Developmental Expectations for the Self and Most Other People: Age Grading in Three Functions of Social Comparison

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This study focused on beliefs about one's own compared with other people's development in adulthood. Young, middle-aged, and old adults rated person-descriptive attributes with respect to developmental change throughout adulthood for the self and most other people, controllability for self and other, desirability, degree of self-descriptiveness, relevance as a developmental goal, and typical age-timing of attribute as developmental goal. Various aspects of subjective identification with age groups were also assessed. Findings suggested 3 modes of social comparison: self-assessment reflected in congruence between self and other-ascribed developmental trajectories, self-enhancement involved in more favorable expectations for the self regarding old age, and self-improvement expressed in developmental aspirations toward higher status age groups.

The present research addresses adults' conceptions about development in adulthood. Specifically, this research juxtaposes development-related conceptions pertaining to the self and normative conceptions related to "most other people." Previous research on normative conceptions about adult development showed high levels of agreement among adolescents and various adult age groups (J. Heckhausen, 1989; Heckhausen & Baltes, 1991; Heckhausen, Dixon, & Baltes, 1989; Hosenfeld, 1988). Normative conceptions about adult development constitute widely shared common-sense knowledge and thus may provide a normative reference system of development-related expectations against which individual developmental trajectories are evaluated. It is common-sense knowledge, for instance, that forgetfulness is likely to increase in old age. Therefore, people entering old age may try to counteract this normative decline by developing their memory skills. Also, incidents of memory failure in older people may more likely be attributed to age, rather than other causes.

Normative conceptions about development are widely shared among members of a given society (Hagestad, 1990; Heckhausen & Baltes, 1991; Heckhausen et al., 1989; Neugarten, Moore, & Lowe, 1965). They function as "social constructions of reality" (Berger & Luckmann, 1966) and are resistent to short-lived changes in actual age-chronological timing of life transitions (Modell, 1980). Normative conceptions about development comprise intriguing characteristics because of their dual nature: In some ways they are social cognitions, and in other ways they are self-related cognitions. In a developmentally dynamic way, these conceptions relate to *ingroups* (an individual's peers) and to *outgroups* (people not of the same age as the individual) at the same time. An individual can think about people at various ages different from his or her own and perceive them as an outgroup. However, what is currently an age-related outgroup has been or will be an ingroup at some other stage of the individual's life course. The individual is most likely to have been or will become a member of this current outgroup at some point in his or her life. Thus, cognitive representations of people at different ages become charged with self-involvement.

Normative conceptions about development probably function as markers or reference frames for assessing one's own personal developmental trajectory. Knowing the typical or normal developmental course informs the individual about whether his or her developmental past is normative or deviant, whether his or her current status is on time or off time, and about what to expect for the future. Accordingly, the individual might decide to invest special effort to overcome deviant age timing or, alternatively, he or she might try to interpret personal deviance from age norms in a self-consistent way (J. Heckhausen, 1990).

Three Functions of Social Comparison in Life Span Development

This article draws on the theory of social comparison to clarify the functions normative conceptions about development play in people's perceptions of their own development. According to Festinger (1954), social comparisons mainly assist accurate *self-assessment* (or self-evaluation) in relation to social standards. Moreover, with regard to abilities, social comparisons might reflect a "unidirectional drive upward" (Festinger, 1954, p. 124) targeted at *self-improvement*. In a recent review,

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¹ The term *normative conceptions about development* is used to refer to conceptions about the typical or standard course of development that is attributed to most other people.

Wood (1989) integrated research in social psychology, achievement motivation, and on the self to also include *self-enhancement* as an important function of social comparisons.

From a life span developmental perspective, none of the three types of social comparison alone would be functional for the entire life span. Instead, flexible priorities of self-assessment, self-enhancement, or self-improvement should be particularly adaptive, depending on the specific challenges encountered at different periods of the adult life course. Life span research on objective (Kliegl & Baltes, 1987; Salthouse, 1985) as well as subjective development (Heckhausen et al., 1989, Ryff, 1982) suggests that moving from young adulthood to middle adulthood and into old age involves a shift from a predominance of developmental growth to gradually increasing developmental decline. In addition, changes expected to occur in advanced age are associated with diminished perceived controllability, and thus less scope for plasticity (Heckhausen & Baltes, 1991). It would appear functional to give priority to informational (self-assessment) and motivational (self-improvement) needs in young and middle adulthood, when developmental changes are still perceived to be largely controllable. Conversely, in old age, when less can be done to modify the course of decline, well-being might best be fostered by satisfying selfesteem (self-enhancement) needs even at the expense of informational needs (Schulz, Heckhausen, & Locher, 1991).

In the present study, conceptions about developmental gains and losses and about the controllability of psychological attributes are assessed separately for the self and for most other people. In general, we expect to find a pattern of expected developmental gains and losses converging with findings of previous research. Previous studies on normative expectations about adult development found adults' conceptions about adult development to be optimistic overall; more gains than losses were expected, and most expected changes were perceived to be fairly controllable (Heckhausen & Baltes, 1991; Heckhausen et al., 1989). However, there was an age-related shift from a predominance of expected gains in early and middle adulthood to a predominance of expected losses and less perceived controllability in old age (Heckhausen & Baltes, 1991; Heckhausen et al., 1989). We expect this pattern of findings to be replicated in the present study.

