

## 4 RESULTS

### 4.1 Transformation of the Unattainable Goal to Have Children Into the Life Longing to Have Children

The first aim of this study was to investigate under which conditions the behaviorally unattainable goal to have children is either transformed into or evolves as a life longing. Therefore it was necessary to consider each manifestation of the wish for children - as a goal and as a life longing – separately, and to examine similarities and differences in the expression of the wish for children as a goal or life longing. Several interrelated factors were assumed to influence the expression of the goal and/or life longing to have children. These include (1) existence of the wish for children, (2) its intensity (past, concurrent, and future), (3) overall duration (calculated on the basis of self-report), (4) subjective attainability, and (5) objective attainability. As described in the hypotheses section, I assumed that both goal and life longing expressions would be influenced by the described factors in differential ways, which would also speak for the discriminant validity of the two concepts.

#### 4.1.1 Validation Check: *The Wish for Children as Goal and/or Life Longing*

Before the main hypotheses of the first research question were tested, it was necessary to check whether participants in the present study did in fact express their wish for children as a goal or life longing. Therefore, two types of validation checks were used: (1) whether the wish for children was spontaneously listed as an important life longing and/or given-up goal and (2) whether the wish for children was rated high on characteristics of life longings and goals. The basic assumption was that women who never had a wish for children are less likely to spontaneously mention a life longing or given-up goal to have children and rate the wish for children lower on goal or life longing characteristics than women who have or have had a wish for children. In order to test this assumption, three groups of women were compared to each other (see Method Section): (1) always voluntarily childless women, (2) currently voluntarily (but previously involuntarily) childless women, and (3) currently involuntarily childless women.

#### Spontaneous Listing of the Life Longing to Have Children

When participants were asked to write down their two most important life longings, 16.5% (27 persons) of all women in the sample spontaneously reported the life longing to have children. As expected groups differed significantly in the frequency of listing the wish

for children as one of their two most important life longings,  $\chi^2(2, N = 164) = 19.7, p < .05$ .<sup>11</sup> Only one woman (3.1%) who never had a wish for children and three currently voluntarily childless women (5.4%) reported the life longing to have children. In comparison, 23 involuntarily childless women (30.3%) spontaneously mentioned the life longing to have children.

### Spontaneous Listing of the Given-up Goal to Have Children

As described in the theoretical part of this dissertation, it was assumed that life longings develop out of given-up life goals. In this context, I was interested in the question whether participants would spontaneously mention their wish for children as a given-up life goal. Therefore, women were asked to write down an important goal that they had pursued in childhood, adolescence or early adulthood but that they had given up. Out of 166 participants, 129 listed a given-up goal. In total, 25 women (19.4%) mentioned the given-up life goal to have children.<sup>12</sup> One woman (4.3%) who never had a wish for children, eight (17.8%) currently voluntarily childless women, and 16 (26.2%) involuntarily childless women listed the given-up goal to have children,  $\chi^2(2, N = 129) = 5.2, p = .07$ .<sup>13</sup> Although there was only a statistical trend for a group difference in mentioning the given-up goal to have children, inspections of frequencies show that women with a wish for children (those who were currently or formerly involuntarily childless) listed the given-up goal to have children more often (24 women in total) than women who never had a wish for children (one woman).

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<sup>11</sup> As described in the Method section, half of the sample read a life-domain-specific instruction and half of the sample read a life-time-specific instruction before writing down their most important life longings. There was no significant difference in the frequency of mentioning the life longing to have children as a function of type of life longing instruction,  $\chi^2(1, N = 166) = 0.70, p = .40$  (12 women in the life-time-specific condition and 15 women in the life-domain-specific condition mentioned the life longing to have children).

<sup>12</sup> Out of all women who spontaneously mentioned the life longing to have children (27 women) or the given-up goal to have children (25 women), five women listed both. The others listed either only a life longing or only a given-up goal.

<sup>13</sup> As described in the Method section, in order to control for position effects, half of the sample completed the questionnaire on given-up goals at the beginning of the first testing session whereas the other half completed it at the end of the second testing session. No significant difference was found for the listing of the given-up life goal to have children as a function of position of the task,  $\chi^2(1, N = 131) = 0.05, p = .83$ .

### Rating of the Wish for Children as a Life Longing

In addition to the spontaneous listing of the life longing to have children, women in the three different groups were compared to each other with respect to the extent to which they expressed their wish for children as a life longing. Therefore, participants rated their wish for children on the Life Longing Questionnaire (see Measures section). First, an ANOVA with child-wish status as the between-subjects factor was conducted in order to compare the three groups on their overall life longing score. As described in the Methods section, this score was created by aggregating all 22 items that were used to assess the six structural characteristics of life longing. As expected, women in the three groups differed in their expression of the life longing to have children (see first line in Table 6)<sup>14</sup>. In order to determine which groups differ from each other, Bonferroni post-hoc tests were conducted. The Bonferroni test is a multiple comparison test that uses t-tests to perform pairwise comparisons between group means. The specificity of this post-hoc test is that it divides the overall error rate by the total number of tests in order to adjust the significance level for the fact that multiple comparisons are made. This post-hoc test showed that each group differed significantly from each other. Involuntarily childless women had the strongest expression of the life longing to have children, followed by currently voluntarily childless women, followed by women who had always been voluntarily childless. The same group differences were found when looking at the single item “I would describe my wish for children as a life longing”,  $F(2, 158) = 28.17, p < .05, \eta^2 = .26$ . Involuntarily childless women agreed most to this statement ( $M = 4.81, SD = 1.42$ ), followed by currently voluntarily childless women ( $M = 3.84, SD = 1.78$ ) and always voluntarily childless women ( $M = 2.20, SD = 1.79$ ), all  $ps$  of Bonferroni post-hoc tests  $< .05$ .

In order to check whether the same group differences in life longing expression could be found for all six individual life longing characteristics, a MANOVA was conducted with child-wish status as between-subjects factor and the six life longing components (incompleteness, symbolic meaning, reflection/evaluation, emotional ambivalence, tritime focus, and personal utopia) as dependent variables. This analysis showed that over all six structural characteristics of life longings groups differed significantly from each other,  $F(12, 306) = 7.51, p < .05, \eta^2 = .23$ .<sup>15</sup> Follow-up ANOVAs (see Table 6) and Bonferroni post-hoc

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<sup>14</sup> When chronological age was entered as a covariate in the same analysis, the effect of child-wish status remained significant,  $F(2, 159) = 39.99, p < .05, \eta^2 = .34$ .

<sup>15</sup> Chronological age as a covariate did not affect the reported result,  $F(12, 304) = 7.28, p < .05, \eta^2 = .22$ .

tests revealed that groups differed on all scales with effect sizes ranging from .07 (for personal utopia) to .33 (for incompleteness).<sup>16</sup> On the scales incompleteness, symbolic meaning, reflection/evaluation, ambivalent emotions, and tritime focus all three groups differed significantly from each other with involuntarily childless women reporting the highest scores, followed by currently voluntarily childless women, followed by women who never had a wish for children. On the personal utopia scale, women who never had a wish for children had significantly lower scores than both other groups. The other two groups did not differ from each other.

Table 6  
*Expression of the Life Longing to Have Children by Child-Wish Status*

|                         | Means |      |      | Standard Deviations |      |      | ANOVA <sup>a</sup> |          |          |
|-------------------------|-------|------|------|---------------------|------|------|--------------------|----------|----------|
|                         | CIC   | CVC  | AVC  | CIC                 | CVC  | AVC  | <i>F</i>           | <i>p</i> | $\eta^2$ |
| Life longing expression | 4.02  | 3.13 | 2.00 | 0.94                | 1.13 | 1.17 | 41.93              | <.001    | .34      |
| Incompleteness          | 4.19  | 2.65 | 1.69 | 1.35                | 1.52 | 1.32 | 39.28              | <.001    | .33      |
| Symbolic meaning        | 4.42  | 3.41 | 2.11 | 1.12                | 1.32 | 1.38 | 37.68              | <.001    | .32      |
| Reflection/evaluation   | 4.31  | 3.32 | 2.33 | 1.24                | 1.25 | 1.30 | 22.78              | <.001    | .23      |
| Emotional ambivalence   | 4.03  | 2.92 | 1.97 | 1.24                | 1.25 | 1.30 | 31.61              | <.001    | .29      |
| Tritime focus           | 3.79  | 3.18 | 2.02 | 1.39                | 1.46 | 1.30 | 16.94              | <.001    | .18      |
| Personal utopia         | 3.10  | 3.21 | 2.18 | 1.35                | 1.56 | 1.20 | 5.68               | <.01     | .07      |

*Note.* Total  $N = 166$ . <sup>a</sup> Degrees of freedom for the *F*-Test for life longing expression was (2, 160), for all other *F*-tests degrees of freedom were (2, 157). Life longing expression represents the aggregated score over all 22 items that were used to assess the six structural characteristics of life longing. CIC = currently involuntarily childless women ( $n = 76$ ); CVC = currently voluntarily childless women who had previously been involuntarily childless ( $n = 56$ ); AVC = always voluntarily childless women ( $n = 31$ ). All constructs were rated on six-point scales ranging from 1 (*does not apply at all*) to 6 (*applies very well*).

In one of the previous sections, it was reported that 26 women in the present sample had listed the life longing to have children as one of their two most important life longings. It was assumed that these 26 women would rate their wish for children higher on characteristics of life longing than women who had a wish for children but did not mention this life longing spontaneously ( $n = 107$ ). Applying an ANOVA, this assumption could be confirmed: women who spontaneously reported the life longing to have children rated their wish for children higher on the life longing characteristics ( $M = 4.29$ ,  $SD = 0.86$ ) than women with a wish for children who did not spontaneously list it as a life longing ( $M = 3.49$ ,  $SD = 1.11$ ),  $F(1, 131) =$

<sup>16</sup> In the follow-up ANOVAs the effects for child-wish status were robust against controlling for chronological age.

11.83,  $p < .05$ ,  $\eta^2 = .08$ . A significant difference between both groups was found in a MANOVA for all structural life longing characteristics,  $F(6, 125) = 3.72$ ,  $p < .05$ ,  $\eta^2 = .15$ . Follow-up ANOVAs confirmed significant mean differences on the structural criteria incompleteness,  $F(1, 130) = 16.30$ ,  $p < .05$ ,  $\eta^2 = .11$ ; symbolic meaning,  $F(1, 130) = 7.20$ ,  $p < .05$ ,  $\eta^2 = .05$ ; reflection,  $F(1, 130) = 11.44$ ,  $p < .05$ ,  $\eta^2 = .08$ ; emotional ambivalence,  $F(1, 130) = 4.62$ ,  $p < .05$ ,  $\eta^2 = .03$ ; and tritime focus,  $F(1, 130) = 12.71$ ,  $p < .05$ ,  $\eta^2 = .09$ . Women who spontaneously mentioned the life longing to have children scored higher on these scales than women who had a wish for children but did not list the life longing to have children. No group difference was found for personal utopia,  $F(1, 130) = 0.05$ ,  $p = .83$ ,  $\eta^2 = .00$ . These results indicate that for those women who spontaneously list the life longing to have children this life longing is especially strong. Both the spontaneous listing and the high rating suggest that the life longing to have children is of particular importance in these women's lives.

