4. RESULTS

The description of results is divided into two parts. In the first part, I will describe analyses of the data from the short-term longitudinal questionnaire study (study part 1), and in the second part, those of the diary phase (study part 2). To facilitate orientation, tables in the following sections and in the appendices indicate the time of variable measurement. The first and second measurement points of the short-term longitudinal questionnaire study are referred to as "T1" and "T2," and the diary phase, as "D." The appendices contain, among other information, detailed descriptions of all variables in the total sample, and in the subsamples of younger and older adults. They also show information on variable transformations and results of tests for age-group mean differences. In the following description of the analyses and results, I will give cross-references to the respective tables in the appendices.

4.1. Study Part 1: Short-Term Longitudinal Questionnaire Study

I will first describe analyses investigating differences in intergoal relations between younger and older participants. Then, I will present results pertaining to associations between intergoal relations and various facets of psychological well-being and self-reported goal progress. Following that, I will describe analyses relating exercise-specific intergoal conflict and facilitation to the participant's exercise behavior during the study interval.

4.1.1. Intergoal Relations in Younger and Older Adults

To investigate potential age-group differences in intergoal relations, I conducted the following series of analyses. First, I analyzed potential age-group differences in the various intergoal conflict and facilitation subscales. Following that, I investigated cross-sectional associations between intergoal conflict and facilitation and various other person and goal characteristics. Then, I analyzed whether the age-group differences in intergoal relations could be accounted for by initial age-group differences in the identified correlates ("rival predictors"). Finally, I performed cluster analyses on the intergoal conflict and facilitation subscales to explore potential age-group differences in the intergoal-conflict-by-facilitation configuration.

4.1.1.1. Age-Group Differences

How important were the various intergoal conflict and facilitation sources in the investigated sample? Were there differences in the subscale endorsements of younger and older participants? Figure 7 shows the subscale means per age group. Subscales are ordered by descending means to facilitate the evaluation of their relative importance.

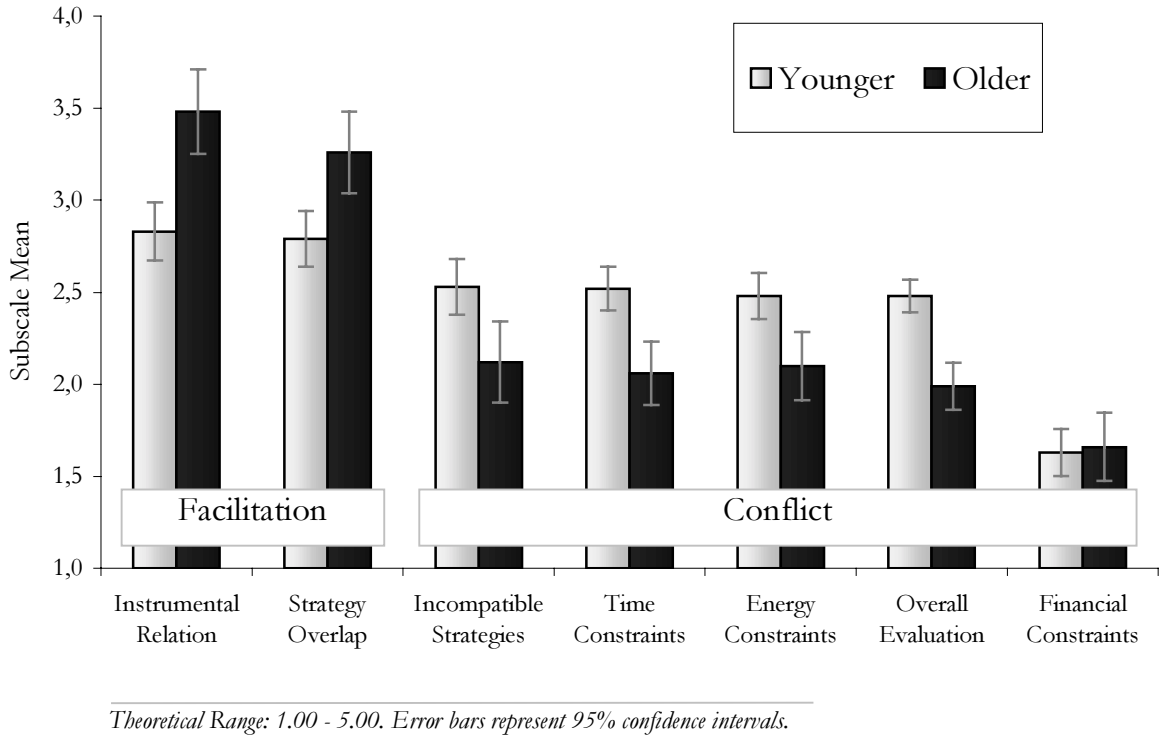


Figure 7. *Mean Scores of the Intergoal Conflict and Facilitation Subscales in Both Age Groups*

Using SPSS GLM REPEATED MEASURES, a 2 (age group) by 7 (subscale) repeated measures analysis of variance (ANOVA) on the scores of the seven subscales yielded a significant subscale main effect ($F(6, 138) = 53.56$, $p < .001$, $\eta^2 = .70$), and a significant subscale-by-age-group interaction ($F(6, 138) = 8.27$, $p < .001$, $\eta^2 = .27$) according to Wilks' Lambda.[38] Because the Mauchly test indicated a significant departure

[38] With one exception, subscale distributions approximated normal distributions satisfactorily in both age groups. The exception pertained to the subscale intergoal conflict due to financial constraints (for detailed descriptions of transformations and variables, see Appendix B, Table B 1). The Box-*M*-Test of homogeneity of variance-covariance matrices was significant ($F(28, 29063) = 1.97$, $p = .002$), however, at a level where significance tests in ANOVA are robust, even with unequal cell sizes (Tabachnick & Fidell, 1996).

from sphericity (i.e., from homogeneity of variances of pairwise differences between variables, Crowder & Hand, 1991), and in response to the slight departures from assumptions underlying repeated measures ANOVA described in footnote 38, I applied the conservative Greenhouse-Geisser correction to the tests of significance. This, however, did not alter the results (critical value for an alpha level of .05: $F(2.80, 64.45) = 2.81$).

To understand the subscale-by-age-group interaction, I conducted follow-up analyses in two steps: First, I compared the mean scores of the various intergoal conflict and facilitation subscales *within* age groups. Second, I examined potential differences in the subscale mean scores *between* age groups.

(1) Within-age-group comparisons. Using SPSS GLM REPEATED MEASURES, I conducted, separately in each age group, repeated measures ANOVAs on the intergoal conflict and facilitation subscales. Analyses revealed significant effects of the within-subjects factor in both the younger and the older subsample ($F(6, 93) = 51.16$, $p < .001$, $\eta^2 = .77$ and $F(6, 40) = 16.54$, $p < .001$, $\eta^2 = .71$, respectively). These effects remained significant after applying the Greenhouse-Geisser correction for departure from sphericity (critical values for an alpha level of .05: $F(3.25, 50.41) = 2.72$ and $F(2.17, 14.48) = 3.62$, respectively).

Table 15 shows the significances of paired-sample *t* tests contrasting the subscales in the corresponding lines and columns of the table. Values above the diagonal represent the results in the younger age group, values below, the results in the older one. With five contrasts per subscale, I adjusted the significance level to $p < .01$. The results are most easily interpreted by referring to the subscale means shown in Figure 7 on page 120.

The patterns of within-group differences in subscale means were highly similar in the younger and older subsamples. Younger as well as older adults reported significantly more intergoal facilitation (due to both overlap in goal attainment strategies and instrumental intergoal relations) than intergoal conflict from various sources.[39] There was only one exception. In the younger subsample, the difference between overlap and incompatibility in goal attainment strategies was not statistically significant. In both age groups, there were no significant mean differences between the two intergoal facilitation subscales. With respect to the intergoal conflict subscales, there were no significant mean differences among the subscales energy constraints, time constraints, and incompatible

[39] Note that this finding is not trivial because the intergoal conflict and facilitation subscales were not correlated (see 3.1.3.2).

goal attainment strategies in both age groups. Intergoal conflict due to financial constraints was the least frequently reported conflict source. In both age groups, its mean score was significantly smaller than that of all other subscales.

Table 15. *Differences in Subscale Means in the Younger (Above Diagonal) and Older (Below Diagonal) Subsamples: Significance of Paired-Sample t–Tests* [40]

	Conflict				Facilitation	
	I	II	III	IV	I	II
Conflict						
T1 Time constraints		**	n.s.	n.s.	**	**
T1 Financial constraints	**		**	**	**	**
T1 Energy constraints	n.s.	**		n.s.	**	**
T1 Incompatible strategies	n.s.	**	n.s.		*	**
Facilitation						
T1 Strategy overlap	**	**	**	**		n.s.
T1 Instrumental relations	**	**	**	**	*	

n.s. $p > .05$; * $p < .05$; ** $p < .01$ (alpha adjustment for five contrasts per subscale)[41]

(2) Between-age-group comparisons. A multivariate analysis of variance on the seven subscales, conducted with SPSS GLM MULTIVARIATE, yielded a significant multivariate age-group effect according to Wilks' Lambda ($F(7, 137) = 7.52$, $p < .001$, $\eta^2 = .29$). Table 16 shows results of univariate follow-up analyses (ANOVAs) with alpha-level adjustment for multiple testing. All intergoal conflict and facilitation subscales—with the exception of conflict due to financial constraints—showed significant age-group differences. Compared to older adults, younger adults reported significantly more intergoal conflict due to time and energy constraints, as well as due to incompatible goal attainment strategies. Furthermore, younger adults reported significantly less intergoal facilitation due to overlap in goal attainment strategies and to instrumental relationships between goals than did older adults. In addition, younger adults' overall evaluations of intergoal relations with the modified Striving Instrumentality Matrix were significantly less favorable than those of older adults. An exception to these results is that there were no significant age-

[40] The table does not show contrasts involving the Striving Instrumentality Matrix because differences in response formats (bipolar versus unipolar) prevent meaningful interpretation of results.

[41] The indication of *p*-values smaller than .05 (*) serves descriptive purposes. I regard results as significant if they meet the multiple-testing adjusted criterion of significance (**).

group mean differences in the subscale intergoal conflict due to financial constraints. This also was the conflict source of least relevance in the investigated sample.

Table 16. *Univariate Follow-Up Analyses of Age-Group Mean Differences of the Intergoal Conflict and Facilitation Subscales*

Subscale	Mean (SE) Younger Adults	Older Adults	*F*	df	*p* [(a)]	η^2
Conflict						
T1 Time constraints	2.52 (.06)	2.06 (.09)	19.20	1	.00	.12
T1 Financial constraints	1.63 (.06)	1.66 (.10)	.08	1	.78	.00
T1 Energy constraints	2.48 (.06)	2.10 (.11)	11.49	1	.00	.07
T1 Incompatible strategies	2.53 (.08)	2.12 (.11)	9.61	1	.00	.06
Facilitation						
T1 Strategy overlap	2.79 (.07)	3.26 (.14)	11.60	1	.00	.08
T1 Instrumental relations	2.83 (.07)	3.48 (.15)	21.88	1	.00	.13
Overall Evaluation						
T1 Modified SIM [(b)]	2.48 (.04)	1.99 (.08)	38.42	1	.00	.21

(a) Adjustment for seven comparisons: $p < .01$

(b) Striving Instrumentality Matrix, higher scores indicate more unfavorable intergoal relations

Did the observed pattern of mean differences result from the specific goal context chosen for this study? That is, did younger and older adults differ in the nature of inter-goal relations because the shared goal of starting to exercise had a higher conflict and lower facilitation potential in younger than in older adults? To rule out such a possibility, I repeated the above described analyses after exclusion of the exercise-specific intergoal conflict and facilitation responses. The main question was whether the observed age-group differences could be replicated if only the relations among the three goals participants reported *besides* exercising were taken into account. Aggregation of conflict and facilitation scores followed the procedure described before, except that item responses concerning relations between the exercise goal and the three other goals were excluded. These analyses replicated the pattern of mean differences (within and across age groups) described above (for a detailed description of the analyses, see Appendix C). Accordingly, the observed age-group differences in inter-goal relations did not result from including the shared goal of starting to exercise.

Did the observed age-group differences in intergoal relations result from initial age-group differences in other characteristics? I addressed this question in two steps: First, I identified potential rival predictors, that is, characteristics that correlated with either the intergoal conflict or the intergoal facilitation composite at the .05 level. In the second step, I conducted sequential (hierarchical) regression analyses to investigate whether including age group as a predictor significantly added to the prediction of intergoal conflict and facilitation above and beyond the contribution of the identified rival predictors. I will describe these analyses below. They were conducted with the intergoal conflict and facilitation scores obtained in the total set of four goals. Furthermore, because the intergoal conflict subscales were highly correlated as were the intergoal facilitation subscales (see 3.1.3.2), and because I had not hypothesized differential effects of the various specific sources of intergoal conflict and facilitation, I used the conflict and facilitation composite scores (rather than single subscales) for most of the analyses reported below.[42]

4.1.1.2. Correlates of Intergoal Conflict and Facilitation

Who has conflicting, and who has facilitative goals? I had hypothesized that (a) habitual strategies in coordinating the pursuit of multiple goals and (b) the resource intensity of selected goals (i.e., the amount of time, energy, and money necessary for the accomplishment of one's goals) are related to the nature of intergoal relations. If this is the case, can the observed age-group differences in intergoal conflict and facilitation be ex-

[42] Repeating the analyses described above with the intergoal conflict and facilitation composite scores (rather than the single subscales) yielded the same pattern of age-group differences (for detailed descriptions of variables and transformations, see Appendix B, Table B 2). A 2 (between subjects: young versus old) by 2 (within-subjects: conflict versus facilitation composite) repeated measures analysis of variance yielded a significant main effect of the within-subjects factor (conflict versus facilitation: $F(1, 143) = 73.77$, $p < .001$, $\eta^2 = .34$), and a significant interaction ($F(1, 143) = 33.27$, $p < .001$, $\eta^2 = .19$) according to Wilks' Lambda. Note that the dependent variables approximated normal distribution satisfactorily. The Box-*M*-Test of homogeneity of variance-covariance matrices was significant ($F(3, 174638) = 5.24$, $p = .001$), however, at a level where significance tests in analyses of variance are robust (Tabachnick & Fidell, 1996). Paired-sample *t* tests, conducted separately in both age groups, revealed that younger ($t(98) = 3.03$, $p < .01$) as well as older participants ($t(45) = 6.68$, $p < .001$) reported significantly more intergoal facilitation than intergoal conflict. A multivariate analysis of variance conducted on the conflict and facilitation composites yielded a significant multivariate age-group effect according to Wilks' Lamdba ($F(2, 142) = 16.52$, $p < .001$, $\eta^2 = .19$). Univariate follow-up analyses (ANOVAs) showed that younger participants reported significantly more total intergoal conflict ($F(1) = 11.86$, $p < .001$, $\eta^2 = .08$), and significantly less total intergoal facilitation ($F(1) = 8.18$, $p < .001$, $\eta^2 = .13$) than did older participants. I obtained the same pattern of results when excluding the exercise-specific intergoal relations from the aggregation of the composite scores (for a detailed description of these analyses, see Appendix C).

plained by age-group differences in these characteristics? The following analyses addressed this question and explored correlations with additional characteristics that might explain the observed age-group differences in intergoal relations. These exploratory analyses included the person's tendency to (c) respond in socially desirable ways, (d) tolerate ambiguous situations, (e) engage in the life-management strategies specified by the SOC-model, the person's (f) personality traits, and the average degree of (g) internal, and (h) external control over the attainment of the four reported goals. All of these potential correlates were assessed at T1. Table B 3 in Appendix B contains detailed descriptions of these variables, data transformations, and age-group differences.

Table 17 shows Pearson's correlations between the intergoal conflict and facilitation composite scores and the various characteristics mentioned above.[43] To assess potential age-group differences, I used SPSS UNIVANOVA to test the following model for each investigated bivariate association: *Person[Goal] Characteristic = Age group + Conflict [Facilitation] + Age group * Conflict [Facilitation]*. Only one model yielded a significant interaction at the .05 level, indicating a nonrandom age-group difference in the correlation between intergoal conflict and the average internal control over goal attainment ($p = .002$). In this case, Table 17 also shows the correlations separately for both age groups.

Contrary to my hypotheses, the considered habitual strategies in coordinating multiple goals (i.e., prioritizing/sequencing, compromising, and distancing) were independent of intergoal conflict and facilitation.

In support of my prediction was that individuals with highly resource-demanding goals did tend to report more intergoal conflict than participants with less resource-demanding goals. This correlation, although being relatively small ($r = .26$), remained significant according to the alpha-level adjustment for multiple testing ($p < .003$ for 17 correlations per composite). There was no relationship between intergoal facilitation and the resource intensity of reported goals.

[43] Variable distributions approximated normal distribution satisfactorily as indicated by absolute ratios of skewness and kurtosis to their respective standard errors being smaller than two. Exceptions to this were the variables elective selection, compensation, and average internal control over goal attainment. The departures from normality in these three variables were, however, slight and therefore tolerated (see Appendix B, Table B 3).

Table 17. *Associations between Intergoal Facilitation and Conflict and Several Person and Goal Characteristics: Pearson's Correlations at T1*[44]

Scale		Facilitation (T1) *r*	Conflict (T1) *r*
A) Person characteristics			
T1	Social desirability	.09 n.s.	-.11 n.s.
T1	Ambiguity intolerance	-.04 n.s.	.07 n.s.
Coordinating multiple goals			
T1	Prioritizing/Sequencing	.08 n.s.	-.14 n.s.
T1	Compromising	-.07 n.s.	-.18 *
T1	Distancing	-.07 n.s.	-.03 n.s.
Personality Traits			
T1	Neuroticism	-.07 n.s.	.04 n.s.
T1	Extraversion	-.05 n.s.	.12 n.s.
T1	Openness to experience	.00 n.s.	.04 n.s.
T1	Conscientiousness	.12 n.s.	-.08 n.s.
T1	Agreeableness	-.02 n.s.	-.25 **
SOC – Strategies			
T1	Elective selection	.11 n.s.	-.02 n.s.
T1	Loss-based selection	.04 n.s.	.07 n.s.
T1	Optimization	.03 n.s.	.06 n.s.
T1	Compensation	.20 *	-.20 *
B) Goal characteristics			
T1	Resource intensity	.08 n.s.	.26 **
T1	Internal control	.21 *	-.11 n.s. (a)
T1	External control	.08 n.s.	.17 *

n.s. $p > .05$; * $p < .05$; ** $p < .003$ (alpha-level adjustment for 17 correlations per composite scale)[45]
Notes. All correlations were tested for age-group differences. Unless otherwise specified, they were not significant (i.e., $p > .05$).
(a) Significant age-group difference ($p = .002$): $r_{young} = .09$ n.s.; $r_{old} = -.40$* ($p = .006$)

The conducted exploratory analyses revealed that intergoal relations were independent of most of the additionally considered person and goal characteristics. The only correlations that remained significant after adjusting the alpha level for multiple testing involved the personality trait agreeableness and the average level of internal control over

[44] Where appropriate, transformed items were used for analyses (see Appendix B, Table B 3). Plus and minus signs of correlations involving reflected variables were reversed before reporting to fit the original scaling.