Rationale of Study

This study uses comparisons between conceptions about the self and conceptions about most other people as an empirical paradigm to address social comparison processes. Although separate assessments of self- and other-related beliefs do not directly represent social comparison, they do inform about the reference frame of normative beliefs and knowledge, within which the self is construed. With regard to this study's main goal of comparing self and other-related conceptions, we investigated how the relation between self- and other-related conceptions reveals shifting priorities across age groups among the three functions of social comparison: self-assessment, self-enhancement, or self-improvement. The predominance of each mode of social comparison should vary with the period of the adult life span addressed. Each of the three functions of social comparison will be discussed with an emphasis on their specific developmental aspects and the respective hypotheses for the present study.

According to Festinger (1954), the most important function of social comparison is the validation and calibration of self-assessment. In the absence of objective physical standards, people compare their own standing with regard to abilities and opinions with those of other people. In doing this, they prefer to use similar others as standards of reference (Festinger, 1954). What does the function of self-assessment imply for age-graded social comparisons? Age-normative conceptions about the life course and development provide a standard reference about what lifecourse events and developmental changes to expect at which ages. The individual can use these conceptions as reference points to evaluate present and past personal status and to generate personal expectations about future personal development. Using normative expectations about adult development as a standard reference for the assessment of one's own developmental status and future prospects would seem functional for focusing developmental planning and action on age-appropriate issues.

A focus on the validation of self-assessment by social comparison should be reflected in an overall congruence of self- and other-related expected trajectories for developmental gains and losses. Target-age related shifts in the expected potential for growth or risks for decline should be similar in the ratings pertaining to the self and those pertaining to most other people. In addition, the perceived relative controllability of various psychological attributes for the self should resemble the rank order of attribute controllability as ascribed to most other people.

Moreover, and in contrast to Festinger's (1954) emphasis on social comparison as a means to maximize validity of self-evaluations, social comparison processes might also serve to maintain self-esteem and even promote self-enhancement (Wood, 1989). To serve self-enhancement, social comparison may be tailored to use reference groups inferior to the self. There is growing evidence that people selectively choose less fortunate or lower status social referents or actively derogate them so that their own standing would appear enhanced (Diener, 1984; Taylor, Lichtman, & Wood, 1984; Wills, 1981). Such downward comparisons (Wills, 1981) are particularly likely under conditions of stress or threat, such as severe illness (Taylor & Lobel, 1989, Taylor et al., 1984), disability (Schulz & Decker, 1985), or crime-related victimization (Burgess & Holmstrom, 1979). Subjective well-being in the face of objective deprivation along important dimensions may be maintained by strategically selective choices of social reference groups that are at least as deprived as oneself (Diener, 1984; Wills, 1981). In a life span framework, the decreasing potentials for gains and increasing risks for decline expected for advanced age (Heckhausen et al., 1989) would constitute an anticipated (for young and middleaged adults) or concurrent (for old adults) threat to self-esteem.

In the present study, a self-enhancing mode of social comparison would be indicated by more developmental gains and fewer developmental losses expected for the self than for most other people. This mode, however, clashes with the function of accurate self-assessment, which should lead to high congruence between self- and other-related conceptions. With regard to young and middle adulthood, the self-assessment function may dominate because these age periods do not inherently present a threat to self-esteem. Thus, it is expected that self-enhancement would be weak or absent for those life span periods that are not threatening in terms of normative expectations about gains and losses. However, with regard to old age, when expected losses outnumber expected gains, self-enhancement should be more pronounced. With regard to perceived controllability, one's own potential should be estimated higher than most other people's potential.

Finally, Festinger (1954) also postulated a "unidirectional drive upward" (p. 124) according to which people strive for self-improvement in their abilities. Upward social comparisons -that is, comparisons with people who are superior on a criterion dimension-best serve self-improvement. They set the goals to aim for and provide models for how to attain these goals. What would this imply in the context of adult development? Normative conceptions about development comprise an expected predominance of improvements (i.e., more gains than losses) throughout young and middle adulthood but a predominant decline (i.e., more losses than gains) in advanced age (Heckhausen et al., 1989). For young adults, upward social comparison should thus be focused on somewhat older ("more mature") people to model growth. In contrast, older adults can be expected to compare themselves with somewhat younger ("less aged") adults when trying to improve their developmental status. Moreover, both young and old individuals would facilitate self-improvement by perceiving their own potential to control psychological change as substantial.

In the present study, the self-improvement function of social comparison is identified by investigating adults' developmental aspirations. Two indicators of developmental aspirations are used. One is *subjective age*, that is, the age group an individual identifies with. The other one is *developmental goals* (i.e., how does one want to change?). Based on research about the status of age levels (Chiriboga, 1978; Tuckman & Lorge, 1952) and social norms about the "prime of life" (Neugarten et al., 1965; Plath & Ikeda, 1975; Zepelin, Sills, & Heath, 1986–1987), we predicted that young adults would identify with slightly older, that is, young middle-aged adults, whereas old adults would identify with somewhat younger, that is, older middle-aged adults. Likewise, young and old adults should hold goals for developmental change that they normatively ascribe to people somewhat older or younger, respectively.