#### Rating of the Wish for Children as a Goal

Equivalent to the analyses for the life longing to have children, the three groups were compared with respect to the extent to which they expressed their wish for children as a goal. Using child-wish status as the between-subjects factor, an ANOVA revealed a significant difference between the three groups,  $F(2, 161) = 13.97$ ,  $p < .05$ ,  $\eta^2 = .15$ .<sup>17 18</sup> A Bonferroni post-hoc analysis showed that involuntarily childless women expressed their wish for children more as a goal ( $M = 2.68$ ,  $SD = 1.44$ ) than currently voluntarily childless women ( $M = 1.74$ ,  $SD = 1.11$ ), and women who had always been voluntarily childless ( $M = 1.57$ ,  $SD = 0.70$ ). The latter two groups did not differ significantly from each other with respect to the expression of the goal to have children. However, when groups were compared to each other on the single item "I would describe my wish for children as a goal" all pairwise group comparisons were significant (all  $ps < .05$ ). Agreement to this statement was highest in involuntarily childless women ( $M = 3.61$ ,  $SD = 1.74$ ), followed by currently voluntarily childless women ( $M = 2.68$ ,  $SD = 1.79$ ), and then by always voluntarily childless women ( $M = 1.67$ ,  $SD = 1.47$ ).

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<sup>17</sup> Note that the assumption of homogeneity of variances was violated in this analysis, Levene's test:  $F(2, 161) = 10.88$ ,  $p < .05$ .

<sup>18</sup> The effect of child-wish status remained stable even after controlling for chronological age,  $F(2, 160) = 13.46$ ,  $p < .05$ ,  $\eta^2 = .14$ .

### Summary of the Validation Check

In sum, women who had always been voluntarily childless, women who were only currently voluntarily childless, and women who were currently involuntarily childless differed in the frequency of spontaneously mentioning the life longing to have children and in the intensity of expressing their wish for children as a life longing. Involuntarily childless women reported the highest scores for expression of life longing to have children and they listed the life longing to have children most often. Women who never had a wish for children were least likely to express their wish for children as a life longing or to mention the life longing to have children when asked to write down their most important life longings. Also as expected, the likelihood of reporting the life longing to have children and the rating of the wish for children in terms of life longing characteristics were higher in women who were currently involuntarily childless than in women who were currently voluntarily childless even though they had been involuntarily childless previously.

Equivalent to the results for the expression of life longing to have children, involuntarily childless women showed a higher expression of the goal to have children than women who were currently voluntarily childless or who had never had a wish for children. Somewhat different from the evaluation of the wish for children as a goal was the question for given-up life goals. There was only a statistical trend for the three groups differing in the frequency of listing the given-up goal to have children. Women who were involuntarily childless mentioned the given-up goal to have children twice as often as currently voluntarily childless women.

Taken together, these results suggest that overall the wish for children is most likely to be represented as a life longing and/or as a goal in involuntarily childless women. However, it has to be taken into account that voluntarily childless women may also express their wish for children as a life longing (although not necessarily as a goal) if they were involuntarily childless in former times. In general, these results validate the approach to investigate the wish for children as a goal and/or life longing.

#### *4.1.2 Prediction of Goal and Life Longing to Have Children*

In the first research question I wanted to examine under which conditions the life longing to have children emerges and a transformation of the unattainable goal to have children into the life longing to have children takes place. Therefore, the predictive effects of several child-wish-related variables on goal expression and life longing expression were considered (see Table 7 for intercorrelations between all included variables).

Table 7

*Correlations Between Expression of Life Longing to Have Children, Expression of Goal to Have Children, Child-Wish-Related Variables, and Age.*

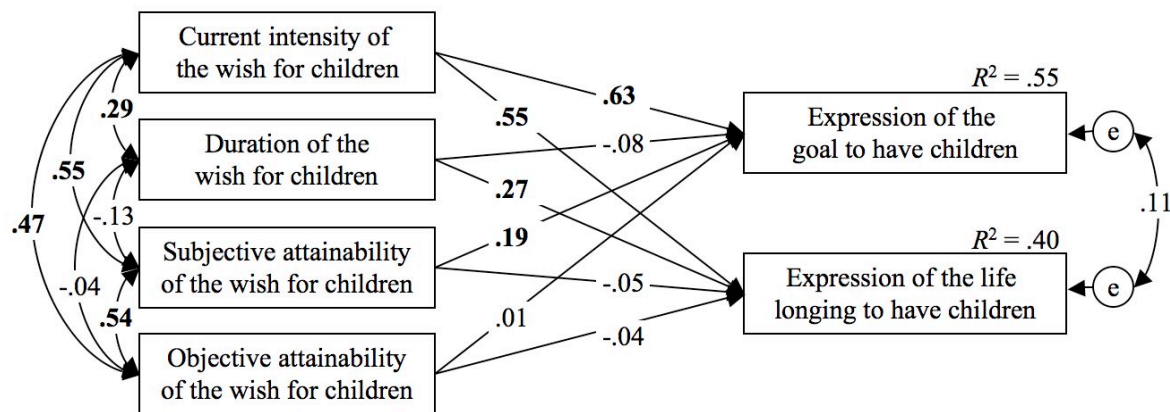
|  | 2          | 3          | 4          | 5          | 6          | 7          | 8           | 9          | 10          |
|--|------------|------------|------------|------------|------------|------------|-------------|------------|-------------|
| 1. Life longing expression <sup>a, b</sup> | <b>.41</b> | <b>.56</b> | <b>.23</b> | <b>.43</b> | <b>.55</b> | <b>.40</b> | <b>.18</b>  | <b>.17</b> | <b>-.21</b> |
| 2. Goal expression <sup>b</sup>            |            | <b>.71</b> | .10        | .14        | <b>.33</b> | .03        | <b>.54</b>  | <b>.42</b> | <b>-.43</b> |
| 3. Current intensity                       |            |            | <b>.24</b> | <b>.22</b> | <b>.64</b> | <b>.23</b> | <b>.52</b>  | <b>.47</b> | <b>-.45</b> |
| 4. Intensity at age 20                     |            |            |            | <b>.60</b> | .13        | <b>.52</b> | <b>-.16</b> | -.04       | .13         |
| 5. Intensity at age 30                     |            |            |            |            | .09        | <b>.49</b> | <b>-.21</b> | -.13       | .15         |
| 6. Future intensity                        |            |            |            |            |            | .15        | <b>.30</b>  | <b>.32</b> | <b>-.34</b> |
| 7. Duration                                |            |            |            |            |            |            | -.13        | -.05       | .14         |
| 8. Subjective attainability                |            |            |            |            |            |            |             | <b>.55</b> | <b>-.65</b> |
| 9. Objective attainability                 |            |            |            |            |            |            |             |            | <b>-.80</b> |
| 10. Age                                    |            |            |            |            |            |            |             |            | -           |

*Note.*  $N = 166$ . Coefficients in bold are significant at  $p < .05$ . <sup>a</sup> Except for age, all variables in this table refer to the wish for children. <sup>b</sup> Each correlation between life longing expression and another variable was compared to the correlation between goal expression and the respective variable. Except for the relationship to intensity of the wish for children at age 20, all correlations were significantly different from each other with  $Z > 1.96$ , two-tailed,  $p < .05$  for dependent correlations ( $r = .41$ ). For example, the correlation of  $r = .56$  between life longing expression and current child-wish intensity was significantly different from the correlation of  $r = .71$  between goal expression and current child-wish intensity with  $Z = 2.58$ ,  $p < .05$ .

### The Predictive Effect of Intensity, Duration, and Attainability of the Wish for Children

It was suggested that the extent to which the wish for children is expressed as a goal or life longing, respectively, can be predicted by intensity (current, past, and future), duration (calculated on the basis of self-report), and attainability of the wish for children. Specifically, my prediction was that high current intensity and high attainability of the wish for children are related to a stronger expression of the goal to have children. In contrast, high intensity (current, past, and future), long duration, and low attainability of the wish for children were hypothesized to be related to a stronger expression of the life longing to have children. In order to test these differential predictive patterns of child-wish-related variables for goal and life longing expression, path analyses were conducted. Path analyses can be understood as an extension of multiple regression analysis (Klem, 1995) in which more than one dependent variable is regressed on several predictor variables. In the baseline model (see Figure 7), current intensity, duration, subjective attainability, and objective attainability of the wish for

children were used as exogenous variables that explained the two endogenous variables expression of the goal to have children and expression of the life longing to have children.<sup>19</sup>



*Figure 7.* Path model for the prediction of goal and life longing expression by current intensity, duration, subjective attainability, and objective attainability of the wish for children.  $N = 166$ . Standardized path coefficients, correlations between exogenous variables, and the correlation between the residual terms (e) of the endogenous variables are displayed. Coefficients in bold are significant at  $p < .05$ .

The association between the two endogenous variables was estimated by correlating the residual terms of both variables with each other. The loadings of the residual terms of the two endogenous variables were fixed at a value of 1.0.

Consistent with expectations, high current intensity and high subjective attainability of the wish for children were predictive for higher expressions of the goal to have children, whereas high current intensity and a long duration of the wish for children were predictive for higher expressions of the life longing to have children (see Figure 7). Inconsistent with my hypothesis, low subjective attainability did not serve as a predictor of life longing expression. Furthermore, whether it was objectively attainable (as indicated by age, partner status, and sexual orientation) to have children or not did not influence the extent to which women expressed their wish for children as a goal or a life longing.

In a next step, it was tested for each of the four predictor variables whether the path coefficient that predicted goal expression was significantly different from the path coefficient that predicted life longing expression. Only when this criterion is met, can it be concluded that both the goal to have children and the life longing to have children are predicted by different variables. Therefore, for each predictor variable the paths to goal expression and life longing expression were set to be equal. This was done separately for each exogenous

<sup>19</sup> Note that in this analysis I did not additionally control for chronological age because age was one component of objective attainability of the wish for children and was thus already included in the model.



variable. When paths were set to be equal the change in model fit of the resulting model (evaluated by the  $\chi^2$ -value including its degrees of freedom and probability level) was tested and compared to the baseline model with zero degrees of freedom. If the model fit decreased significantly (indicated by a significant change in the  $\chi^2$ -value) relative to the baseline model, the conclusion was that the paths for this predictor variable cannot be set equal, which indicates that this variable has a differential predictive effect on expression of the goal to have children and expression of the longing to have children. Results of model comparisons are shown in Table 8.

