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Striving to Feel Good: Ideal Affect, Actual Affect, and Their Correspondence Across Adulthood

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Abstract

The experience of positive affect is essential for healthy functioning and quality of life. Although there is a great deal of research on ways in which people regulate negative states, little is known about the regulation of positive states. In the present study we examined age differences in the types of positive states people strive to experience and the correspondence between their desired and actual experiences. Adults aged 18–93 years of age described their ideal positive affect states. Then, using experience-sampling over a seven-day period, they reported their actual positive affect experiences. Two types of positive affect were assessed: low-arousal (calm, peaceful, relaxed) and high-arousal (excited, proud). Young participants valued both types of positive affect equally. Older participants, however, showed increasingly clear preferences for low-arousal over high-arousal positive affect. Older adults reached both types of positive affective goals more often than younger adults (indicated by a smaller discrepancy between actual and ideal affect). Moreover, meeting ideal levels of positive low-arousal affect (though not positive high-arousal affect) was associated with individuals' physical health, over and above levels of actual affect. Findings underscore the importance of considering age differences in emotion-regulatory goals related to positive experience.

Keywords

Affect; emotion regulation; age differences; ideal affect; socioemotional selectivity theory; arousal

Frequent experiences of joy, excitement, pride, peace of mind, and other positive affective states are an important aspect of emotional life and are considered a hallmark of life quality and resilience (Fredrickson & Kurtz, 2011). People with frequent experiences of positive affect are better able to cope with difficult life events (Ong, Bergeman, Bisconti, & Wallace, 2006), are more successful in their careers (Boehm & Lyubomirsky, 2008), enjoy better health (Cohen & Pressman, 2006), and even live longer (Carstensen, et al., 2011). Thus, when looking at how individuals regulate their emotional life, it is important to consider not only the processes that surround the regulation of negative affect but also those related to maintaining or increasing positive affect.

Growing evidence suggests that aging may confer benefits to positive experience. Older adults tend to have more positive and stable emotional experiences in everyday life than younger adults (Carstensen, et al., 2011). In attempting to explain these trends, researchers have uncovered important normative increases with age in the motivation for and ability to regulate emotions (Scheibe & Carstensen, 2010 for overview). However, extant research has largely neglected the possibility that the *types* of positive affective states that people regulate

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may also shift as people get older. Affect valuation theory (Tsai, Knutson, & Fung, 2006) suggests that individuals differ in the types of affective states that they want to experience (i.e., their ideal affect), independent of the types of affective states that they actually experience (i.e., their actual affect). Some people prefer affective states characterized by high arousal, such as excitement. In contrast, other people, and perhaps increasingly so with age, prefer affective states characterized by relatively low arousal, such as calm. In the current study we examine age differences in younger and older adults' positive affect goals and the extent to which their daily emotional experience maps onto these goals.[1]

Positive Affect and Emotion Regulation Across Adulthood

Research has shown that, on average, people's emotional experience tends to be more positive with age (Carstensen, Pasupathi, Mayr, & Nesselroade, 2000; Carstensen, et al., 2011; Mroczek & Kolarz, 1998; Ross & Mirowsky, 2008), at least until the last few years of life (Gerstorf, et al., 2010). One of the main factors thought to underlie positive affect trajectories across adulthood are age-related changes in emotion regulation (Blanchard-Fields, 2007; Charles, 2010; Scheibe & Carstensen, 2010). Specifically, it has been proposed that older adults are more motivated to regulate emotions, select more adaptive emotion regulatory strategies, and are more effective and efficient in executing strategies. For example, socioemotional selectivity theory (Carstensen, 2006) predicts that to the extent that future time left in life is perceived as limited, emotional goals gain primacy over other types of goals. Since subjective sense of time left in life naturally shrinks with advancing age, older adults are theoretically more motivated to experience positive and meaningful emotional states in the current moment, relative to younger adults who are willing to accept momentary drops in emotional well-being because such drops often serve future-oriented goals (e.g., gaining knowledge or independence). Empirical evidence on the frequency at which people want to optimize their emotional well-being in daily life is consistent with these predictions (Riediger, Schmiedek, Wagner, & Lindenberger, 2009).

Relatedly, older people appear to be more effective and more efficient when regulating emotions (Blanchard-Fields, 2007; Charles, 2010; Scheibe & Blanchard-Fields, 2009). Experience no doubt contributes to improvements in regulation. Because critical life events are experienced and resolved across life (Hobson & Delunas, 2001), the longer people live, the more opportunities they have to practice regulating emotions. As a result, practice likely contributes to improvements over time. There are three sources of evidence suggesting this is indeed the case. First, findings from self-report measures suggest that compared to younger adults, older adults are more confident that they can control the inner experience and outer signs of both positive and negative emotions in everyday life (Birditt & Fingerman, 2005; Gross, et al., 1997; Kessler & Staudinger, 2009; Lawton, Kleban, Rajagopal, & Dean, 1992). Second, experience-sampling studies, which sample momentary affective experience repeatedly across hours or days, show higher affect stability with age, both in general (Carstensen, et al., 2000; Röcke, Li, & Smith, 2009) and in response to daily stressors (Birditt, Fingerman, & Almeida, 2005; Brose, Schmiedek, Lövden, & Lindenberger, 2011; but see Mroczek & Almeida, 2004). Third, laboratory studies have found that in response to negative emotion-eliciting events (e.g., pictures, films, interpersonal situations), older adults are more successful in following instructions to positively reappraise situations and are equally as successful as young adults in following instructions to suppress or amplify facial expressions (Kunzmann, Kupperbusch, & Levenson, 2005; Phillips, Henry, Hosie, & Milne, 2008; Shiota & Levenson, 2009). Laboratory studies also show that in older adults, emotion regulation comes at a lower cost

[1]Although people also differ in the types of negative states they want to experience (i.e., their ideal negative affect), there is considerably less variation than in ideal positive affect, suggesting that it might be better studied using different measures.

to working memory and episodic memory, relative to younger adults (Emery & Hess, 2011; Scheibe & Blanchard-Fields, 2009). Researchers have argued that these age differences are due to older adults choosing less cognitively demanding strategies or optimizing the regulatory process to the point that it becomes relatively automatic and requires minimal cognitive control.