Method

Sample and Between-Subjects Design

Subjects were recruited through newspaper advertisements in Berlin, Germany, and were paid 30 DM (German Deutsche marks) for each of four 1¹/2-hr sessions. The between-subjects design comprises the variables age, gender, and educational background and was completely balanced. The total sample of 180 subjects was equally divided (10 subjects per cell) by (a) *age*: young adults (n = 60; M = 28.77 years, SD =4.55, age range = 21 to 35 years old), middle-aged adults (n = 60; M =47.50 years, SD = 4.37, age range = 40 to 55 years old), and old adults (n = 60; M = 68.55, SD = 5.55, age range = 60 to 80 years old); (b) gender: women (n = 90) and men (n = 90); and (c) educational background in terms of the three-tiered German school system: graduates of the German Hauptschule (n = 60, 9 years of schooling), graduates of the German Realschule (n = 60; 10 years of schooling), and graduates of the German Gymnasium (n = 60; 13 years of schooling).

Materials and Within-Subject Factors

Materials. A list of 100 adjectives describing psychological attributes was selected from Goldberg's (1973) list of 1,710 personality descriptors. Two bilingual (English-German) members of staff translated the adjectives from English into German, and vice versa, so that a satisfactory equivalence of adjectives' meaning was achieved. On the basis of Goldberg's information about desirability ratings and the factor classification, 10 desirable and 10 undesirable attributes were selected for each of five personality factors: extraversion (e.g., assertive or inhibited), agreeableness (e.g., affectionate or quarrelsome), conscientiousness (e.g., dependable or irresponsible), emotional stability (e.g., self-controlled or nervous), and intellect functioning (e.g., knowledgeable or naive). This selection yielded 10 scales, that is, one desirable and one undesirable 10-item scale for each of the five personality factors.

The desirability ratings and the ratings on how descriptive the attribute is for oneself were used to validate the classification of the items into desirable and undesirable ones, as well as with regard to the five personality factors. Two attributes (worrying, worriless) had to be excluded from further analyses because their German translations were rated to be close to neutral (instead of either undesirable or desirable). Another seven items were deleted because an analysis of internal consistency performed on the ratings of self-descriptiveness showed that their deletion from the scales increased Cronbach's alpha. Internal consistencies of the 10 scales, thus reduced, ranged from .74 (Emotional Stability, desirable) to .87 (Emotional Stability, undesirable).

Instructional variables. Subjects were asked to rate each of the 100 attributes with regard to six variables: (a) desirability, that is, "How desirable is the attribute?" (9-point scale: 1 = very undesirable, 5 = neutral, and 9 = very desirable); (b) expected change in adulthood, that is, "Does the attribute increase (1 = a little, 2 = medium, and 3 = verymuch), decrease (-1 = a little, -2 = medium, and -3 = very much), or remain stable (0 = stable) during 7 decades of adulthood (i.e., the 20s, 30s, 40s, 50s, 60s, 70s, and 80s)?" (c) perceived controllability, that is, "How much can one control the modification of the attribute?" (9point scale: 1 = not at all, 5 = medium, and 9 = very much); (d) self-description, that is, "How characteristic is the attribute for you?" (1 = not at all, 5 = medium, and 9 = very much; (e) developmental goals, that is, "Mark up to 10 attributes for which you intend a change" (a plus symbol equals intended increase of attribute, and a minus symbol equals intended decrease of attribute); and (f) normative age of developmental goals, that is, "Give for each of your 10 selected developmental goals the age at which people typically would hold this developmental goal."

Instructional targets. Ratings of expected change (see "b" in previous paragraph) and perceived controllability (see "c" in previous paragraph) were requested for two different instructional targets. Subjects rated expected change and perceived controllability as associated with *most other people* on the one hand and with themselves personally on the other hand.

Procedure. In the first of four sessions, we asked subjects to give ratings of expected change and ratings of perceived controllability for either the self or most other people. In the second session, ratings for the respective other instructional target were collected. The order of instructional targets across sessions was counterbalanced. In the third session, we requested subjects to rate the desirability and how characteristic the attribute was for themselves (self-description). In addition, we asked subjects to mark up to 10 attributes for which they held a developmental goal (i.e., increasing or decreasing the attribute). In the fourth session, 1 year after the first session (reduction of the sample to N=153), we assessed a number of additional variables. These included

subjective age identification (Kastenbaum, Derbin, Sabatini, & Artt, 1981), verbal IQ, and a reassessment of developmental goals collected in the third session. Moreover, five aspects of subjective age identification were measured in accordance with a scheme used by Kastenbaum et al. (1981): "the age I feel like," "the age I look like," "the age resembling my interests and activities," "the age other strangers would ascribe to me," and "the age my friends would ascribe to me" (1 = much younger than my actual age, 3 = about the same as my actual age, and 5 = much older than my actual age). In addition, we asked subjects to give, for each chosen developmental goal, an estimate of the typical age at which most other people would hold it.