Table 8  
*Change in Model Fit When Setting to Be Equal Paths of Intensity, Duration, Subjective Attainability, or Objective Attainability of the Wish for Children*

| Model                                    | $\Delta\chi^2$ | $\Delta df$ | <i>p</i> |
|--|----------------|-------------|----------|
| Intensity set to be equal                | 0.78           | 1           | .38      |
| Duration set to be equal                 | 17.75          | 1           | < .05    |
| Subjective attainability set to be equal | 5.80           | 1           | < .05    |
| Objective attainability set to be equal  | 0.38           | 1           | .54      |

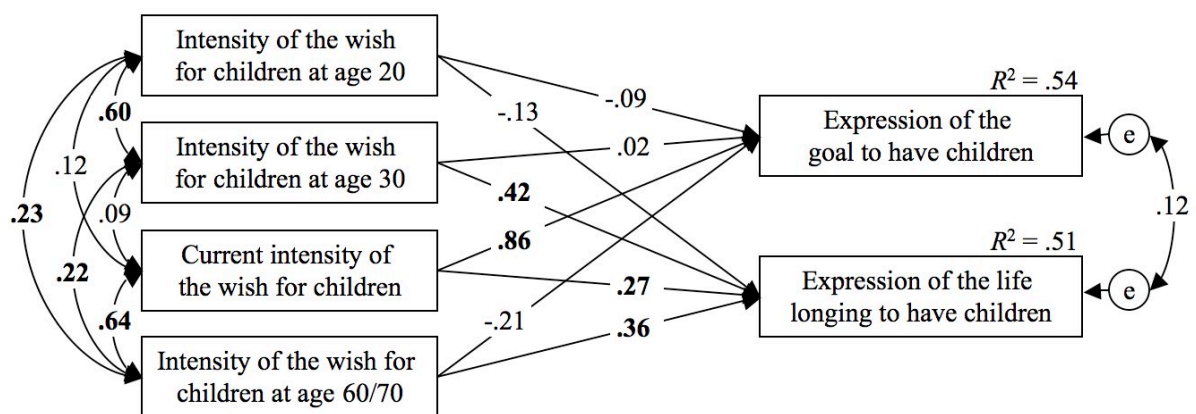
*Note.* The change in model fit refers to a comparison of the baseline model with zero degrees of freedom (i.e., all parameters are estimated, see Figure 7) with a model in which two paths are set to be equal.

When intensity of the wish for children was set to be equal, the model fit did not change significantly. This result demonstrates that current intensity of the wish for children equally predicted the expression of the goal to have children and the expression of the life longing to have children. Setting to be equal the duration of the wish for children resulted in a significant decline in model fit. In accordance with my hypothesis, duration of the wish for children was not equally predictive for life longing and goal expression. When subjective attainability of the wish for children was set to be equal, the model fit significantly changed as well. Subjective attainability of the wish for children did not equally predict goal expression and life longing expression. Finally, when paths of objective attainability were set to be equal, the model fit did not change. This indicates that the (nonsignificant) predictive effects of this variable are comparable to each other for life longing expression and goal expression.

#### The Predictive Effect of Past, Current, and Future Intensity of the Wish for Children

So far, it has been shown that current intensity of the wish for children influences both the expression of the goal to have children and the expression of the life longing to have children. However, following a lifespan approach and based on the assumption that life

longings show a tritime focus whereas goals are only related to the present time point, I was also interested in the role that past and future intensity of the wish for children play in predicting goal and life longing expression. Therefore, in a separate path analysis, the predictive effects of child-wish intensity at age 20, child-wish intensity at age 30, current child-wish intensity, and future intensity of the wish for children on goal and life longing expression were tested (see Figure 8). Because of the high correlation between child wish intensity at age 60 and 70 ( $r = .94, p < .05$ ), both variables were aggregated into one score for future intensity of the wish for children to avoid high multicollinearity. Loadings of the residual terms of both endogenous variables were fixed at a value of 1.0.<sup>20</sup>



*Figure 8.* Path model for prediction of goal and life longing expression by current intensity, past intensity, and future intensity of the wish for children.  $N = 166$ . Standardized path coefficients, correlations between exogenous variables, and the correlation between the residual terms (e) of the endogenous variables are displayed. Coefficients in bold are significant at  $p < .05$ .

Inspections of path coefficients show that the expression of the goal to have children was uniquely predicted by current intensity of the wish for children, whereas the expression of the life longing to have children was predicted by intensity at age 30, current intensity, and future intensity of the wish for children. Intensity of the wish for children at age 20 neither predicted goal expression nor life longing expression. These results indicate that a strong current intensity of the wish for children was found for women with a strong goal expression but also for women with a strong life longing expression. Women who reported a more intense wish for children at age 30 reported a stronger expression of the life longing to have children but not a stronger expression of the goal to have children. The same effect was found for future intensity of the wish for children. Women who believed that they would have an

<sup>20</sup> When path coefficients of each exogenous variable were set to be equal in a model that also included age, the same results as described above were found.

intense wish for children at ages 60 and 70 showed a higher life longing expression. In contrast, goal expression was not influenced by future intensity of the wish for children.

As in the previous path model, paths for each exogenous variable were set to be equal one by one (see Table 9 for changes in model fit as compared to the baseline model). Except for intensity of the wish for children at age 20, the effects of all predictor variables were not comparable with each other. As described above, current intensity of the wish for children served as a significant predictor for both goal expression and life longing expression. However, the decline in model fit when setting the parameters to be equal indicated that the effect of this variable was significantly different for goal and life longing expression (note that this result is different from the result of the previous path model in which the effect of current intensity was investigated together with duration and attainability of the wish for children; in this previous model, current intensity was equally important for predicting goal and life longing expression).

Table 9

*Change in Model Fit When Setting to Be Equal Paths of Past Intensity, Current Intensity, or Future Intensity of the Wish for Children*

| Model                               | $\Delta\chi^2$ | $\Delta df$ | <i>p</i> |
|-------------------------------------|----------------|-------------|----------|
| Current intensity set to be equal   | 35.00          | 1           | < .05    |
| Intensity at age 20 set to be equal | 0.21           | 1           | .65      |
| Intensity at age 30 set to be equal | 18.14          | 1           | < .05    |
| Past intensity set to be equal      | 33.60          | 1           | < .05    |

*Note.* The change in model fit refers to a comparison of the baseline model with zero degrees of freedom (i.e., all parameters are estimated, see Figure 8) with a model in which two paths are set to be equal.

In summary, results of both path analyses testing the effects of several child-wish-related variables on goal expression and life longing expression mostly confirmed my hypotheses on the conditions under which the goal and/or life longing to have children emerges. Childless women who reported a strong current intensity of the wish for children and a high subjective attainability of this wish were more likely to express their wish for children as a goal. The life longing to have children was higher in women whose wish for children was longstanding and intense. However, whereas for goal expression only the concurrent intensity of the wish for children had a predictive effect, life longing expression was related to several time points in life, that is, intensity of the wish for children at present, at age 30, and in the future (ages 60/70). In contrast to my expectations, objective attainability did not play a role in predicting either goal or life longing expression. Furthermore, although I

assumed that the life longing to have children would emerge especially if the wish for children was perceived as unattainable, subjective attainability did not play a role for the expression of life longing to have children.

### Prediction of the Six Structural Characteristics of Life Longings

So far, it was examined which child-wish-related variables predict overall life longing expression and how these predictors are different from the predictive pattern for goal expression. However, life longing is assumed to be characterized by six interrelated criteria (incompleteness, symbolic meaning, reflection/evaluation, emotional ambivalence, tritime focus, and personal utopia). Thus, I wanted to identify possible differential patterns in predicting various facets of life longing, that is, to disentangle which predictor was most important for which life longing characteristic. In order to test the predictive effects of child-wish-related variables on the six life longing criteria, multiple regression analyses were conducted for each of the six characteristics. In the first regression analysis, current intensity, duration, subjective attainability, and objective attainability of the wish for children were entered as predictors (see Table 10). In the second regression analysis that was conducted for each life longing characteristic, current intensity, intensity of the wish for children at age 30, child wish intensity at age 20, and future intensity of the wish for children were used as predictor variables (see Table 11). The second set of regression analyses was controlled for chronological age by entering age into the model as the first variable (see Table B1 in Appendix B). The first set of regression analyses was however not controlled for chronological age because age was already coded in the predictor variable objective attainability. In the following section, results of the described analyses will be summarized.

The same child-wish-related variables (current intensity, intensity at age 30, future intensity, and duration) predicted the structural characteristics incompleteness, symbolic meaning, reflection and evaluation, emotional ambivalence, and tritime focus. This predictive pattern is in accordance with results of the path analyses described in Section 4.1.2. for the overall life longing score. Specifically, especially women with higher past, present, and future child-wish intensities and a longer duration of the wish for children expressed this wish in terms of life longing. These women reported stronger feelings of incompleteness and ambivalent emotions related to their wish for children and their wish was more likely to have a symbolic meaning, to activate reflective and evaluative processes, and to be related to past, present, and future.

Table 10  
*Regression Analyses Predicting the Six Structural Characteristics of Life Longing With Current Intensity, Duration, Subjective, and Objective Attainability of the Wish for Children*

|                          | Incom-<br>pleteness | Symbolic<br>meaning | Reflection/<br>Evaluation | Emotional<br>ambivalence | Tritime<br>focus | Personal<br>utopia |
|--------------------------|---------------------|---------------------|---------------------------|--------------------------|------------------|--------------------|
| Current intensity        | <b>.57</b>          | <b>.47</b>          | <b>.50</b>                | <b>.53</b>               | <b>.45</b>       | .12                |
| Duration                 | <b>.27</b>          | <b>.26</b>          | <b>.18</b>                | <b>.29</b>               | <b>.16</b>       | <b>.18</b>         |
| Subjective attainability | -.03                | .02                 | -.02                      | -.07                     | .09              | <b>-.26</b>        |
| Objective attainability  | -.07                | -.04                | -.03                      | -.09                     | -.14             | .12                |
| Total $R^2$              | <b>.42</b>          | <b>.34</b>          | <b>.30</b>                | <b>.37</b>               | <b>.25</b>       | <b>.09</b>         |
| Adjusted $R^2$           | <b>.40</b>          | <b>.32</b>          | <b>.28</b>                | <b>.36</b>               | <b>.23</b>       | <b>.07</b>         |

Note.  $N = 166$ . Values are standardized regression weights ( $\beta$ ) for the full model. Coefficients in bold are significant at  $p < .05$ .

Table 11  
*Regression Analyses Predicting the Six Structural Characteristics of Life Longing With Past, Current, and Future Intensity of the Wish for Children*

|                     | Incom-<br>pleteness | Symbolic<br>meaning | Reflection/<br>Evaluation | Emotional<br>ambivalence | Tritime<br>focus | Personal<br>utopia |
|---------------------|---------------------|---------------------|---------------------------|--------------------------|------------------|--------------------|
| Current intensity   | <b>.29</b>          | <b>.28</b>          | <b>.28</b>                | <b>.24</b>               | <b>.23</b>       | -.08               |
| Intensity at age 30 | <b>.37</b>          | <b>.42</b>          | <b>.30</b>                | <b>.41</b>               | <b>.28</b>       | <b>.30</b>         |
| Intensity at age 20 | -.06                | -.16                | -.10                      | -.03                     | -.15             | -.15               |
| Future intensity    | <b>.36</b>          | <b>.29</b>          | <b>.31</b>                | <b>.31</b>               | <b>.32</b>       | <b>.21</b>         |
| Total $R^2$         | <b>.51</b>          | <b>.43</b>          | <b>.38</b>                | <b>.46</b>               | <b>.31</b>       | <b>.09</b>         |
| Adjusted $R^2$      | <b>.49</b>          | <b>.42</b>          | <b>.36</b>                | <b>.44</b>               | <b>.29</b>       | <b>.07</b>         |

Note.  $N = 166$ . Values are standardized regression weights ( $\beta$ ) for the full model. Coefficients in bold are significant at  $p < .05$ .