Most of the research on emotion regulation has focused on individuals' ability to reduce negative emotions when exposed to negative emotion-eliciting events. Importantly, however, the successful reduction of negative affect does not imply that positive experience improves (Diener & Emmons, 1984). For example, people who successfully subdue their anger in a social conflict situation do not necessarily feel happy. So far, little is known about the regulation of positive affect across adulthood. Moreover, most of the research on emotion regulatory skills is silent about the possibility that there may be age differences in the *types* of emotional goals people pursue, that is, the desired or ideal affect. Socioemotional selectivity theory suggests that older adults are more motivated than younger adults to experience meaningful affective states, which tend to be positive (Carstensen, 2006), but it does not specify the types of positive affect older people pursue. It is possible that some types of positive states are especially desirable to older adults, whereas other types are less desirable. Therefore, an important extension of prior research is to consider age differences in emotion-regulatory goals.

Age Differences in Emotion-Regulatory Goals: The Role of Arousal

Affect regulation can be thought of as a series of control processes, like self-regulation more generally (Carver & Scheier, 1982). According to Larsen's (2000) model of affect regulation, a desired affective state (the desired state set point) is regularly compared with one's current state. When the comparison yields a discrepancy, the motivation to regulate emotions arises, and regulatory mechanisms are elicited to reduce the discrepancy. Naturally, individuals differ not only in the motivation and ability to reduce the discrepancy between the desired and current affective state, but also in their desired affective states themselves, vis. emotion-regulatory goals (Kämpfe & Mitte, 2009; Rusting & Larsen, 1995). Research on ideal affect (Tsai, 2007; Tsai, et al., 2006) emphasizes the importance of considering arousal in understanding people's emotion-regulatory goals. While most people want to feel positive, for some people ideal positive states are characterized by low arousal (e.g., calmness, peacefulness, or serenity), whereas for others, ideal positive states entail high arousal (e.g., excitement, enthusiasm, and elatedness; Tsai, et al., 2006).

Aging may bring a shift in preference away from high-arousal positive emotions and towards low-arousal positive emotions (Scheibe, Mata, & Carstensen, 2011). The model of strengths and vulnerability integration (SAVI) proposed by Charles (2010) posits that older adults' advantage in regulating emotional events reverses in situations that generate sustained and intense emotional arousal, due to reduced physiological flexibility. A potential consequence is that high-arousal stimuli become aversive with advancing age. The model applies equally to positive and negative affective states because physiological flexibility is needed for physiological recovery from all types of high arousal states. However, the extant empirical evidence is restricted to negative events (Björntorp, 2002; Otte, et al., 2005; Ritvanen, Louhevaara, Helin, Väisänen, & Hänninen, 2006).

In addition to valuing high-arousal positive states less, there is also reason to believe that older adults value low-arousal states more than younger adults. Shifts in time perspective with age, as proposed by socioemotional selectivity theory (Carstensen, 2006), have been linked with the experience of different types of emotions (Mogilner, Kamvar, & Aaker, 2011). Excitement and other high-arousal positive states are more likely mentioned when

people think about future positive events, whereas peacefulness, calmness, and other low-arousal positive states are more strongly linked with an appreciation of the present (Mogilner, et al., 2011). To the extent that older adults, because of constraints on time horizons, focus on the present, they may favor low-arousal positive states. Furthermore, the motivation to influence or adjust to the environment is related to ideal affect (Tsai, Miao, Seppala, Fung, & Yeung, 2007). According to Tamir (2009), individuals often prefer to experience certain emotions for instrumental reasons, namely when these emotions promote the attainment of other goals. Several life-span theories of self-regulation propose that older adults adjust to declining cognitive and physical functioning by adopting strategies that adjust the self with the environment and optimize current emotional well-being, while deselecting strategies that influence the social and physical environment to fit with personal goals (Brandtstädter & Renner, 1990; Freund & Baltes, 2000; Heckhausen, Wrosch, & Schulz, 2010). Influence and adjustment behaviors involve different levels of emotional arousal (Tsai, et al., 2007). Influence is facilitated by high-arousal states, such as excitement or enthusiasm, and often involves behavioral action, such as when expressing an opinion, asking others to do something, or actively addressing a physical limitation. Adjustment, in contrast, is facilitated by low-arousal states and often involves suspended action, such as when waiting for others to express their needs or accepting a physical limitation (Tsai, et al., 2007). From this perspective, a shift in preference from highly activated positive states towards more calm positive states with age may facilitate the pursuit of adjustment strategies.

There is initial, albeit indirect, evidence supporting the postulate that there is a shift in preference from high-arousal towards low-arousal positive states across adulthood. Older adults report less experience of highly intense emotions and sensation seeking than younger adults (Lawton, et al., 1992). Findings from one study found that older adults report higher levels of low-arousal positive affect than younger adults, but levels of high-arousal positive affect were comparable across age groups (Kessler & Staudinger, 2009). A recent analysis of emotions expressed on blogs and a series of surveys further shows that younger people associate happiness primarily with excitement, whereas relatively older people (those aged 50 years and older) associate happiness more with peacefulness (Mogilner, et al., 2011). Importantly, inducing younger adults to be present-oriented through meditation made their happiness associations more similar to those of older adults (Mogilner, et al., 2011). Furthermore, when rating emotional pictures, older adults perceive high-arousal positive stimuli as less pleasant, and low-arousal positive stimuli as more pleasant than younger adults (Grühn & Scheibe, 2008; Keil & Freund, 2009). Only one study so far has directly examined age differences in ideal affect, with equivocal results (Tsai, et al., 2011). In this study with a healthy sample of 20 to 80 year old adults, both low and high arousal positive affect were found to be valued less with age by Chinese Americans but age differences were not observed among European Americans. In sum, the extant literature on aging and preferences for affective states low and high in arousal is scant and inconclusive. Moreover, none of the prior studies has included adults over the age of 80 years.

The Present Study

Using data from an experience sampling study with adults aged 18 to 93 years of age (Carstensen, et al., 2011), age differences were examined in ideal positive affect, actual positive affect, and the correspondence between the two on multiple measurement occasions. We distinguished two facets of positive affect, low-arousal positive affect (indexed by feeling calm, peaceful, and relaxed) and high-arousal positive affect (indexed by feeling excited and proud). Per affect valuation theory, we reasoned that regardless of age most people want to feel positive most of the time, but the specific types of desirable affect differ across people. We hypothesized that younger adults would prefer high-arousal

positive affect more than older adults; and in contrast older adults would prefer low-arousal positive affect more than younger adults. As a result, we expected a shift in the relative preference for both types of positive affect with age in a way that low-arousal positive affect is increasingly preferred over high-arousal positive affect. In addition, based on theories and previous findings suggesting that older adults are more motivated and more competent at regulating emotions in day-to-day life, we expected older adults to be more successful in meeting their ideal positive affect goals in everyday life. Meeting ideal affect goals was operationalized as the extent to which actual affect corresponds with levels of ideal affect across measurement occasions.