In addition, we assessed retest stability for a subset of 22 subjects performing all ratings 6 months after the initial assessment. Test-retest coefficients were as follows: expected change for self, r = .80; expected change for other, r = .80; perceived control for self, r = .45; perceived control for other, r = .66; desirability, r = .98; and self-description, r = .91.

Results

The Results section has four parts. First, two predictions derived from previous research (overall optimism and age-related shifts in gain-loss ratio) are investigated. Then, the three functions of social comparison (self-assessment, self-enhancement, and self-improvement) are explored by using the data involving (a) instructional targets (self-other comparison) to identify selfassessment and self-enhancement and (b) developmental aspirations to identify self-improvement.

With regard to the ratings of expected life span change and perceived controllability, analyses involved three between-subjects factors, namely age of subject (young, middle, old), gender, and educational background (Hauptschule, Realschule, Gymnasium), and three within-subjects factors, namely instructional target (self vs. other), desirability of attribute (desirable vs. undesirable), and target age in decades (20s, 30s, . . . 80s). For reasons of parsimony, the present article does not consider the five personality dimensions as a within-subjects factor. Results related to the items' factor structure are reported elsewhere (Krueger & Heckhausen, in press).

Overall Optimistic View

The analyses regarding the expected overall optimistic view of development, as found in previous research, is based (as is much of the further analysis reported in the following sections) on multivariate analyses of variance (MANOVAs). To prepare the data for analysis, we computed mean scores for each of the 10 scales (i.e., desirable and undesirable scales for each of the five personality factors) across the items involved in the respective scale. In a first step, order effects for self and other-related conceptions were examined. The order in which *self* or *other* targets were rated had no influence on judgments. Thus, sequence of presentation was disregarded in subsequent analyses. A significance level of p < .01 was chosen as a minimum criterion for acceptable significance.

An optimistic view of life span developmental prospects should be shown in more and greater expected increases and less decreases for desirable attributes as compared with undesirable attributes. Thus, the net change (i.e., change averaged across target decades) for desirable attributes should be higher than for undesirable attributes. A 2 (desirability) \times 2 (selfother) \times 7 (target decades) \times 3 (age of subject) \times 2 (gender of subject) \times 3 (educational background of subject) multivariate analysis of variance was conducted on the ratings of expected change (involving both targets, self and most other people). As expected, desirable attributes yielded a greater mean net (i.e., averaged across decades) rating of change (M = .42) than did undesirable attributes (M = .01), F(1, 162) = 51.75, p < .01. The relatively small mean net ratings resulted from averaging across decades, which implies averaging across expected increases and decreases.

Ratings of perceived controllability also revealed an optimistic view, because the overall mean (M = 5.73) was well above the midpoint of the scale. Moreover, a 2 (desirability) \times 2 (selfother) \times 5 (factors) \times 3 (age) \times 2 (gender) \times 3 (education) MAN-OVA yielded a significant main effect for desirability, F(1,162) = 31.73, p < .01. Desirable attributes were perceived to be more controllable (M = 6.08) than undesirable (M = 5.38) attributes.

Aging-Related Shifts in Expected Gains and Losses

To investigate whether there was a shift in expected developmental changes from a predominance of gains toward a predominance of losses at increasing target ages, we investigated four types of expected changes in the ratings for most other people. Increases in desirable attributes and decreases in undesirable attributes constitute two different types of gains. Decreases in desirable attributes and increases in undesirable attributes comprise two different types of losses. For analysis, the number of attributes exhibiting any of the four types of expected change was calculated for each of the 10 scales and each decade. It should be noted that these indicators of gains and losses differ from those used in the previous and the following sections, because they are based on the number of attributes per scale (maximum of 10 attributes) for which either of four types of change is expected, rather than on the average expected change per attribute. In the calculation of the number of attributes per scale, each plus rating, irrespective of its absolute value, was counted as an increase and each minus rating as a decrease. Figure 1 depicts the average number of attributes per



Figure 1. Expected gains and losses in desirable and undesirable attributes across seven decades of the adult life span.

scale (possible range from 1 to 10), which fell in either of the four categories, across the seven target decades. Solid lines show the two types of gains, and hatched lines indicate the two types of losses.

A 2 (gains/losses) \times 2 (high vs. low desirability) \times 7 (target decades) \times 3 (age) \times 2 (gender) \times 3 (education) MANOVA was conducted. The main effect of gains/losses was significant, F(1,162 = 52.76, p < .01. In accordance with the findings reported in the previous section, the two types of gains (M = 5.72) greatly outnumbered the two types of losses (M = 4.40). The main effect of desirability was also significant, F(1, 162) = 3.36, p =.01. The Gains/Losses × Desirability interaction yielded a large significant effect, F(1, 162) = 93.40, p < .01. Follow-up analyses revealed that, among the gains, increases in desirable attributes were more frequent than decreases in undesirable attributes, t(179) = 12.97, p < .01, whereas for the losses, decreases in desirable attributes were less frequent than increases in undesirable attributes, t(179) = -11.02, p = .01. Thus, desirable increases were most frequent (M = 3.54), followed by losses in undesirable attributes (M = 2.59), gains in undesirable attributes (M = 2.17), and finally, losses in desirable attributes (M = 1.85).