[45] The indication of *p*-values smaller than .05 (*) serves descriptive purposes. I regard results as significant if they meet the multiple-testing adjusted criterion of significance (**).

goal attainment in the older subsample. More agreeable individuals tended to report less intergoal conflict than did less agreeable participants (r = -.25). Older participants with high internal control over goal attainment tended to report less intergoal conflict than older participants with less internal control over goal attainment did. The size of this association was moderate (r = -.40), and its significance with p = .006 only slightly beyond the multiple-testing-adjusted criterion.

4.1.1.3. Control Analyses

To be conservative in testing the stability of the observed age-group differences in intergoal relations, I considered all variables with significant correlations to either intergoal conflict or intergoal facilitation at the .05 level as potential rival predictors (see Table 17). These included the following variables: (a) tendency to seek and accept compromises when encountering difficulties in pursuing multiple goals, (b) agreeableness, (c) SOC-strategy compensation, (d) average resource intensity of reported goals, (e) average internal, and (f) average external control over goal attainment.

Table 18. *Sequential (Hierarchical) Multiple Regression of Rival Predictors and Age Group on Intergoal Facilitation and Conflict*

	Facilitation (T1)			Conflict (T1)		
	R	R^2	ΔR^2	R	R^2	ΔR^2
Step I:						
Rival predictors	.34 **	.12		.42 **	.17	
Step II:						
Age group added	.48 **	.23	.11 **	.49 **	.24	.07 **

** p < .01

Using SPSS REGRESSION, I conducted sequential (hierarchical) multiple regression analyses to test how well intergoal facilitation and intergoal conflict could be predicted by age group while controlling for age-group differences in the rival predictors. In the first step, all rival predictors were entered simultaneously into the models. In the second step, age group was added to the prediction.[46] Table 18 shows the multiple correlation (R), the percentage of the variance explained (R^2), and the change in the percentage

[46] Multivariate analysis of covariance (MANCOVA) could not be conducted because the assumption of homogeneity of regression was violated in one instance (i.e., because there was an age-group difference in the bivariate relation between internal control over goal attainment and intergoal conflict). The regression format of addressing this analysis of covariance problem was therefore more appropriate (see Tabachnick & Fidell, 1996).

of the variance explained after adding age group to the prediction (ΔR^2). After controlling for the six potential rival predictors, age group still significantly contributed to the prediction of intergoal facilitation (additional explanation of 11% of the variance) and of intergoal conflict (additional explanation of 7% of the variance).

4.1.1.4. Cluster-Analytic Exploration of Age-Group Differences

Because intergoal conflict and facilitation were independent, I conducted cluster analyses—aimed at identifying potentially differential patterns of within-person *conflict-facilitation-configurations*—to further explore the observed age-group differences in intergoal relations. For determining the cluster solution, I applied a two-step procedure (Milligan & Cooper, 1987). In the first step, I used hierarchical cluster analysis to determine the number of clusters. This solution was optimized in the second step by applying a nonhierarchical technique with the cluster centers from the hierarchical results as initial seed points.

Step 1: Hierarchical cluster analysis. Applying Ward's method and squared Euclidean distance, I conducted hierarchical cluster analyses on the seven intergoal conflict and facilitation subscales using SAS CLUSTER and SPSS CLUSTER. I applied both statistical packages in this instance to take advantage of the various criteria for determining the number of clusters (i.e., pseudo F and pseudo t^2 in SAS, and residual sum of squares in SPSS; see explanations in Table 19 for a description of the stopping rules). All obtained criteria consistently favored a solution with three clusters. Table 19 gives an overview of the percentages of the variance explained and the stopping criteria obtained for the six- to one-cluster solutions.

Step 2. Optimizing the three-cluster solution. Using SPSS QUICK CLUSTER, I applied nonhierarchical (k-means) clustering to optimize the three-cluster solution using the cluster centers from the hierarchical analysis (obtained in SPSS CLUSTER) as initial seed points. The three obtained clusters included $n = 24$, $n = 51$, and $n = 70$ cases. Using SPSS GLM MULTIVARIATE, a multivariate analysis of cluster differences on the seven intergoal conflict and facilitation subscales (clustering variables) yielded a significant main effect for cluster according to Wilks' Lambda ($F(14, 272) = 37.61$, $p < .001$, $\eta^2 = .66$).[47] Table 20 shows the results of univariate follow-up analyses (ANOVAs and pairwise comparisons using t tests) with alpha adjustment for inflated Type I error. Clusters I ($n = 24$)

[47] The Box-M-Test ($F(56,16921) = 1.65$, $p = .002$) indicates a violation of the assumption of homogeneity of variance-covariance matrices, however, at a level where significance tests in analyses of variance are robust (Tabachnick & Fidell, 1996).

and II (n = 51) did not differ significantly in any of the four intergoal conflict scales. Cluster III (n = 70) had, on each of the four intergoal conflict scales, significantly higher mean scores than the other two clusters. On the two intergoal facilitation scales, cluster I consistently showed the highest, and cluster II, the lowest mean scores, while cluster III took an intermediate position (all differences significant). With respect to the overall evaluation of intergoal relations with the Striving Instrumentality Matrix, participants in cluster I evaluated the relations among their goals significantly more favorably than did participants in clusters II and III, who did not differ significantly from another.

Table 19. *Hierarchical Cluster Analyses of the Intergoal Conflict and Facilitation Subscales: Variance Explained and Stopping Criteria for the Six- to One-Cluster Solutions*

Solution *n* Cluster	Variance Explained Semipartial R^2 (a)	R^2 (b)	Criteria for Determination of Cluster Number pseudo *F* (c)	pseudo t^2 (d)	Residual Sum of Squares (e)
6	.04	.63	46.9	11.6	186.77
5	.04	.59	50.1	19.3	206.20
4	.04	.55	56.7	21.0	227.37
3	.08	.46	**61.5**	27.1	268.80
2	.20	.26	50.6	**55.9**	**370.36**
1	.26	.00	.	50.6	501.53

(a) Decrease in the proportion of variance accounted for by this step (i.e., joining of two clusters)

(b) Proportion of variance accounted for by the clusters

Stopping rules:

(c) Find largest values (SAS Institute Inc., 1999)

(d) Read down the column, find first value markedly larger than the previous value, and move back up by one solution (SAS Institute Inc., 1999)

(e) Represents sum of squared distances of cluster members from cluster centroid. Read down the column, find first value markedly larger than the previous value, and move back up by one solution (Bortz, 1993)

Table 20. *Clustering Variable Profiles: Cluster Size, Means and Standard Errors, and Tests of Differences Between Cluster Means (ANOVAs and Significance of t Tests)*

Clustering Variable		*n*	*M (SE)*	Univariate *F* and Pairwise Comparisons		
A. Conflict Subscales						
T1	*Time Constraints*					$F(2) = 65.29^{**}$, $\eta^2 = .48$
	Cluster I	24	1.84 (.10)		I	II
	Cluster II	51	2.02 (.07)	II	n.s.	
	Cluster III	70	2.81 (.05)	III	**	**
T1	*Financial Constraints*					$F(2) = 26.46^{**}$, $\eta^2 = .27$
	Cluster I	24	1.25 (.07)		I	II
	Cluster II	51	1.35 (.05)	II	n.s.	
	Cluster III	70	1.99 (.08)	III	**	**
T1	*Energy Constraints*					$F(2) = 56.43^{**}$, $\eta^2 = .44$
	Cluster I	24	1.89 (.14)		I	II
	Cluster II	51	1.96 (.06)	II	n.s.	
	Cluster III	70	2.82 (.06)	III	**	**
T1	*Incompatible Strategies*					$F(2) = 79.84^{**}$, $\eta^2 = .53$
	Cluster I	24	1.95 (.13)		I	II
	Cluster II	51	1.82 (.07)	II	n.s.	
	Cluster III	70	2.98 (.06)	III	**	**
B. Facilitation Subscales						
T1	*Strategy Overlap*					$F(2) = 97.24^{**}$, $\eta^2 = .58$
	Cluster I	24	4.12 (.12)		I	II
	Cluster II	51	2.34 (.07)	II	**	
	Cluster III	70	2.97 (.06)	III	**	**
T1	*Instrumental Relations*					$F(2) = 93.35^{**}$, $\eta^2 = .57$
	Cluster I	24	4.38 (.10)		I	II
	Cluster II	51	2.48 (.08)	II	**	
	Cluster III	70	2.98 (.07)	III	**	**
C. Overall Evaluation						
T1	*Modified SIM* [a]					$F(2) = 69.16^{**}$, $\eta^2 = .49$
	Cluster I	24	1.50 (.09)		I	II
	Cluster II	51	2.44 (.05)	II	**	
	Cluster III	70	2.50 (.05)	III	**	n.s.

n.s. $p > .05$; ** $p < .002$ (alpha adjustment for 21 repeated analyses)

(a) SIM = Striving Instrumentality Matrix, higher scores indicate more unfavorable evaluations of inter-goal relations

Cluster description in terms of the intergoal conflict and facilitation composite scores. Because the three clusters evinced identical patterns of mean differences in all four conflict and in both facilitation subscales, they can be described and labeled in terms of their configuration on the conflict and facilitation *composites* (see Figure 8 and Table 21). Participants grouped in cluster I reported the most integrated intergoal relations, that is, little intergoal conflict and high intergoal facilitation. Participants in cluster II also reported little conflict (no significant difference to cluster I), but also few positive intergoal relations (i.e., facilitation). Participants in cluster III, finally, tended to report comparatively high levels of intergoal conflict. In terms of intergoal facilitation, they took an intermediate position between clusters I and II. The three clusters can thus, in a necessarily simplifying manner, be labeled as "low conflict, high facilitation" (cluster I), "low conflict, low facilitation" (cluster II), and "high conflict, moderate facilitation" (cluster III).

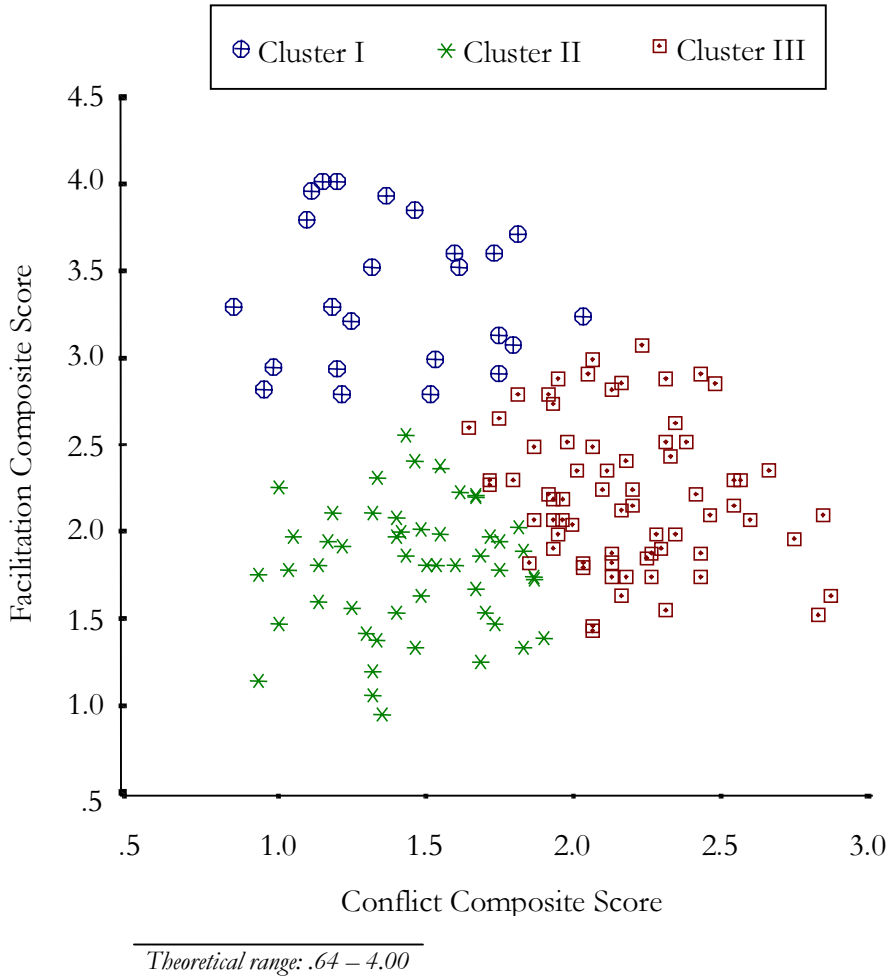


Figure 8. *Intergoal-Conflict-by-Facilitation Scatterplot: Visualization of Cluster Membership*

Table 21. *Clustering Profiles on the Intergoal Conflict and Facilitation Composites: Cluster Size, Means and Standard Errors, and Tests of Differences between Cluster Means (ANOVAs and Significance of t Tests)*

	n	*M (SE)*	Univariate *F* and Pairwise Comparisons		
Conflict Composite Score				*F(2) = 126.76**, η^2 = .64*	
Cluster I	24	1.40 (.06)		I	II
Cluster II	51	1.45 (.04)	II	n.s.	
Cluster III	70	2.18 (.03)	III	**	**
Facilitation Composite Score				*F(2) = 122.79**, η^2 = .64*	
Cluster I	24	3.36 (.09)		I	II
Cluster II	51	1.78 (.05)	II	**	
Cluster III	70	2.20 (.05)	III	**	**

n.s. $p > .05$; ** $p < .008$ (alpha adjustment for six repeated analyses)
Note. Multivariate cluster difference $F(4, 282) = 123.74$, $p = .00$, $\eta^2 = .64$ (Box-*M*-Test: $F(6,49720) = .60$, $p = .73$)

Age-group differences in the likelihood of cluster membership. Did younger and older participants differ in their likelihood of belonging to each of the three clusters? Table 22 shows the numbers and percentages of younger and older adults in each of the three clusters (see also Figure 9).

Table 22. *Age-Group Differences in the Frequency of Cluster Membership*

			Younger Subsample		Older Subsample		Age-group difference? [a]
	Conflict	*Facilitation*	*n*	*%*	*N*	*%*	*p*
Cluster I	"low"	"high"	7	7.1	17	37.0	**
Cluster II	"low"	"low"	36	36.4	15	32.6	n.s.
Cluster III	"high"	"moderate"	56	56.6	14	30.4	**

n.s. $p > .05$; ** $p < .004$ (alpha adjustment for six repeated single cell tests)
(a) Fuchs-Kennett test (testing age-group differences in frequency of cluster membership)

There was a significant relationship between age group and cluster membership ($\chi^2(2) = 21.52$, $p < .01$). Follow-up analyses with the Fuchs-Kennett test (Fuchs-Kennett-Ausreißer-Einfeldertest; see Bortz & Lienert, 1998) showed that this relationship resulted from differential probabilities for younger and older adults to belong to clusters I and III. Older participants were significantly more likely to be members of cluster I ("low conflict,

high facilitation") than were younger participants (37% versus 7.1%). Younger adults, in contrast, were significantly more likely to belong to cluster III ("high conflict, moderate facilitation") than were older participants (56.6.% versus 30.4%). Older adults were about equally distributed in all three clusters ($\chi^2(2, n = 46) = .31$, n.s.), which was not the case for the younger participants ($\chi^2(2, n = 99) = 36.78, p < .001$; see Figure 9). Pairwise comparisons of the frequencies of cluster membership within the younger subsample revealed that significantly fewer younger participants were members of cluster I ("low conflict, high facilitation") than of cluster II ("low conflict, low facilitation") and cluster III ("high conflict, moderate facilitation;" $\chi^2(1, n = 63) = 38.12, p < .001$ and $\chi^2(1, n = 43) = 19.56, p < .001$, respectively). Younger adults furthermore tended to be more often members of cluster III ("high conflict, moderate facilitation") than of cluster II ("low conflict, low facilitation; $\chi^2(1, n = 92) = 4.34, p < .05$). This difference, however, did not remain significant according to the alpha adjustment for multiple testing (i.e., $p > .02$, critical value for three repeated analyses).