Whereas between 25% and 51% of the variance in incompleteness, symbolic meaning, reflection and evaluation, emotional ambivalence, and tritime focus were explained by the described predictors, the same variables accounted for much less variance in personal utopia (9%). Furthermore, in contrast to the other five life longing characteristics, current intensity of the wish for children was not associated with personal utopia but subjective attainability of the wish for children served as a predictor for personal utopia. Women who subjectively rated

their wish for children as less attainable, described their wish for children as more utopian. Whether the wish for children was considered to be utopian was not dependent on the intensity of the wish for children. However, women with a higher child wish intensity at age 30 and in the future scored higher on personal utopia. Together these results confirm that except for some specificities for personal utopia, all life longing characteristics were predicted by the same child-wish-related variables.

#### 4.1.3 Transition From Goal to Life Longing

So far, the goal to have children and the life longing to have children have been considered separately. As emphasized in the theoretical part of this dissertation, I was interested in the possible transformation from goal to life longing. Since no longitudinal data were available in this study, a real transition could not be investigated. However, women evaluated their wish for children with respect to goal expression and life longing expression separately. Using this joint information, participants were divided into four groups (the grouping variable is called ‘transition group’): (1) those with a strong goal expression but a weak life longing expression, (2) those with a strong goal expression and a strong life longing expression, (3) those with a weak goal expression but strong life longing expression, and (4) those with a weak goal expression and a weak life longing expression. In this order, the groups represent different stages of a possible transformation process. For reasons of parsimony, median splits were employed to distinguish between strong and weak life longing expression or goal expression, respectively. On a scale from 1.0 to 6.0, the median for life longing expression was at 3.45 and the median of goal expression was at 1.80 (see Figure B1 in Appendix B for a graphical representation of the median splits and the distribution of participants on life longing and goal expression; see Table B2 in Appendix B for means and standard deviations of goal and life longing expression for the four transition groups).<sup>21</sup> Table 12 displays the number and average age of participants per group.

Women with strong goal expression and weak life longing to have children were assumed to be approaching a possible transition process (in the following this group will therefore be referred to as ‘*before transition*’). Women who are assumed to be in the transition process from goal to life longing (this group is called ‘*in transition*’) are characterized by a strong goal expression and a strong life longing expression at the same time. The third group included women after the transition process (called ‘*after transition*’).

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<sup>21</sup> Note that results of the following analyses remained stable when instead of the medians the sample means were used as the points at which the sample was split into groups.

Women in this group did not pursue their wish for children as a goal anymore. They reported low goal expression, but their wish for children fulfilled the criteria of life longing, that is, they scored high on life longing characteristics. The last group contained women who rated their wish for children low on both goal and life longing expression. In the following, this group is referred to as “*control group*” although it is not a “control group” in the classical/experimental sense. This last group is assumed to be more heterogeneous than the other three groups. It includes persons who never had a wish for children but also women who formerly had a wish for children but who did not express this wish as a goal or life longing (anymore) in the present study. For these women we do not know whether they even transformed their goal to have children into a life longing or not.<sup>22</sup>

Table 12  
*Number and Age of Participants as a Function of Goal- and Life Longing Expression*

|                        |               | <b>Life Longing Expression</b>  |  |
|------------------------|---------------|---|--|
|                        |               | <b>Strong</b>   | <b>Weak</b>  |
| <b>Goal Expression</b> | <b>Strong</b> | <i>In transition</i><br><i>n</i> = 52<br><i>M</i> <sub>age</sub> = 42.05, <i>SD</i> = 6.41    | <i>Before transition</i><br><i>n</i> = 23<br><i>M</i> <sub>age</sub> = 44.24, <i>SD</i> = 6.70 |
|                        | <b>Weak</b>   | <i>After transition</i><br><i>n</i> = 32<br><i>M</i> <sub>age</sub> = 47.25, <i>SD</i> = 5.92 | <i>Control group</i><br><i>n</i> = 59<br><i>M</i> <sub>age</sub> = 45.17, <i>SD</i> = 6.58     |

*Note.* Total *N* = 166.

A comparison of participants' age in the four groups using an ANOVA with transition group as between-subjects factor demonstrated that the groups differed with respect to their age,  $F(3, 162) = 7.78, p < .05, \eta^2 = .13$ . Women who were in the “in transition from goal to life longing stage” were significantly younger than women in the “after transition stage” and

<sup>22</sup> It can be assumed that women in the transition groups differ from each other with respect to the extent to which they disengaged from the goal to have children. That is, disengagement from the goal to have children should be used as one indicator to validate the proposed transition groups. In fact, women in the “in transition stage”, “after transition stage”, and “control group” differed significantly from each other in disengagement from the goal to have children,  $F(2, 94) = 25.69, p < .05, \eta^2 = .35$ . Women in the “in transition stage” reported the lowest goal disengagement ( $M = 2.91, SD = 1.33$ ), followed by women in the “after transition stage” ( $M = 4.15, SD = 1.34$ ), and women in the “control group” ( $M = 5.03, SD = 0.95$ ) who reported the highest level of disengagement, all  $ps < .05$ . Women in the “before transition stage” were not included in these analyses because only 8 women in this group responded to these items, which could be interpreted in that for most women in this group goal disengagement was not relevant yet.

women in the “control group”, all *ps* of Bonferroni post-hoc tests < .05. Women in the other groups did not differ from each other with respect to age.<sup>23</sup>

Having identified groups based on life longing and goal expression, I wanted to investigate the typical characteristics of the four groups. My hypothesis was that the child-wish-related variables that were tested as predictors for goal and life longing expression could also be used as variables that differentiate between women in different stages of the transformation from the goal to have children into the life longing to have children. Hence, the four groups were compared to each other with respect to intensity, duration, subjective attainability, and objective attainability of the wish for children. In order to test this prediction, SPSS GLM was used to perform a *profile analysis*. Profile analysis is a special type of multivariate analysis of variance, in which the effect of one or more independent variables on several dependent variables is tested (for an overview see Tabachnick & Fidell, 2001). Profile analysis is well-suited to “compare profiles of two or more groups measured on several different scales, all at one time” (Tabachnick & Fidell, 2001, p. 391).

Basically, profile analysis asks three types of questions. First, the *test of parallelism* asks whether groups have different profiles on a set of variables. Specifically, it considers whether the difference (differences are called segments in profile analysis) between the first and second dependent variable (and all other combinations of dependent variables) is the same for each group. Parallelism corresponds to the interaction effect in the multivariate test of significance. Second, the *test of levels* gives an answer to the question whether one group, on average, has higher scores on the measured variables than other groups. Thus, it examines the differences between means of each group combined over all dependent variables. The levels test corresponds to the test of between-subjects effects (main effect). Third, the *test of flatness* looks at similarity of responses to all dependent variables, independent of group membership. It asks whether, for all groups combined, the segments deviate from zero. Flatness corresponds to the within-subjects main effect and its result is found in the multivariate test of significance. The test of flatness is only relevant when profiles are parallel. The specificity of profile analysis is that all dependent variables have to be measured

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<sup>23</sup> A two-factorial ANOVA with goal expression and life longing expression as two separate between-subjects factors revealed a significant main effect for goal expression ( $F(1, 162) = 15.44, p < .05, \eta^2 = .09$ ), indicating that women with a strong expression of the goal to have children were on average younger than women with a weak expression of the goal to have children. There was no significant main effect for life longing expression ( $F(1, 162) = 1.04, p = .31, \eta^2 = .01$ ) and no significant interaction effect for goal-by-life-longing-expression ( $F(1, 162) = 1.22, p = .27, \eta^2 = .01$ ).



on the same scale. Since this was not the case in the present study, all four dependent variables were z-standardized (to a mean of zero and a variance of one) prior to analysis.

The profile analysis revealed two main results. First, the profiles of the groups were not parallel to each other, that is, the parallelism test found significant differences between segments (differences between dependent variables for each combination of dependent variables) for the four groups,  $F(9, 480) = 8.77, p < .05, \eta^2 = .14$ .<sup>24</sup> The non-parallelism of the profiles is also clearly visible in Figure B2 in Appendix B. It illustrates the z-standardized mean rating for each group on each dependent variable. As described above, flatness is only relevant when parallelism of the profiles is found and was thus not considered here.<sup>25</sup> Finally, the levels test indicated that combined over all four child-wish-related variables, the four groups had significantly different means,  $F(3, 160) = 23.20, p < .05, \eta^2 = .30$ . In sum, these results confirm the assumption that child-wish-related variables can be used to differentiate between women in the four transition groups. Each group shows a specific profile on these variables and, overall, groups differ on the mean expression on these variables.

In a next step, I wanted to investigate which groups differ on which variables. Therefore, an ANOVA followed by Bonferroni post-hoc tests was conducted for each of the four child-wish-related variables. Overall, the four transition groups differed significantly on all four variables (intensity of the wish for children<sup>26</sup>,  $F(3, 162) = 31.51, p < .05, \eta^2 = .37$ ; duration of the wish for children,  $F(3, 160) = 5.78, p < .05, \eta^2 = .10$ ; subjective attainability of the wish for children<sup>27</sup>,  $F(3, 162) = 9.64, p < .05, \eta^2 = .15$ ; and objective attainability of the wish for children,  $F(3, 162) = 5.20, p < .05, \eta^2 = .09$ ).<sup>28</sup>

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<sup>24</sup> Note that the assumption of homogeneity of variance-covariance matrices was violated in this analysis, Box's  $M = 69.49, F(30, 30103) = 2.19, p < .05$ .

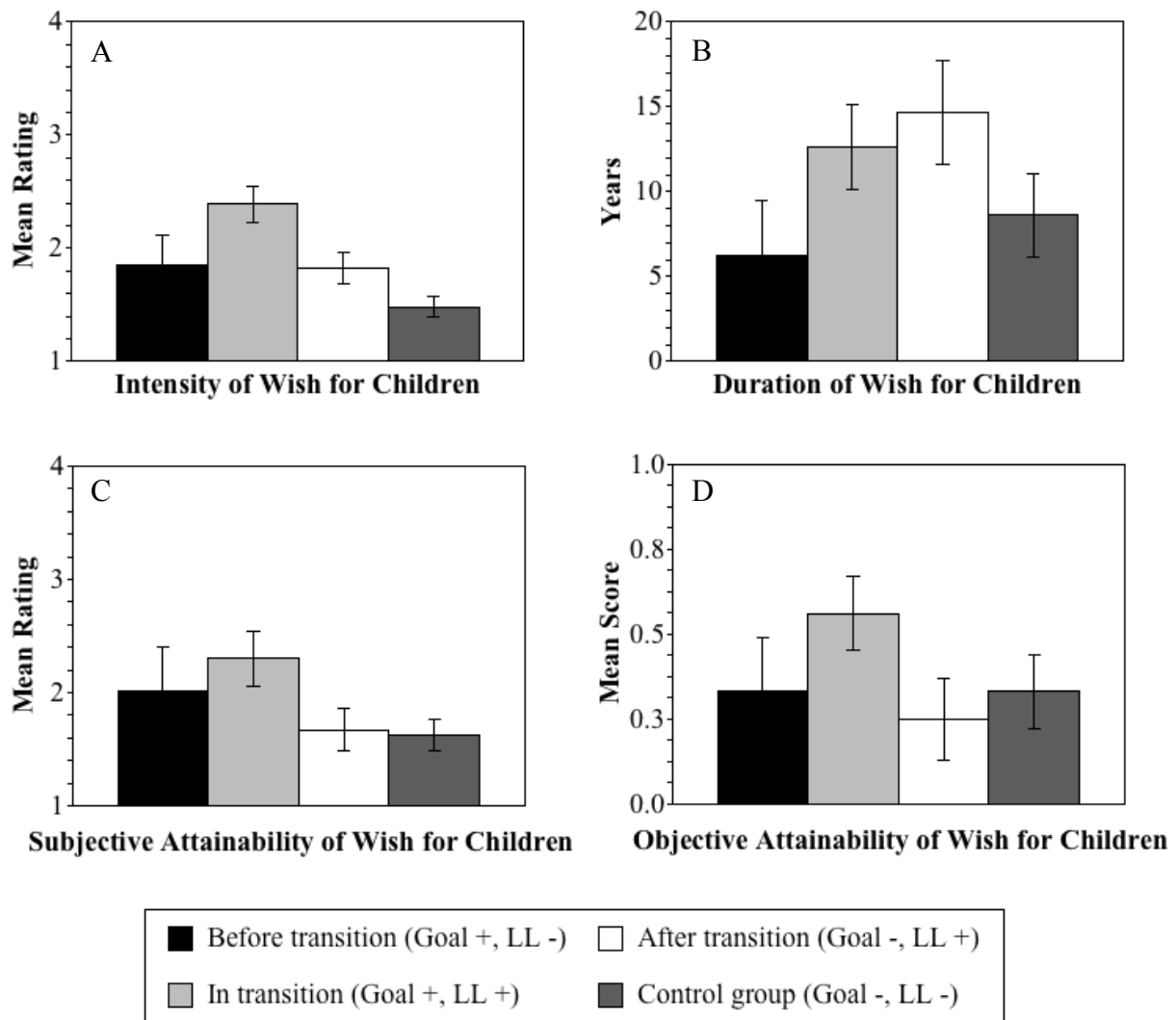
<sup>25</sup> The flatness test revealed a significant effect,  $F(3, 158) = 23.30, p < .05, \eta^2 = .31$ , indicating that for all groups combined, the segments significantly deviated from zero.