Certainly, successful affect regulation is but one mechanism by which ideal-actual affect correspondence is attained. Correspondence can also be achieved when individuals adjust their ideal affect, or when contextual influences afford affective experiences that are more in line with ideal affect. To examine whether ideal-actual affect correspondences are related to affect regulation, we examined the relationship between ideal-actual affect discrepancy and individuals' momentary desire to change their emotional states. In line with control models of affect regulation (Larsen, 2000), we reasoned that a large ideal-actual affect discrepancies induces a desire to regulate emotions in order to change actual affect towards ideal levels of affect. Hence, we expected that on days on which people experience a larger discrepancy between ideal and actual positive affect, they would also report greater desire to change how they are feeling compared to days where there is less discrepancy between ideal and actual positive affect.

Finally, we explored the implications of average ideal-actual affect correspondence for physical health. Past work on young adults suggests that a larger discrepancy between actual and ideal affect is related to higher levels of depression (Tsai, et al., 2006). In the present study, we extend this past work by considering physical health symptoms in an age-diverse sample and by controlling for levels of actual affect in order to investigate the incremental validity of ideal-actual affect correspondences for predicting life quality. The relevance of positive emotions for health outcomes is well-established. Positive affect is thought to benefit health through its stress-buffering effects, association with better health practices, and improved social interactions (Cohen & Pressman, 2006; Ong, 2010). At the same time, there may be an optimal level of positive affect that differs across individuals, manifested in their ideal affect. Failing to meet optimal levels of affect over time should lead to maladaptive outcomes. Accordingly we expected that meeting ideal affect states should be associated with better health. This effect should hold over and above levels of actual positive affect and should apply to both low and high arousal affect.

Method

Participants

The sample consisted of 136 participants (52% women) ranging in age from 18 to 93 years (M = 55.56, SD = 21.99) and was taken from the third wave of an experience-sampling study on emotional experience in adulthood (Carstensen, et al., 2011). Sixty-seven percent of the participants were European American, and the remaining 31% were African American; 2% indicated "other" race. Education ranged from 11 to 21 years (M = 15.33, SD = 2.26). Gender, ethnicity, and socioeconomic status were stratified across age.

Procedure

After obtaining informed consent and background information such as level of education, the participants completed questionnaires that assessed affect, physical health, and psychological well-being. They were then provided an electronic pager and instructed to

complete an emotion response sheet each time they were paged. Over the next week, participants were randomly paged 5 times a day within a 12-hour window that they were awake. On average, participants completed 7.87 (*SD* = 2.10) days of experience-sampling and 4.57 (*SD* = .99) beeps per day. Completed emotion response sheets were returned by mail at the end of each day to monitor compliance. Participants were paid for their participation at the end of the week of experience sampling (for a more detailed description of the procedure, see Carstensen et al., 2011).

Materials

Ideal Affect—During the baseline session, participants indicated their ideal affect by completing an adapted version of the Affect Valuation Index (Tsai & Knutson, 2006). Participants indicated on 5-point Likert-scale how often they would ideally like to have each of 36 emotions (including some items from the original instrument and some from Carstensen et al. [2000]) over the course of a typical week (1=*never*, 2=*small amount of time*, 3=*half the time*, 4=*most of the time*, 5=*all the time*). In this study, we focused on a subset of emotions, including three low-arousal positive (calm, peaceful, relaxed) and two high-arousal positive emotions (excited, proud).[2]

Emotion sampling—Each time participants were paged they rated the degree to which they were feeling each of 28 emotions using a 7-point scale that ranged from 1 (*not at all*) to 7 (*extremely*). The list included the same three low-arousal positive (calm, peaceful, relaxed) and two high-arousal positive emotions (excitement, pride) that were assessed in the ideal affect scale.

Desire to change emotions—In addition to reporting on their emotions, at each measurement occasion, participants rated on a single item the degree to which they wanted to feel differently than they do now on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*).

Cornell Medical Index (CMI)—In the baseline session, participants completed the CMI (Brodman, Erdmann, & Wolff, 1956), a 195-item index of physical and mental health problems that allows for the computation of a general health index, as well as subscales that represent particular subsystems (e.g., visual, allergic, cardiovascular, neurological). Participants completed a 195-item checklist of health symptoms, including items related to lifetime prevalence of specific systems, current experience of symptoms, and family history questions. We focused on the general physical health index (i.e., the total number of symptoms of physical illness in subscales A to L). Previous research shows a close relationship between the CMI and objective health status as assessed by physicians (Pendleton, et al., 2004). We calculated the sum across the 143 physical health items (*M* = 16.28, *SD* = 11.56; r_{age} = .32, p < .001).

Results

Data Reduction

In order to create an index of meeting ideal positive affect in daily life we recoded the ideal affect and actual affect ratings to be on the same 0 to 1 scale. Specially, for ideal affect we recoded each of the AVI items into a 0–1 scale format: (1=0) (2=.25) (3=.5) (4=.75) (5=1). Then we created scales for ideal low-arousal positive (LAP: calm, peaceful, and relaxed;

[2]Note that the item “proud” was not included in the HAP subscale of the original AVI (Tsai et al., 2006). It was chosen because of its match with the item “pride” in the emotion sampling. Prior research has located “pride” in the HAP quadrant of the affect circumplex (Ross & Mirowsky, 2008).

alpha = .74) and ideal high-arousal positive (HAP: excited and proud; alpha= .48) by averaging across the relevant emotion ratings. The assignment of items to subscales is consistent with prior research (Ross & Mirowsky, 2008; Tsai, et al., 2006).

While ideal affect was measured on a frequency scale, actual affect was measured on an intensity scale and repeatedly (5 times per day for 7 days). In order to compare actual affect with ideal affect, we therefore needed to transform the actual affect intensity ratings into a daily frequency index. We followed the logic described by Schimmack and Diener (1997) for transforming intensity ratings into a frequency score. Specifically, we computed the percentage of occasions each day on which a given emotion was rated higher than a 3 (i.e., equal to or higher than the midpoint of the 7-point intensity scale ranging from 1 “not at all” to 7 “extremely”). For example, if an emotion was rated higher than 3 on 80% of the occasions on a given day (i.e., 4 out of 5 occasions) the emotion would be coded .80. Some participants failed to complete all five daily samplers, therefore, we only included days with at least 3 measurement occasions (13.6% of days were excluded based on this criterion). We then created scales for actual LAP (calm, peaceful, and relaxed; average alpha = .86, ranging from .82 to 91 on days 1–7) and actual HAP (excitement and pride; average alpha= .71, ranging from .67 to .75) by averaging across the relevant emotions for each day. The mean correlation between actual LAP and HAP across days was .49 ($p < .05$; ranging from .43 to . 51 on days 1–7). The correlations between actual affect (aggregated across days) and ideal affect were .12 ($p > .05$) for LAP and .37 ($p < .01$) for HAP.

