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Persistence in goal striving and positive reappraisal as psychosocial resources for ageing well: A dyadic analysis

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Objectives: Associations of both individuals' and their spouses' tendencies toward persistence in goal striving (an index of primary control) and positive reappraisal (an index of accommodation) with individuals' characteristics of successful aging (physical and mental health, life satisfaction and social networks/engagement) were examined in midlife and older spousal dyads.

Method: One-hundred and twenty spousal dyads (240 individuals) completed a mail-out questionnaire concerned with psychosocial correlates of mental health and well-being in older adulthood.

Results: Results indicated that 40–60% of the variance in successful aging outcomes occurred between dyads. Individuals' tendencies toward positive reappraisal were positively related to physical and mental health and life satisfaction. Positive reappraisal was also related to more extensive social networks with friends and greater social engagement, but only among younger participants. Individuals' persistence in goal striving was associated with better mental health but was not related to the other indices of aging well, while spouses' goal persistence and reappraisal tendencies were not related to individuals' aging well outcomes.

Conclusion: The findings indicate a substantial degree of interdependence among spouses in the extent to which they are ageing well, and highlight the adaptive value of positive reappraisal as a coping strategy used in response to loss of primary control in later life.

Keywords: successful aging; dyads; primary control; secondary control

Introduction

Over the past two decades research in aging has increasingly focused on what it means to age well, with a substantial literature developing around issues of maintaining good health and well-being, and maximizing potential in older adulthood. Numerous researchers have explored definitions of successful aging, with Rowe and Kahn's (1987, 1997) early conceptualization around low probability of disease and disability, high functional capacity and active engagement with life more recently complemented by the identification of additional relevant psychosocial outcomes and resources such as high life satisfaction, social participation and the capacity for personal growth (Bowling & Iliffe, 2006).

Researchers have also explored the developmental processes believed to underlie successful ageing. One perspective that broadly encompasses the various cognitive, behavioral and motivational mechanisms thought to determine capacity for ageing well is the life span developmental theory of selective optimization with compensation (SOC; Baltes, 1997; Freund & Baltes, 1998). SOC characterizes human development as an ongoing process concerned with the maximization of positive opportunities for growth in the context of limited resources. Selection is concerned with the identification of appropriate and achievable developmental pathways, while optimization refers to

allocation and refinement of personal and social resources in order to maximize opportunities for goal attainment. Compensation refers to substitutive processes used to maintain functioning in a given domain in the face of declining resources. Compensation becomes particularly important for developmental functioning in later life when health-related constraints may result in reduced capacity for goal attainment and a greater need for effective compensatory strategy use (Freund & Baltes, 1998).

The present study approaches the topic of successful aging from an SOC framework, with a particular focus on behavior aimed at establishing control over the environment and accommodative belief systems thought to promote autonomy under circumstances when control cannot be exercised. Both active attempts to establish control and accommodation processes are recognized as key resources that enable adaptive developmental change and resilience (Skinner, 2007). The importance of control-related constructs for ageing well was emphasized by Rowe and Kahn (1997) who identified self-efficacy, mastery and control beliefs as consistent predictors of sustained engagement in later life. Moreover, Schulz and Heckhausen (1996) proposed a lifespan model of successful aging that emphasized the role of control motivation in providing the impetus for, and regulation of, interactions with the environment through selection and compensation processes.

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This study examined direct associations between persistence in goal striving – an index of primary control and positive reappraisal – an accommodation strategy used in response to loss of primary control, with measures of aging well in a sample of midlife and older spousal dyads. Moderating effects of goal persistence and reappraisal on associations between age, physical health, and aging well outcomes were also examined. Finally, possible spousal interdependence in the associations between the control-related measures and aging well was investigated. Studies concerned with associations of control motivation and well-being have overwhelmingly focused on the characteristics of individuals, potentially obscuring the importance of social context in shaping cognition and behavior. The present study addresses this gap in the literature by examining interdependence in husbands' and wives' tendencies toward persistence in goal striving and positive reappraisal, and individual and social indices of successful aging in a sample of midlife and older partner dyads.

Control motivation and aging well

Numerous studies indicate the importance of control-related beliefs and behaviors for maintaining health and well-being over the life course. Control beliefs have been identified as important psychological resources that contribute positively to well-being in later life (Lachman, 2006). Perceived control has also been identified as buffering against the impact of stressful events on mental health (Chou & Chi, 2000; Krause & Stryker, 1984; Pudrovska, Schieman, Pearlin, & Nguyen, 2005).