The analyses involving target decades yielded a significant Gains/Losses × Decade interaction, F(6, 972) = 31.76, p < .01. Moreover, the three-way Gains/Losses × Desirability × Target Decade interaction was large and significant, F(6, 972) = 48.80, p < .01, indicating significantly different trends for each of the four types of change. Therefore, trend analyses involving target decades were performed separately for each of the four types of change.

Figure 1 shows that for desirable attributes, particularly radical change was expected, both for the gains, F(6, 972) = 241.47, p < .01 (linear component: F(1, 162) = 1091.36, p < .01) and for the losses, F(6, 972) = 57.99, p < .01 (linear component: F(1, 972) = 57.99, p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component: F(1, 972) = 57.99), p < .01 (linear component) = 162) = 298.02, p < .01; quadratic component: F(1, 162) = 86.86; p < .01). However, the undesirable attributes also yielded significant target-age trends for both the gains, F(6, 972) = 30.70, p <.01 (linear component: F(1, 162) = 111.89, p < .01) and the losses, F(6, 972) = 21.65, p < .01 (linear component: F(1, 162) =37.22, p < .01; quadratic component: F(1, 162) = 44.33, p > 100.01). Figure 1 illustrates that the expected increases in desirable attributes exhibited the greatest target age-related shift from a very high frequency in the 20s and 30s decades to a very low frequency in the 70s and 80s decades. Overall, the expected changes reflect age-related shifts toward greater risks for decline and diminished potentials for growth.

We should emphasize at this point that the curves of gains and losses across target decades, as depicted in Figure 1, do not represent expected developmental change in terms of absolute trajectories. Instead, these curves reflect the expected rate, or in graphical terms, the slope of change at each target decade.

Self-Other Comparison: Congruence and Enhancement

In this section, results related to the self-assessment and the self-enhancement function of social comparison are presented jointly, because these two functions are reflected in relative congruence and differences of self- and other-related developmental conceptions. Note that these analyses involve ratings of expected change rather than frequencies of perceived gains and losses (as in the analyses reported in the previous section).

The 2 (desirability) \times 2 (self-other) \times 7 (target decades) \times 3 (subject age) \times 2 (gender) \times 3 (education) MANOVA (described at the beginning of the Results section) yielded a significant two-way interaction between the within-subject variables, desirability and self-other, F(1, 162) = 29.68, p < .01. With regard to the desirable attributes, the mean expected increase (averaged across decades) for the self was greater (M = .46) than for most other people (M = .37), t(179) = 3.86, p < .01, whereas for the undesirable attributes the mean expected increase was lower (M = -.05) than for most other people (M = .06), t(179) = -5.82, p = .01. Thus, for both the desirable and the undesirable attributes, a self-enhancement effect was found.

Moreover, the three-way Desirability \times Self-Other \times and Target Decade interaction was significant, F(6, 972) = 17.74, p = .01. This three-way interaction was modulated by an effect of subject's age, yielding a significant four-way interaction among desirability, self-other, target decade, and subject's age, F(12, 972) = 1.79, p < .01. Because of the various significant interactions involving both desirability and target decade, we performed further analysis separately for desirable and undesirable attributes. Figure 2 depicts perceived trajectories of change in desirable and undesirable attributes for the self and most other people, separately, for young (upper panel), middle-aged (middle panel), and older (lower panel) adults.

As can be seen in Figure 2, trajectories of change expected for oneself are very similar to those expected for most other people. Initially, desirable attributes are expected to increase rapidly during the decades of the 20s and 30s, whereas thereafter, their rate of increase steadily declines across adulthood, until desirable attributes actually start decreasing (after crossing the zero line) in the decades of the 70s and 80s, F(6, 972) = 128.41, p < 128.41.01 (linear component: F(1, 162) = 703.17, p < .01; quadratic component: F(1, 162) = 83.64, p < .01). Conversely, undesirable attributes are expected to first decrease somewhat during the decades of the 30s and 40s (see the rate of change below the zero line in Figure 2) and increase at a growing rate after the age of 60, F(6, 972) = 32.26, p < .01 (linear component: F(1, 162) =80.17, p < .01; quadratic component: F(1, 162) = 80.93, p < 0.01.01). The finding of largely congruent change trajectories for self and most other people speaks to the self-assessment function of social comparison.

Apart from the apparent congruence, expected trajectories for the self and most other people also showed characteristic differences regarding later adulthood. According to predictions, for the target ages between the 50s and the 80s, less decrease in desirable and less increase in undesirable attributes were expected for the self when compared with most other people. These differences in late life trajectories for self and other are congruent with a self-enhancement function of social comparison.

