	.132	-.014	
Step 3 Continuity Activity Scores				.039 ***
Frequency	4.731	2.009	-.096 *	
Importance	.915	1.826	.023	
Difficulty	2.252	2.345	.059	
Ability	-.480	1.537	-.015	
Future Intention	1.766	2.463	.034	
Step 4 Current Activity Scores				.055 ***
Frequency	.155	.044	.170 ***	
Importance	-.074	.713	-.006	
Difficulty	.069	.912	.005	
Ability	2.884	.701	.211 ***	
Future Intention	.624	.758	.043	

*p <.05. **p<.01. ***p<.001.

Table 3.

Summary of Hierarchical Regression Analysis for Variables Predicting Negative Affect at Time 2 (N=368)

Variable	*B*	*SE B*	ß		ΔR^2	
Step 1 Negative Affect Time 1	.368	.048	.368	***	.199	***
Step 2 Health and Demographics					.044	**
Age	.009	.055	.008			
Gender	.326	.583	.029			
Marital Status	.865	.592	.073			
Education	-.065	.105	-.029			
Financial Status	.119	.227	.026			
Number of Illnesses	.157	.069	.111	*		
Retirement Length	.030	.145	.010			
Step 3 Continuity Activity Scores					.037	**
Frequency	-.321	2.197	-.007			
Importance	.521	1.997	.015			
Difficulty	-.778	2.566	-.023			
Ability	1.143	1.686	.038			
Future Intention	4.739	2.687	.101			
Step 4 Current Activity Scores					.042	***
Frequency	-.084	.044	-.103	*		
Importance	.568	.770	.046			
Difficulty	3.379	.997	.256	**		
Ability	-.513	.758	-.044			
Future Intention	.902	.829	-.069			

*p <.05. **p<.01. ***p<.001.

Table 4.

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	-.192[a]	.059	.114[b]
Ability	-.269[a]	-.011	.269[b]
Difficulty	.052	.138[a]	-.223[b]
Future Intention	-.146[a]	-.076	.180[b]
Negative Affect			
Ability	.110[a]	.135[a]	-.251[b]
Difficulty	-.207[a]	-.079[a]	.286[b]

Note .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.

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