While research into control-related constructs and their correlates has a comparatively long history in social psychology (for a review see Skinner, 1996), more recently theorists have identified two distinct elements of control motivation: goal-directed behaviors aimed at exercising control over the environment, referred to as *primary control*, and the cognitive re-interpretation of situations where control is lost or limited, referred to as secondary control or *accommodation* (Brandtstader & Renner, 1990; Heckhausen & Schulz, 1995; Morling & Evered, 2006; Skinner, 2007).

The distinction between primary control and accommodation processes has particular relevance to the study of control motivation as it relates to aging well. Within the broader context of SOC, primary control is regarded as a central enabling factor for goal attainment over the life course (Heckhausen & Schulz, 1995; Schulz & Heckhausen, 1996). However accommodation may also take on particular importance as a compensatory strategy in older adulthood when decline in health and functional resources results in a decrease in the extent to which primary control can be exercised (Wrosch, Heckhausen, & Lachman, 2000). The effective use of adaptive accommodation strategies provides a means of 'fitting in' with unavoidable life

circumstances that is in keeping with the effective use of coping strategies (Morling & Evered, 2006).

There are numerous self-directed cognitive responses to loss of control (cf. Heckhausen and Schulz, 1995) that vary in the extent to which they are adaptive (Skinner, 2007; Windsor, Anstey, & Walker, 2008). The present study focuses on positive reappraisal (e.g., finding positives under negative or challenging circumstances) as an accommodative strategy that has been identified as an adaptive response to stress (Pearlin, Menaghan, Lieberman, & Mullan, 1981), and as a means of establishing a sense of autonomy through focusing on the positive aspects of a situation where primary control is unattainable (Skinner, 2007). This study investigated associations of persistence in goal striving (an index of primary control) and positive reappraisal (an index of accommodation) with both individual and social indicators of successful aging.

The relevance of social context to primary control, positive reappraisal, and aging well

Research concerned with psychosocial aspects of development has traditionally focused on the beliefs and behaviors of independent individuals. However it is important to consider the role of broader social systems in providing a context for behavior. For a given individual, their intentions and expectancies will influence the nature of their social interactions, with the outcomes of such interactions in turn influencing underlying cognitive systems (McClintock, 1983). Spousal dyads provide a particularly important context for the development and expression of interpersonal beliefs and behaviors (Kelley et al., 1983). Interdependencies between spouses in the shaping of cognition and affect are reflected in qualitative (Sandberg, Miller, & Harper, 2002) and larger population-based studies (Butterworth & Rodgers, 2006; Townsend, Miller, & Guo, 2001) that have demonstrated substantial levels of concordance in the mental health and well-being of married couples.

Relationship contexts are also relevant to outcomes associated with the expression of primary control, accommodation strategies, and aging well. Limited research in this area suggests that strong motivation for primary control could have a disruptive influence on dyadic relationships by promoting tendencies to dominate interactions and to disclose less (Morling & Evered, 2006). However tendencies toward primary control could be beneficial in less intimate social contexts by encouraging active regulation of frequency of social contact (Morling & Evered, 2006).

In the spousal dyad context, accommodation processes such as positive reappraisal appear to more clearly represent adaptive strategies for the maintenance of mutually satisfying relationships. By facilitating adaptation to the needs and goals of one's partner, accommodation is likely to facilitate mutual respect

and contribute to a broader fundamental motivation toward relatedness (Morling & Evered, 2006; Ryan & Deci, 2000). In the present study, multilevel models (Kenny, Kashy, & Cook, 2006; see *statistical analysis*) were used to explore spousal interdependencies in associations between persistence in goal striving, positive reappraisal, and indices of aging well.

The present study

In light of the view that primary control and accommodation are adaptive processes that combine to shape motivation and coping (Skinner, 2007) it was hypothesized (1) that persistence in goal striving and positive reappraisal would be directly and positively related to individual and social indices of aging well, including physical and mental health, life satisfaction, social support, and social engagement. Given the role of perceived control in buffering against the negative effects of stress on mental health and the identification of positive reappraisal as an important accommodative coping strategy, tests of interactions were used to assess possible buffering effects of persistence in goal striving and reappraisal on associations of older age and declining physical health with aging well outcomes. It was hypothesized (2) that those with higher levels of goal persistence and reappraisal would show weaker associations of age and physical health with individual indices of aging well.