The three subject age groups differed in the degree of selfother difference with regard to later adulthood, as indicated by a significant Self-Other × Target Decade × Subject's Age interaction with regard to undesirable attributes, F(12, 972) = 2.07, p < .01, and a marginally significant interaction, F(12, 972) =1.37, p < .05, with regard to desirable attributes. In general, old and middle-aged adults indicated larger self-other differences



Figure 2. Change in desirable and undesirable attributes expected for the self and most other people by young, middle-aged, and old adults across the adult life span.

with regard to late adulthood, thereby expressing a stronger self-enhancement tendency than young adults. As can be seen in the upper panel of Figure 2, the young adults saw almost no difference in change trajectories between self and other for desirable attributes (only significant difference for the 80s), t(59) = 2.70, p < .01. With regard to undesirable attributes, young

adults viewed their own developmental prospects more favorably than most other people's for most of the adult life span except for early adulthood: the 40s, t(59) = -3.56, p < .01; 50s, t(59) = -4.79, p < .01; 60s, t(59) = -4.31, p < .01; 70s, t(59) =-2.87, p < .01; and 80s, t(59) = -2.99, p < .01. The middle-aged adults (middle panel) expected superior later life developmental prospects for the self as compared with most other people with regard to desirable attributes—the 70s, t(59) = 3.20, p < .01, and 80s, t(59) = 3.30, p < .01—and, even more extensively, with respect to undesirable attributes—the 50s, t(59) = -3.66, p < -3.66.01; 60s, t(59) = -4.16, p < .01; 70s, t(59) = -4.82, p < .01; and80s, t(59) = -4.53, p < .01. However, for early adulthood, the middle-aged adults perceived less decrease in undesirable attributes for themselves as compared with others: the 20s, t(59) =3.36, p < .01, and 30s, t(59) = 2.72, p < .01. Finally, the old adults selectively viewed their own development in later life more favorably than other people's development, both with regard to desirable—the 60s, t(59) = 4.60, p < .01; 70s, t(59) =4.91, p < .01; and 80s, t(59) = 5.22, p < .01—and undesirable attributes—the 60s, t(59) = -3.55, p < .01; 70s, t(59) = -4.99, p < .01; and 80s, t(59) = -4.54, p < .01. It should be noted that with regard to the desirable attributes, the greater self-other difference was due to lowered developmental expectations for other people, rather than reflecting raised prospects for the self. For undesirable attributes, old adults showed more positive expectations for both self and other, when compared with middleaged and young adults.

Finally, we investigated perceived controllability. The correlation between mean controllability ratings obtained for the self and for most other people came to .97 (p < .01), indicating a close self-other resemblance of relative controllability among the 100 attributes. However, controllability ratings differed for self and other targets as well. The 2 (high vs. low desirability) × 2 (self-other) × 3 (age) × 2 (gender) × 3 (education) MANOVA yielded a significant main effect for self-other, F(1, 162) =45.18, p < .01. More controllability was ascribed to the self (M = 5.94) than to most other people (M = 5.53).

The results on trajectories expected for self and other suggest that normative conceptions about most other people's development can serve as reference frames for self-assessment but can also provide the backdrop for self-enhancement, particularly for the middle-aged and old adults.

Developmental Aspirations

The results on developmental aspirations inform about a potential self-improvement function of social comparison. A selfimprovement function would be shown in targets of developmental aspirations reflecting an orientation toward higher status age groups, that is, somewhat older age groups for young adults and somewhat younger age groups for middle-aged and old adults.

We assessed developmental aspirations by means of two different indicators: (a) the age with which a person subjectively identifies (e.g., 1 = much younger than my actual age; 5 = mucholder than my actual age) in terms of five aspects (appearance, feel like, activities, strangers' perceptions, and friends' perceptions) and (b) the age perceived to be normative for one's developmental goals. A 5 (aspects of subjective age) \times 3 (age) \times 2 (gender) \times 3 (education) MANOVA was performed on the five measures of subjective age identification. There was a significant main effect for age, F(2, 162) = 36.41, p < .01. Overall means (average of the five aspects) of subjective age identification suggested that old (M = 1.88) and middle-aged (M = 2.05)subjects identified with somewhat younger ages than their own actual age, whereas young subjects (M = 2.96) identified with their own age group: young versus old, t(97) = 7.83, p < .01; young versus middle-aged, t(96) = 6.30, p < .01. Moreover, the Age \times Aspect (of subjective age) interaction reached significance, F(8, 648) = 2.75, p < .01. Based on the assumption that appearance age would be less malleable than other aspects of age identification, appearance age was contrasted with the other four aspects of age identification, separately for each age group. These analyses revealed a main effect of aspect (of subjective age identification) for young (appearance age vs. all other aspects: t(43) = -2.99, p < .01) and old adults (appearance age vs. all other aspects: t(54) = 2.65, p < .01). Figure 3 shows the degree to which young, middle-aged, and old subjects perceived themselves as younger, age-congruent, or older than their chronological age, separately for five different aspects of subjective age identification.