Note that the chosen cut-off of 3 diverges from previous work from our lab (Carstensen, et al., 2000; Carstensen, et al., 2011) as well as other researchers (Schimmack & Diener, 1997) who transformed an emotional intensity scale (i.e., how intense is the emotion at the current moment) into an emotional frequency scale (i.e., did the emotion occur or not). In these earlier studies, because emotions were counted as occurring if they were rated higher than 1 on the emotional intensity scale, they included emotions at very low intensities. For the present study, we reasoned that a cut-off of 3 would be a more conservative estimate of an emotion occurrence than a cut-off of 1 and would ensure that only clear instances of emotion occurrences, that is, emotions with at least moderate intensity, would be included (for results with the alterative cutoff of 1, see Footnote 6).

Using the transformed scores for ideal and actual affect, we derived a discrepancy index for LAP and HAP each day of the experience-sampling week. Specifically, we calculated the size of discrepancy between actual and ideal affect each day by subtracting actual affect from ideal affect (so positive scores indicate falling below ideal affect and negative scores indicate exceeding ideal affect). For example, if a person had an ideal LAP score of .80, the discrepancy would be .20 on a day where their actual LAP was .60 and −.10 on a day where their actual LAP was .90. These discrepancy indices for LAP and HAP were moderately correlated with each other (mean $r = .33$, $p < .01$; ranging from .22 to .44 on days 1–7), indicating that they represent related but distinct concepts.

Data Analysis Plan

Using these indices, we tested the key hypotheses. First, we examined the hypothesis that there are age-related increases in ideal LAP and decreases in ideal HAP. Age differences in ideal affect were tested with regression analysis, including both linear (centered) and quadratic age effects as predictors. Additionally, we conducted multivariate general model (GLM) analyses to examine the relative level of ideal LAP and HAP as a function of age.

Next, we tested for similar age differences in actual affect, and also examined whether older adults are more likely than younger adults to meet their ideal affect goals in daily life (using the discrepancy between ideal and actual affect as indicator). Because there were multiple

measurement occasions per person for these variables, we conducted multilevel modeling using the linear MIXED MODELS function in SPSS. We first analyzed the data using a two-level model, in which days were nested within persons. Age effects were tested with linear and quadratic age terms. Results are reported as unstandardized HLM coefficients. In order to test the relative level of actual LAP and HAP, as well as the relative LAP and HAP discrepancy, we ran three-level models (affect type nested within days nested within persons).

Finally, we examined whether meeting ideal positive affect goals (i.e., smaller discrepancies between actual and ideal affect) predicts less desire to change emotions and better physical health. Desire to change emotions was assessed using experience sampling so we used multi-level modeling to test this hypothesis. Health was assessed at the person level so we used regression analyses to test this hypothesis (averaging discrepancy scores between actual and ideal affect across days). In both analyses, we examined whether age moderated the effects of actual-ideal discrepancies on outcomes.

Age Differences in Ideal Positive Affect

For ideal LAP there was a significant quadratic age effect ($\beta = -.17$, $p < .05$) and no linear age effect ($\beta = .09$, $p = .32$). In the case of ideal HAP, there was a significant linear age effect ($\beta = -.17$, $p < .05$) and a significant quadratic age effect ($\beta = -.18$, $p < .05$). Regression lines are plotted in Figure 1, Panel A. As can be seen in the figure, there is a slight age-related increase in the value placed on LAP up until young-old age, followed by a slight decrease towards advanced ages. Additionally, there is relative age-related stability in the value placed on HAP until young-old age, then a drop in value placed on HAP in old-old age.[3] The linear age effect for HAP was robust when controlling for actual affect, although the quadratic age effects for both LAP and HAP were reduced to trend level.

In addition, we examined the relative level of ideal LAP and HAP in a multivariate general model (GLM) with affect type (LAP, HAP) as within-subject factor and age (linear, quadratic) as between-subjects factor. As shown in Table 1, there was a main effect for affect type, suggesting that LAP is valued generally more highly than HAP. Consistent with the previous analyses, there was also a significant quadratic age effect. Finally, there was a significant linear age x affect type interaction, that the difference in ideal LAP and ideal HAP increased with age.[4] To summarize, there was an increasing preference for LAP relative to HAP expressed by older relative to younger participants. These results were robust when controlling for actual affect.

Age Differences in Actual Positive Affect

Next, we examined linear and quadratic age effects in the daily frequencies of actual LAP and HAP, using multi-level modeling. The model involved two levels of data. At Level 1 (the day level), we predicted daily affect (either LAP or HAP) by an intercept and a random effect; there were no further Level 1 predictors. At Level 2 (the person level), we predicted the affect intercept by linear and quadratic age terms; these were *z*-standardized based on the total sample. The intercept of daily LAP frequency was .73, suggesting that participants

[3]To better understand age effects, we split the sample into four age groups: young (under age 40, $n = 36$), middle-aged (between the ages of 40 and 59, $n = 41$), young-old (between the ages of 60 and 79, $n = 31$), and old-old (age 80 and older, $n = 28$; see Figure 1). *T*-tests comparing each pair of the four age groups revealed a trend for young-old to want to feel more LAP than young adults, $t(65) = -1.78$, $p < .10$, and significant effects for old-old adults to want to feel less HAP than any other age group, $ts\ (57+) \geq 2.10$, all $ps < .05$.

[4]When comparing ideal HAP and ideal LAP in the four different age groups, there was no difference between ideal HAP and LAP among younger adults, $t < 1$. In contrast, ideal LAP was significantly higher than ideal HAP among the remaining three age groups, $t(27+) \geq 2.58$, all $ps < .05$. Moreover, the difference between ideal LAP and ideal HAP in old-old adults was significantly larger than in young adults, $t(62) = -2.42$, $p < .05$; and marginally larger than in middle-aged and young-old adults, $t(57+) \geq -1.65$, both $ps \leq .10$.

experienced LAP emotions of at least moderate intensity on average on 3.65 out of 5 measurement occasions (73%) each day. There was a significant positive linear age effect for LAP (β = .0789, $p < .01$), and a statistical trend for a quadratic age effect (β = −.0299, $p = .10$). These results suggest that there is an age-related increase in the average daily frequency of LAP states, which tapers off in old age (see Figure 1, Panel B). When running the same multilevel model predicting daily HAP, the intercept of daily HAP was .53; there were no significant age effects for HAP (linear: β = .0302, $p = .21$; quadratic: β = −.0384, $p = .15$). Thus, the results indicate stability in the experience of HAP states with age.