Finally, interdependencies between husbands' and wives' persistence in goal striving, positive reappraisal and aging well outcomes were examined. In light of the high levels of spousal concordance in mental health outcomes reported in previous research (e.g., Butterworth & Rodgers) it was hypothesized (3) that a significant proportion of the total variance in mental health and life satisfaction would occur between dyads. Also given the likely importance of accommodation strategies for the maintenance of relationships, (Morling & Evered, 2006) a positive association between spouses' use of positive reappraisal strategies and individuals' aging well was hypothesized (4). Analyses were conducted controlling for age, gender and level of education, as previous research has revealed associations of these socio-demographic characteristics with perceived control (e.g., Flouri, 2006; Ross & Mirowsky, 2002), use of accommodation processes (e.g., Chipperfield & Perry, 2006) and mental health outcomes (e.g., Jorm et al., 2005).

Method

Participants and procedure

Data presented here are taken from the *Aging well Together Study*, a questionnaire based survey of psychosocial correlates of ageing well in midlife and older adult heterosexual partnered couples. Participants consisted of 261 individuals from the Australian Capital Territory and surrounding area

who responded to calls for participation placed in local media. Nineteen participants were excluded from the current analysis due to the non-response of their spouse, resulting in a sample of 120 couples (240 individuals). Ages ranged from 52 to 90, with a mean of 65.87 (SD = 7.64) years (Table 1). The sample was well educated with almost two-thirds (64%) reporting having completed tertiary education. Participants also had high levels of self-rated physical health for an older sample with a mean of 49.17 (SD = 10.46) on the Rand-PHC, which is standardized to a mean of 50 based on US population data collected across the adult age range (Hays, 1998).

Volunteer couples were sent a package via the post containing two identical questionnaires, two study information sheets and two reply paid envelopes. The questionnaire cover sheet instructed participants not to discuss the questionnaire content or their responses with their partner before both partners had completed the questionnaire. Completed questionnaires were returned to the study investigator using the supplied reply paid envelopes. Only those measures used in the current analyses are described below. The Australian National University Human Research Ethics Committee approved the study protocol.

Measures

Individual indices of ageing well

Mental health was measured using the Mental Health Index (MHI) from the 36-item short form health survey (SF-36; Ware, Kosinski, & Keller, 1994). This scale consists of five items rated on six-point scales ranging from 'all of the time' to 'none of the time', that reflect both negative (e.g., 'been a very nervous person') and positive (e.g., 'been a happy person') affect experienced in the past 4 weeks. Responses were combined and transformed to a scale ranging from 0 to 100, with higher scores reflecting positive mental health. The MHI has well-established validity and reliability (e.g., Fone, Dunstan, John, & Lloyd, 2007), and its measurement properties have been favorably compared with those of longer mental health scales (Berwick et al., 1991). Cronbach's α for the MHI in the current sample was 0.83. Self-rated physical health was measured using the RAND-12 Physical Health Component score (RAND-12 PHC). The RAND-12 PHC is a short form of the RAND-36 PHC, which has been found to have sound psychometric properties in population samples of adults (Hays, 1998). This measure provides a total score reflecting levels of disability caused by physical health problems that is standardized to a mean of 50 with a standard deviation of 10 based on US population data. Higher scores indicate better physical health/lower disability.

Subjective well-being was measured using the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993). The scale consists of five items (e.g., 'The conditions of my

Table 1. Descriptive statistics: age, education, goal persistence, positive reappraisal and aging well indices by gender.