<sup>26</sup> Note that the assumption of homogeneity of variances was violated in this analysis, Levene's test:  $F(3, 162) = 5.96, p < .05$ .

<sup>27</sup> Note that the assumption of homogeneity of variances was violated in this analysis, Levene's test:  $F(3, 162) = 11.97, p < .05$ .

<sup>28</sup> When chronological age was entered into each ANOVA as a covariate, results remained robust. Intensity of the wish for children:  $F(3, 161) = 22.86, p < .05, \eta^2 = .30$ . Duration of the wish for children:  $F(3, 159) = 6.52, p < .05, \eta^2 = .11$ . Subjective attainability of the wish for children:  $F(3, 161) = 2.87, p < .05, \eta^2 = .05$ . The analysis for objective attainability of the wish for children was not controlled for chronological age because age is already coded in this variable.

The comparison of each group to each other group using Bonferroni post-hoc tests revealed the following mean-level differences (see Figure 9, Panel A to D for a graphical illustration of mean levels).



*Figure 9.* Expressions of current intensity (A), duration (B), subjective attainability (C), and objective attainability (D) of the wish for children by transition group. In the legend, Goal + stands for strong expression of the goal to have children, Goal - stands for weak expression of the goal to have children. LL + stands for strong expression of the life longing to have children, LL - stands for weak expression of the life longing to have children.  $N = 166$ . Error bars represent 95% confidence intervals.

For *current intensity* of the wish for children, women in the “in transition stage” scored significantly higher than all other women, all  $ps < .05$ . Women in the “control group” had the lowest scores in intensity in comparison to all other groups, all  $ps < .05$ . For *duration* of the wish for children it was found that women in the “before transition stage” reported a significantly shorter duration of the wish for children than women in the “in transition stage”

and “after transition stage”, all  $ps < .05$ . In addition, women in the “after transition stage” reported significantly longer durations of their wish for children than women in the “control group”,  $p < .05$ . With respect to *subjective attainability* of the wish for children, women in the “in transition stage” experienced their wish for children as significantly more attainable than women in the “after transition stage” and women in the “control group”, all  $ps < .05$ . The same group differences were found for *objective attainability* of the wish for children. That is, objective attainability was higher for women in the “in transition stage” than for women in the “after transition stage” or in the “control group”, all  $ps < .05$ .

Taken together, intensity of the wish for children is a variable that differentiated well between the four groups. Child-wish intensity was highest in women who presumably were in the transition process from goal to life longing, that is, when both their goal and life longing expression was high. Women who already transformed their goal to have children into a life longing showed the longest duration of their wish for children. Duration of the wish for children also differentiated between women after the transition and women in the “control group” and between women before the transition and those in and after the transition. Subjective and objective attainability of the wish for children differentiated women who were in the transition process from those after the transition and in the “control group”, but not from women before the transition.

#### **4.2 The Functional Significance of Transforming the Unattainable Goal to Have Children Into a Life Longing**

In my second research question I examined whether it is functional for a person’s well-being to pursue the unattainable goal to have children at an imaginary level as a life longing. In order to answer this question, it was investigated how indicators of well-being were related to the goal to have children and the life longing to have children, respectively. Furthermore, it was tested which variables moderated the relationships between well-being and goal expression or life longing expression, respectively. Finally, it was examined whether persons who are in, before, and after the transformation of the goal to have children into a life longing differed from each other with respect to well-being and whether they differed from women who did not describe their (former) wish for children as a goal or life longing.

In all analyses only women were included who ever had a wish for children ( $n = 133$ ). This was done because the functionality of a possible transformation of an unattainable goal into a life longing is only relevant to women who ever had the wish for children and not in women who never had a wish for children ( $n = 32$ ).

#### 4.2.1 Relationship Between Well-Being and Expression of the Goal to Have Children

It was hypothesized that childless women would show a negative relationship between the expression of the goal to have children and indicators of well-being if their wish for children was experienced as unattainable, whereas women would show a positive relationship between goal expression and well-being if their wish for children was experienced as attainable.

Three indicators of well-being were used: an overall score for psychological well-being (measured by the Ryff Inventory; Ryff, 1989), an overall score for happiness (operationalized by positive affect, the absence of negative affect, and life satisfaction; see Section 3.3.5), and a depressivity score (measured by the CES-D; Radloff, 1977).

Inspections of bivariate correlations showed that women who reported a higher expression of the goal to have children also showed higher depressivity scores ( $r = .26, p < .05$ ). However, goal expression was not significantly related to psychological well-being ( $r = -.13, p = .15$ ) or happiness ( $r = -.05, p = .56$ ). Subjective and objective attainability of the wish for children were not related to any indicator of well-being (all  $ps > .19$ ). Age was also not associated with well-being (all  $ps > .28$ ). These results indicate that there is not necessarily a relationship between goal expression and well-being and that attainability of the wish for children does not affect well-being directly.

Hierarchical multiple regression analyses were conducted in order to test the moderator effect of attainability of the wish for children on the relationship between goal expression and well-being. In these analyses, goal expression was entered in the first step, followed by attainability (separately for objective and subjective attainability) of the wish for children in the second step, and the interaction term between goal expression and attainability in the third step. This was done in separate analyses for each indicator of well-being as criterion.

When considering subjective attainability of the wish for children (see Table 13), women who reported a stronger goal to have children also reported lower psychological well-being, higher depressivity, and lower happiness (although the latter effect was only a statistical trend). In addition to the main effect of goal expression, the interaction effect of goal expression by subjective attainability emerged as a significant predictor of psychological well-being. Thus, whether the goal to have children was negatively related to psychological well-being was dependent on subjective attainability of the wish for children (see Figure 10): Women who perceived their wish for children as unattainable showed a negative association between psychological well-being and expression of their goal to have children, whereas a

slightly positive relationship was found for women who reported a high subjective probability to fulfill their wish for children.

Table 13

*Hierarchical Regression Analyses Predicting Well-Being With Goal Expression: Moderator Effect of Subjective Attainability of the Wish for Children*

| Variable  | Psychological well-being |              | Happiness         |              | Depressivity |              |
|---|--------------------------|--------------|-------------------|--------------|--------------|--------------|
|   | <i>B</i>                 | $\Delta R^2$ | <i>B</i>          | $\Delta R^2$ | <i>B</i>     | $\Delta R^2$ |
| Step 1  |                          | .02          |                   | .00          |              | .07          |
| Expression of the goal to have children           | <b>-.14</b>              |              | -.14 <sup>+</sup> |              | <b>.15</b>   |              |
| Step 2  |                          | .01          |                   | .03          |              | .03          |
| Subjective attainability of the wish for children | .04                      |              | .20 <sup>+</sup>  |              | -.10         |              |
| Step 3  |                          | .04          |                   | .01          |              | .01          |
| Goal expression x Subjective attainability        | <b>.12</b>               |              | .07               |              | -.05         |              |
| Total $R^2$                                       |                          | <b>.07</b>   |                   | .04          |              | <b>.11</b>   |
| Adjusted $R^2$                                    |                          | <b>.05</b>   |                   | .02          |              | <b>.09</b>   |

Note.  $N = 133$ . Values are unstandardized regression weights ( $B$ ) for the full model (see recommendations by Aiken & West, 1991).

Coefficients in bold are significant at  $p < .05$ . <sup>+</sup> $p < .10$ .

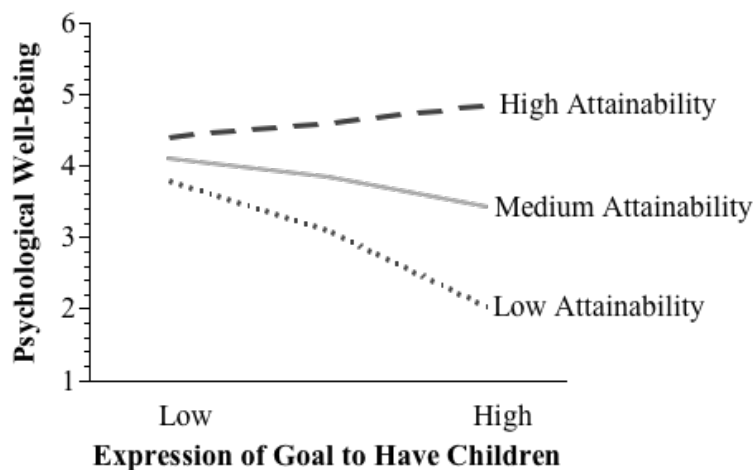


Figure 10. The relationship between expression of the goal to have children and psychological well-being is moderated by subjective attainability of the wish for children. Low and high expression of the goal to have children corresponds to  $\pm 1$  SD ( $SD = 1.39$ ) from the mean of goal expression ( $M = 2.27$ ).

In contrast to subjective attainability, objective attainability of the wish for children neither served as a direct predictor of any indicator of well-being, nor did it moderate the relationship between well-being and expression of the goal to have children.

In sum, in accordance with my hypothesis, the relationship between goal expression and well-being was dependent on subjective attainability of the wish for children. However, objective attainability of the wish for children did not affect well-being directly or indirectly.