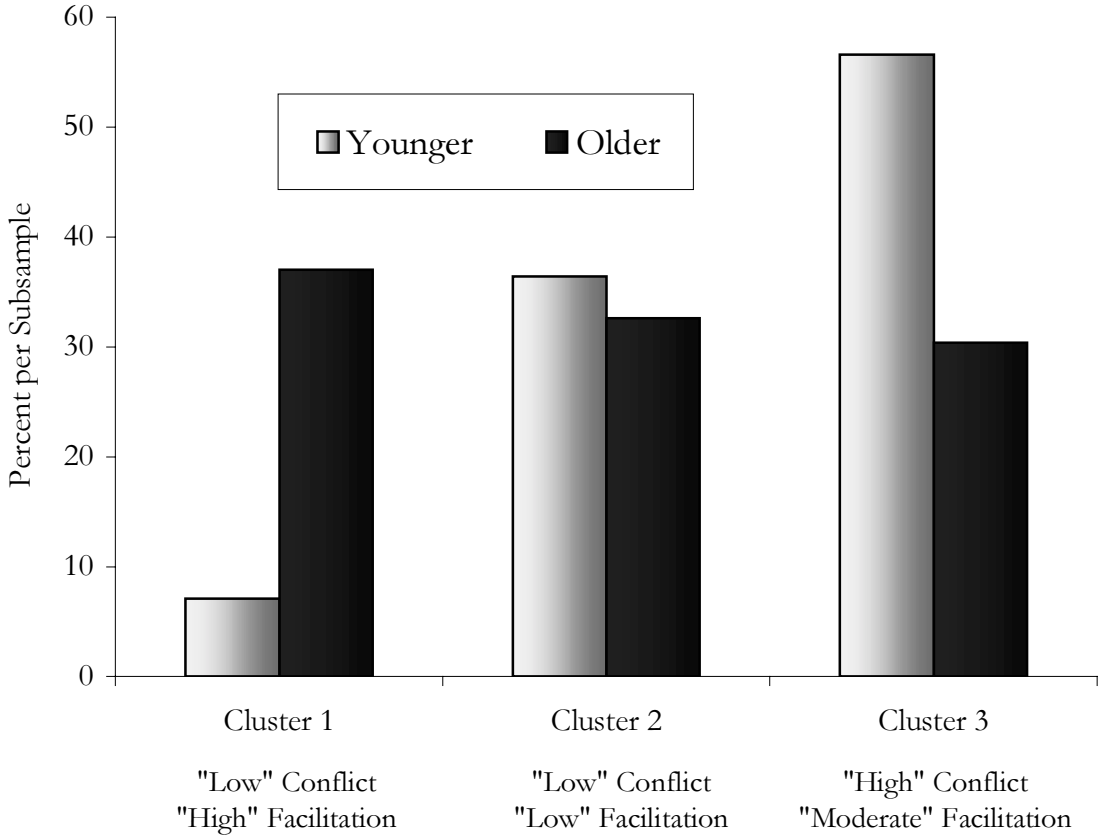


Figure 9. *Percentages of Younger and Older Participants in the Three Clusters*

In summary, taking an exploratory cluster-analytic approach, I identified three groups with different within-person configurations of intergoal conflict and facilitation: a group of $n = 24$ participants who reported low conflict and high facilitation, a group of $n = 51$ participants who reported both low conflict and low facilitation, and a group of $n = 70$ participants who reported high conflict and moderate facilitation. Older adults were about equally distributed in all three clusters. Younger adults, in contrast, were less often members of cluster I (low conflict, low facilitation) than of the other two clusters. There was a marginally significant trend within the younger adults to be most frequently assigned to cluster III ("high conflict, low facilitation"). The observed age-group difference can thus be specified in terms of the intergoal-conflict-by-facilitation configuration. Compared to younger adults, older adults were more likely to report very integrated intergoal relations (i.e., to belong to cluster I), and less likely to report high intergoal conflict (i.e., to belong to cluster III).

4.1.2. Intergoal Relations and Subjective Well-Being

How happy and satisfied are people with varying levels of intergoal conflict and facilitation? Four different facets of subjective well-being were assessed at both measurement points: (a) positive psychological functioning (Ryff & Keyes, 1995), (b) habitual emotional well-being (i.e., the average frequency of positive and negative affect during the preceding four months), (c) life satisfaction (aggregated across past, current, and prospective life satisfaction, and desire for change in various life domains), and (d) goal-specific satisfaction.[48]

Table 23 shows the bivariate and multiple correlations between the intergoal conflict and facilitation composites and the various well-being indicators obtained with SPSS CORRELATION and SPSS REGRESSION.[49] To check for potential age-group differences in bivariate associations, I tested the following models using SPSS UNIANOVA: *SWB Indicator = Age group + Conflict [Facilitation] + Age group * Conflict [Facilitation]*. Two of the models yielded a significant interaction at the .05 level, indicating that the bivariate association differed between age groups. In these cases, Table 23 also shows results of analyses conducted separately in both age groups.

[48] The participants' subjective well-being varied within a nonpathological range. Mean scores indicated a moderate to rather high subjective well-being in the younger and older participants (see Appendix B, Table B 4 and Table B 5 for detailed descriptions of data distributions, transformations, correlations, and age-group differences).

[49] All variables approximated normal distribution (see Appendix B, Table B 4).

In order to test whether the associations between intergoal conflict or facilitation and the various indicators of subjective well-being depended on the conflict-by-facilitation configuration, I tested the following multiple regression models: *SWB Indicator = Conflict + Facilitation + Conflict * Facilitation*. Where age-group differences in bivariate relations were involved, I obtained the models separately in both age groups. Because these analyses revealed no significant interactions at the .05 level, the multiple correlations reported in Table 23 are results of the more parsimonious models without the interaction.

Table 23. *Cross-Sectional and Longitudinal Associations Between Intergoal Conflict and Facilitation and Indicators of Subjective Well-Being: Bivariate (Pearson's) and Multiple Correlations*

	Facilitation (T1) Bivariate *r*	Conflict (T1) Bivariate *r*	Multiple *R*
Positive Psychological Functioning (Ryff Scales)			
T1 (*N* = 145)	.11 n.s.	-.23 **	.25 *
T2 (*N* = 142)	-.02 n.s. (a)	-.05 n.s.	.05 n.s. (a)
Emotional Well-Being			
Positive Affect			
T1 (*N* = 145)	.06 n.s.	-.20 * (b)	.21 * (b)
T2 (*N* = 142)	-.11 n.s.	-.12 n.s.	.15 n.s.
Negative Affect			
T1 (*N* = 145)	.02 n.s.	.25 **	.25 * (*p* = .009)
T2 (*N* = 142)	-.07 n.s.	.16 *	.17 n.s.
Life Satisfaction (Global)			
T1 (*N* = 145)	.00 n.s.	-.19 *	.19 n.s.
T2 (*N* = 142)	.07 n.s.	-.12 n.s.	.14 n.s.
Goal-Specific Satisfaction			
T1 (*N* = 145)	.02 n.s.	-.24 **	.24 *
T2 (*N* = 142)	.15 *	-.22 **	.26 * (*p* = .008)

n.s. $p > .05$; * $p < .05$; ** $p < .005$ (alpha adjustment for 10 repeated analyses)[50]

Note. All correlations were tested for age-group differences. Unless otherwise specified, they were not significant (i.e., $p > .05$).

(a) Significant age-group difference ($p = .02$): r_{young} = -.15 n.s.; r_{old} =.30*; multiple R_{young} = .15 n.s.; multiple R_{old} = .30, n.s.

(b) Significant age-group difference ($p = .02$): r_{young} = -.01 n.s.; r_{old} =-.40**; multiple R_{young} = .03 n.s.; multiple R_{old} = .40*

[50] The indication of *p*-values smaller than .05 (*) serves descriptive purposes. I regard results as significant if they meet the multiple-testing adjusted criterion of significance (**).

The participants' subjective well-being at both measurement points was independent of the level of perceived *positive* intergoal relations (i.e., intergoal facilitation). In contrast, participants with more *conflicting* goals reported lower well-being on three of the five measures at the first measurement point: They reported lower levels of positive psychological functioning, a higher frequency of negative affect during the preceding four months, and less satisfaction with their goals ($r \leq .25$). Longitudinally, only the correlation between intergoal conflict and goal-specific satisfaction ($r = -.22$) remained significant according to the adjusted alpha criterion.[51]

In sum, the participants' subjective well-being at both measurement points was independent of intergoal facilitation. In contrast, intergoal conflict was at the time of its assessment negatively associated with several goal-unspecific and goal-specific facets of psychological well-being. Longitudinally, intergoal conflict was only predictive of goal-specific satisfaction. Participants with more conflicting goals at T1 tended to be less satisfied with these goals after four months. Albeit being small, all observed significant correlations remained so after separately controlling for potential rival predictors (see Appendix D, Table D 1).

4.1.3. Intergoal Relations and Self-Reported Goal Progress

Did the nature of intergoal relations predict the degree to which participants subjectively progressed toward their goals during the months between both questionnaire sessions? To investigate this question, I averaged the participant's ratings of subjective goal progress at T2 across all four goals and determined associations to at T1 reported levels of intergoal conflict and facilitation using correlation and regression analyses.[52]

To check for potential age-group differences in bivariate associations, I used SPSS UNIANOVA to test the models: *Goal Progress = Age Group + Conflict [Facilitation] + Age group * Conflict [Facilitation]*. A significant interaction ($p = .01$) showed that the bivariate

[51] I furthermore tested whether intergoal conflict and facilitation predicted *change* in subjective well-being during the study interval. Using SPSS REGRESSION, I conducted sequential (hierarchical) multiple regression analyses to test how well the various facets of subjective well-being at T2 could be predicted by intergoal conflict and facilitation while controlling for the initial level of subjective well-being at T1. In the first step, the respective facet of well-being at T1 was entered into the model. In the second step, intergoal conflict and facilitation were added to the prediction. In none of these models did intergoal conflict and facilitation predict change in well-being over time (Ryff scales: $\Delta R^2 = .02$; positive affect: $\Delta R^2 = .006$, negative affect: $\Delta R^2 = .003$, life satisfaction: $\Delta R^2 = .007$, goal satisfaction: $\Delta R^2 = .03$; all ps $> .01$; critical value for five repeated analyses).

[52] The goal progress aggregate approximated normal distribution satisfactorily (see Appendix B, Table B 6 for variable descriptions).

association between intergoal facilitation and goal progress differed between age groups. Using SPSS REGRESSION, I therefore conducted multiple regression analyses separately in both age groups. To test whether the associations between intergoal conflict or facilitation and subjective goal progress depended on the conflict-by-facilitation configuration, I tested the following model in both age groups: *Goal Progress = Conflict + Facilitation + Conflict * Facilitation*. Because the interactions did not reach significance at the .05 level, more parsimonious models without the interaction were run. Table 24 shows results of these analyses.

Only in the older age group were intergoal relations assessed at T1 significantly associated with the degree of subjective goal progress at T2. Here, the correlation between intergoal *facilitation* and goal progress was almost twice as high as that between intergoal *conflict* and goal progress. Furthermore, intergoal conflict did not contribute to the prediction of subjective goal progress when simultaneously controlling for intergoal facilitation. This pattern is interesting because it deviates from the association pattern of intergoal relations to various facets of subjective well-being. There, intergoal facilitation appeared to be less important than intergoal conflict.

Table 24. *Predicting Self-Reported Goal Progress at T2 in the Subsamples of Younger and Older Adults: Pearson's Correlations and Results of Multiple Regression Analyses*

	Predictor	*r*		*B*		β		
Younger Subsample (n = 97)								
T1	Conflict	-.08	n.s.	-.14	n.s.	-.08	R = .08	n.s.
T1	Facilitation	.00	n.s.	.09	n.s.	.01	R^2 = .01	
Older Subsample (n = 45)								
T1	Conflict	-.26	*	-.34	n.s.	-.20	R = .46	**
T1	Facilitation	.41	**	2.43	**	.38	R^2 = .21	(a)

n.s. $p > .05$; * $p < .05$; ** $p < .01$

(a) R^2 = .04 (unique conflict) + .14 (unique facilitation) + .03 (shared) = .21

Two of the empirical predictions of this study were that (a) unfavorable intergoal relations have a longer term detrimental effect on subjective well-being and that (b) this relationship is mediated by the fact that individuals with more unfavorable intergoal relations are less likely to progress toward their goals within a given time frame than are individuals with more favorable intergoal relations. As I described before, participants who reported less favorable intergoal relations at the first measurement point indeed tended to

be less satisfied with their goals after about four months (however, there were no longer term associations between intergoal relations and goal-*unspecific* facets of psychological well-being). The question arising next was whether this negative association between intergoal conflict and goal satisfaction at T2 was mediated by the extent of goal progress during the months between both measurement points. In other words, the question of interest was whether participants with less favorable intergoal relations at T1 were less satisfied with their goals at T2 *because* they progressed less toward their goals in the intermediate months.

According to Baron and Kenny (1986), three requirements must be fulfilled in order to statistically support the assumption of mediation: First, there must be a significant association between the independent variables (intergoal conflict and facilitation) and the mediator (goal progress). Second, there must be a significant association between the independent variables (intergoal conflict and facilitation) and the dependent variable (goal satisfaction at T2). Third, when the dependent variable (goal satisfaction at T2) is regressed on both the independent variables (intergoal conflict and facilitation) and the mediator (goal progress), there must be a significant effect of the mediator on the dependent variable. If these conditions are fulfilled, then the effect of the independent variables on the dependent variable is less in the third than in the second condition.

As shown in the previous section, the first of Baron and Kenny's requirements is fulfilled in the older, but not in the younger, subsample. The second and third requirements hold when tested in the total sample (note that there were no age-group differences in the bivariate associations between intergoal conflict and facilitation and goal satisfaction, see 4.1.2). If tested in the older subsample alone, however, the associations between intergoal conflict and facilitation and goal satisfaction do not reach statistical significance. They are, however, of the same pattern and size as those tested in the total sample (see Table 25). In other words, the second requirement is not fulfilled because of the small size of the older subsample. Overall, there is not sufficient statistical support for the mediation hypothesis.

Table 25. *Predicting Goal Satisfaction at T2 in the Total Sample and the Older Subsample: Results of Multiple Regression Analyses*

	Predictor		*r*		*B*		β		
Total Sample (*N* = 142)									
Step I									
	T1	Conflict	-.22	**	-.34	*	-.21	R = .26	**
	T1	Facilitation	.15	*	.89	n.s.	.13	R^2 = .07	
Step II									
	T1	Conflict	-.22	**	-.18	n.s.	-.10	R = .73	**
	T1	Facilitation	.15	*	.08	n.s.	.01	R^2 = .53	
	T2	Goal progress	.72	**	.75	**	.70	Δ R^2= .46	**
Older Subsample Only (*n* = 45)									
Step I									
	T1	Conflict	-.22	+	-.37	n.s.	-.21	R = .29	n.s.
	T1	Facilitation	.21	+	1.34	n.s.	.23	R^2 = .08	
Step II									
	T1	Conflict	-.22	+	-.06	n.s.	-.03	R = .78	**
	T1	Facilitation	.21	+	-.94	n.s.	.13	R^2 = .61	
	T2	Goal progress	.77	**	.94	**	.81	Δ R^2= .53	**

n.s. $p > .10$; + $p < .10$; * $p < .05$, ** $p < .01$

4.1.4. Overview of Exercise-Specific Analyses

With the aim of obtaining objective indicators of longer term goal pursuit, the present study was conducted with participants who shared the goal of starting regular physical exercise. The following sections detail analyses of the question whether the degree to which participants perceived the exercise goal as helping or hindering their other three goals (and vice versa) was predictive of their subsequent exercise behavior. Five indicators of exercise participation were available for each of the five calendar months of the study interval: self-reported exercise (a) duration, (b) regularity, (c) frequency, and (d) objective frequency of attending the cooperating exercise facility. I computed a fifth exercise participation indicator—(e) relative fulfillment of the originally intended monthly exercise rate—by dividing the self-reported monthly exercise frequencies (assessed at T2) by the intended monthly exercise rate reported at T1.

The central independent variables of the analyses described below were the levels of *exercise-specific* intergoal conflict and facilitation. The aggregation of these composites followed the procedure described before, however, only included those items involving comparisons of the exercise goal with the other three goals. They thus represented the

exercise-specific intergoal relations within the set of four goals, that is, the degree to which participants at T1 evaluated their exercise goal as being positively or negatively related to their other goals.

In the following sections, I will first address age-group differences in the levels of exercise-specific intergoal conflict and facilitation and test whether these differences can be explained by initial age-group differences in exercise motives and other exercise-specific person and context characteristics. Following that, I will describe two sets of analyses investigating the relation between exercise-specific intergoal relations and longer term exercise adherence. In a first set of analyses, I addressed the relationship between exercise-specific intergoal conflict and facilitation and the participant's *average* exercise behavior in the study interval. In a second set of analyses, I investigated this relationship with respect to the development of exercise participation *over time*. A final set of analyses addressed the question whether age-group differences in exercise behavior can be explained by initial age-group differences in exercise-specific intergoal conflict and facilitation.

4.1.5. Exercise-Specific Intergoal Conflict and Facilitation

4.1.5.1. Age-Group Differences

I used SPSS MANOVA to test whether the levels of exercise-specific intergoal conflict and facilitation differed between younger and older participants. A one-way multivariate analysis of variance showed a significant multivariate age-group difference according to Wilks' Lambda ($F(2,142) = 14.39$, $p = .00$, $\eta^2 = .17$).[53] Univariate follow-up analyses (ANOVAs, see Table 26) showed that, compared to older participants, younger participants evaluated exercising as being significantly more conflicting with and significantly less facilitative for their other goals (and vice versa).

[53] Exercise-specific intergoal conflict and facilitation approximated normal distribution satisfactorily (see Appendix B, Table B 7 for a detailed description of transformations and variable distributions). Box-*M*-Test: $F(3, 174\,638) = 1.25$, $p = .29$

Table 26. *Univariate Follow-Up Analyses of Age-Group Differences in Exercise-Specific Intergoal Conflict and Facilitation*

		Mean (SE) Younger Adults	Older Adults	*F*	df	*p* [a]	η^2
T1	Exercise-specific conflict	1.77 (.04)	1.57 (.07)	7.05	1	.01	.05
T1	Exercise-specific facilitation [b]	1.39 (.02)	1.58 (.04)	21.56	1	.00	.13

(a) Alpha adjustment for two repeated analyses: $p < .025$

(b) Transformation: Square Root

Did the observed age-group differences in exercise-specific intergoal conflict and facilitation result from the fact that younger and older adults differed in their exercise motives, exercise contexts, or other exercise-specific characteristics? To investigate this question, I first explored correlations between exercise-specific intergoal conflict and facilitation and several other exercise-specific person and context variables in order to identify potential rival predictors. In the second step, I conducted sequential (hierarchical) regression analyses to investigate whether including age group as predictor significantly added to the prediction of exercise-specific intergoal conflict and facilitation above and beyond the contribution of the identified rival predictors.