In addition, we examined the relative frequency of actual LAP and HAP in a 3-level model (with affect type nested within days nested within persons). At Level 1, we predicted daily affect by an intercept, affect type (LAP vs. HAP; with LAP as the reference category coded 0 and HAP coded 1), and a random effect. Because LAP was the reference category coded 0, the intercept represents daily LAP, while the slope indicates the difference between daily LAP and daily HAP. At Level 2 (the day level), there were no further predictors; thus, we only predicted the Level 1 intercept and affect type slope by their Level 2 intercept and random effect. At Level 3 (the person level), we added the linear and quadratic age terms as predictors for both the Level 2 intercept and Level 2 affect type slope. Results are reported in Table 2. The model yielded a significant negative slope for affect type, suggesting HAP states were experienced less frequently on a given day than LAP states. The affect type slope was moderated by linear age (with no quadratic age moderation), indicating that the discrepancy between actual LAP and HAP became even larger with age. These results were robust when controlling for ideal affect. Thus overall, LAP states were experienced more frequently than HAP states among all age groups; however, this effect became larger with age.

Age Differences in Discrepancy between Actual and Ideal Positive Affect

Next we examined linear and quadratic effects of age in the correspondence between actual and ideal LAP and HAP states, using multilevel modeling. We ran the same models as for actual affect, only that instead of predicting daily actual affect, we now predicted the daily discrepancy between actual and ideal affect. The intercepts were .10 for LAP and .21 for HAP (both $ps < .01$), suggesting that participants on average experienced both LAP and HAP states less often than they ideally wanted to (see Figure 1, Panel C). There were linear age effects on the intercept of both LAP (β = −.0642, $p < .01$) and HAP (β = −.0643, $p < .01$), such that the discrepancy between actual and ideal affect decreased with age for both LAP and HAP states. There were no quadratic age effects.

We again examined the relative level of discrepancy for LAP and HAP in a 3-level model (with affect type nested within day nested within person). LAP again served as the reference category for affect type. As shown in Table 2, there was a main effect of affect type, suggesting that the ideal-actual discrepancy was larger for HAP than for LAP. There was no age x affect type interaction; thus, the difference between LAP and HAP discrepancies was invariant across age groups. In sum, LAP goals were met better than HAP goals across all ages, and the size of discrepancy between LAP and HAP did not differ by age.[5, 6]

[5]We tested whether ethnicity moderated the age effects for ideal affect, actual affect, and the discrepancy between actual and ideal affect. There was only one significant age x ethnicity interaction, between quadratic age and ethnicity for ideal HAP, β = −.52, $p < .01$. Follow-up analyses with the two ethnic groups indicated that there was a quadratic age effect for Caucasians, β = −.34, $p < .01$, but no significant age effects for African Americans, $p > .25$.

Predicting Daily Desire to Change Emotions and Health

We next examined (1) whether the degree of meeting ideal affect on a given day was associated with daily desire to change emotions (mean of wanting to feel differently on a given day), and (2) whether the average degree of meeting ideal affect was associated with overall physical health, over and above actual affect.

First, we predicted desire to change emotions on a given day (Level 1) from the actual-ideal discrepancy for LAP and HAP (Level 1), as well as linear and quadratic age (Level 2 predictors of both intercept and slopes). The daily actual-ideal discrepancy scores (our Level 1 predictors) were entered uncentered, because zero represents a meaningful value (i.e., no discrepancy between actual and ideal affect). Results are reported in Table 3. As expected, the slope was significant for daily LAP discrepancy scores (ideal – actual LAP) predicting daily desire to change emotions, with no age moderation effect. The slope was also significant for daily HAP discrepancy scores (ideal – actual HAP) predicting daily desire to change emotions; linear age moderated this relationship. These results confirm our hypothesis that the desire to change emotions was higher on days with a larger discrepancy between actual affect and ideal affect. In addition, the age effect for HAP indicates that the relationship between the actual-ideal discrepancy and the desire to change emotions was reduced for relatively older individuals.

Next, we examined links to physical health, using regression analyses (instead of multilevel modeling) because health was measured at the person level. We calculated each person's average discrepancy between actual and ideal LAP and HAP across days, and entered these two variables along with linear and quadratic age terms in the first step. As expected, a larger discrepancy between actual and ideal LAP was associated with more physical health symptoms ($\beta = .29$, $p < .01$). In contrast, the discrepancy between actual and ideal HAP was not associated with physical health symptoms ($\beta = .03$, $p = .75$). We considered age moderation effects in a second step, but there were no significant interactions. Finally, we entered actual affect in the third step. Importantly, the effect of meeting ideal LAP on health remained intact when controlling for experience of LAP ($\beta = .48$, $p < .01$).

Discussion

Despite the importance of positive affect for many important life outcomes, little is known about the types of positive affective states adults of various ages value more or less in daily life (viz. their ideal affect) and how well their actual affect matches these valued states. In the present study we examined the correspondence between ideal and actual affect to see if experience in everyday life is consistent with the theoretical assertion that older adults are better able to reach their affective goals. Considering age differences in ideal affect has important implications for understanding affect regulation and aging. Doing so highlights that it may not be sufficient to examine regulatory outcomes alone but rather one must also take into account potential age differences in the nature of emotion-regulatory goals.

Most people want to feel positive rather than negative most of the time (see also Kämpfe & Mitte, 2009; Rusting & Larsen, 1995; Tsai, et al., 2006). However, affect valuation theory suggest that people differ in the types of positive affect states they ideally want to

[6]When rerunning our main analyses with a cut-off of 1, the most important difference to the cut-off of 3 was that the intercept of actual affect was substantially higher ($M = .95$ vs. .73 for LAP; $M = .80$vs. .53 for HAP), with associated restrictions in variance especially for actual LAP. The linear age effect for actual LAP was robust ($\beta = .0012$, $p < .01$). In addition, quadratic age effects for both actual LAP ($\beta = -.0001$, $p < .05$) and actual HAP ($\beta = -.0001$, $p = .08$) emerged, suggesting a drop of both types of actual affect in advanced old age. We could not meaningfully predict actual-ideal discrepancies because levels of actual affect lay above levels of ideal affect, contrary to all prior research on actual-ideal affect discrepancy (Kämpfe & Mitte, 2009; Tsai, et al., 2006). This supports the contention that the chosen cut-off of 3 is more meaningfully describing instances of affect occurrence than a cut-off of 1.

experience (Tsai, et al., 2006). Findings from the present study suggest that age may be an important factor associated with ideal positive affect. In this North American sample, there was relatively greater preference for low-arousal positive affect (calm, peaceful, relaxed) relative to high-arousal positive affect (excited, proud) in older participants. In addition, there was evidence that older adults' experiences in daily life were more consistent with their ideal positive affect goals than those of younger adults. The daily correspondence between affective goals and experience predicted daily desire to change emotions. Moreover, the mean correspondence between LAP goals and actual affect across study days predicted health symptoms over and above actual affect (though this was not the case for HAP goals). In the following, we discuss these different findings.