#### 4.2.2 Relationship Between Well-Being and Expression of the Life Longing to Have Children

For expression of the life longing to have children and indicators of well-being, a quadratic association was predicted. Specifically, it was assumed that childless women who experienced a moderate expression of the life longing to have children would report higher well-being than women who experienced a low or very strong expression of the life longing to have children. First, bivariate correlations between life longing expression (linear and quadratic) and indicators of well-being were considered. The quadratic term of life longing was created by first centering the raw score of overall life longing expression and then squaring the centered variable. As can be seen in Table 14, women who reported a stronger expression of the life longing to have children had lower psychological well-being, lower happiness, and higher depressivity scores. In contrast to my predictions, there was no quadratic relationship between well-being and life longing on the bivariate correlational level.

Table 14  
*Correlations Between Indicators of Well-Being and Life Longing*

|   | Psychological well-being | Happiness   | Depressivity |
|---|--------------------------|-------------|--------------|
| Expression of the life longing to have children         | <b>-.28</b>              | <b>-.18</b> | <b>.32</b>   |
| Squared expression of the life longing to have children | .10                      | .05         | .02          |

*Note.*  $N = 133$ . Coefficients in bold are significant at  $p < .05$ .

In addition, I suggested that the relationship between the expression of the life longing to have children and indicators of well-being would be influenced by several variables including control over life longing experience as well as strategies of self-regulatory behavior. Equivalent to the procedure described for the relationship between goal expression and well-being in Section 4.2.1, several hierarchical multiple regression analyses were conducted separately for three indicators of well-being (psychological well-being, happiness, and

depressivity) and several moderator variables. In the first step of each regression analysis, the linear life longing expression was entered, followed by the quadratic life longing expression in the second step, and the respective moderator variable in the third step. In the fourth step, the interaction term between the moderator variable and the linear life longing expression was entered, followed by the interaction term between the moderator variable and the quadratic life longing expression in the last step.<sup>29</sup>

The psychological literature on goals emphasizes that in situations in which persons are faced with unattainable goals, self-regulation behavior is required in order to avoid distress and a decline in well-being. Thus, I assumed that self-regulation strategies would also influence well-being in the present study. In addition, it was hypothesized that self-regulatory behavior would moderate the relationship between well-being and expression of the life longing to have children. Specifically, I assumed that those women should show a more positive relationship between life longing and well-being who have more control over the experience of their life longing to have children, who are generally better able to flexibly adjust to critical situations or blocked goals, and who are better able to disengage from the unattainable goal to have children and invest more in alternative life goals when faced with the unattainable goal to have children. Note that control over life longing experience, goal disengagement, and goal reengagement were assessed child-wish-specifically, whereas flexible goal adjustment was not assessed child-wish-specifically. Table 15 shows bivariate correlations between well-being indicators and the described possible moderator variables.

Table 15  
*Correlations Between Indicators of Well-Being and Self-Regulatory Strategies*

|   | Psychological<br>well-being | Happiness  | Depressivity |
|---|-----------------------------|------------|--------------|
| Control over the experience of the<br>life longing to have children <sup>a</sup>                          | .12                         | <b>.19</b> | <b>-.26</b>  |
| Disengagement from the goal<br>to have children <sup>b</sup>  | <b>.27</b>                  | .19        | <b>-.24</b>  |
| Engagement in alternative goals<br>when faced with the unattainable<br>goal to have children <sup>b</sup> | <b>.33</b>                  | <b>.23</b> | <b>-.24</b>  |
| Flexible goal adjustment <sup>a</sup>   | <b>.45</b>                  | <b>.45</b> | <b>-.31</b>  |

Note. <sup>a</sup>  $N = 133$ . <sup>b</sup>  $N = 102$ . Coefficients in bold are significant at  $p < .05$ .

<sup>29</sup> The equation for this regression model is:  $Y = b_1X + b_2X^2 + b_3Z + b_4XZ + b_5X^2Z + b_0$ . In the present case  $Y =$  well-being;  $X =$  expression of life longing to have children;  $Z =$  moderator variable.

As apparent in Table 15, all four moderator variables were significantly related to well-being, that is, persons who reported more control over the experience of their life longing to have children, who flexibly adjusted to barriers in goal attainment, who reported more disengagement from the goal to have children and more reengagement in alternative goals had higher psychological well-being, were happier, and less depressive.

#### The Moderating Effect of Control Over Life Longing Experience

As outlined above, I wanted to investigate whether control over life longing experience influenced well-being directly and/or indirectly. As can be seen in Table 16, results of the hierarchical regression analyses were in accordance with those from bivariate correlational analyses and suggest that women who were better able to control the experience of their life longing to have children reported lower depressivity, higher happiness, and higher psychological well-being (statistical trend).

Table 16

*Hierarchical Regression Analyses Predicting Well-Being With Life Longing Expression: Moderator Effect of Control Over Experience of Life Longing to Have Children*

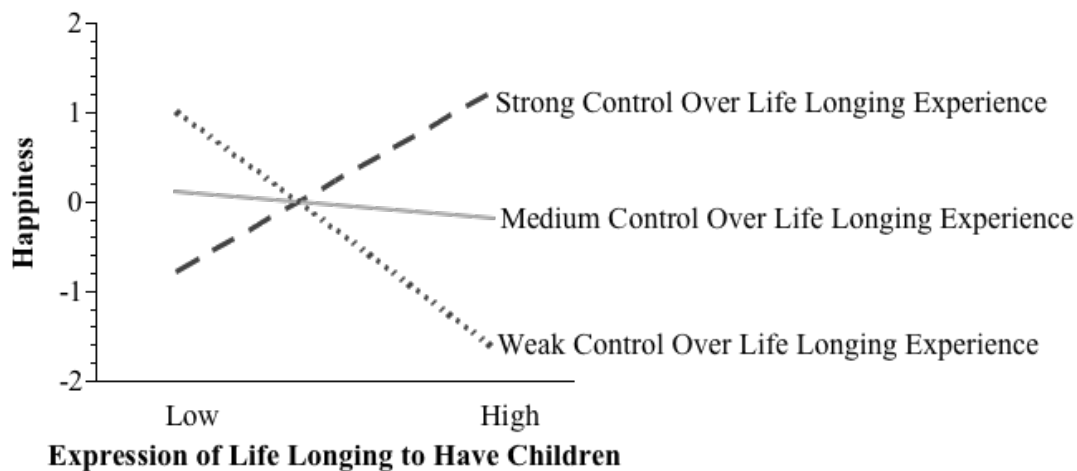
| Variable  | Psychological well-being |              | Happiness   |              | Depressivity |              |
|---|--------------------------|--------------|-------------|--------------|--------------|--------------|
|   | <i>B</i>                 | $\Delta R^2$ | <i>B</i>    | $\Delta R^2$ | <i>B</i>     | $\Delta R^2$ |
| Step 1  |                          | <b>.08</b>   |             | <b>.04</b>   |              | <b>.10</b>   |
| Expression of the life longing to have children | <b>-.16</b>              |              | <b>-.15</b> |              | <b>.14</b>   |              |
| Step 2  |                          | .00          |             | .00          |              | .01          |
| Quadratic expression of life longing            | .02                      |              | .00         |              | .03          |              |
| Step 3  |                          | .01          |             | <b>.03</b>   |              | <b>.05</b>   |
| Control over experience of life longing         | .10 <sup>+</sup>         |              | <b>.20</b>  |              | <b>-.08</b>  |              |
| Step 4  |                          | .00          |             | <b>.03</b>   |              | .00          |
| Life longing x Control                          | .00                      |              | <b>-.09</b> |              | -.01         |              |
| Step 5  |                          | .01          |             | .01          |              | .00          |
| Life longing squared x Control                  | -.04                     |              | -.05        |              | .00          |              |
| Total $R^2$                                     |                          | <b>.10</b>   |             | <b>.11</b>   |              | <b>.16</b>   |
| Adjusted $R^2$                                  |                          | <b>.07</b>   |             | <b>.07</b>   |              | <b>.13</b>   |

Note.  $N = 133$ . Values are unstandardized regression weights (*B*) for the full model (see recommendations by Aiken & West, 1991).

Coefficients in bold are significant at  $p < .05$ . <sup>+</sup> $p < .10$ .



Again, there was a significant linear effect of life longing expression on well-being, but no quadratic relationship between well-being and expression of life longing to have children. For happiness the expected moderator effect of controllability was found. As apparent from Figure 11, for women who perceived the experience of their life longing to have children as more controllable a positive relationship between happiness and life longing to have children was found. In contrast, women showed a negative relationship between happiness and life longing to have children when the experience of their life longing to have children was less controllable.



*Figure 11.* The relationship between expression of the life longing to have children and happiness is moderated by control over experience of the life longing to have children. Low and high expression of the life longing to have children corresponds to  $\pm 1$  SD ( $SD = 1.11$ ) from the mean of life longing expression ( $M = 3.65$ ).

#### The Moderating Effect of Flexible Goal Adjustment

Persons who are confronted with unattainable goals have to adjust to this situation. The more flexible a person generally is in adjusting to aversive situations or unattainable goals the higher his or her well-being should be. Bivariate correlations reported above supported this assumption for the present study. In addition, I wanted to investigate whether flexible goal adjustment moderated the relationship between well-being and life longing. The results of hierarchical multiple regression analyses (see Table 17) show that in addition to the significant direct effect of flexible goal adjustment on well-being, goal adjustment moderated the linear (but not the quadratic) relationship between happiness and expression of the life longing to have children. Figure 12 illustrates this effect: Women who adjusted more flexibly to blocked goals (in general) showed a positive relationship between happiness and expression of the life longing to have children whereas women who did not adjust well to aversive situations showed a negative association.

Table 17  
*Hierarchical Regression Analyses Predicting Well-Being With Life Longing Expression:  
 Moderator Effect of Flexible Goal Adjustment*

| Variable  | Psychological well-being |              | Happiness  |              | Depressivity      |              |
|---|--------------------------|--------------|------------|--------------|-------------------|--------------|
|   | <i>B</i>                 | $\Delta R^2$ | <i>B</i>   | $\Delta R^2$ | <i>B</i>          | $\Delta R^2$ |
| Step 1  |                          | <b>.08</b>   |            | <b>.03</b>   |                   | <b>.10</b>   |
| Expression of the life longing to have children | <b>-.13</b>              |              | -.10       |              | <b>.14</b>        |              |
| Step 2  |                          | .00          |            | .00          |                   | .01          |
| Quadratic expression of life longing            | .01                      |              | -.01       |              | .04               |              |
| Step 3  |                          | <b>.17</b>   |            | <b>.18</b>   |                   | <b>.08</b>   |
| Flexible goal adjustment                        | <b>.26</b>               |              | <b>.31</b> |              | <b>-.11</b>       |              |
| Step 4  |                          | .01          |            | <b>.03</b>   |                   | .02          |
| Life longing x Flexible goal adjustment         | .08                      |              | <b>.18</b> |              | -.09 <sup>+</sup> |              |
| Step 5  |                          | .01          |            | .01          |                   | .00          |
| Life longing squared x Flexible goal adjustment | .03                      |              | .09        |              | -.03              |              |
| Total $R^2$                                     |                          | <b>.27</b>   |            | <b>.25</b>   |                   | <b>.21</b>   |
| Adjusted $R^2$                                  |                          | <b>.23</b>   |            | <b>.22</b>   |                   | <b>.19</b>   |

Note.  $N = 133$ . Values are unstandardized regression weights ( $B$ ) for the full model (see recommendations by Aiken & West, 1991).