	Total	Husbands	Wives	$p(\chi^2, t)$	Intra-class correlation
<i>N</i>	240	120	120		
Education					
Tertiary educated (%)	64.2	72.5	55.8	0.017	
Completed secondary school/trade (%)	10.8	6.7	15.0		
Did not complete secondary school (%)	25.0	20.8	29.2		
Age <i>M</i> (SD)	65.87 (7.64)	67.30 (7.88)	64.43 (7.15)	<0.001	0.78
Goal persistence <i>M</i> (SD)	3.25 (0.61)	3.33 (0.63)	3.18 (0.57)	0.044	0.00
Positive reappraisal <i>M</i> (SD)	3.23 (0.58)	3.26 (0.56)	3.20 (0.60)	0.408	0.12
Physical health (Rand-PHC) <i>M</i> (SD)	49.17 (10.46)	49.12 (10.14)	49.22 (10.81)	0.926	0.38
Mental health (MHI) <i>M</i> (SD)	84.65 (12.06)	85.81 (12.27)	83.50 (11.79)	0.064	0.36
Life satisfaction <i>M</i> (SD)	19.12 (3.53)	18.85 (3.59)	19.38 (3.45)	0.130	0.41
Social network – friends <i>M</i> (SD)	8.85 (3.27)	8.68 (3.52)	9.02 (3.02)	0.294	0.41
Social network – relatives <i>M</i> (SD)	8.99 (3.22)	8.80 (3.32)	9.18 (3.11)	0.175	0.54
Social engagement <i>M</i> (SD)	29.20 (5.07)	28.52 (5.27)	29.89 (4.78)	0.001	0.57

life are excellent') that participants responded to using five-point scales ranging from strongly disagree to strongly agree. Responses were summed to produce a total score with higher values indicating higher satisfaction with life (Cronbach's $\alpha = 0.85$).

Social indices of aging well

Availability of social networks was assessed using the friends and relatives subscales of the six-item short form Lubben Social Network Scale (LSNS-6; Lubben et al., 2006). Items record the number of social network members who participants see or hear from frequently, can talk with about private matters, and can call on for help. The LSNS-6 has been found to have good reliability and validity in samples of older adults (Lubben et al., 2006). Cronbach's α was 0.82 and 0.85 for the friends and relatives subscales, respectively.

Social engagement was measured using a seven-item measure developed by Berry, Rodgers and Dear (2007). Items assess frequency of social engagement in the domains of contact with immediate household, extended family, friends and neighbors; participating in organized community activities; taking an active interest in current affairs; and religious observance, with responses provided on a six-point scale ranging from 'never' to 'very often'. The measure has been found to be negatively associated with psychological distress in a population sample of adults (Berry et al., 2007). Cronbach's α was 0.59 in the current sample.

Persistence in goal striving and positive reappraisal

Goal persistence and positive reappraisal were assessed using subscales from a 14-item instrument developed for use in the Midlife in the United States (MIDUS) survey (Wrosch et al., 2000). Goal persistence was operationalized using a five-item measure (e.g., 'When I encounter problems, I don't give up until I solve them'). Positive reappraisal was assessed using a

four-item measure (e.g., 'I usually learn something meaningful from a difficult situation'). A five item 'lowering aspirations' subscale also included in the original MIDUS scale was not used in the current analysis. Participants were asked to respond to the items in terms of how well they described them, using four-point scales ranging from 'not at all well' to 'very well'. The measures have been found to predict well-being in midlife adults (Wrosch et al., 2000) and showed good internal consistency in the current sample with Cronbach's α of 0.81 and 0.75 respectively for the persistence in goal striving and positive reappraisal scales.

Socio-demographic covariates and physical health

Participants reported their age, gender and highest level of educational attainment (coded as 0 = tertiary educated, 1 = completed secondary school or trade certificate or non-tertiary qualifications, 2 = did not complete secondary school) with these variables included as covariates.

Statistical analysis

For initial descriptive analyses, comparisons between husbands and wives were made using repeated measures *t*-tests to allow for non-independence between partners. Multilevel variance components (null) models estimated with a random intercept, and without the inclusion of predictor variables, were used to generate intra-class correlations, which provided an estimate of the proportion of variance in the dependent variables that occurred at the dyad and individual levels. Associations of individuals' and their spouses' tendencies toward goal persistence and positive reappraisal with indices of aging well were estimated by fitting a series of actor-partner interdependence models (APIM; Kenny et al., 2006) using the Stata 'xtreg' procedure (StataCorp, 1999). APIMs consisted of two-level multilevel models comprised of individual participants

(Level 1) nested within spousal dyads (Level 2). Multilevel models produce coefficients that are analogous to those produced in fixed-effects regression, however non-independence of observations is accounted for, with separate residual terms estimated to reflect variance in the outcome occurring at the between-dyad level and the between-individual level (Kenny & Cook, 1999). Through pair-wise structuring of data (where each individual's outcome score is associated with his or her own predictor score and his or her spouse's predictor score), APIM models allow for the testing of associations between the characteristics of individuals (e.g., individual goal persistence) and a given outcome (e.g., mental health) in addition to associations between corresponding characteristics of spouses (e.g., spouse goal persistence) and the outcome (Kenny et al., 2006).