4.1.5.2. Associations With Other Exercise-Specific Person and Context Characteristics

In exploratory analyses, I investigated whether exercise-specific intergoal conflict and facilitation were related to several other exercise-specific person and context characteristics: A first group of correlates included the participants' reasons for exercising. The considered exercise reasons were enhancing one's (a) attractiveness, (b) fitness, (c) health, or (d) tone, (e) seeking enjoyment, (f) regulating one's mood, and (g) controlling one's weight. Other person-specific correlates included (h) the participants' exercise-specific self-efficacy, (i) the concreteness of the participants' exercising schedule (i.e., exercise-specific intention strength), and (j) the degree to which participants enjoyed exercising. Characteristics of the exercise context included the accessibility of (k) social contact, (l) fitness- and health-related information and instruction, and (m) wellness and care facilities (such as sauna or solariums). Finally, several characteristics of prior exercise experiences were considered, namely, (n) the duration since the end of the last phase of regular exer-

cising[54], (o) the total duration of all prior phases of regular exercising, and (p) the duration of the current exercise phase. Most of these potential correlates were assessed at the first assessment occasion. Exercise enjoyment and characteristics of the exercise context were assessed at the second measurement session. With one exception, all potential correlates were continuous variables. The exception pertained to the duration of the current exercise phase, which comprised three categories (about to begin, less than one month, more than one month). Appendix A, Table A8 gives detailed information on the assessment instruments. Appendix B, Table B 8 contains detailed descriptions of data distributions, transformations, and age-group differences.

Table 27 shows the correlations between exercise-specific intergoal conflict and facilitation and the continuous exercise-specific person and context characteristics. For reliable assessments of significance, I computed Spearman rank correlations, instead of Pearson's correlations, where nonnormally distributed variables were involved.[55] To assess potential age-group differences, I used SPSS UNIANOVA to test, for each investigated bivariate association, the model: *Person [Context] Characteristic = Age group + Exercise-Specific Conflict [Facilitation] + Age group * Exercise-Specific Conflict [Facilitation]*. Only two models yielded significant interactions ($p < .05$), indicating nonrandom age-group differences in the bivariate relationships between (a) exercise enjoyment and exercise-specific intergoal conflict and (b) the duration since the end of the last phase of regular exercising and exercise-specific facilitation. In these cases, Table 27 also shows the correlations separately for both age groups.

Participants whose intention to exercise was motivated by the desire to enhance their health, to regulate their mood, or to control their weight tended to describe their exercise goal as being more positively related to their other goals (i.e., reported higher levels of exercise-specific intergoal facilitation) than did participants who indicated that, for them, these were less important reasons for exercising. Furthermore, participants tended to describe exercising as being more positively related to their other goals when they exercised in a context where wellness and care facilities were available. The size of

[54] I defined prior phases of regular exercising as those phases lasting at least three consecutive months during which the participant had exercised at least once a week.

[55] Most distributions were satisfactorily symmetric in the total sample. Slight to moderate departures from normality remained in the following variables: (a) reasons for exercising: health, tone, weight control, (b) exercise context: accessibility of wellness facilities, and (c) exercise biography: years since end of last phase of exercising, and total duration of prior phases of regular exercising (see Appendix B, Table B 8).

these associations was small to moderate (≤ .38) and they were significant according to the alpha-level adjustment for multiple testing ($p < .003$ for 15 correlations per composite).

Participants with a high degree of exercise-specific intergoal conflict tended to have a lower exercise-specific self-efficacy (i.e., to be less certain that they would exercise in the face of obstacles). Older participants with a higher level of exercise-specific conflict tended to enjoy exercising less than older participants who perceived exercising as less conflicting with their other goals. The size of this association was moderate ($r = -.40$) and its significance with $p = .007$ only slightly larger than the conservative alpha-level adjustment for multiple testing. This relationship did not exist in the younger subsample.

Were there systematic associations between exercise-specific intergoal conflict and facilitation and the duration of the current exercise phase? To test this, I conducted a 3 (duration of current exercise phase: about to begin, less than one month, more than one month) by 2 (age group: young versus old) multivariate analysis of variance on exercise-specific intergoal conflict and facilitation using SPSS MANOVA. Aside of the age-group effect ($F(2, 137) = 7.92$, $p = .001$, $\eta^2 = .10$), this analysis yielded a nonsignificant exercise duration effect ($F(4, 274) = .78$, $p = .54$, $\eta^2 = .01$), and a nonsignificant interaction according to Wilks' Lambda ($F(4, 274) = .26$, $p = .91$, $\eta^2 = .00$).[56] These results show that there were no significant differences in exercise-specific intergoal conflict and facilitation among participants who differed with respect to the length of the current exercise phase. These associations did not differ between younger and older adults.[57]

[56] Box-*M*-Test: $F(15, 3096) = 1.11$, $p = .34$

[57] Note that this finding indicates that the age-group differences in the length of the current exercise phase (see Table 5) did not effect the analyses in the present study.

Table 27. *Bivariate Associations Between Exercise-Specific Intergoal Facilitation and Conflict and Several Exercise-Related Person and Context Characteristics*[58]

		Exercise-Specific Facilitation (T1) *r*	Exercise-Specific Conflict (T1) *r*
Reasons for Exercise			
T1	Attractiveness	.13 n.s.	.14 n.s.
T1	Enjoyment	.08 n.s.	-.13 n.s.
T1	Fitness	.24 * (p = .004)	.05 n.s.
T1	Health (a)	.38 **	-.02 n.s.
T1	Mood regulation	.25 **	.07 n.s.
T1	Tone (a)	.18 *	.04 n.s.
T1	Weight control (a)	.27 **	.06 n.s.
Exercise-Specific Person Characteristics			
T1	Exercise-specific self-efficacy	.11 n.s.	-.35 **
T1	Exercise-specific intention strength (a)	-.09 n.s.	-.23 * (p = .005)
T2	Exercise enjoyment	.20 *	-.32 ** (b)
Exercise Context – Accessibility of ...			
T2	Social contact	.06 n.s.	-.17 *
T2	Information and instruction	.19 *	-.01 n.s.
T2	Wellness and care facilities (a)	.29 **	.01 n.s.
Exercise Biography			
T1	Years since end of last phase of exercising (a) (d)	-.14 n.s. (c)	.21 *
T1	Total duration (in years) of prior phases of exercising (a)	.02 n.s.	-.03 n.s.

n.s. $p > .05$; * $p < .05$; ** $p < .003$ (alpha adjustment for 15 correlations per composite scale)[59]

Notes. Unless otherwise specified, Pearson's correlations are reported. All correlations were tested for age-group differences. Unless otherwise specified, they were not significant (i.e., $p > .05$).

(a) Spearman rank correlations

(b) Significant age-group difference (p = .04): r_{young} = .14 n.s.; r_{old} = -.40* (p = .007)

(c) Significant age-group difference (p = .02): r_{young} = .12 n.s.; r_{old} = -.35, n.s.

(d) Only participants with prior exercise experience: N_{total} = 121, $n_{younger}$ = 92, n_{older} = 29

4.1.5.3. Control Analyses

In order to be conservative when conducting control analyses, I considered all person and context variables with significant correlations to exercise-specific intergoal con-

[58] Where appropriate, transformed scales were used for analyses (see Appendix B, Table B 8). Plus and minus signs of correlations involving reflected variables were reversed before reporting to fit the original scaling.

[59] The indication of p-values smaller than .05 (*) serves descriptive purposes. I regard results as significant if they meet the multiple-testing adjusted criterion of significance (**).

flict or facilitation at the $p < .05$ level as potential rival predictors that might account for the observed age-group differences in exercise-specific intergoal relations (see Table 27). Using SPSS REGRESSION, I performed sequential (hierarchical) multiple regression analyses to test how well age group predicted exercise-specific intergoal conflict and facilitation while controlling for initial age-group differences in these variables. I conducted three analyses. One analysis controlled for age-group differences in exercise motives (i.e., fitness, health, mood, tone, and weight control). The second analysis controlled for age-group differences in exercise-specific person and context variables (i.e., exercise-specific self-efficacy, intention strength, enjoyment; accessibility of social contact, information and instruction, and wellness facilities; years since end of last phase of exercising). The third analysis simultaneously controlled for *all* identified potential rival predictors. In each of these analyses, the control variables were entered simultaneously in the first step, and age group was added to the prediction in the second step.[60] Table 28 shows the multiple correlations (R), the percentages of the variance explained (R^2), and the changes in the percentage of the variance explained after adding age group to the predictions (ΔR^2).

After controlling for age-group differences in exercise motivation, in exercise-specific person and context characteristics, as well as in all these variables simultaneously, age group still significantly contributed to the prediction of exercise-specific intergoal *facilitation* (additional explanation of 8%, 10%, and 5% of the variance, respectively). Age group also significantly contributed to the prediction of exercise-specific intergoal *conflict* after controlling for initial age-group differences in exercise motivation (additional explanation of 5% of the variance). It did, however, not add significantly to the prediction of exercise-specific intergoal conflict after adjusting for age-group differences in the seven other considered exercise-specific person and context variables, and after adjusting for all rival predictors simultaneously (additional explanation of 1% and 2% of the variance, respectively).

[60] The regression format for addressing this analysis of covariance problem was appropriate because the assumption of homogeneity of regression underlying multivariate analysis of covariance (MANCOVA) was violated in one instance (i.e., because there was an age-group difference in the bivariate association between exercise enjoyment and exercise-specific intergoal conflict).

Table 28. *Sequential (Hierarchical) Multiple Regression of Control Variables and Age Group on Exercise-Specific Intergoal Facilitation and Conflict*

	Exercise-Specific Facilitation			Exercise-Specific Conflict		
	R	R^2	ΔR^2	R	R^2	ΔR^2
Control for Exercise Motivation						
Step I:						
Reasons for exercise (a)	.44 **	.19		.12 n.s.	.01	
Step II:						
Age group added	.52 **	.27	.08 **	.25 n.s.	.06	.05 **
Control for Exercise-Specific Person/Context Characteristics						
Step I:						
Exercise-specific person and context characteristics (b)	.36 *	.13		.50 **	.25	
Step II:						
Age group added	.48 **	.23	.10 **	.51 **	.26	.01 n.s.
Control for All Rival Predictors						
Step I:						
All control variables (a) + (b)	.52 **	.27		.51 **	.26	
Step II:						
Age group added	.57 **	.32	.05 **	.53 **	.28	.02 n.s.

n.s. $p > .10$; + $p < .10$; * $p < .05$; ** $p < .017$ (alpha adjustment for three repeated analyses per composite)
Notes. Considered rival predictors:
(a) *Reasons for exercise:* (1) fitness, (2) health, (3) mood, (4) tone, (5) weight control
(b) *Exercise-specific person characteristics:* (1) exercise-specific self-efficacy, (2) exercise-specific intention strength, (3) exercise enjoyment; *exercise-specific context characteristics:* (4) social contact, (5) information and instruction, (6) wellness facilities; *exercise biography:* (7) years since end of last phase of exercising

4.1.6. Average Exercise Frequency, Regularity, and Duration

Did younger and older participants differ in their average exercise behavior during the study interval? And were the levels of exercise-specific intergoal conflict and facilitation related to the average exercise behavior? I will describe analyses investigating these questions in the sections below.

4.1.6.1. Age-Group Differences

To obtain information on the participants' average exercise behavior, I averaged the self-reports on monthly exercise duration, regularity, and frequency, calculations of the relative realization of the originally intended monthly exercise rate (based on self-reports), and the available objective information on the frequency of attending the cooperating exercise facility across all five calendar months of the study interval.

Using SPSS MANOVA, I conducted a multivariate analysis of variance on the four exercise participation characteristics derived from self-reports. This analysis yielded a significant multivariate age-group effect according to Wilks' Lambda ($F(4, 136) = 6.95$, $p = .00$, $\eta^2 = .17$).[61] Univariate follow-up analyses revealed that older adults' self-reports indicated a higher average self-reported exercise regularity in the study interval than the younger participants'.[62] Furthermore, older participants tended to realize a higher percentage of their originally intended monthly exercise rate. There were no significant age-group differences with respect to the average self-reported exercise duration and frequency. Conducting this analysis for the objective exercise frequency revealed a significant age-group difference. Older adults tended to attend their sports facility more often than did younger participants (see Table 29).

Table 29. *Univariate Follow-Up Analyses of Age-Group Differences in Average Exercise Behavior*

Exercise Behavior [a]		Mean (SE) Younger Adults	Mean (SE) Older Adults	F	df	p [b]	η^2
Self-Reported Exercise Behavior ($N_{total} = 142$, $n_{younger} = 97$, $n_{older} = 45$)							
T2	Duration	2.73 (.10)	2.95 (.17)	1.37	1	.24	.01
T2	Regularity	3.03 (.12)	4.00 (.17)	20.36	1	.00	.13
T2	Frequency	5.22 (.25)	5.75 (.38)	1.38	1	.24	.00
T2	Percent realization of intended monthly exercise rate [c]	.68 (.03)	.85 (.05)	10.83	1	.00	.07
Objective Exercise Behavior ($N_{total} = 107$, $n_{younger} = 70$, $n_{older} = 37$)							
T2	Average exercise attendance	2.36 (.19)	3.12 (.28)	6.80	1	.010	.06

(a) All exercise behavior characteristics averaged across the five calendar months of the study interval
(b) Alpha adjustment for four repeated analyses: $p < .013$
(c) Percent realization of intended monthly exercise rate: self-reported monthly exercise frequency (assessed at T2) divided by originally intended monthly exercise frequency (assessed at T1)

[61] Most variable distributions approximated normal distributions satisfactorily. The only considerable departure from normality was observed in the distribution of the average exercise regularity in the subsample of older adults (see Appendix B, Table B 9 and Table B 10, for a detailed description of variables, data transformations, and variable correlations). Box-*M*-Test: $F(10, 34054) = 1.61$, $p = .10$

[62] Because of the nonnormal distribution of the average exercise regularity in the older subsample, I repeated the analysis using the nonparametric Mann-Whitney-U-Test. This test replicated the age-group effect ($U = 1119.50$; $p = .000$).

4.1.6.2. Associations With Exercise-Specific Intergoal Conflict and Facilitation

Did the degree of exercise-specific intergoal conflict and facilitation predict the participant's average exercise behavior during the study interval? Using SPSS CORRELATION and SPSS REGRESSION, I determined the bivariate and multiple associations (see Table 30). To check for potential age-group differences in bivariate associations, I used SPSS UNIANOVA to test models of the following kind: *Exercise Behavior = Age Group + Exercise-Specific Conflict [Facilitation] + Age Group * Exercise-Specific Conflict [Facilitation]*. Nonsignificant interactions ($p > .05$) showed that there were no age-group differences in bivariate relations, which therefore were estimated in the total sample.

To test whether the associations between exercise-specific intergoal conflict and facilitation and the various exercise behavior aggregates depended on the within-person configuration of exercise-specific conflict and facilitation, I tested the following multiple regression models: *Exercise Behavior = Exercise-Specific Conflict + Exercise-Specific Facilitation + Exercise-Specific Conflict * Exercise-Specific Facilitation*. Again, all models yielded nonsignificant interactions at the .05 level. Table 30 therefore shows results of more parsimonious models without the interaction.

Exercise-specific intergoal relations consistently predicted small, but significant amounts of variance (≤ 10%) in the participant's average exercise behavior during the study interval. The only multiple correlation that did not reach significance according to the alpha-level adjustment for multiple testing ($p < .01$ for five repeated analyses) involved the average realization of the originally intended monthly exercise rate. Overall, exercise-specific intergoal facilitation was a slightly more important predictor of the various facets of exercise participation than exercise-specific intergoal conflict.

Bivariate associations showed that participants who reported at the first measurement point that their exercise goal was *positively* related to their other three goals tended in the subsequent months to exercise, on the average, longer, more regularly, and more frequently (according to objective information) than did participants who reported less exercise-specific intergoal facilitation. Participants who reported during the first questionnaire session that their exercise goal *conflicted* with their other goals tended to realize a smaller percentage of their originally intended monthly exercise rate.

Analyses predicting self-reported versus objectively assessed exercise frequencies yielded the same basic pattern of results. The effects were slightly larger in the analysis involving objective data. Control analyses (see Appendix D, Table D 2) showed that the

associations between exercise-specific intergoal relations and exercise behavior were relatively robust to separately controlling for the potential rival predictors identified in section 4.1.5.2.

Table 30. *Predicting the Average Monthly Exercise Behavior in the Study Interval: Pearson's Correlations and Results of Multiple Regression Analyses*

	Predictor	*r*		*B*		β		
Self-Reported Exercise Behavior (*N* = 142)								
	A) Predicting Average Self-Reported Monthly Exercise Duration (T2)							
T1	Exercise-specific conflict	-.12	n.s.	-.21	n.s.	-.09	R = .28	**
T1	Exercise-specific facilitation	.27	**	1.08	**	.26	R^2 = .08	(a)
	B) Predicting Average Self-Reported Monthly Exercise Regularity (T2)							
T1	Exercise-specific conflict	-.19	*	-.47	*	-.16	R = .28	**
T1	Exercise-specific facilitation	.23	**	1.05	*	.21	R^2 = .08	(b)
	C) Predicting Average Self-Reported Monthly Exercise Frequency (T2)							
T1	Exercise-specific conflict	-.17	*	-.86	n.s.	-.16	R = .25	**
T1	Exercise-specific facilitation	.19	*	1.68	*	.17	R^2 = .06	(c)
	D) Predicting Average Monthly Realization of Intended Exercise Rate (T2)							
T1	Exercise-specific conflict	-.20	**	-.13	*	-.19	R = .25	*
T1	Exercise-specific facilitation	.16	*	.17	n.s.	.14	R^2 = .06	(d)
Objective Exercise Behavior (*N* = 107)								
	E) Predicting Mean Objective Monthly Exercise Frequency (T2)							
T1	Exercise-specific conflict	-.21	*	-.77	*	-.21	R = .31	**
T1	Exercise-specific facilitation	.23	**	1.37	*	.22	R^2 = .10	(e)

n.s. $p > .05$; * $p < .05$; ** $p < .01$ (alpha adjustment for five repeated analyses)[63]

(a) R^2 = .01 (unique conflict) + .06 (unique facilitation) + .01 (shared) = .08

(b) R^2 = .03 (unique conflict) + .04 (unique facilitation) + .01 (shared) = .08

(c) R^2 = .02 (unique conflict) + .03 (unique facilitation) + .01 (shared) = .06

(d) R^2 = .035 (unique conflict) + .02 (unique facilitation) + .005 (shared) = .06

(e) R^2 = .04 (unique conflict) + .05 (unique facilitation) + .01 (shared) = .10

4.1.7. Exercise Frequency over Time

How did the exercise attendance of younger and older participants develop over time? Were the initial levels of exercise-specific intergoal conflict and facilitation related to various trajectories of exercise adherence? The analyses described below address these questions.

[63] The indication of *p*-values smaller than .05 (*) serves descriptive purposes. I regard results as significant if they meet the multiple-testing adjusted criterion of significance (**).