Ideal Positive Affect: Shift in Relative Preference for Low-Arousal Over High-Arousal

Recently, there has been increasing interest in the role of arousal in emotional aging. While most prior studies on affect and aging have either focused on high-arousal affect only (such as studies using the PANAS; e.g., Mroczek & Kolarz, 1998) or have aggregated across levels of arousal (Carstensen, et al., 2000; Carstensen, et al., 2011), recently researchers have begun to recognize the importance of distinguishing between low- and high-arousal affective states in understanding age differences in appraisal of affective stimuli (Kiel & Freund, 2009), forecasted affect (Scheibe, et al., 2011), and experienced affect (Kessler & Staudinger, 2009; Ross & Mirowsky, 2008). From these studies a pattern is emerging that low-arousal positive affect may become more attractive and more prevalent relative to high-arousal positive affect as people age. While previous studies find trends in this direction (Mogilner, et al., 2011), only one study so far has directly examined age differences in ideal affect (i.e., the affective states people want to experience; Tsai, et al., 2011). Although this earlier study did not observe age differences in ideal affect among European Americans, older adults in that sample were highly selected. They were relatively young (under 80 years old), exceptionally healthy, and included only individuals whose parents were born and raised in the U.S. and whose ancestors were from Western and Northern Europe. In the present study, we further investigated age differences in ideal positive affect in a large and diverse sample spanning an age range from young adulthood to advanced old age. In this sample, there was an increased desire with age to experience low-arousal positive states until young-old age (with a slight decrease thereafter), and a decreased desire for high-arousal positive states from young-old age to advanced old age. This led to a clear age-related shift in the preference for low- over high-arousal positive affect. Young adults valued high-arousal positive states (excitement, pride) just as much as they valued low-arousal states (peacefulness, calm), reporting a desire to feel these different positive states "most of the time" (not "all of the time"). In contrast to young adults, who showed no clear preference for either type of positive affect, middle-aged, young-old and old-old adults reported an increasingly clear preference for LAP states over HAP states. The largest discrepancy between ideal LAP and HAP, and thus the largest relative preference for low over high arousal affect, was evident in adults over the age of 80. The fact that the strongest age differences in ideal affect occurred after 80 years old suggest that changes in ideal HAP emerge late in life, perhaps because participants come from a culture that places great emphasis on high arousal positive states (Tsai et al., 2006). Notably, even very old adults expressed the desire to experience HAP states a little over "half of the time." Thus, the shift in prevalence appears to be relative rather than absolute, with both types of positive affect states maintaining some appeal.

At this time, the underlying mechanisms driving the shift in arousal preferences with age have yet to be established. From the theoretical perspective of SAVI (Charles, 2010), high-arousal states of either valence are harder to regulate by older adults because of older adults' lower physiological flexibility. Lower physiological flexibility is thought to attenuate initial

physiological reactivity to emotional stimuli (Kunzmann, et al., 2005; Tsai, Levenson, & Carstensen, 2000), yet once the stimuli are strong and enduring enough to elicit a certain physiological reaction, physiological reactivity is amplified and prolonged in older individuals (Uchino, Birmingham, & Berg, 2010). Prolonged periods of sustained physiological arousal are assumed to be aversive. This reasoning suggests a direct link between physiological flexibility and ideal affect, which should be examined in future research.

Future research should also consider other mechanisms for age-related shifts in ideal affect. Another potential mechanism is age-related differences in motivation. To the extent that aging is accompanied by a reduced time perspective and increased focus on the present, emotional preferences should change. Appreciation of the present likely gives rise to peacefulness and other low-arousal positive emotions more so than to excitement and other high-arousal positive states, which in turn should emerge from a focus on positive future events (cf. Mogilner, et al., 2011). Moreover, postulated age differences in interpersonal goals relating to influence versus adjustment might underlie age differences in ideal affect (see also Kessler & Staudinger, 2009). When people aim to adjust to their social environment rather than aiming to influence others, as is typical in older ages (Brandtstädter & Renner, 1990; Freund & Baltes, 2000; Heckhausen, et al., 2010), they tend to value LAP more and HAP less than people who aim to influence rather than adjust to others (Tsai, et al., 2007). From this perspective, a shift in preference from highly activated positive states towards more calm positive states with age may accompany motivational changes leading to an enhanced focus on the present and the pursuit of adjustment goals.

Meeting Ideal Positive Affect: More Successful With Age

Given age differences in ideal positive affect, a logical next question is whether age groups differ in their ability to reach their ideals, i.e., whether their actual affect would more closely match their ideal affect. Given a solid body of literature indicating older adults are more motivated to regulate emotions, select more adaptive emotion regulatory strategies, and are more effective and efficient in executing strategies (Scheibe & Carstensen, 2010), we expected them to be more likely than younger adults to meet their ideal positive affect. Given the descriptive nature of this study, we cannot address causal relationships between goals and affect. However, the pattern of findings is consistent with the idea that older people more effectively pursue affective goals. Older adults' daily experiences met ideal levels of LAP and HAP more than did younger adults. These findings dovetail with those from an earlier study that compared individuals' ideal and actual ratings of different aspects of the self-concept (e.g., having a positive attitude towards self, having a sense of mastery and control, having warm and trusting relationships; Ryff, 1991). In this prior study, the discrepancy between ideal and actual ratings also showed a progressive lessening across age groups.

Theoretically, a closer match between actual and ideal positive affect in older age groups could be driven by lower ideals and/or by higher levels of actual affect. Higher actual affect, in turn, could be the result of active emotion regulation by individuals, or of changes in life contexts leading to affective experience more in line with older adults' affective goals. While the present study cannot fully disentangle these alternative explanations, findings do appear most consistent with an affect regulation perspective. For LAP, there was no consistent evidence of lowered ideals with age; on the contrary, the value placed on LAP was greater in young-old as compared to younger people. However, there was evidence that levels of actual LAP increased with age. This may suggest that older adults are more motivated to feel low-arousal positive states and have the necessary emotion-regulatory skills to meet their goals. This explanation is further supported by the finding that daily ideal-actual LAP discrepancy was related to daily desire to change emotions. As Larsen's

(2000) model of affect regulation would predict, when actual levels of LAP were further below ideal levels, participants reported a stronger wish to feel differently, a likely precursor for enacting emotion regulation strategies.