We used a sequential approach to modeling the associations of individuals' and spouses' persistence in goal striving and positive reappraisal with indices of ageing well. Each APIM included the direct effects of socio-demographic covariates, individuals' goal persistence and positive reappraisal and corresponding spouses' goal persistence and positive reappraisal strategies on a first step. Cross-product terms representing two-way interactions between RAND-PHC physical health and age with each of the measures of individual and spouse goal persistence and positive reappraisal (eight interaction terms in total) were tested individually at a second step, with only significant interactions retained in the final models. Scale-level predictors were mean centered to reduce multicollinearity between main effects and interaction terms (cf. Cohen, J., Cohen, P., West, & Aiken, 2003). Significant interactions were displayed graphically by plotting predicted values generated by solving the regression equations for high (+1 SD) and low (−1 SD) values of the predictors implicated in the interaction.

Missing values

Less than 3% of cases had missing data on any variable, with the exception of social engagement, which had 3.3% ($n=8$) missing. All missing data for the 240 cases retained for analysis were imputed using Maximum Likelihood estimation via the SPSS EM algorithm (Schafer & Graham, 2002).

Results

Descriptive statistics

Socio-demographic characteristics and husbands' and wives' mean scores on persistence in goal striving, positive reappraisal, and indices of ageing well are shown in Table 1. Husbands tended to be better educated and reported significantly higher levels of goal persistence relative to their wives, however there were no significant gender differences in use of positive reappraisal. Husbands and wives did not significantly

differ in levels of physical and mental health, life satisfaction, or social network availability of friends and relatives, however wives reported significantly higher levels of social engagement relative to husbands.

Table 1 also shows intra-class correlation coefficients which reflect the proportion of variance in each measure that was accounted for at the dyad level. Substantial levels of partner concordance in the indices of ageing well were revealed. Around 35–40% of the variance in mental health, physical health, life satisfaction and social networks with friends occurred at the dyad level, while over 50% of variance in social engagement and social networks with family occurred at the dyad level. Zero variance in goal persistence occurred at the dyad level, indicating an absence of partner concordance in the expression of individual tendencies toward persistence in goal striving. However around 12% of the variance in positive reappraisals occurred at the dyad level, indicating a degree of partner similarity in the endorsement of this accommodation strategy.

Persistence in goal striving and positive reappraisal as predictors of individual characteristics of ageing well

Results of the multilevel APIMs used to predict physical health (as measured using the Rand-PHC), mental health and life satisfaction are shown in Table 2. The role of individual and spouse goal persistence and reappraisal in predicting physical health (Rand-PHC) was examined first. Physical health was also included as a predictor in subsequent analyses to test the possible moderating effects of control and reappraisal described above in hypothesis 2.

The results did not reveal a positive association between individuals' tendencies toward goal persistence and Rand-PHC scores. The direct effect of individuals' positive reappraisal on physical health was significant at Step 1, however tests of interaction effects at Step 2 also revealed a trend towards significance of the interaction between age and individuals' positive reappraisal. The nature of the interaction (illustrated in Figure 1) indicated that the negative association between age and physical health was weaker among those who reported higher levels of positive reappraisal, suggesting a possible protective effect. Spouses' goal persistence and reappraisal tendencies were not significantly associated with physical health.

Table 2 also shows results of APIMs used to assess associations of goal persistence and reappraisal with mental health (measured using the MHI) and life satisfaction. Individuals' goal persistence and positive reappraisal were each significantly and positively associated with mental health. Step 2 of the model that included MHI scores as the outcome also revealed a trend towards a significant interaction between physical health and individual reappraisal. The nature of the interaction (illustrated in Figure 1)

Table 2. Associations of age, education, and individual and spouse goal persistence and reappraisal with individual indices of aging well.