4.1.7.1. Age-Group Differences

Table 31 and Figure 10 show the trajectories of older and younger participants' self-reported monthly exercise frequencies throughout the study interval. In the younger age group, monthly exercise frequencies fluctuated over time: There was a marginally significant decline in the percentage of younger participants who had exercised at least once a week from 88.7% in the first month to 58.8% in the last month of study participation, and a significant increase in the percentage of younger participants who had not exercised at all from 4.1% in the first month to 34.0% in the last months of study participation. The percentage of younger participants who had exercised less than once a week remained stable across the study interval (about 10%).

In contrast, monthly exercise frequencies in the older age group remained stable. The percentage of older participants who had exercised at least once a week remained consistently high (> 80% throughout all five calendar months). Similarly, the percentages of older participants who had exercised less than once a week or not at all remained consistently low.

Table 31. *Self-Reported Monthly Exercise Frequencies of Younger and Older Participants*

	Calendar Month of Study Interval				
Exercise Frequency	1 (T1)	2	3	4	5 (T2)
Younger Subsample (n = 97)					
At least once a week	86 (88.7%)	82 (84.5%)	73 (75.3%)	63 (64.9%)	57 (58.8%)
					$\chi^2(4) = 8.35, p = .08$
Less than once a week	7 (7.2%)	10 (10.3%)	12 (12.4%)	9 (9.3%)	7 (7.2%)
					$\chi^2(4) = 3.66, p = .45$
Not at all	4 (4.1%)	5 (5.2%)	12 (12.4%)	25 (25.8%)	33 (34.0%)
					$\chi^2(4) = 57.10, p = .00$
Older Subsample (n = 45)					
At least once a week	43 (95.6%)	39 (87.7%)	40 (88.9%)	40 (88.9%)	38 (84.4%)
					$\chi^2(4) = 0.35, p = .99$
Less than once a week	0 (0.00%)	1 (2.2%)	2 (4.4%)	3 (6.7%)	2 (4.4%)
					$\chi^2(4) = 3.25, p = .52$
Not at all	2 (4.4%)	5 (11.1%)	3 (6.7%)	2 (4.4%)	5 (11.1%)
					$\chi^2(4) = 2.71, p = .61$

Note. Figures represent absolute and relative (%) numbers per subsample. χ^2-test of null hypothesis of equal distribution throughout months 1 to 5.

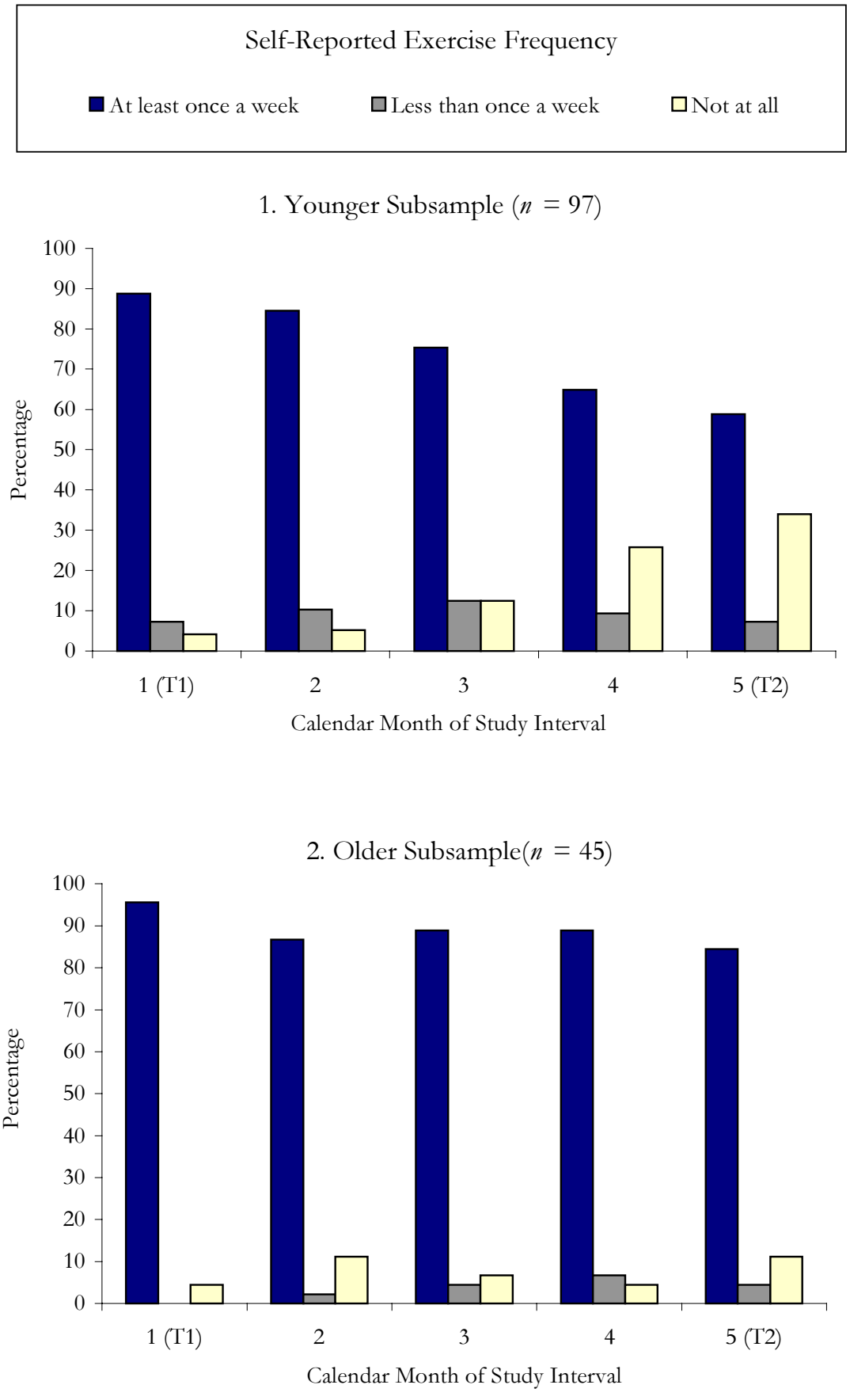


Figure 10. *Younger and Older Participants' Self-Reported Exercise Frequency in the Study Interval*

Two trajectories of exercise participation over time are particularly interesting—persistent continuation of regular exercising throughout the entire study interval, and discontinuation of exercising within the study interval. I classified participants who reported that they had exercised at least once a week throughout the entire study interval as "persistent exercisers," and participants who reported that they had not exercised at all in the last two months of their study participation (i.e., calendar months 4 and 5) as "exercise drop-outs." Younger and older participants differed significantly in their likelihood of belonging to these two groups (see Table 32). A significantly lower percentage of younger, as compared to older, participants were persistent exercisers (46.4% versus 71.1%, respectively, $\chi^2(1) = 7.57$, $p < .01$). In contrast, a significantly lower percentage of older, as compared to younger, participants were "exercise drop-outs" (4.4% versus 22.7%, respectively, $\chi^2(1) = 7.28$, $p < .01$).

Table 32. *Number and Percentage of Persistent Exercisers and Exercise Drop-Outs in the Total Sample and the Subsamples of Younger and Older Adults*

	Persistent Exercisers	Exercise Drop-Outs
Total Sample (N = 142)	77 (54.2%)	24 (16.9%)
Younger Subsample (n = 97)	45 (46.4%)	22 (22.7%)
Older Subsample (n = 45)	32 (71.1%)	2 (4.4.%)
	$\chi^2(1) = 7.57, p < .01$	$\chi^2(1) = 7.28, p < .01$

Note. χ^2-tests of null hypothesis that there is no relationship between age group and membership (versus nonmembership) of exercise behavior group.

4.1.7.2. Associations With Exercise-Specific Intergoal Conflict and Facilitation

Did exercise drop-outs and persistent exercisers differ in exercise-specific intergoal relations reported at T1? Using SPSS MANOVA, I conducted a multivariate analysis of variance on exercise-specific intergoal conflict and facilitation. This analysis yielded a significant multivariate group effect according to Wilks' Lambda ($F(2, 98) = 3.33$, $p = .040$, $\eta^2 = .06$).[64] Univariate follow-up analyses (ANOVAs) showed that this effect was due to a significant difference in exercise-specific intergoal facilitation. Participants who exercised persistently at least once a week throughout the entire study interval had reported more exercise-specific inter-goal facilitation at T1 than had participants who discontinued exercising within the study interval. There was no significant difference between persis-

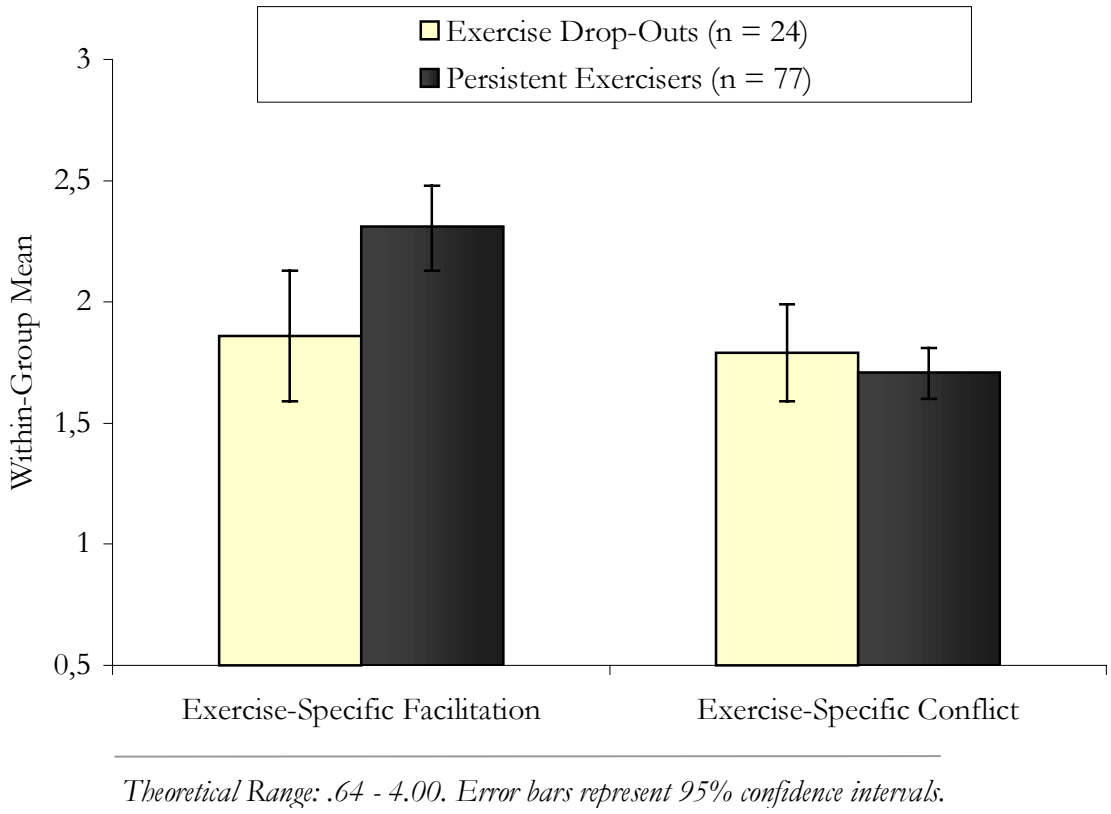
[64] Box-*M*-Test: $F(3, 28075) = .34$, $p = .80$

tent exercisers and exercise drop-outs with respect to exercise-specific intergoal conflict (see Table 33 and Figure 11).

Table 33. *Univariate Follow-Up Analyses of Differences Between Exercise Drop-Outs and Persistent Exercisers in Exercise-Specific Intergoal Facilitation and Conflict*

		Mean (SE)					
		Exercise Drop-Outs (n = 24)	Persistent Exercisers (n = 77)	F	df	p	η^2
T1	Exercise-specific facilitation [a]	1.34 (.05)	1.50 (.03)	6.50	1	.01	.06
T1	Exercise-specific conflict	1.79 (.10)	1.71 (.05)	.64	1	.43	.01

[a] Transformation: Square Root



Theoretical Range: .64 - 4.00. Error bars represent 95% confidence intervals.

Figure 11. *Exercise-Specific Intergoal Facilitation and Conflict in Persistent Exercisers and Exercise Drop-Outs*[65]

[65] To facilitate comparisons between exercise-specific intergoal facilitation and conflict, the figure shows exercise-specific intergoal facilitation in its nontransformed distribution. Note however, that statistical analyses were conducted on the transformed exercise-specific intergoal facilitation score (see Table 33 und Appendix B, Table B 7).

4.1.8. Age-Group Differences in Exercise Adherence – A Consequence of Exercise-Specific Intergoal Relations?

The so far described exercise-related analyses yielded three main results: (a) Compared to younger participants, older adults tended to report less exercise-specific intergoal conflict and more exercise-specific intergoal facilitation. (b) Compared to younger participants, older adults tended to exercise more regularly, to realize their initially intended exercise rate to a greater extent, and to attend their exercise facility more often. They furthermore were more likely to exercise persistently throughout the entire study interval and less likely to quit exercising during the study interval than were younger adults. (c) These exercise-behavior characteristics showed small but significant associations to exercise-specific intergoal relations.

The question arising from this pattern of results is whether older participants were more persistent in pursuing their exercise goal because it was less conflicting with, and more facilitative for their other three goals (and vice versa). Where continuous exercise behavior characteristics were involved (i.e., exercise regularity, percent realization of initially intended exercise frequency, and attendance of exercise facility), I conducted sequential (hierarchical) multiple regression analyses to investigate this question (see Table 34). In the case of group membership (persistent exerciser versus exercise drop-out), I performed a logistic regression analysis (see Table 35). All analyses followed the same procedure: Dependent variables were the exercise-participation characteristics. In the first step, exercise-specific intergoal conflict and facilitation were entered into the analyses. In the second step, age group was added to the predictions.

In three of the four analyses, age group significantly contributed to the prediction of the exercise-behavior characteristic after adjusting for initial age-group differences in exercise-specific intergoal relations. Specifically, age-group differences in (a) the average exercise regularity, (b) the percent realization of the initially intended exercise rate, and (c) the likelihood of belonging to the groups of persistent exercisers versus exercise drop-outs could not be completely accounted for by age-group differences in exercise-specific intergoal relations. Note that all these exercise-behavior indicators were based on participants' *self-reports*. A different picture emerged for the prediction of the *objective* exercise-attendance data (i.e., the frequency with which participants attended their sports facility). In this case, age group did not add significantly to the prediction above and beyond the contribution of exercise-specific intergoal relations. The observed higher attendance rate

of the cooperating exercise facilities by the older participants was statistically accounted for by age-group differences in exercise-specific intergoal relations.

Table 34. *Sequential (Hierarchical) Regression of Exercise-Specific Intergoal Relations and Age Group on Exercise-Behavior Characteristics*

	R	R^2	ΔR^2
Self-Reported Exercise Behavior (*N* = 142)			
A. Predicting Average Self-Reported Exercise Regularity			
Step 1:			
Exercise-specific conflict and facilitation	.28 **	.08	
Step 2:			
Age group added	.37 **	.15	.07 **
B. Predicting Average Realization of Intended Exercise Rate			
Step 1:			
Exercise-specific conflict and facilitation	.25 *	.06	
Step 2:			
Age group added	.31 **	.10	.04 *
Objective Exercise Behavior (*N* = 107)			
C. Predicting Average Objective Attendance in Exercise Facility			
Step 1:			
Exercise-specific conflict and facilitation	.31 **	.10	
Step 2:			
Age group added	.33 **	.11	.01 n.s.

* $p < .05$; ** $p < .01$

Table 35. *Logistic Regression of Exercise-Specific Intergoal Relations and Age Group on Group Membership (Persistent Exercisers Versus Exercise Drop-Outs, N = 101)*

	Cox & Snell R^2		χ^2	df	*p*
Step 1:					
Exercise-specific conflict and facilitation	.07	Model	6.80	2	.03
Step 2:					
Age group added	.12	Model	12.75	3	.01
		Step	5.95	1	.02 (a)

(a) Indicates significant improvement of prediction of group membership by introducing age group as predictor

4.1.9. Summary of Results in Study Part 1

Younger *and* older participants reported significantly more intergoal facilitation than intergoal conflict. This finding is not trivial because intergoal conflict and facilitation were uncorrelated. Furthermore, older participants reported significantly more intergoal facilitation and significantly less intergoal conflict than did younger participants (see Figure 7). These age-group differences did not result from the goal context chosen for this study (i.e., starting to exercise), but remained stable after excluding the exercise goal from scale aggregations.

Taking an exploratory cluster-analytic approach, I identified three groups with different within-person configurations of intergoal conflict and facilitation: one cluster of participants who reported low levels of intergoal conflict and high levels of intergoal facilitation (cluster I), a second cluster of participants who reported low levels of both intergoal conflict and intergoal facilitation (cluster II), and a third cluster of participants who reported high levels of intergoal conflict and moderate levels of intergoal facilitation (cluster III). Older adults were about equally distributed in all three clusters. Younger participants, in contrast, were not. Significantly fewer younger participants belonged to cluster I ("low conflict, high facilitation") than to the other two clusters. There was a marginally significant trend that younger participants more likely belonged to cluster III ("high conflict, moderate facilitation") than to cluster II ("low conflict, low facilitation"). In terms of within-person configurations of intergoal conflict and intergoal facilitation, the observed age-group difference in intergoal relations could be traced to the fact that older participants were more likely than younger participants to be members of cluster I ("low conflict, high facilitation;" 37% versus 7%, respectively), and less likely than younger participants to be members of cluster III ("high conflict, moderate facilitation;" 30% versus 57%, respectively).

Intergoal conflict and facilitation were independent of, or showed rather small associations with, various cross-sectionally assessed person and goal characteristics. The only significant relations involved intergoal conflict. Participants whose goals were more resource intensive tended to report higher levels of intergoal conflict than did participants with less resource-intensive goals (r = .26). Furthermore, more agreeable participants tended to report lower levels of intergoal conflict (r = -.25). Older participants reporting higher levels of intergoal conflict also tended to report that the realization of their goals was less under their own control than did older participants with less conflicting goals (r

= -.40). Intergoal conflict and facilitation were independent of the personality traits neuroticism, extraversion, openness to experience, and conscientiousness, the tendency to respond in socially desirable ways, to tolerate ambiguities, and to engage in SOC-relevant behavior.