Coefficients in bold are significant at  $p < .05$ . <sup>+</sup>  $p < .10$ .

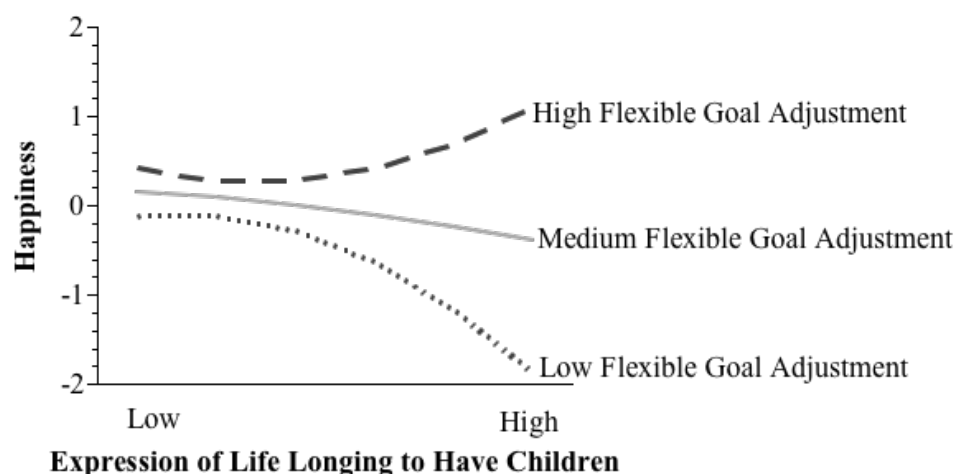


Figure 12. The relationship between expression of the life longing to have children and happiness is moderated by flexible goal adjustment. Low and high expression of the life longing to have children corresponds to  $\pm 1$  SD ( $SD = 1.11$ ) from the mean of life longing expression ( $M = 3.65$ ).

### The Moderating Effect of Disengagement From the Goal to Have Children

One of my basic assumptions was that persons transform their goal to have children into a life longing if they realize that they cannot attain this goal. This assumption suggests that persons disengage from the goal to have children and pursue it only at an imaginary level as a life longing. Therefore, the direct effect and the moderator effect of disengagement from the goal to have children were tested. Results of hierarchical multiple regression analyses for psychological well-being, happiness, and depressivity as criterion variables are displayed in Table 18.

Table 18  
*Hierarchical Regression Analyses Predicting Well-Being With Life Longing Expression: Moderator Effect of Disengagement from the Goal to Have Children*

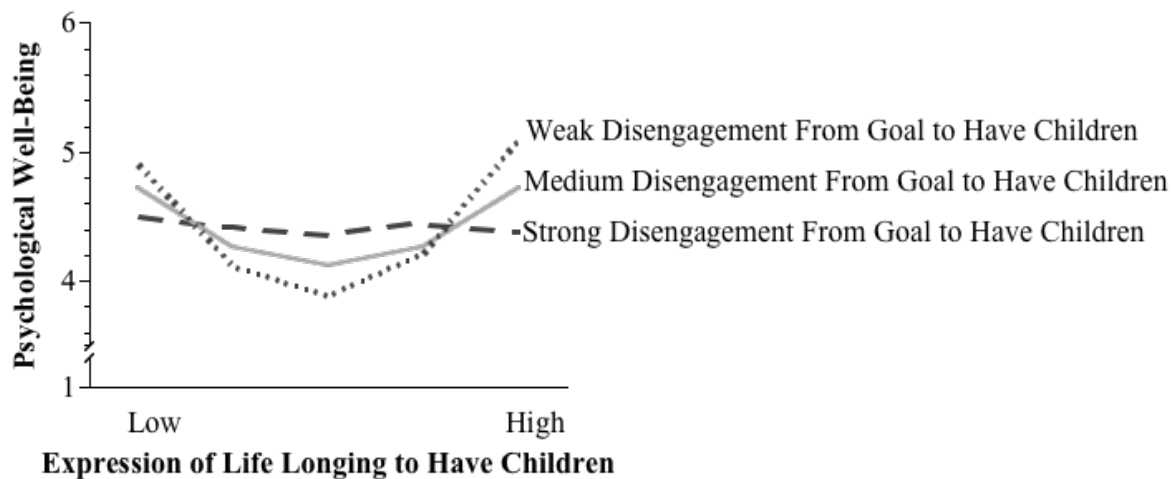
| Variable  | Psychological well-being |                  | Happiness   |                  | Depressivity     |                  |
|---|--------------------------|------------------|-------------|------------------|------------------|------------------|
|   | <i>B</i>                 | $\Delta R^2$     | <i>B</i>    | $\Delta R^2$     | <i>B</i>         | $\Delta R^2$     |
| Step 1  |                          | <b>.05</b>       |             | .02              |                  | <b>.06</b>       |
| Expression of the life longing to have children | <b>-.30</b>              |                  | <b>-.39</b> |                  | <b>.23</b>       |                  |
| Step 2  |                          | .00              |             | .00              |                  | .01              |
| Quadratic expression of life longing            | <b>.15</b>               |                  | <b>.21</b>  |                  | -.05             |                  |
| Step 3  |                          | .04 <sup>+</sup> |             | .02              |                  | .03 <sup>+</sup> |
| Goal disengagement                              | .10 <sup>+</sup>         |                  | .10         |                  | -.05             |                  |
| Step 4  |                          | .03              |             | .04 <sup>+</sup> |                  | .03 <sup>+</sup> |
| Life longing x Goal disengagement               | <b>.14</b>               |                  | <b>.22</b>  |                  | <b>-.11</b>      |                  |
| Step 5  |                          | <b>.06</b>       |             | <b>.07</b>       |                  | .03 <sup>+</sup> |
| Life longing squared x Goal disengagement       | <b>-.09</b>              |                  | <b>-.12</b> |                  | .05 <sup>+</sup> |                  |
| Total $R^2$                                     |                          | <b>.18</b>       |             | <b>.15</b>       |                  | <b>.16</b>       |
| Adjusted $R^2$                                  |                          | <b>.13</b>       |             | <b>.10</b>       |                  | <b>.12</b>       |

Note.  $N = 102$ . Values are unstandardized regression weights (*B*) for the full model (see recommendations by Aiken & West, 1991).

Coefficients in bold are significant at  $p < .05$ . <sup>+</sup> $p < .10$ .

In the full regression model the linear relationship between psychological well-being and expression of the life longing to have children was specified by a significant quadratic effect. There was no significant main effect of goal disengagement. Disengagement from the goal to have children was found to moderate the relationship between well-being and life longing expression. The linear life longing by goal disengagement interaction term as well as

the quadratic life longing by goal disengagement interaction term reached significance. Inspections of the interaction effects (see Figure 13) revealed an interaction pattern that was partly opposite to my hypothesis. Women who reported that they had disengaged from the goal to have children showed no longer a relationship between psychological well-being and life longing expression. In contrast, women who reported a weak to medium disengagement showed an U-shaped association between psychological well-being and life longing expression. That is, women who did not disengage yet completely showed higher well-being if they had either a relatively weak or a very high expression of the life longing to have children. The same moderation effect was found for happiness and depressivity (although the latter one was a linear and no quadratic interaction effect).



*Figure 13.* The relationship between expression of the life longing to have children and psychological well-being is moderated by disengagement from the goal to have children. Low and high expression of the life longing to have children corresponds to  $\pm 1$  SD ( $SD = 1.11$ ) from the mean of life longing expression ( $M = 3.65$ ). Note that no woman with weak disengagement from the goal to have children had a score on life longing expression that was below  $-1$  SD from the mean of life longing expression. In contrast, the scores of women in the group of medium and strong disengagement were distributed across the entire scale width.

#### The Moderating Effect of Reengagement in Alternative Goals

Several studies have shown that not only disengagement from a blocked goal results in higher well-being but also that reengagement in alternative goals is an important component in adaptation to unattainable goals. Thus, I wanted to investigate whether reengagement in alternative life goals when faced with the unattainable goal to have children would influence well-being directly and whether it would moderate the relationship between well-being and expression of the life longing to have children. Results of hierarchical multiple regression analyses are provided in Table 19.

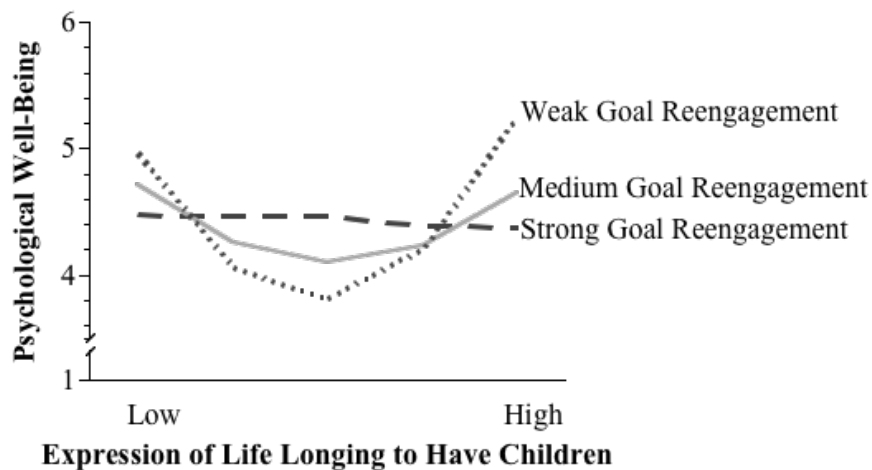
Table 19  
*Hierarchical Regression Analyses Predicting Well-Being With Life Longing Expression:  
 Moderator Effect of Reengagement in Alternative Goals*

| Variable  | Psychological well-being |              | Happiness        |              | Depressivity      |                        |
|---|--------------------------|--------------|------------------|--------------|-------------------|------------------------|
|   | <i>B</i>                 | $\Delta R^2$ | <i>B</i>         | $\Delta R^2$ | <i>B</i>          | $\Delta R^2$           |
| Step 1  |                          | <b>.05</b>   |                  | .02          |                   | <b>.06</b>             |
| Expression of the life longing to have children | <b>-.31</b>              |              | <b>-.31</b>      |              | <b>.22</b>        |                        |
| Step 2  |                          | .00          |                  | .00          |                   | .01                    |
| Quadratic expression of life longing            | <b>.15</b>               |              | .13              |              | -.03              |                        |
| Step 3  |                          | <b>.08</b>   |                  | <b>.04</b>   |                   | <b>.04</b>             |
| Reengagement in alternative goals               | <b>.18</b>               |              | .19 <sup>+</sup> |              | -.07              |                        |
| Step 4  |                          | .01          |                  | .00          |                   | .01                    |
| Life longing x Goal reengagement                | <b>.23</b>               |              | .23 <sup>+</sup> |              | -.14 <sup>+</sup> |                        |
| Step 5  |                          | <b>.08</b>   |                  | <b>.06</b>   |                   | <b>.03<sup>+</sup></b> |
| Life longing squared x Goal reengagement        | <b>-.15</b>              |              | <b>-.17</b>      |              | .07 <sup>+</sup>  |                        |
| Total $R^2$                                     |                          | <b>.22</b>   |                  | <b>.12</b>   |                   | <b>.15</b>             |
| Adjusted $R^2$                                  |                          | <b>.18</b>   |                  | <b>.08</b>   |                   | <b>.11</b>             |

Note.  $N = 102$ . Values are unstandardized regression weights ( $B$ ) for the full model (see recommendations by Aiken & West, 1991).