Independent variables	Dependent variables											
	Rand-PHC				MHI				Life satisfaction			
	Step 1		Step 2		Step 1		Step 2		Step 1		Step 2	
	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>
Constant	49.885		49.841		84.764		84.946		18.849		18.797	
Age	−0.499	<0.001	−0.521	<0.001	0.312	0.003	0.310	0.003	0.087	0.011	0.086	0.012
Female	−0.669	0.559	−0.601	0.595	−1.097	0.372	−1.165	0.335	0.940	0.009	0.959	0.007
Education												
Tertiary (Reference)												
High school	−0.791	0.696	−0.882	0.661	1.463	0.504	1.693	0.437	−0.925	0.169	−0.988	0.140
<High school	−1.446	0.337	−1.348	0.369	0.933	0.569	1.113	0.497	−0.440	0.391	−0.503	0.326
Rand-PHC	—	—	—	—	0.482	<0.001	0.463	<0.001	0.097	<0.001	0.101	<0.001
Individual goal persistence	1.589	0.178	1.600	0.174	2.639	0.041	2.983	0.022	0.477	0.248	0.378	0.365
Individual reappraisal	2.398	0.048	2.466	0.041	3.275	0.014	3.049	0.022	0.873	0.038	0.943	0.025
Spouse goal persistence	−1.230	0.298	−1.166	0.322	−0.123	0.924	0.034	0.979	0.502	0.224	0.453	0.271
Spouse reappraisal	1.849	0.126	1.722	0.153	1.095	0.407	0.920	0.486	−0.127	0.762	−0.072	0.863
Interactions												
Age X individual reappraisal			0.246	0.057								
Rand-PHC X individual reappraisal							−0.183	0.062			0.055	0.069
Variance components												
Dyad level	22.062		23.136		28.484		30.614		4.435		4.410	
Individual level	64.803		65.967		76.510		73.428		6.574		6.538	
<i>R</i> ²												
Dyad level	0.29		0.29		0.34		0.33		0.16		0.17	
Individual level	0.04		0.07		0.22		0.25		0.16		0.17	
Overall	0.21		0.22		0.30		0.30		0.16		0.17	

Note: *B* = unstandardized regression coefficients.

indicated that individuals in poor health were less likely to report low levels of mental health if they also had stronger tendencies toward positive reappraisal. Spouses' goal persistence and positive reappraisal were not associated with MHI scores.

Of the individual and spouse control and reappraisal variables, only individual positive reappraisal was associated with life satisfaction, with greater tendencies toward reappraisal associated with higher life satisfaction. However tests of interactions also revealed that the physical health by individual positive reappraisal interaction approached significance. The interaction (shown in the lower panel of Figure 1) indicated that the positive association between physical health and life satisfaction was stronger among those with greater reappraisal tendencies.

Persistence in goal striving and positive reappraisal as predictors of social characteristics of ageing well

Results of the APIMs used to predict social indices of ageing well (social networks with friends and relatives and social engagement) are shown in Table 3. Results of the models did not reveal

significant direct associations between individual goal persistence or reappraisal, or spouse goal persistence and reappraisal with any of the three dependent variables at Step 1. However significant age by individual positive reappraisal interactions emerged in the prediction of social networks with friends, and social engagement (illustrated in Figure 2). The interactions indicated that positive reappraisal was related to greater social network availability with friends and social engagement among those at younger ages (around late midlife in this sample), while there was little association between reappraisal tendencies and the social outcomes at older ages. None of the interactions tested emerged as significant predictors of social networks with relatives (Step 2 not shown).

Discussion

The present study represents a first attempt to investigate associations of individuals' and their spouses' persistence in goal striving (an index of primary control) and positive reappraisal (an index of accommodation) with individual and social indices of

Figure 1. Interactions of age and positive reappraisal in the prediction of physical health (upper left panel), and interactions of physical health and positive reappraisal in the prediction of mental health (upper right panel) and life satisfaction (lower panel).

successful aging in a sample of midlife and older spousal dyads. It was hypothesized that goal persistence and positive reappraisal would be positively associated with indicators of ageing well and that negative associations of age and physical health with the successful aging indices would be buffered for those with strong tendencies toward goal persistence and reappraisal. The dyadic structure of the data also permitted examination of partner concordance in the indices of aging well, and the extent to which individuals' aging well outcomes were predicted by their spouses' tendencies toward goal persistence and positive reappraisal.

The results provided partial support for the notion that goal persistence and positive reappraisal facilitate positive aging. Individuals' goal persistence was significantly and positively associated with mental health, however it was not associated with the other aging well indices. Much of the research concerned with associations between control motivation and well-being in later life has focused on the role of *perceived* control in predicting physical and mental health outcomes (e.g., Lachman, 2006). It may be that such beliefs about the capacity to exert control remain an important component of well-being into older adulthood (Windsor et al., 2008), while primary control

Table 3. Associations of age, education, and individual and spouse goal persistence and reappraisal with social indices of aging well.