Intergoal facilitation was not related to the participant's self-reported positive psychological functioning, habitual emotional well-being, life satisfaction, and goal satisfaction at the first and second measurement points. In contrast, the degree of intergoal conflict was, at the time of its assessment (T1), negatively associated with three of these facets of psychological well-being (i.e., positive psychological functioning, emotional well-being, and goal-specific satisfaction; $|r| \leq .25$). Longitudinally, the level of intergoal conflict was only predictive of goal-specific satisfaction. Participants with more conflicting goals tended to be less satisfied with these goals at T2 (i.e., after about four months; $r = -.22$).

In the younger subsample, intergoal conflict and facilitation were unrelated to the self-reported goal progress in the study interval (assessed at T2). In the older subsample, participants with more facilitative goals tended to report more goal progress at T2 than did participants with less facilitative goals ($r = .41$). The hypothesis that goal progress mediated the negative longitudinal relationship between intergoal conflict and goal-specific satisfaction was not supported.

Age-group differences in intergoal conflict and facilitation were replicated when only the exercise-specific intergoal relations were taken into account. Older participants tended to evaluate their exercise goal as being less conflicting with, and more facilitative for their other three goals (and vice versa; see Table 26). The age-group differences in exercise-specific intergoal *facilitation* could not be explained by age-group differences in exercise motivation, nor by age-group differences in seven other exercise-specific person and context variables. The age-group difference in exercise-specific intergoal *conflict* also remained after exercise motivation was controlled for, but did not remain after the various additional exercise-specific person and context variables were simultaneously controlled for.

Younger and older participants differed in their average monthly exercise behavior in the study interval. Older participants tended to exercise more regularly, to realize a higher percentage of their originally intended monthly exercise frequency, and to attend their cooperating sports facility more often than did younger participants. There were no age-group differences in the average self-reported monthly exercise duration and frequency (see Table 29).

Age-group differences were also found in the development of exercise participation over time. In the younger age group, the percentage of participants who exercised at least once a week decreased throughout the five calendar months of the study interval (marginally significant), whereas the percentage of participants who did not exercise at all significantly increased. In contrast, the percentage of older participants who exercised at least once a week remained consistently high, and the percentages of older participants who did not exercise at all, or who exercised less than once a week remained consistently low throughout the study interval (see Figure 10). Older adults were significantly more likely than younger adults to belong to the group of "persistent exercisers" (i.e., to have exercised at least once a week throughout the entire study interval; 71% versus 46%, respectively). Younger adults, in contrast, were significantly more likely than older adults to belong to the group of "exercise drop-outs" (i.e., to have not exercised at all in the last two calendar months of the study interval; 23% versus 4%, respectively).

Exercise-specific intergoal conflict and facilitation were predictive of the average exercise behavior in the subsequent study interval. Participants who described their exercise goal at the first measurement time as less conflicting with, and more facilitative for their other three goals tended to exercise, on the average, longer, more regularly, and more frequently than did participants who described their exercise goal as more conflicting and less facilitative (see Table 30). Overall, exercise-specific intergoal facilitation appeared to be a more important predictor of the average exercise behavior than exercise-specific intergoal conflict. This became even more obvious when the groups of "persistent exercisers" and "exercise drop-outs" were compared (see Figure 11). Persistent exercisers, on the average, had reported significantly higher levels of exercise-specific intergoal facilitation than had exercise drop-outs. Both groups, however, did not differ significantly with respect to exercise-specific intergoal conflict.

Investigations of whether the observed age-group differences in exercise behavior could be explained by age-related differences in exercise-specific intergoal relations yielded the following results: Age-group differences in *self-reported* characteristics of exercise behavior were not completely explained by age-group differences in exercise-specific intergoal conflict and facilitation, but age-group differences in the average monthly *objective* exercise frequency (according to information provided by the cooperating sports facility) were (see Tables 34 and 35).

4.2. Study Part 2: Diary Phase

What are the associations between intergoal relations and the person's emotional well-being in everyday life? Do intergoal relations have implications for enjoying and disliking everyday activities, and for pursuing one's goals? What about the experience of situational conflict? And the involvement in goal-relevant activities? Below, I will describe analyses addressing these questions.

4.2.1. Intergoal Relations and Emotional Well-Being in Everyday Life

Did participants with varying levels of intergoal conflict and facilitation differ in their affective experience of everyday life? To characterize the participant's emotional well-being during the diary phase, I averaged affect ratings across all diary entries. These ratings reflect the participant's short-term evaluations of the intensity of positive and negative affect during the preceding hours (i.e., during the time interval since waking up for the 1st, and since the preceding diary entry for the 2nd and 3rd diary entry).

To check for potential age-group differences in the bivariate associations between intergoal conflict or facilitation and affective well-being, I used SPSS UNIANOVA to test the following models: *Positive [Negative] Affect = Age Group + Conflict [Facilitation] + Age Group * Conflict [Facilitation].*[66] All models yielded nonsignificant interactions ($p > .05$), indicating that there were no systematic age-group differences in bivariate associations.

Using SPSS REGRESSION, I tested whether the associations between intergoal conflict or facilitation and the affect indicators depended on the conflict-by-facilitation configuration. Interaction terms were tested in multiple regression models of the following kind: *Positive [Negative] Affect = Conflict + Facilitation + Conflict * Facilitation*. None of these models yielded a significant interaction at the .05 level. Table 36 therefore shows results of more parsimonious models without the interaction.

Intergoal conflict showed significant associations to the participants' affective experiences during the diary phase. Participants with less conflicting goals tended to experience, on the average, more intense positive and less intense negative affect than participants with more conflicting goals. The correlation was particularly strong with respect to the average intensity of negative affect ($r = .44$). Considering the simultaneous (multiple) relationships, intergoal facilitation did not contribute significantly to the prediction of

[66] All variables approximated normal distribution satisfactorily (see Appendix E, Table E 1, for description of variables, transformations, and age-group differences).

positive and negative affect. Overall, intergoal relations explained significant amounts of the variance in average positive and negative affect (12% and 22%, respectively).

Table 36. *Predicting Average Positive and Negative Affect During the Diary Phase (N = 81): Pearson's Correlations and Results of Multiple Regression Analyses*

	Predictor	*r*		*B*		β		
Predicting Average Positive Affect During Diary Phase								
T1	Conflict	-.28	**	-.17	*	-.24	R = .35	**
T1	Facilitation	.26	**	.58	n.s.	.21	R^2 = .12	(a)
Predicting Average Negative Affect During Diary Phase								
T1	Conflict	.44	**	.45	**	.41	R = .47	**
T1	Facilitation	-.24	**	-.64	n.s.	-.15	R^2 = .22	(b)

n.s. $p > .05$; * $p < .05$; ** $p < .025$ (alpha adjustment for two repeated analyses)
(a) R^2 = .05 (unique conflict) + .04 (unique facilitation) + .03 (shared) = .12
(b) R^2 = .16 (unique conflict) + .02 (unique facilitation) + .04 (shared) = .22

Control analyses showed that these relations remained stable after separately controlling for the potential rival predictors identified in study part 1 (see 4.1.1.2). For two reasons, I considered the frequency of exercising reported in the first nine diaries as an additional rival predictor.[67] First, physical exercise has been shown to have implications for affective experiences (for overviews, see Casper, 1993; Tuson & Sinyor, 1993). Second, participants with more facilitative goals tended to exercise more often during the first nine diary days than participants with less facilitative goals ($r_{facilitation}$ = .23, $p < .05$; $r_{conflict}$ = -.00 n.s.). Including exercise frequency as control variable did not alter the results reported in Table 36. All control analyses are documented in Appendix F.

4.2.2. Intergoal Relations and the Tendencies to Enjoy and Dislike Everyday Activities

Participants' evaluations of how much they enjoyed and disliked the activities they had engaged in during the preceding hours reflected an additional facet of the subjective experience of everyday life. Averaging all ratings across the entire diary phase yielded indicators representing the participants' tendencies to enjoy and dislike their activities.

[67] I only considered instances of exercising reported during the *first nine* diaries to ensure an equivalent time frame for all participants. I excluded one participant with less than nine diaries from these analyses.

Using SPSS UNIANOVA, I tested for age-group differences in bivariate associations between intergoal conflict or facilitation and the participants' tendencies to enjoy and dislike their reported activities. The models *Average Enjoyment [Displeasure] = Age Group + Conflict [Facilitation] + Age Group * Conflict [Facilitation]* yielded nonsignificant interactions at the .05 level, indicating that there were no systematic age-group differences.

To test whether the associations between intergoal conflict or facilitation and the average degree of enjoying or disliking one's activities depended on the conflict-by-facilitation configuration, I tested interaction terms in multiple regression models of the following kind: *Average Enjoyment [Displeasure] = Conflict + Facilitation + Conflict * Facilitation*. All interactions were nonsignificant at the .05 level. Table 37 therefore shows results of more parsimonious models without the interaction.[68]

Table 37. *Predicting Average Enjoyment and Displeasure from Everyday Activities: Pearson's Correlations and Results of Multiple Regression Analyses*

	Predictor	*r*		*B*		β		
Predicting Average Enjoyment of Everyday Activities								
T1	Conflict	-.28	**	-.20	**	-.25	R = .31	**
T1	Facilitation	.19	*	.44	n.s.	.14	R^2 = .10	(a)
Predicting Average Displeasure from Everyday Activities (c)								
T1	Conflict	.29	**	.07	**	.26	R = .34	**
T1	Facilitation	-.23	**	-.18	n.s.	-.18	R^2 = .12	(b)

n.s. $p > .05$; * $p < .05$; ** $p < .025$ (alpha adjustment for two repeated analyses)[69]

(a) R^2 = .06 (unique conflict) + .02 (unique facilitation) + .02 (shared) = .10

(b) R^2 = .06 (unique conflict) + .03 (unique facilitation) + .03 (shared) = .12

(c) Because of substantial skewness of the dependent variable (see Appendix E, Table E 1), I repeated the analyses using Spearman rank correlations. This replicated the obtained pattern of results: $rho_{conflict}$ = .41**, $rho_{facilitation}$ = -.25*

Intergoal conflict significantly predicted the participants' tendency to enjoy and dislike their activities. Participants with less conflicting tended to enjoy more and dislike less what they were doing during the diary phase. The bivariate associations were of rela-

[68] The "activity enjoyment" variable approximated normal distribution satisfactorily. The "activity-displeasure" variable, however, was substantially skewed, particularly in the older subsample (see Appendix E, Table E 1, for descriptions of variables, transformations, and age-group differences).

[69] The indication of *p*-values smaller than .05 (*) serves descriptive purposes. I regard results as significant if they meet the multiple-testing adjusted criterion of significance (**).

tively small size ($r < .30$). Because of the substantial skewness in the "activity-displeasure" variable, I repeated the analyses using Spearman rank correlations. This replicated the observed pattern of results, and yielded a moderate association between intergoal conflict and the tendency to dislike one's activities (rho = .41). Considering the simultaneous (multiple) relationships, intergoal facilitation did not significantly contribute to the predictions. Overall, the nature of intergoal relations accounted for small to moderate amounts of the variance in the participants' tendencies to enjoy and dislike their everyday activities (10% and 12%, respectively). These relationships remained relatively stable after separately controlling for the potential rival predictors identified in study part 1, as well as for the frequency of exercising during the first nine diary days (for a detailed documentation of control analyses, see Appendix F).

4.2.3. Intergoal Relations and the Enjoyment of Goal Pursuit

The analyses described above showed that participants with more conflicting and less facilitative goals in general tended to enjoy less what they were doing (and to dislike it more)—regardless of whether the activities were relevant for the four goals under study or not. Next, I tested whether similar associations could be observed when only goal-relevant activities were taken into account. Specifically, these analyses tested whether the *pursuit of goals* was more or less enjoyable depending on how this goal was related to the person's other goals.[70]

The target level of analysis for investigating this question was the *single reported goal* (in contrast to the above reported analyses, where the unit of interest was the person and information was aggregated across all four goals). Four each single goal, I created a variable that represented the average enjoyment of (only those) activities that the participant had rated as furthering that goal (see Appendix E, Table E 4, for a description of this variable and a test for age-group mean differences). The central independent variables in the analyses described below were the degrees of intergoal conflict and facilitation associated with each particular goal. I will refer to these as *goal-specific* conflict and facilitation.

Because each participant reported four goals, a hierarchical data structure resulted: The goals were nested (i.e., hierarchically organized) within individuals. Such nested data

[70] Theoretically, a similar question could be explored with respect to the degree of *disliking* goal-relevant activities. I did not do this because participants rarely indicated that they disliked goal-relevant activities. For more than half of the investigated goals (51.2%), there were no occurrences where the participant had reported to dislike pursuing that goal.

have at least two sources of variability—differences between individuals (between-person variability), such that some individuals tend to enjoy pursuing their goals more than others; and differences among the four goals obtained from each person (within-person variation), such that the individual tends to enjoy pursuing some of his or her goals more than others. In such nested designs, the lowest (i.e., goal) level observations are generally not completely independent because observations of the same person are typically more similar (e.g., correlate more highly) than observations of different persons. This violates a central assumption in standard statistical tests, such as ordinary least squares regression. I therefore used multilevel regression modeling (e.g., Bryk & Raudenbush, 1992; Goldstein, 1995; Hox, 1995) to accommodate dependencies among observations within each participant and to analyze variables from different hierarchical levels simultaneously.

The rationale for investigating the association between goal-specific conflict and facilitation and the average enjoyment of goal-relevant activities was the same as in the above described analyses based on standard regression. Specifically, it comprised two steps. First, I determined bivariate associations and tested them for potential age-group differences. Second, I determined the multiple relation and tested it for a potential conflict-by-facilitation interaction.

Conceptually, multilevel regression models represent hierarchical systems of regression equations, which express the dependent variable (enjoyment of goal-relevant activities) using a pair of linked models: one at the goal level (level 1) and one at the person level (level 2). In order to determine *bivariate* relations and to test them for potential age-group differences, I expressed the average enjoyment of goal-relevant activities using goal-specific conflict (or goal-specific facilitation) as single predictor on the goal level (level 1). Intercept (i.e., mean enjoyment) and slope (i.e., strength of association between goal-specific conflict [facilitation] and average enjoyment of goal-relevant activities) in these regression equations were assumed to vary across individuals (i.e., to be "random" rather than "fixed" effects). Using notational conventions (e.g. Bryk & Raudenbush, 1992), the respective regression equation can be formalized as follows:

$$Enjoyment = \beta_{0j} + \beta_{1j}\, Conflict\ [Facilitation] + r_{ij} \quad (1)$$

where β_{0j} – random intercept, β_{1j} – random slope, r_{ij} – random error associated with i^{th} goal in j^{th} individual

A major conceptual difference to ordinary least squares regression is that the latter assumes that both the intercept and slope do *not* vary across individuals. This assumption

becomes testable with multilevel regression modeling. If intercept and slope do display variance across individuals, the logical extension of the model is to include predictors of such (level 2) variance. On the person level (level 2), I therefore expressed the random regression coefficients (intercept and slope) in equation (1) by introducing age group as an explanatory variable. This yielded the following regression equations:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}\, Age\ Group + u_{0j} \quad (2)$$

where γ_{00} – fixed intercept, γ_{01} – fixed slope for age group, u_{0j} – random residual for j^{th} person

$$\beta_{1j} = \gamma_{10} + \gamma_{11}\, Age\ Group + u_{1j} \quad (3)$$

where γ_{10} – fixed intercept, γ_{11} – fixed slope for age group, u_{1j} – random residual for j^{th} person

Combining equations (1), (2), and (3) yielded the following starting model for the investigation of age-group differences in bivariate associations between goal-specific conflict [facilitation] and average enjoyment of goal pursuit:

$$\begin{aligned} Enjoyment = {} & \gamma_{00} + \gamma_{01}\, Age\ Group + \gamma_{10}\, Conflict\ [Facilitation] \\ & + \gamma_{11}\, Age\ Group * Conflict\ [Facilitation] \\ & + u_{0j} + u_{1j}\, Conflict\ [Facilitation] + r_{ij} \end{aligned} \quad (4)$$

This combined model is the sum of a fixed and a random part. The coefficients of the fixed part (first two lines in equation 4) are equivalent to the usual intercept and slopes known from standard regression analyses. The random part (third line in equation 4), reflects the assumptions of between-person variation in *intercepts* (i.e., variation in mean enjoyment of goal-relevant activities, denoted by u_{0j}), between-person variation in the *slope* of goal-specific conflict or facilitation (i.e., variation in the size of the association between enjoyment of goal-relevant activities and the degree of conflict (facilitation) associated with that goal, denoted by u_{1j}), and random variation *within* individuals (denoted by r_{ij}).[71]

To determine the *multiple relationship* between goal-specific conflict, facilitation, and average enjoyment of goal pursuit, I expressed the average enjoyment of goal-relevant activities using goal-specific conflict, goal-specific facilitation, and the goal-specific con-

[71] In contrast, ordinary regression assumes that γ_{01} and u_{0j} of equation (2) and γ_{11} and u_{1j} of equation (3) are zero, so that β_{0j} and β_{1j} of equation (1) are fixed effects (i.e., that intercept and slope are the same for all individuals, across both age groups).

flict-by-facilitation interaction as predictors on the goal level (level 1). I again assumed intercept and slopes to vary across individuals:

$$Enjoyment = \beta_{0j} + \beta_{1j}\,Conflict + \beta_{2j}\,Facilitation + \beta_{3j}\,Conflict * Facilitation + r_{ij} \quad (5)$$

where β_{0j} – random intercept, β_{kj} – random slope for k^{th} explanatory variable, r_{ij} – random error associated with i^{th} goal in j^{th} individual

No further predictors were included on the person level:

$$\beta_{0j} = \gamma_{00} + u_{0j} \quad (6)$$

where γ_{00} – fixed intercept, u_{0j} – random residual for j^{th} person

$$\beta_{kj} = \gamma_{k0} + u_{kj} \quad (7)$$

where β_{kj} – slope of k^{th} explanatory variable, γ_{k0} – fixed intercept of k^{th} explanatory variable, u_{kj} – random residual of k^{th} explanatory variable for j^{th} person

Combining equations (5), (6), and (7) yielded the following starting model for the investigation of the multiple relationship between goal-specific conflict, facilitation, and average enjoyment of goal pursuit:

$$\begin{aligned} Enjoyment = {} & \gamma_{00} + \gamma_{10}\,Conflict + \gamma_{20}\,Facilitation + \gamma_{30}\,Conflict * Facilitation \\ & + u_{0j} + u_{1j}\,Conflict + u_{2j}\,Facilitation + u_{3j}\,Conflict * Facilitation + r_{ij} \end{aligned} \quad (8)$$

This combined starting model is again the sum of a fixed and a random part. The fixed part (first line of equation 8) represents equivalents to the intercept and slopes known from standard regression models. The random part (second line in equation 8) represents a test of the assumptions of between-person variation in *intercepts* (i.e., variation in mean enjoyment of goal-relevant activities, denoted by u_{0j}), between-person variation in the *slopes* of the explanatory variables (i.e., variation in the size of the associations between enjoyment of goal-relevant activities and the explanatory variables, denoted by u_{kj}), and random variation *within* individuals (denoted by r_{ij}).