Figure 3 indicates that young adults barely deviate in indicators of subjective age identification from their actual chronological age. In contrast, middle-aged and old adults identified with younger age groups on all five dimensions of subjective age identification. The only dimension for which young adults thought they were younger than their chronological age was appearance age (appearance age vs. all other aspects of subjective age: t(43) = -2.99, p < .01). Old and middle-aged adults perceived themselves as younger than they actually were on all dimensions, thereby enhancing their own age status. In contrast to young adults, old adults perceived their appearance age as higher (although still younger than their chronological age) than either of the other dimensions of subjective age: t(54) = 2.65, p = .01).

The second indicator of developmental aspirations was the



Figure 3. Subjective age perception by young, middle-aged, and old adults for five aspects of subjective age.

normative age ascribed to one's own developmental goals. Subjects indicated at what age they thought most other people would strive for developmental change on the attributes they (the subjects) had chosen. A 3 (age) \times 2 (gender) \times 3 (education) analysis of variance (ANOVA) was performed on the normative ages of developmental goals. The main effect of age was significant, F(2, 162) = 16.12, p < .01. Old subjects endorsed normative ages at a mean age of 44.5 years, whereas young and middle-aged subjects indicated normative ages at a mean age of 35.4 years. Note that young subjects thought that their developmental goals were normative for people older than themselves, whereas middle-aged and especially old adults perceived their developmental goals as normative for people younger than themselves. To investigate this age differential overtaxing and undertaxing of developmental goals, a 3 (age) \times 2 (gender) \times 3 (education) ANOVA was performed on the differences between the actual chronological age of the individual subjects and the normative ages for the developmental goals endorsed by the subjects. The main effect of age on these difference scores was significant, F(2, 162) = 154.44, p < .01. The young adults ascribed their developmental goals to people older than themselves (M = 6.0 years), whereas the middle-aged (M = -12.1years) and especially the old (M = -24.0 years) adults thought that their developmental goals were characteristic for people vounger than themselves (young vs. middle-aged: t(96) =-12.34, p < .01; middle-aged vs. old: t(107) = -6.88, p < .01).

Discussion

The first question in this study was whether the age-normative pattern of developmental expectations found in previous studies (Heckhausen & Baltes, 1991; Heckhausen et al., 1989) would be replicated. A positive finding would support the claim that age-normative conceptions about adult development are "social constructions of reality" (Berger & Luckmann, 1966), consensually shared in a given society. Such consensual constructions of adult development can serve as normative frames of reference for the assessment of one's own developmental status.

In line with earlier research (Heckhausen & Baltes, 1991; Heckhausen et al., 1989), the present study showed a generally optimistic view of adult developmental prospects. Expected gains clearly outnumbered expected losses, and overall perceived controllability was high. Age-related curves of expected gains and losses showed a gradual shift from a predominance of gains for early adulthood toward a predominance of losses for old age. Extending previous research (Heckhausen et al., 1989), the present study found the expected age-graded pattern of decreasing growth potential and increasing risks for decline reflected in the change curves for four distinct types of developmental events: increases in desirable attributes and decreases in undesirable attributes as two different instantiations of gains, and decreases in desirable attributes and increases in undesirable attributes as two different instantiations of losses.

For both gains and losses, expected age-related changes in desirable attributes exhibited more radical age-related shifts than those expected for undesirable attributes. The most salient shift in developmental expectations was obtained for gains in desirable attributes. This finding converges with the theory of selective optimization with compensation (Baltes, 1987; Baltes & Baltes, 1990). According to this theory, the aging process is characterized by ever-growing constraints on the scope and richness of selected growth. Thus, across the adult life span, the developmental potential becomes increasingly restricted. Our findings suggest that these increasing developmental constraints are reflected in a sharp age-related decline in adults' expectations of growth. The most salient feature of aging throughout adulthood is not so much that one is getting worse, but that one has fewer chances to get better.

Social Comparison Across the Adult Life Span

The central issue addressed in the present study was the degree of congruence between self- and other-related expected developmental trajectories. High self-other congruence is interpreted as an indicator of a validity orientation, which is involved in the self-assessment function of social comparison. Substantial congruence was found for expected developmental change as well as for perceived controllability. At higher age levels, reduced potential for growth, paired with increased risks for decline, was expected for both the self as well as most other people. Thus, expectations about change were not simply biased for the self, such that ever-increasing growth and complete resiliance against decline would be expected. Instead, less fortunate developmental prospects at higher ages were accepted for the self as a likely future. This finding suggests that normative conceptions about development can serve as a frame of reference for identifying the current and prospective developmental status of the self.

There was also clear evidence for a self-enhancement effect in the comparison between one's own and most other people's developmental prospects. More increase in desirable and less increase in undesirable attributes was expected for the self as compared with most other people. Characteristically, and in accordance with predictions, this self-enhancement effect exclusively pertained to the second half of the adult life span, when the developmental status of the individual is threatened by impending age-related loss. It was with regard to advanced age that the adults expected to fare better than most of their peers. They anticipated to suffer later and less decline in desirable attributes and later and less increase in undesirable attributes.