Independent variables	Dependent variables									
	Social networks– friends				Social networks– relatives				Social engagement	
	Step 1		Step 2		Step 1		Step 1		Step 2	
	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>
Constant	8.615		8.624		8.798		28.502		28.518	
Age	−0.041	0.222	−0.028	0.407	0.037	0.269	0.060	0.242	0.085	0.099
Female	0.128	0.719	0.110	0.754	0.413	0.182	1.669	<0.001	1.650	<0.001
Education										
Tertiary (Reference)										
High school	0.815	0.218	0.839	0.201	0.003	0.996	0.501	0.581	0.491	0.582
<High school	0.264	0.600	0.244	0.626	−0.060	0.900	−0.695	0.331	−0.732	0.298
Rand-PHC	0.036	0.100	0.042	0.051	0.043	0.031	−0.020	0.509	−0.008	0.798
Individual goal persistence	0.243	0.548	0.230	0.567	−0.310	0.448	0.275	0.661	0.253	0.684
Individual reappraisal	0.383	0.354	0.341	0.406	0.234	0.569	1.141	0.071	1.066	0.088
Spouse goal persistence	0.276	0.496	0.261	0.516	0.298	0.465	−0.330	0.599	−0.351	0.572
Spouse reappraisal	0.345	0.403	0.380	0.352	−0.083	0.839	1.011	0.109	1.069	0.086
Interactions										
Age X individual reappraisal			−0.095	0.024					−0.164	0.004
Variance components										
Dyad level	4.125		4.105		5.978		14.900		14.923	
Individual level	6.345		6.240		4.627		10.119		9.728	
<i>R</i> ²										
Dyad level	0.07		0.09		0.002		0.039		0.060	
Individual level	0.04		0.06		0.079		0.131		0.172	
Overall	0.06		0.08		0.016		0.059		0.084	

Note: *B* = unstandardized regression coefficients.

Figure 2. Interactions of age and positive reappraisal in the prediction of social networks with friends and social engagement.

related behaviors, as reflected in the measure of goal persistence used in the current study decrease in importance on account of reduced capacity to exert primary control, and increased proficiency in the use of

adaptive accommodation and compensation strategies. Age-related changes in motivation that result in a greater emphasis on social connectedness and a decreased emphasis on striving for future goals

(Carstensen, 2006) may also result in the importance of goal persistence for well-being outcomes declining in later life.

Associations between higher levels of individuals' positive reappraisal and better aging well outcomes were more consistently observed, with the main effect for positive reappraisal emerging as a significant predictor of each of the individual indices of successful aging – physical health, mental health and life satisfaction. Individual positive reappraisal was also implicated in several interactions with physical health and age in the prediction of aging well outcomes. Positive reappraisal appeared to act as a buffer in the relationships between age and physical health, and between physical and mental health, as indicated by interaction effects that approached significance. In these examples, older individuals were less likely to report poor physical health, and those in poor physical health were less likely to also report poor mental health if they had strong tendencies toward positive reappraisal.

An additional trend towards a significant interaction effect suggested a different pattern in the prediction of life satisfaction, where the positive association of physical health was stronger among those with greater tendencies toward positive reappraisal. This finding suggests that while reappraisal could play a buffering role in protecting against negative effects of physical health on emotional well-being (as indicated by the interaction described above), it could have a different influence on the cognitive processes that underlie more evaluative and objective representations of well-being as represented by life satisfaction. Ratings of global life satisfaction (a cognitive component of well-being; Diener, Suh, Lucas, & Smith, 1999) are likely to be less subject to the influence of current mood and arousal levels relative to mental health as assessed using the MHI. Under conditions of low arousal, the schemas that underlie reappraisal tendencies may be more likely to produce an enhanced recognition of the benefits of physical health for general well-being, and less likely to promote a potentially illusory (cf. Taylor & Brown, 1988) discounting of the negative effect of poor health on life satisfaction. Theories that explain the differential relationships of variables to different components of subjective well-being, and models that explain the processes underlying coping, have a relatively short history (Diener et al., 1999). Further empirical research and theory development is needed to better delineate the moderating effects of positive reappraisal and other accommodation strategies on associations between risk factors and different components of well-being, both in older adulthood and over the lifespan.