For the estimation of both types of models (addressing bivariate and multiple relationships), goal-specific conflict and facilitation were entered as deviations from their respective overall means (i.e., they were grand-mean centered). Following the procedure described in Box 2, I obtained parameter estimates using Restricted Maximum Likelihood (REML) in SAS PROC MIXED.

Box 2. *Model-Specification Procedure*

Step 1:	Estimation of starting model in equations (4) and (8).
Step 2:	Exclusion of nonsignificant interaction terms (and in case of equation (4) of age group) and re-estimation of this reduced model.
Step 3:	Re-estimation of the model in step 2 with the slope of predictors fixed across individuals.
Step 4:	Comparison of goodness of fit of models in step 2 and step 3 using the likelihood ratio test on the change in deviance.[72] Determination of final model according to this test.

In both models, interaction terms were nonsignificant at the .05 level. This shows (a) that there were no age-group differences in the bivariate associations between goal-specific conflict or facilitation and the average enjoyment of goal pursuit, and (b) that these associations did not depend on the configuration of goal-specific conflict and facilitation. Also in both models, fixing the slopes of the explanatory variables across individuals did not significantly decrease the goodness of model fit. This shows that the associations between goal-specific conflict or facilitation and average enjoyment of goal pursuit did not vary significantly across participants. Table 38 displays parameter estimates of the final models (i.e., step 4).

Overall, the results show that goal-directed activities were more enjoyable the more facilitative and less conflicting the respective goal was. Considering the simultaneous (multiple) relationship, the level of facilitation associated with a goal was a more important predictor of the average enjoyment of pursuing that goal than the level of goal-specific conflict (which was only marginally significant). The estimated variance components show that there were significant variations in the mean enjoyment of goal-relevant activities between participants (intercept) and a significant variation of the enjoyment of goal-relevant activities within participants (residuals) that were not accounted for by the levels of goal-specific conflict and facilitation. Overall, goal-specific conflict and facilitation simultaneously accounted for 12.5% of the variation of the average enjoyment of goal-relevant variables between and within participants.

[72] The likelihood ratio test can be used to assess if, of two nested models, the more parsimonious model has a significantly worse fit to the data. Under the null hypothesis that the two models are equivalent, the difference between the –2 REML Log Likelihood statistics in both models has a chi-square distribution with degrees of freedom equal to the number of constraints differentiating model A from model B (Littell, Milliken, Stroup, & Wolfinger, 1996).

Table 38. *Predicting Average Enjoyment of Pursuing Personal Goals: Results of Multilevel Regression Analyses (324 Goals Nested Within N = 81 Participants)*

		Bivariate Relationships With Activity Enjoyment (D)		Multiple Relationship
		Facilitation (T1)	Conflict (T1)	
Fixed Part [a]				
	Intercept	1.58 (.06) **	1.61 (.06) **	1.59 (.06) **
T1	Goal-specific facilitation	.17 (.06) **	-	.13 (.07) *
T1	Goal specific conflict	-	-.25 (.10) *	-.19 (.10) +
Random Part [b]				
	Intercept	.23 (.05) **	.22 (.05) **	.21 (.05) **
	Residual	.28 (.03) **	.28 (.02) **	.28 (.03) **
Modeled Variance [c]		6.98%	10.73%	12.50%

+ $p < .10$; * $p < .05$; ** $p < .01$

(a) Unstandardized regression coefficients (standard error)

(b) Estimated variance components (standard error)

(c) Total proportional reduction in variance components (intercept and residual) in comparison to unconditional means models (i.e., models without the explanatory variables)

4.2.4. Intergoal Relations and the Experience of Situational Conflict

Were intergoal relations reflected in the relative frequency of conflicting motivational tendencies experienced in everyday life? To assess this, I determined the percentage of activities for which participants had indicated that they would have liked or ought to have done something else instead. These evaluations reflect situational conflict resulting from the simultaneous occurrence of two potentially opposing motivational tendencies ("fulfillment of duty" versus "search for pleasure"). Depending on which tendency is currently given priority, persons might feel that they would *want* to be doing something else (because that would be more pleasant than what they are doing) or that they *ought* be doing something else (because that would be more responsible than what they are doing).

Using SPSS UNIANOVA, I tested whether there were age-group differences in the bivariate relationships between situational conflict and intergoal conflict or facilitation: *Percent Want [Ought] To Do Something Else = Age Group + Conflict [Facilitation] + Age Group * Conflict [Facilitation]*. These analyses yielded nonsignificant interactions, indicating that there were no age-group differences in bivariate associations.

To test whether these associations depended on the conflict-by-facilitation configuration, I tested interaction terms in multiple regression models of the following kind: *Percent Want [Ought] To Do Something Else = Conflict + Facilitation + Conflict * Facilitation.*

Again, the interactions were not significant at the .05 level. Table 39 therefore shows results of more parsimonious models without the interaction.[73]

The more conflicting and the less facilitative goals the participants' goals were, the more likely they were to report that what they did was *not* what they wanted or ought to do (accounting, overall, for 16% and 14% of the variance, respectively). Because of the substantial skewness of the dependent variables, I additionally computed Spearman rank correlations. These analyses replicated the reported pattern of results (see Table 39).

Table 39. *Predicting the Relative Frequency of Situational Conflict: Pearson's Correlations and Results of Multiple Regression Analyses*

	Predictor	*r*	*B*	β	
Predicting Percent Situational Conflict "Want to Do Something Else" (a)					
T1	Conflict	.32 **	.03 **	.27	R = .40 **
T1	Facilitation	-.30 **	-.11 **	-.25	R^2 = .16 (c)
Predicting Percent Situational Conflict "Ought to Do Something Else" (b)					
T1	Conflict	.28 **	.02 *	.24	R = .37 **
T1	Facilitation	-.30 **	-.09 **	-.25	R^2 = .14 (d)

* $p < .05$, ** $p < .025$ (alpha adjustment for two repeated analyses

Notes. Because of the substantial skewness of the situational conflict variables (see Appendix E, Table E 2), I repeated the analyses using Spearman rank correlations. This replicated the obtained pattern of results:

(a) $rho_{conflict} = .31^{**}$, $rho_{facilitation} = -.32^{**}$

(b) $rho_{conflict} = .27^{*}$, $rho_{facilitation} = -.30^{**}$

(c) R^2 = .07 (unique conflict) + .06 (unique facilitation) + .03 (shared) = .16

(d) R^2 = .05 (unique conflict) + .06 (unique facilitation) + .03 (shared) = .14

4.2.5. Intergoal Relations and the Involvement in Activities Furthering and Hindering Goal Pursuit

The analyses described next address the question whether intergoal relations had implications for the engagement in activities furthering or hindering goal pursuit. I considered four indicators of involvement in (positively and negatively) goal-relevant activities. All indicators were based on the participants' ratings of each reported activity on the question if and how much this activity was *furthering* or *hindering* each of their four goals.

[73] Overall, situational conflict occurred relatively seldomly in the investigated sample (with a mean of 7% and 4% of endorsements of want and ought to do something else, respectively). A substantial positive skewness could not be satisfactorily reduced by variable transformations (see Appendix E, Table E 2 for detailed descriptions of variables, transformations, and age-group differences).

Averaging these information across all activities and goals yielded indicators of the participants' mean involvement in (a) activities furthering, and (b) activities hindering their goals. Additional indicators characterized the *pattern* of relevance of the same activity for different goals. Two goal-relevance patterns were particularly interesting because of their relatedness to the concepts of intergoal conflict and facilitation. I considered patterns in which the same activity was rated as simultaneously furthering more than one goal as an expression of intergoal facilitation (goal relevance pattern "++"), and patterns in which the same activity was rated as furthering (at least) one goal and hindering (at least) one additional goal as an expression of intergoal conflict (goal relevance pattern "+-/-+"). For each reported activity, I determined the numbers of pairs of goals with goal relevance patterns "++" and "+-/-+".[74] Dividing their totals by the total number of activities reported throughout the diary phase yielded indicators of the persons' tendencies to perceive their reported activities (c) as simultaneously furthering several of their goals and (d) as furthering (at least) one, but hindering (at least) one additional of their goals.

As expected, participants' ratings indicated that only a subset of their reported activities was (positively or negatively) relevant for their four goals. The involvement in activities *furthering* goal pursuit was about four times more pronounced than the involvement in activities *hindering* the reported goals, a rarely occurring phenomenon. Also of low baseline frequency was the occurrence of activities that participants rated as being simultaneously (positively or negatively) relevant for more than one goal. Here, the frequency of activities rated as simultaneously furthering several goals was 20 times higher than the frequency of activities rated as simultaneously furthering (at least) one goal, but hindering (at least) one other goal. The latter had an extremely low baseline frequency and on the average only occurred in .05% of the reported activities (for description of variables, transformations, and age-group differences, see Appendix E, Table E 3).

I used SPSS UNIANOVA to test for potential age-group differences in bivariate associations: *Goal-Involvement Indicator = Age Group + Conflict [Facilitation] + Age Group * Conflict [Facilitation]*. Nonsignificant interaction terms ($p > .05$) showed that younger and older adults did not differ in the correlations between intergoal conflict or facilitation and the various goal-involvement indicators.

[74] Because each activity was rated with respect to its relevance for four goals (a, b, c, d), goal relevance patterns in a total of six pairs of goals were considered (ab, ac, ad, bc, bd, cd).

I further tested whether the associations between intergoal conflict or facilitation and the various goal involvement indicators depended on the conflict-by-facilitation configuration. Nonsignificant interaction terms ($p > .05$) in the models *Goal-Involvement Indicator = Conflict + Facilitation + Conflict * Facilitation* showed that this was not the case. Table 40 therefore shows results of more parsimonious models without the interaction.

Table 40. *Predicting Involvement in (Positively and Negatively) Goal-Relevant Activities: Pearson's Correlations and Results of Multiple Regression Analyses*

	Predictor	*r*		*B*		β		
Predicting Involvement in Activities Furthering Goals								
T1	Conflict	-.21	*	-.07	n.s.	-.15	R = .39	**
T1	Facilitation	.37	**	.60	**	.34	R^2 = .15	(a)
Predicting Involvement in Activities Hindering Goals								
T1	Conflict	.20	*	.07	n.s.	.20	R = .20	n.s.
T1	Facilitation	-.04	n.s.	-.00	n.s.	-.00	R^2 = .04	
Predicting Average Occurrence of Goal Relevance Pattern "++" (c)								
T1	Conflict	-.20	*	-.01	n.s.	-.07	R = .67	**
T1	Facilitation	.67	**	.36	**	.66	R^2 = .45	(b)
Predicting Average Occurrence of Goal Relevance Pattern "+-/-+" (d)								
T1	Conflict	.10	n.s.	.00	n.s.	.11	R = .10	n.s.
T1	Facilitation	.01	n.s.	.00	n.s.	.03	R^2 = .01	

n.s. $p > .05$; * $p < .05$, ** $p < .013$ (alpha adjustment for four repeated analyses)[75]

(a) R^2 = .02 (unique conflict) + .11 (unique facilitation) + .02 (shared) = .15

(b) R^2 = .01 (unique conflict) + .41 (unique facilitation) + .03 (shared) = .45

Because of the substantial skewness of the goal relevance pattern variables (see Appendix E, Table E 3), I repeated analyses using Spearman rank correlations:

(c) $rho_{conflict}$ = .06 n.s., $rho_{facilitation}$ = .64**

(d) $rho_{conflict}$ = .10 n.s., $rho_{facilitation}$ = -.13 n.s.

Participants with more facilitative goals tended to be more involved in activities *furthering* their goals than participants with less facilitative goals. The size of the bivariate association was substantial ($r = .37$). Intergoal conflict did not contribute to the prediction of goal pursuit after adjusting for intergoal facilitation. Overall, intergoal relations accounted for 15% of the variance of participants' average involvement in goal pursuit. In

[75] The indication of *p*-values smaller than .05 (*) serves descriptive purposes. I regard results as significant if they meet the multiple-testing adjusted criterion of significance (**).

contrast to this pronounced relationship, the contribution of intergoal conflict and facilitation to the prediction of involvement in activities *hindering* goal pursuit was negligible.

Results also showed that the more facilitative their goals, the more likely participants engaged in activities that furthered several of their goals at once. With $r = .67$, this association was strong. Spearman rank correlations, computed because of the skewness of the dependent variable, replicated this result. The association with intergoal conflict was not significant. Overall, the nature of intergoal relations accounted for 45% of the variance in the average occurrence of activities furthering more than one goal at once. In contrast, no associations existed between the nature of intergoal relations and the occurrence of activities that furthered (at least) one, and hindered (at least) one additional goal.

4.2.6. Did Situational Conflict and Goal Involvement Mediate the Relationship between Intergoal Relations and Emotional Well-Being?

One purpose of the diary phase was to identify events or processes in the participants' everyday lives that might mediate the relationship between intergoal relations and subjective well-being. I had predicted that the frequency of experiencing situational conflict and the degree of involvement in the pursuit of one's goal might be such mediators. As I described before, intergoal relations, specifically intergoal conflict, was substantially associated with the participants' average emotional well-being during the diary phase. The less conflicting the participants' four goals, the more intense positive, and the less intense negative affect they tended to experience. Also in agreement with the hypothesis were the observations that intergoal relations were associated with (a) the tendency to experience situational conflict (i.e., the experience that one wants to or ought to do something other than what one is doing), and (b) the intensity of engagement in the pursuit of one's goals. The question addressed next was whether situational conflict and the degree of engagement in goal pursuit indeed *mediated* the relationship between intergoal relations and emotional well-being. The analyses described next explored this question on two different levels of analysis. I conducted a first series of analyses on the level of the *single diary-entry report* covering a period of few hours. The question of interest was whether the occurrence of situational conflict and the degree of involvement in goal pursuit *during the time period covered by a single diary entry* were predictive of the intensity of (short-term) positive and negative affect experienced *during that time*. A second series of analyses addressed the question whether situational conflict and goal involvement, if *aggregated across the entire diary*

phase, mediated the relation between intergoal relations and the *average* emotional well-being during the diary phase.

4.2.6.1. Situational Conflict and Goal Involvement as Predictors of Short-Term Affect

Do conflict experiences, such as the feeling that one wants or ought to do something else instead of what one is doing, and the degree of involvement in the pursuit of one's goals predict one's concurrent emotional well-being? To address this question, I investigated associations between situational conflict and goal involvement on the one hand, and the intensity of short-term positive and negative affect on the other. The available data had two characteristics with implications for appropriate data analysis: (a) The data structure was hierarchical with, on the average, 27 repeated diary entries nested within participants. (b) The time intervals between diary entries were not equal (because diaries were kept during three periods of three consecutive days that were interspersed with breaks of six days). Such unequally-spaced repeated measures designs are characterized by a covariance structure of observations that violates the assumption of independent errors in most standard methods for analyzing hierarchical data.[76] With repeated measures in general, two adjacent measures are typically more highly correlated than two measurement points taken several measurement points apart. Furthermore, with unequally spaced observations in particular, measurements being closer together in time (regardless of how many measurement points apart) are typically more highly correlated than two measures taken further apart in time.[77]

To accommodate for this within-subjects covariation of observations, I used multilevel regression modeling fitting a time-series type covariance structure appropriate for unequally spaced repeated measures. Specifically, I used SAS PROC MIXED and Restricted Maximum Likelihood (REML) to fit the SP(POW) (spatial power law) covariance structure to the data. SP(POW) models the covariance between two measurements at times t1 and t2 as $cov(y_{t1}, y_{t2}) = \sigma^2 \rho^{|t1-t2|}$, where ρ is an autoregressive parameter assumed to satisfy $|\rho| < 1$, and σ^2 is the overall variance of observations (Littell et al., 1996, p. 128 f.). Using spatial power law, a *continuous* "time-in-study" variable references meas-

[76] Most standard methods for analyzing hierarchical data structures are based on the assumption of independent errors, that is, the assumption that all level 1 (i.e., diary-entry) observations within a given level 2 unit (i.e., participant) are equally correlated.

[77] In the present study, for example, observations taken *within* one of the three diary periods would typically be more highly correlated than observations taken during different diary periods.

urement times. The difference between two time points can take unequally spaced measurement points into account (unlike, for example, the often used autoregressive-of-order-1 covariance structure, in which measurement times are referenced by their position in the time series). I defined the scale of the continuous "time-in-study" variable such that each day of the *entire* diary study represented three units. In other words, the nine diary entries of the first period of three consecutive diary days were successively counted (1 to 9; three days with three diary entries each). Each of the six days in the interval between the first and second diary period was weighted by three and successively counted (10 to 27). The nine diary entries of the second diary period were successively counted (28 to 36), and so forth. The autoregressive parameter ρ, accordingly, represented the covariance of two adjacent diary entries in the *same* diary period of three days.

The investigation of the relationship between short-term emotional well-being, short-term occurrence of situational conflict, and short-term goal involvement followed the same rationale as in all analyses described before. First, I determined the bivariate associations between the dependent variable (short-term affect) and the independent variables (short-term situational conflict and short-term goal involvement) and tested them for age-group differences. Second, I determined the multiple relationship between the dependent and independent variables.