Coefficients in bold are significant at  $p < .05$ . <sup>+</sup>  $p < .10$ .

When considering the full regression models, I found that beyond the significant main effect of life longing expression, reengagement in alternative life goals directly influenced psychological well-being and happiness (statistical trend). Both indicators of well-being were higher when women reported more reengagement in alternative goals. In addition, goal reengagement moderated the relationship between life longing and well-being. Specifically, the quadratic life-longing-by-well-being interaction reached significance for psychological well-being and happiness. The patterns of these interaction effects were the same as for disengagement from the goal to have children. As can be seen in Figure 14 for psychological well-being, women who strongly reengaged in alternative goals showed no longer a relationship between the expression of the life longing to have children and well-being. However, women who reported a weak to medium goal reengagement showed an U-shaped association between life longing and well-being such that either a very weak or a very strong expression of the life longing to have children were related to higher scores on well-being whereas a medium expression of the life longing was related to lower well-being.



*Figure 14.* The relationship between the expression of the life longing to have children and psychological well-being is moderated by reengagement in alternative goals. Low and high expression of the life longing to have children corresponds to  $\pm 1$  SD ( $SD = 1.11$ ) from the mean of life longing expression ( $M = 3.65$ ). Note that no woman with weak goal reengagement had a score on life longing expression that was below  $-1$  SD from the mean of life longing expression. In contrast, the scores of women in the group of medium and strong reengagement were distributed across the entire scale width.

Taken together, my hypothesis of a quadratic relationship between well-being and expression of the life longing to have children could not be confirmed. In contrast, it was found that women who had a stronger expression of life longing to have children reported lower psychological well-being, lower happiness, and higher depressivity. Partly in accordance with my hypotheses, this relationship was moderated by several self-regulatory strategies. Women who generally adjusted to blocked goals flexibly and who were better able to control the experience of their life longing to have children showed a positive relationship between well-being and life longing expression. In contrast, women showed an even more pronounced negative relationship between well-being and life longing expression if they scored low on control over life longing experience and/or flexible goal adjustment. Women who disengaged from the goal to have children and who reengaged in alternative goals when they were faced with the unattainable goal to have children showed no longer a negative relationship (but also not a positive one) between life longing expression and well-being. Interestingly, those women who reported weak to moderate disengagement from the goal to have children and weak to moderate reengagement in alternative goals had the highest scores in well-being when they had a very weak or a very strong expression of the life longing to have children.

#### 4.2.3 Well-Being as a Function of Transition From Goal to Life Longing

In Section 4.1.3 a discrimination between women before, in, after the transition process from goal to life longing and a “control group” has been introduced. My hypothesis was that women in these different stages differ from each other with respect to their well-being (see also the second working model of this thesis in Figure 4, p. 42). Specifically, it was predicted that women who are in the “in transition from goal to life longing stage” would show lower well-being than women in the “before transition stage”, in the “after transition stage”, and in the “control group”. In order to test this hypothesis, a MANOVA with transition group membership<sup>30</sup> as between-subjects factor and psychological well-being, happiness, and depressivity as dependent variables was conducted. Overall, groups differed significantly from each other in well-being,  $F(9, 387) = 2.61, p < .05, \eta^2 = .06$ .<sup>31</sup> Follow-up univariate tests showed significant group differences for all three indicators of well-being:  $F(3, 129) = 6.06, p < .05, \eta^2 = .12$  for psychological well-being;  $F(3, 129) = 2.94, p < .05, \eta^2 = .06$  for happiness;  $F(3, 129) = 3.75, p < .05, \eta^2 = .12$  for depressivity<sup>32</sup>. Bonferroni post-hoc tests showed that women in the “control group” had significantly higher scores in psychological well-being than women in the “in transition stage” and in the “after transition stage”, all  $ps < .05$ . For depressivity only one comparison was significant. Women in the “in transition stage” reported significantly higher depressivity scores than women in the “control group”,  $p < .05$ . Only one trend for a group difference was found for happiness. Again, women in the “control group” showed a trend to be happier than women in the “in transition stage”,  $p = .06$ . The mean value for each indicator of well-being in each group is illustrated in Figure 15 (panel A to C).

In sum, the hypothesis that women in the transition phase from goal to life longing show lower well-being than all other groups was only partly confirmed. On all measures of well-being, women in the “control group”, that is, those women who reported low goal

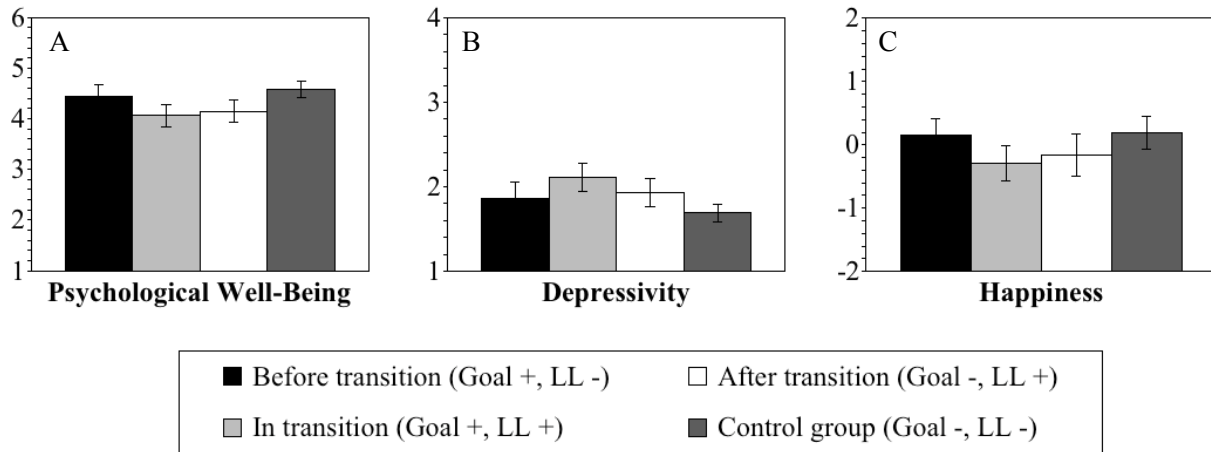
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<sup>30</sup> Note that because in these analyses only women were included who at some point in life had a wish for children ( $n = 133$ ), women were newly grouped according to their goal and life longing expression. For the  $n = 133$  sample, the median for life longing expression was at 3.77 and the median for goal expression was at 1.80. Table B3 in Appendix B displays the number and average age of participants per group. Table B4 in Appendix B shows the means and standard deviations of goal and life longing expression for the four transition groups.

<sup>31</sup> When this MANOVA was controlled for chronological age, results remained the same,  $F(9, 384) = 2.51, p < .05, \eta^2 = .06$ .

<sup>32</sup> Note that the assumption of homogeneity of variances was violated in this analysis, Levene’s test:  $F(3, 129) = 4.44, p < .05$ .

expression and low life longing expression had the highest scores. Women before, in, and after the transition did not differ significantly from each other, although women in the “in transition stage” showed the worst scores on all indicators of well-being.



*Figure 15.* Psychological well-being (A), depressivity (B), and happiness (C) by transition group. In the legend, Goal + stands for strong expression of the goal to have children, Goal - stands for weak expression of the goal to have children. LL + stands for strong expression of the life longing to have children, LL - stands for weak expression of the life longing to have children.  $N = 133$ . Error bars represent 95% confidence intervals.

#### 4.3 Summary of Findings in Relation to Hypotheses

Table 20 summarizes all results of the present study and relates them back to the initial hypotheses, indicating whether hypotheses were confirmed or not.

Table 20  
*Summary of Findings*

| Hypothesis   | Data support hypothesis?  |
|--|---|
| 1) <i>The extent to which the wish for children is expressed as a goal or life longing, respectively, can be predicted by intensity (current, past, and future), duration, and attainability of the wish for children.</i> |   |
| (a) High current intensity and high attainability of the wish for children will be related to a stronger expression of the goal to have children.  | <b>Yes</b>  |
| (b) High past, current, and future intensity, long duration, and low attainability of the wish for children will be related to a stronger expression of the life longing to have children.                                 | <b>Partially<sup>a</sup></b><br>Attainability of the wish for children was no significant predictor of life longing expression. |

(Table continues)



Table 20 (continued)

| Hypothesis  | Data support hypothesis?   |
|---|--|
| <p>II) <i>The child-wish-related variables intensity, duration, and attainability of the wish for children can be used to differentiate between women who are before, in, and after the transition from goal to life longing.</i></p>   |  |
| <p>(a) The intensity of the wish for children is likely to be the same for women before, in, and after the transition from goal to life longing.</p>  | <p><b>Partially</b><br/>Intensity of the wish for children is highest in the “in transition stage”</p>   |
| <p>(b) The duration of the wish for children is shortest in women before the transition; it is longer for women in the transition, and is longest in women after the transition from goal to life longing.</p>  | <p><b>Partially</b><br/>Women in the “in transition stage” and “after transition stage” did not differ significantly in duration of the wish for children.</p>       |
| <p>(c) The attainability of the wish for children is highest in women before the transition; it is lower for women in the transition, and is lowest for women after the transition from goal to life longing.</p>   | <p><b>Partially:</b><br/>Women in the “before transition stage” and “in transition stag” did not differ significantly in attainability of the wish for children.</p> |
| <p>III) <i>Women who perceive their wish for children as unattainable will show a negative relationship between goal expression and well-being, whereas women who perceive their wish for children as highly attainable will show a positive relationship between goal expression and well-being.</i></p> | <p><b>Yes</b></p>  |
| <p>IV) <i>There is a quadratic relationship between the expression of the life longing to have children and well-being, and this relationship is moderated by the use of other self-regulatory strategies.</i></p>  |  |
| <p>(a) Childless women who experience a moderate expression of the life longing to have children report higher well-being than women with a high or low expression of life longing.</p>   | <p><b>No<sup>a</sup></b><br/>There is a <i>linear</i> negative association between well-being and expression of the life longing to have children.</p>               |

(Table continues)

Table 20 (continued)

| Hypothesis  | Data support hypothesis?  |
|---|---|
| <p>(b) The association between the expression of life longing to have children and well-being will be more positive when women have more control over the experience of their life longing and when they also make use of other self-regulatory strategies such as general flexible goal adjustment, disengagement from the goal to have children, and investment in alternative goals as a reaction to the unattainable goal to have children.</p> | <p><b>Partially:</b><br/>Women who reported weak disengagement from the goal to have children and weak engagement in alternative goals showed a U-shaped relationship between life longing expression and well-being.</p>   |
| <p>V) <i>Women who are in the process of transforming their goal to have children into a life longing are likely to report lower well-being than women who are before or after the transition from goal to life longing and women who report low expressions of the goal and the life longing to have children.</i></p>   | <p><b>Partially:</b><br/>Women before, in, and after the transition process did not differ from each other, although women in the transition process reported the lowest scores on all indicators of well-being. Women in the “in transition stage” transition reported significantly lower well-being than women in the “control group”.</p> |

Note. <sup>a</sup> When a hypothesis was not or only partially empirically supported, it is briefly summarized in what way the respective results differ from the prediction.