Interactions between individuals' positive reappraisal and age were evident in the prediction of social networks with friends and social engagement. In each case, positive reappraisal appeared to be associated with greater social involvement among those at relatively younger ages, while older participants did not

show appreciable differences in social involvement according to positive reappraisal tendencies. These findings could reflect motivational changes surrounding social relationships identified in socio-emotional selectivity theory (Carstensen, 2006) that are thought to occur in later life. Specifically, older adults may place a relatively greater emphasis on maintaining quality in social relations (as opposed to pursuing more future oriented goals) due to the increased salience of limited future time that occurs with advancing age. As a consequence, 'old-old' and 'oldest-old' adults may be motivated to develop and retain positive social relations irrespective of tendencies toward reappraisal. In contrast, the social relationships and social engagement of midlife, and 'young-old' adults may be more dependent on tendencies toward reappraisal and associated benefits to social relations that result from the capacity to change aspects of the self in order to meet the needs of others (Morling & Evered, 2006).

Finally, analyses that capitalized on the dyadic structure of the data to investigate shared variance in indices of aging well, and possible spouse effects of goal persistence, and reappraisal on successful aging yielded mixed results. The findings revealed a substantial level of partner concordance in characteristics of aging well, with 40–55% of the variance in the outcome measures of successful aging occurring at the dyad level. However contrary to hypothesis 4, multilevel analysis did not reveal significant associations between spouses' positive reappraisal and individuals' aging well outcomes. The high levels of partner concordance in aging well emphasize the importance of considering the role of social context in shaping outcomes for health and well-being in later life. However the results also suggest that where goal persistence and reappraisal strategies are concerned, it is primarily individual differences rather than spouse characteristics that are associated with successful aging. Further studies are needed to examine possible spousal interdependencies in the effects of alternative psychosocial and health-related characteristics on aging well.

The most consistent findings observed in the present study were the associations of individual tendencies toward positive reappraisal with higher scores on the individual indices of successful aging. These results highlight the importance of this accommodation strategy for physical and mental health and well-being in older adulthood. However positive reappraisal represents just one potentially adaptive means of maintaining or enhancing well-being in response to losses in the capacity to exercise primary control. Other cognitive accommodation processes such as downward social comparison, and dissolving commitments to previously important goals (Skinner, 2007), may also contribute to effective self-regulation in later life and should be considered in future studies of psychosocial correlates of successful aging. It is also pertinent to consider the extent to which positive reappraisal might be regarded as a key component of

more general individual differences constructs reflecting broad capacities for effective adaptation and self-regulation such as sense of coherence (Antonovsky, 1987), emotional complexity (e.g., Ong, Bergeman, Bisconti, & Wallace, 2006), and wisdom (Baltes & Smith, 2008). A more effective integration of existing theory in these areas could prove important in explicating the roles of primary control, accommodation, and other psychosocial resources in contributing to effective self-regulation and adaptation over the life course.

The results presented here should be interpreted in the context of a number of limitations. First the study was cross-sectional, and as a result inferences about the causal direction of associations between goal persistence, accommodative processes, and indices of aging well cannot be made. The study also included a relatively small sample size, which may have resulted in restrictions on the statistical power available to detect small but substantively meaningful associations. Participants were not randomly selected, and the sample was generally in good health and reported high levels of education. Some bias in participant self-selection may have resulted in a lower proportion of participants with poorer aging-related outcomes in our sample than might be observed in the general population. It is possible that any benefits to individuals that result from the characteristics of their spouse (such as tendencies toward positive reappraisal) might be most evident among individuals in poor health who are reliant on their spouse for assistance with day-to-day activities. Consequently, larger more representative samples are needed to establish a more definitive picture of spousal interdependencies in associations between psychosocial characteristics and aging well outcomes.

Conclusions

The present study provides important new insights concerned with (1) partner concordance in indices of aging well, and (2) associations of persistence in goal striving and positive reappraisal with aging well outcomes. The results highlight the adaptive value of positive reappraisal as a coping strategy used in response to loss of primary control in later life. Longitudinal studies of spousal dyads with domain specific measures of primary control and accommodation strategies are required to develop a more comprehensive understanding of the importance of both social context and psychosocial resources for successful aging.

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