In case of HAP, findings were somewhat less conclusive. There was little evidence for age differences in either levels of ideal affect or levels of actual affect up until young-old age, and a drop in ideal affect in advanced age. Thus, neither age differences in ideal HAP alone, nor age differences in actual HAP alone account for the age-related increase in meeting ideal affect. Furthermore, even though higher daily ideal-actual HAP discrepancy was as well related to a stronger desire to change emotions that day, this relationship was weaker in relatively older people. This suggests that in the case of HAP, emotion regulation is probably not the only mechanism for a higher ideal-actual affect correspondence with age.

Of interest was also the finding that meeting ideal LAP predicted fewer physical health symptoms over and above levels of actual LAP. The link between meeting ideal affect and health is a novel finding and illustrates the importance of taking into account individual differences in emotion-regulatory goals. Prior research has already established a link between positive affect and health (Cohen & Pressman, 2006; Ong, 2010). This link is thought to come about by the stress-buffering effect of positive affect and its association with improved health practices and social interactions. In particular, induced low-arousal positive affect was shown to have benefits for immune and neuroendocrine processes that are associated with health (Pressman & Cohen, 2005). Our study adds to this literature by indicating that it does not only seem to matter for health to have time periods in which one feels calm, relaxed and peaceful, but it also seems to matter that one experiences these states about as often as wanted. Put differently, people likely differ in their optimal level of affect and the amount of times that they need to rest physically and mentally, and accomplishing the needed amount of rest is important. Falling short of the desired amount of rest may prevent sufficient recovery from times of stress.

No association was found between meeting ideal HAP and health symptoms. This finding may reflect the complicated relationship between actual HAP and health. Earlier laboratory research shows that inducing HAP can trigger rises in physiological arousal, which are potentially harmful (Pressman & Cohen, 2005). Such detrimental effects may be even more pronounced in older individuals whose slower physiological systems may lead to slower recovery from high-arousal states (Charles, 2010). Thus, while it may be generally good to meet HAP goals in daily life, in some cases this means experiencing frequently intense levels of HAP, which is not outright adaptive. Clearly, future research is warranted to shed more light on this issue. Our study could be a first indication that reaching the desired amount of LAP states may be more important for health than reaching the desired amount of HAP states for all age groups. It is possible that with life experience people come to understand the benefits of LAP states for health, and hence attach higher value to these states.

Three additional findings are noteworthy. First, the divergent age trajectories of actual LAP (increase with age) and HAP (stability with age) are surprisingly consistent with one earlier study that distinguished levels of arousal in a sample of 20 to 80 year-old adults (Kessler & Staudinger, 2009). Second, the match between ideal and actual LAP and HAP was far from perfect: On average, people tended to experience less LAP and HAP than they ideally want to. This is consistent with prior research finding ideals exceeded actual experiences at all ages (Kämpfe & Mitte, 2009; Ryff, 1991; Tsai, et al., 2006). Third, across the whole age spectrum, ideal-actual correspondences were generally stronger for LAP than for HAP, suggesting that LAP goals might be easier to reach than HAP goals (perhaps because daily

contexts generally support LAP experiences more than HAP experiences, or because the cultural emphasis on HAP states makes them particularly difficult to achieve).

Limitations and Future Directions

An important limitation of the present study is its cross-sectional design, which confounds developmental with cohort effects. Without longitudinal and cohort-sequential data, it is impossible to determine the extent to which either developmental changes or historical influences drive the found age associations. Moreover, longitudinal designs would allow for the investigation of individual differences in intraindividual change (Baltes, Reese, & Nesselroade, 1977) in ideal affect and its correspondence with actual affect. Although our results suggest there is a normative increase in the preference for LAP over HAP as people age, not everyone may show such changes to the same extent or at the same rate. Similarly, while most people may become better at reaching their positive affect goals with age, some may not (and some may even become worse at it).

Relatedly, the current research cannot speak to the mechanisms underlying age differences in ideal affect. As noted above, it may be fruitful to link ideal positive affect with measures of physiological flexibility, such as heart rate and skin conductance level reactions to emotion-inducing stimuli (Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005). In addition, future research should explore the influence of motivational factors such as a general age-related shift from influence to adjustment goals on ideal affect.

Future research should also examine the strategies that younger and older adults use to reach their ideal positive affect, and whether strategies differ for low and high arousal positive affect. In the context of negative affect regulation, a key set of regulatory strategies has been identified, including for example reappraisal, suppression, or distraction (Gross, 1998; Nolen-Hoeksema & Morrow, 1993). Moreover, recent research suggests that people chose different emotion regulation strategies depending on whether negative emotional stimuli are low are high in arousal (Sheppes, Scheibe, Suri, & Gross, 2011). Whether people use the same or different strategies to reach their positive affect goals has not been systematically examined to date. It has been suggested that savoring, gratitude, and infusing ordinary events with positive meaning may be regulatory strategies to maintain or increase positive affect (Tugade & Fredrickson, 2007).

In this study, ideal affect was assessed only once. This bears the inherent assumption that ideal affect is a stable characteristic of individuals. While virtually everyone may have a default level of ideal positive affect, it is likely that individuals differ in their affective preferences depending on their current affect. For example, during times of stress people may value low-arousal positive states more than in the absence of stress. Vice versa, during times of prolonged rest (e.g., vacation) people may come to value high-arousal positive states more. There can also be situations when people feel they experience too much of these states, and thus strive to down-regulate positive affect. Thus, just like other affective phenomena, ideal affect can be assumed to have both stable and dynamic components. Future research should assess ideal affect repeatedly within the same individuals, and investigate the situational antecedents and behavioral consequences of various levels of ideal LAP and HAP in relation to actual levels of affect.

A related methodological issue concerns the different time scales used for assessing ideal and actual affect. While ideal affect was assessed only once and in a global manner, actual affect was assessed repeatedly in terms of momentary affect intensity, which we rescaled into a metric of daily affect frequency. Despite the rescaling, a methodological limitation remains. Individuals tend to rely on different types of knowledge representations (in our case, identity-related beliefs for ideal affect vs. experiential knowledge for momentary

actual affect) in response to different item formats (Robinson & Clore, 2002). Measuring both ideal and actual affect across the same time scale can ensure that the measurement characteristics of ideal and actual affect are more equivalent. It should be noted, however, that ideal affect is fundamentally different from actual affect in that it may draw on identity- or situation-specific beliefs even if sampled on a momentary basis.