The aggregation of indicators of short-term positive and negative affect as well as of short-term involvement in goal-relevant activities followed the same procedures as before. As an indicator of situational conflict, I created a dichotomous variable that represented the occurrence (versus nonoccurrence) of at least one endorsement of "wanted to" *or* "ought to do something else " in the respective diary-entry report.[78]

The investigation of potential *age-group differences* in bivariate relations followed the rationale described in detail in section 4.2.3. I predicted short-term positive or negative affect using goal involvement (grand-mean centered) or the occurrence of situational conflict as single predictors on the lowest level of the data hierarchy (i.e., diary-entry level). Intercept and slope in these regression equations were initially assumed to be random (i.e., allowed to vary across individuals). On the person level, I expressed the random coefficients intercept and slope by introducing age group as explanatory variable. This yielded

[78] Because of low baseline frequencies and extreme skewness, I no longer distinguished the two aspects of situational conflict on the diary-entry level and chose a dichotomous data format. See Appendix E, Table E 5, for detailed descriptions of variables, transformations, and age-group differences.

the following starting model for the investigation of age-group differences in bivariate associations: *Short-Term Positive [Negative] Affect* = γ_{00} + γ_{01} *Age Group* + γ_{10} *Goal Involvement [Situational Conflict]* + γ_{11} *Age Group * Goal Involvement [Situational Conflict]*+ u_{0j} + u_{1j} *Goal Involvement [Situational Conflict]* + r_{ij} (for an in-depth explanation of procedure and coefficients, see equations 1 to 4 on page 163 f.). Nonsignificant interactions at the .05 level showed that there were no age-group differences in bivariate associations. Fixing the slopes of the independent variables across individuals did not significantly decrease the goodness of model fit. In order to determine *bivariate* associations, I excluded age group and the interaction term from the models and re-estimated them with the slope of the single predictors fixed across participants. Table 41 shows results of these final analyses. To determine the *multiple* relationships, I expressed short-term positive (and negative) affect using short-term involvement in goal-relevant activities (grand-mean centered) and the occurrence of situational conflict as predictors on the diary-entry level of the data hierarchy (level 1). I again assumed intercept and slopes to vary across participants. No further predictors were included on the person level (level 2). This yielded the following starting model for the investigation of the multiple relationship: *Short-Term Positive [Negative] Affect* = γ_{00} + γ_{10} *Goal Involvement* + γ_{20} *Situational Conflict* + u_{0j} + u_{1j} *Goal Involvement* + u_{2j} *Situational Conflict* + r_{ij}. Fixing the slopes of the independent variables did not significantly decrease the goodness of model fit. Table 41 shows results of this final analysis.

The results depicted in Table 41 show that both the degree of involvement in goal-relevant activities and the occurrence (versus nonoccurrence) of situational conflict were associated with the concurrent emotional well-being. Participants tended to experience more intense positive and less intense negative affect in those hours during which they (a) had engaged more intensively in the pursuit of their goals and (b) had not felt they wanted or ought to do something else instead of what they were doing (compared to diary entries where they had engaged less in goal-relevant activities and had experienced situational conflict). Both predictors simultaneously accounted for 10.30% and 12.33% of the total variation in short-term positive and short-term negative affect (between and within participants), respectively. The degree of engagement in goal-relevant activities and the (non)occurrence of situational conflict predicted about equal amounts of variance in short-term positive affect. In contrast, the occurrence of situational conflict explained a larger amount of total variation in short-term negative affect (10.74%) than did the intensity of engagement in goal-relevant activities (2.09%).

Table 41. *Predicting Short-Term Emotional Well-Being in the Diary Phase: Results of Multilevel Regression Analyses (2,243 Diary Entries Nested Within N = 81 Participants)*

	Bivariate Relationships		Multiple Relationship
	Goal Involvement	Situational Conflict	
Predicting Short-Term *Positive* Affect			
Fixed Part [a]			
Intercept	3.14 (.04) **	3.02 (.04) **	3.02 (.04) **
D Goal involvement	.36 (.07) **	-	.34 (.07) **
D Situational conflict: No	-	.21 (.03) **	.20 (.03) **
D Situational conflict: Yes	-	.00	.00
Random Part [b]			
Intercept	.09 (.02) **	.09 (.02) **	.09 (.02) **
SP(POW) [c]	.34 (.02) **	.33 (.02) **	.33 (.02) **
Residual	.36 (.01) **	.36 (.01) **	.35 (.01) **
Modeled Variance [d]	5.88%	5.26%	10.30%
Predicting Short-Term *Negative* Affect			
Fixed Part [a]			
Intercept	2.07 (.06) **	2.18 (.06) **	2.18 (.06) **
D Goal involvement	-.30 (.07) **	-	-.28 (.07) **
D Situational conflict: No	-	-.19 (.03) **	-.19 (.03) **
D Situational conflict: Yes	-	.00	.00
Random Part [b]			
Intercept	.23 (.04) **	.21 (.04) **	.21 (.04) **
SP(POW) [c]	.39 (.02) **	38 (.02) **	.38 (.02) **
Residual	.37 (.01) **	.36 (.01) **	.36 (.01) **
Modeled Variance [d]	2.09%	10.74	12.33%

** $p < .001$

(a) Unstandardized regression coefficients (standard error)

(b) Estimated variance components (standard error)

(c) Autoregressive parameter: Estimated covariance of two adjacent diary entries in the *same* diary period

(d) Total proportional reduction in variance components (intercept and residual) in comparison to unconditional means models (i.e., models without the explanatory variables).

Overall, these results show that the degree of engagement in goal-relevant activities and the experience of situational conflict were associated with the level of short-term positive and negative affect. But were these characteristics of everyday experiences also associated with *within-person fluctuations* in short-term emotional well-being? In other words, did goal involvement and situational conflict account for oscillations above and below (i.e., controlling for) the participant's average emotional well-being during the diary phase (see Reis, Sheldon, Gable, Roscoe, & Ryan, 2000)?

To address this question, I extended the above described multilevel regression models (addressing the multiple relationship between short-term affect, goal involvement, and situational conflict) by including the within-person average of positive or negative affect (grand-mean centered) as predictor variable. Again, fixing the slopes of the predictor variables across participants did not significantly decrease the goodness of model fit. Table 42 shows the results of these analyses. They show that both the degree of involvement in goal-relevant activities and the occurrence of situational conflict were predictive of within-person fluctuations in short-term emotional well-being. Together, they accounted for 8.26% and 9.42% of the within-person variation of short-term positive and negative affect, respectively.

Table 42. *Predicting Within-Person Fluctuations in Emotional Well-Being: Results of Multilevel Regression Analyses (2,243 Diary Entries Nested Within N = 81 Participants)*

		Short-Term *Positive* Affect (D)	Short-Term *Negative* Affect (D)
Fixed Part [a]			
	Intercept	3.04 (.02) **	2.16 (.02) **
D	Goal involvement	.25 (.06) **	-.23 (.06) **
D	Situational conflict: No	.17 (.03) **	-.16 (.03) **
D	Situational conflict: Yes	.00	.00
D	Mean positive affect[b]	.98 (.05) **	-
D	Mean negative affect[b]	-	.94 (.03) **
Random Part [c]			
	Intercept	.00	.00
	SP(POW) [d]	.29 (.02) **	.34 (.02) **
	Residual	.34 (.01) **	.33 (.01) **
Modeled Variance			
	Between persons [e]	100.00%	100.00%
	Within persons [f]	8.26%	9.42%

** $p < .001$

(a) Unstandardized regression coefficients (standard error)

(b) Control variable: Within-person mean across all diary entries

(c) Estimated variance components (standard error)

(d) Autoregressive parameter: Estimated covariance of two adjacent diary entries in the *same* diary period of three days

(e) Proportional reduction in the variance component "intercept" (unexplained between-person variation in mean positive/negative affect) in comparison to unconditional means models (i.e., models without the explanatory variables). Between-person variation is perfectly accounted for by introducing within-person mean of short-term affect as control variable

(f) Proportional reduction in variance component "residual" (unexplained within-person variation) in comparison to unconditional means models (i.e., models without the explanatory variables)

4.2.6.2. Mediation Analyses on the Person Level

Overall, the above reported results showed the following: On the *person* level (i.e., averaging across all diary-entry reports), intergoal relations were associated with (a) the average intensity of positive and negative affect during the diary phase, (b) the average involvement in the pursuit of goal-relevant activities, and (c) the frequency of experiencing situational conflict in the forms that one wants to or ought to do something else. On the level of the *single diary entry*, it was found (d) that engagement in the pursuit of one's goals and the experience of situational conflict were associated with the concurrent emotional well-being. These results imply the possibility that participants with less integrated intergoal relations tended to experience less emotional well-being because they were less involved in the pursuit of their goals and experienced more often situational conflict. On the basis of the analyses described above, however, this line of reasoning remains tentative because (a) it involves a change in the target level of data aggregation, (b) intergoal conflict and intergoal facilitation were differentially related to the various outcome variables, and (c) no inferences about causation can be made on the basis of correlational information. Taking up the first two objections (the latter is inherent in the study's design and, therefore, insurmountable), I conducted mediated regression analyses on the person level as a supplementary approach to investigating the mediation hypothesis.

Let me briefly reiterate the three conditions that must be fulfilled to statistically support the mediation hypothesis on the person level (Baron & Kenny, 1986): First, there must be a significant association between the independent variables (intergoal conflict and facilitation) and the mediators (average goal involvement and proportional frequency of situational conflict). Second, there must be a significant association between the independent variables (intergoal conflict and facilitation) and the dependent variables (average positive and negative affect). Third, when regressing the dependent variables on both the independent variables and the mediators, the mediators must significantly affect the dependent variables. If all three requirements are true, the effects of the independent variables on the dependent variables are reduced in the third compared to the second condition.

In the previous sections, I showed that the first two of these requirements are fulfilled. Table 43 contrasts analyses testing the first (step I) against the third (step II) requirement. Predicting the average *positive* affect during the diary phase, the mediation hypothesis was not supported on the person level (i.e., the hypothesized "mediators" did

not significantly contribute to the prediction of positive affect when controlling for intergoal conflict and facilitation).

Predicting the average *negative* affect during the diary phase, the mediation hypothesis was partly supported. The proportional frequency of experiencing situational conflict, but not the degree of goal involvement, significantly predicted the average negative affect during the diary phase when simultaneously controlling for the nature of intergoal relations. The effect of intergoal conflict was reduced compared to step I, but remained significant. This shows that the association between intergoal conflict and negative affect was only partially mediated by the frequency of experiencing situational conflict (i.e., an unexplained direct effect of intergoal conflict on negative affect remained).

Table 43. *Predicting Average Positive and Negative Affect During the Diary Phase: Results of Multiple Regression Analyses*[79]

	Predictor	*r*		*B*		β		
Predicting Average Positive Affect in the Diary Phase								
Step I								
T1	Conflict	-.28	**	-.17	*	-.24	R = .35	**
T1	Facilitation	.26	*	.58	+	.21	R^2 = . 12	
Step II								
T1	Conflict	-.28	**	-.16	*	-.23	R = .37	*
T1	Facilitation	.26	*	.48	n.s.	.17	R^2 = .14	
D	Goal involvement(a)	.24	*	.21	n.s.	.13	Δ R^2= .02	n.s.
D	Situational conflict(b)	-.10	n.s.	.27	n.s.	.04		
Predicting Average Negative Affect in the Diary Phase								
Step I								
T1	Conflict	.44	**	.45	**	.41	R = .47	**
T1	Facilitation	-.24	*	-.64	n.s	-.15	R^2 = .22	
Step II								
T1	Conflict	.44	**	.38	**	.35	R = .52	**
T1	Facilitation	-.24	*	-.34	n.s.	-.08	R^2 = .27	
D	Goal involvement	-.17	+	-.07	n.s.	-.03	Δ R^2= .05	+
D	Situational conflict	.37	**	2.51	*	.26		

n.s. $p > .10$; + $p < .10$; * $p < .05$, ** $p < .01$

(a) Averaged across entire diary study

(b) Average of proportional occurrence of "want to do something else" and "ought to do something else" in entire diary study (see Appendix E, Table E 5, for variable descriptions)

[79] Where appropriate, transformed variables were used for analyses (see Appendix E, Table E 1). Plus and minus signs of coefficients involving reflected variables were reversed before reporting to fit the original scaling.

4.2.7. Summary of Results in Study Part 2

Intergoal conflict predicted the participant's average emotional well-being during the diary phase. Participants with more conflicting goals tended to experience less intense positive (r = -.28) and more intense negative affect (r = .44). Intergoal facilitation did not contribute significantly to these predictions when intergoal conflict was simultaneously adjusted.

A similar pattern of results was found in the prediction of the participants' average tendencies to regard their everyday activities as enjoyable and unpleasant. The more intergoal conflict participants had reported at T1, the less they tended to enjoy their activities (r = -.28) and the more they tended to find them unpleasant (r = .29). Intergoal facilitation did not significantly contribute to these predictions when intergoal conflict was simultaneously adjusted.

Intergoal relations associated with a particular goal predicted the degree to which the participant enjoyed pursuing that goal. The less conflicting with, and the more facilitative for the participant's other three goals the exercise goal was, the more the participant tended to enjoy activities that were positively relevant for (i.e., furthering) that goal (accounting, overall, for 13% of the variance).

Participants who described their goals as less facilitative and more conflicting tended to report more often that the activities they had engaged in were not what they wanted or ought to do (accounting, overall, for 16% and 14% of the variance, respectively).

In comparison to participants with less facilitative goals, participants with more facilitative goals tended to be more involved in the pursuit of their goals (r = .37), and to indicate more frequently that the same activity was furthering several of their four goals at once (r = .67). Intergoal conflict did not contribute significantly to these predictions.

Intergoal relations were unrelated to the participant's involvement in activities hindering the pursuit of personal goals, and to the occurrence of situations in which the same activity was furthering (at least) one goal, but hindering (at least) one other goal.

Analyses of the hypothesis that the experience of situational conflict and the degree of goal involvement mediate the association between intergoal relations and emotional well-being yielded the following results: Participants tended to experience more intense positive and less intense negative affect during those diary-entry period where they had (a) engaged more in the pursuit of their four goals, and (b) not felt that they

wanted to or ought to do something else instead of what they were doing (accounting, overall, for 10% and 12% of the variance). These associations also remained significant after controlling for the participants' average positive and negative affect. These results show that goal involvement and situational conflict were not only predictive of the *absolute* level of the participants' short-term emotional well-being, but also represented contextual influences that accounted for within-person *fluctuations* in affective experiences. Mediated regression analyses conducted at the *person* level (i.e., at the level in which all observations were averaged across the entire diary study) revealed that situational conflict was a partial mediator of the negative association between intergoal conflict and the average intensity of negative affect in everyday life. It did not mediate the association between intergoal relations and the average positive affect during the diary phase. The involvement in goal pursuit did not function as a mediator on the person level (see Table 43).

4.2.8. Overview of Hypotheses and Main Results

Table 44. *Summary of Hypotheses and Results*

	Hypotheses	Supported by Results?
	1. Intergoal Relations in Younger and Older Adults	
1	Compared to younger adults, older adults have less conflicting and more facilitative goals.	Yes
	2. Potential Antecedents of Intergoal Conflict	
2a	Individuals who tend to engage habitually in the following strategies of co-ordinating multiple goals report lower levels of goal conflict than do individuals who are less inclined to use these strategies:	
2a-1	- Setting priorities	No
2a-2	- Temporally sequencing the pursuit of multiple goals	No
2a-3	- Seeking and accepting compromises (i.e., lowering aspiration levels) when encountering difficulties in working on multiple goals	No
2a-4	- Distancing oneself from some goal(s) when encountering difficulties in pursuing multiple goals	No
2b	Individuals with highly resource-intensive goals report higher levels of goal conflict than individuals with less resource-intensive goals do.	Yes

(table continues)

Table 44 *(continued)*

	Hypotheses	Supported by Results?
	3. Goal Conflict and Subjective Well-Being	
3	Individuals with highly conflicting goals experience lower levels of subjective well-being than do individuals with less conflicting goals. This association would be observable with respect to the following facets of psychological well-being both concurrently and prospectively:	
3a	- Positive psychological functioning (Ryff, 1989)	Concurrent: Yes Prospective: No
3b	- Satisfaction with life	Concurrent: No Prospective: No
3c	- Satisfaction with one's goals	Concurrent: Yes Prospective: Yes
3d	- Habitual emotional well-being (retrospective assessment for past months)	Concurrent: Partially Prospective: No
3e	- Short-term emotional well-being (retrospective assessment for past hours)	Yes
3f	- Enjoyment of everyday activities	Yes
3g	- Dislike of everyday activities	Yes
3h	- Enjoyment of the pursuit of one's goals	Yes
	4. Goal Conflict and the Experience of Situational Conflict	
4	Individuals with highly conflicting goals tend to experience more conflict situations of the following kind than individuals with less conflicting goals do:	
4a	- Situations in which one engages in an activity that furthers (at least) one goal, but simultaneously hinders (at least) one other goal	No
4b	- Situations in which one would rather be doing something else instead of what one is doing	Yes
4c	- Situations in which one should be doing something other than what one is doing	Yes
	5. Goal Conflict and the Involvement in Goal-Relevant Activities	
5a	Individuals with highly conflicting goals tend to engage less in activities that *further* their goals than individuals with less conflicting goals do.	No (but facilitation effect)
5b	Individuals with highly conflicting goals tend to engage more in activities that *hinder* their goals than individuals with less conflicting goals do.	No

(table continues)

Table 44 *(continued)*

	Hypotheses	Supported by Results?
	6. Goal Conflict and Goal Realization	
6a	Individuals with highly conflicting goals tend to progress less toward their goals than individuals with less conflicting goals do.	No (but facilitation effect in older adults)
6b	Individuals whose exercise goal is in conflict with their other goals exercise less than individuals with a less conflicting exercise goal do. This would be observable with respect to a number of exercise behavior characteristics:	
6b-1	- Exercise regularity	No (but facilitation effect)
6b-2	- Exercise duration	No (but facilitation effect)
6b-3	- Exercise frequency	Yes
6b-4	- Degree of adherence to one's intended exercise frequency	Yes
	7. Mediation Hypotheses	
7	The following factors mediate the negative relationship between goal conflict and subjective well-being:	
7a	- The experience of conflict situations	Partially
7b	- Involvement in goal-relevant activities: (Lack of) involvement in activities furthering one's goals and involvement in activities hindering one's goals	No
7c	- (Lack of) goal progress	No