The selective self-enhancement effect for advanced age was salient for both desirable and undesirable attributes in middleaged and old adults. For young adults, in contrast, it was almost absent. Young adults did exhibit a self-enhancement tendency with regard to undesirable attributes; however, this pertained to almost the entire span of target decades except early adulthood, instead of being selectively focused on old age. This age difference in age-selective self-enhancement underscores the functional adaptedness of social comparison strategies to the different demands of various age periods. Old and middle-aged adults are more imminently threatened by aging-related losses and thus might feel a greater need for self-enhancement in this respect. In survey research about attitudes toward aging in the general public, images of old age have been found to be much worse than old people's self-reports would support (Harris & Associates, 1975, 1981; Schulz & Fritz, 1988). O'Gorman (1980) presented compelling evidence for a downgrading effect of old people's peers. Old adults' images about old people's health, financial situation, social support, and other dimensions of well-being were found to be more depreciated the more the respondents themselves experienced the respective problem (O'Gorman, 1980).

The two indicators of developmental aspirations suggest that, in addition to self-assessment and self-enhancement, agegraded social comparisons also served the function of self-improvement. Measures of subjective age identification showed that middle-aged and older adults identified with people younger than themselves. Not surprisingly, the appearance age (i.e., "age that I look like") showed the least bias toward the age group with the respective higher status. After all, when compared with such dimensions as "the age I feel," the age one looks like is less malleable (i.e., is easier to validate objectively). Moreover, personal developmental goals were normatively ascribed to age groups with a higher status compared with one's own age group: Young adults were striving for changes they thought are typical for middle-aged people, middle-aged people aimed for somewhat "younger" goals, and old people were concerned with developmental goals they thought were characteristic of mid-life. Evidently, each age group chose a reference age group that was somewhat higher in social status than themselves and not too far apart. Although this finding could also reflect a self-enhancement tendency, it seems reasonable to interpret it as indicating self-improvement tendencies. Choosing developmental tasks of higher status (but not too far apart) age groups implies the selection of intermediate difficulty with sufficient but not overwhelming challenges, a strategy identified as optimal for attaining high levels of functioning by means of continuous self-improvement (Atkinson, 1957; H. Heckhausen, 1991).

Conclusions, Limitations, and Research Perspectives

In conclusion, the present study suggests that normative conceptions about adult development may constitute social reference systems for three modes of social comparison: self-assessment, self-enhancement, and self-improvement. We showed that people of different adult age groups expect similar age-related patterns of developmental potentials and risks for themselves and most other people. This finding speaks to the focus on validity entailed in the self-assessment function of social comparison. However, with regard to old age, when developmental decline is expected, the self-enhancement function of social comparison becomes salient. For old age, developmental expectations for the self become more optimistic than those pertaining to most other people. Finally, developmental aspirations reflect an upward comparison with the closest higher status age group; that is, early middle-age for young adults and late middle-age for old adults. Such age-graded upward comparisons exemplify the self-improvement function of social comparison. All three adult age groups exhibit each of the three modes of social comparison: self-assessment, self-enhancement, and self-improvement. Thus, no mode of social comparison is associated with one specific age. However, there are agerelated shifts, indicating that young adulthood is the prime time of self-assessment, whereas the developmental risks of old age promote a focus on self-enhancement in middle-aged and,

particularly, in old adults, who are imminently confronted with aging. Interestingly, all age groups, including the elderly, were able and willing to select suitable target age groups for self-improvement.

Regarding the limitations of the present research, it might be argued that the study did not explicitly ascertain whether and to what extent adults do actually engage in spontaneous social comparison processes in their everyday life. However, the present study showed the presence of consensual and chronically accessible (note the high 12-month retest stability in the *Procedure* section) normative conceptions, which reflected specific and age-graded functional characteristics (substantial congruence and age-selective downgrading). Further research should investigate the conditions that promote or inhibit the actual use of the three strategies of social comparison. Selective usage of downward comparisons for self-enhancement and upward comparisons for self-improvement might, for instance, be dependent on whether the person has already given up on a developmental goal or is still pursuing it.

Moreover, future studies should determine whether upward comparisons are more pronounced for domains with high as compared with low self-relevance. In addition, one needs to clarify whether and under which conditions self-enhancement in conceptions about development relies on an elevation of perceived status of self or of a downgrading of the social reference group. Finally, as Buunk and colleagues (Buunk, Collins, Taylor, VanYperen, & Dakof, 1990) argued convincingly, both upward and downward comparisons have their "ups and downs." Comparing downwardly may not only help self-esteem but could also discourage attempts for future change, and upward comparisons may either make one feel comparatively deprived or provide the model for future change. To determine the situational and individual conditions of adaptive versus nonadaptive social comparison is a key issue for future research on successful development and aging.

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The following ethical standards are extracted from the "Ethical Principles of Psychologists and Code of Conduct," which appeared in the December 1992 issue of the *American Psychologist* (Vol. 47, No. 12, pp. 1597–1611). Standards 6.21–6.26 deal with the reporting and publishing of scientific information.

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