Finally, the present research was limited to European Americans and African Americans. Future research should examine whether these findings hold in other cultural contexts. For example, age-related patterns of ideal affect appear to be related to views of aging in different cultures. Tsai et al. (2011) found that Chinese Americans, who have a more positive view of aging than European Americans, showed different patterns of age-related changes in ideal affect.

Conclusion

Socioemotional selectivity theory suggests that older adults are more motivated than younger adults to have meaningful emotional experiences, which for most people are positive. The present study suggests that this may be particularly the case for low-arousal positive affect. Although positive states low and high in arousal appear to be equally desirable to young adults, the older people are to more they prefer positive states low in arousal (calm, peaceful, relaxed) over those high in arousal (excited, proud). Moreover, age differences in positive affect goals were accompanied by an increased likelihood to meet both types of goals. Meeting ideal levels of low arousal positive affect proved important for individuals' health over and above actual levels of low-arousal positive affect. Thus, not only are older adults more likely to meet their ideal positive affect, but the type of affect they value most is associated with better health.

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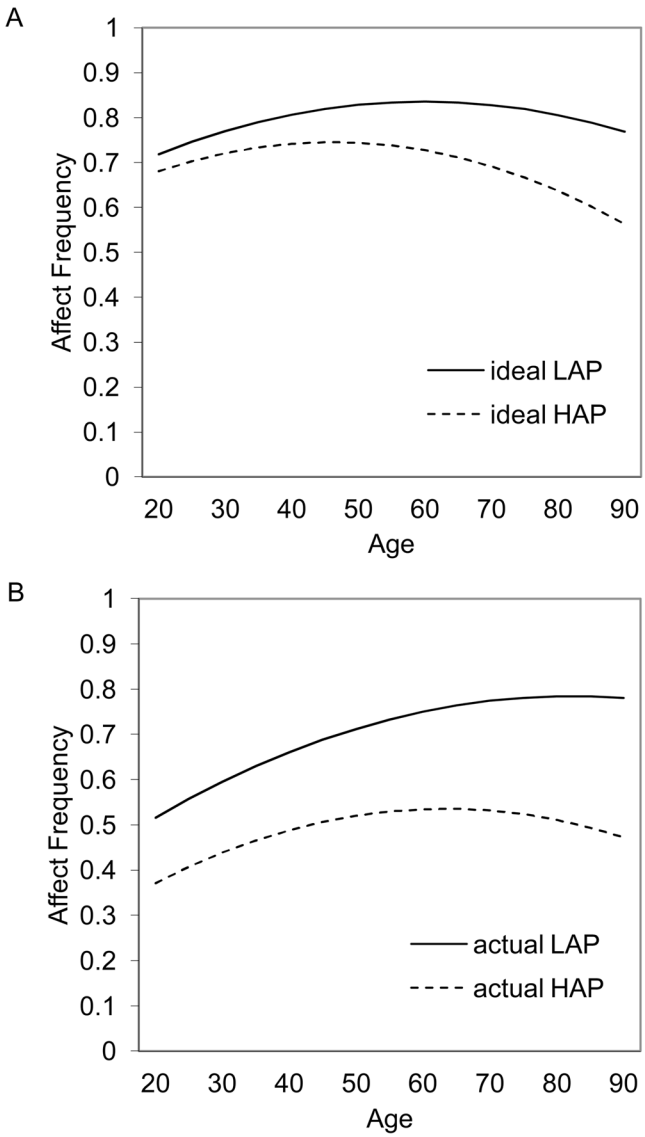

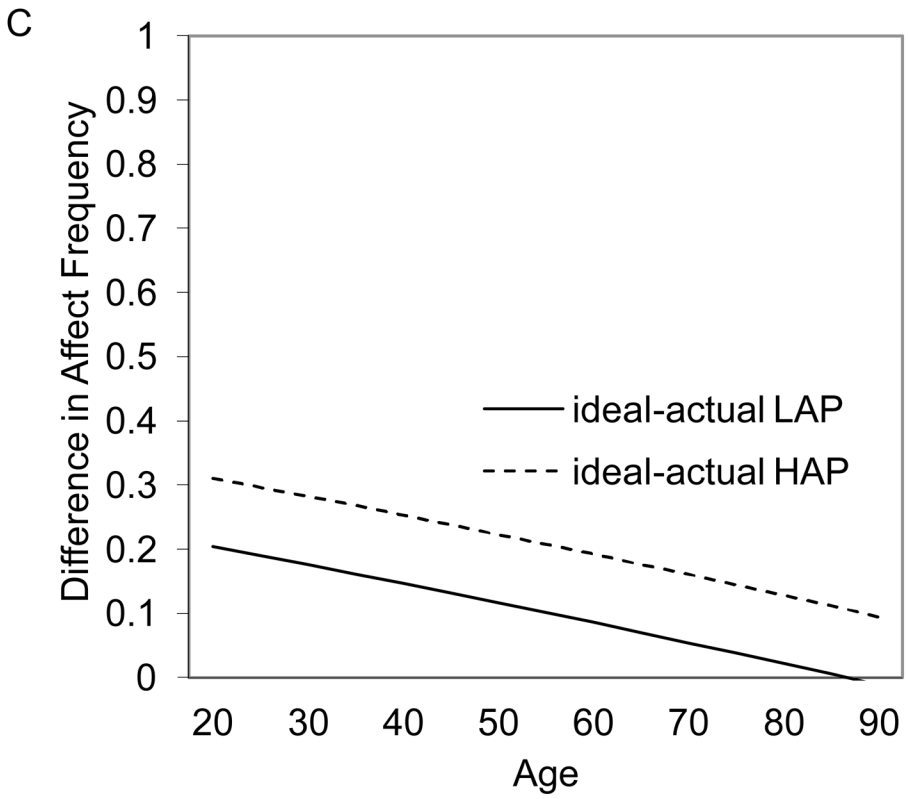

Figure 1.
Prototypical age trajectories for (A) ideal level of low arousal positive (LAP) and high arousal positive (HAP) affect, (B) average daily proportion of occasions experiencing LAP and HAP, and (C) average daily ideal minus actual level of LAP and HAP.

Table 1

Results of General Linear Model Predicting Ideal Affect as a Function of Age and Affect Type

	F (1, 133)	*p*	η^2
Affect Type	9.787*	.002	.069
Age (linear)	.657	.419	.005
Age (squared)	7.107*	.009	.051
Affect Type X Age (linear)	5.870*	.017	.042
Affect Type X Age (squared)	.155	.698	.001

*$p < .05$.

Table 2

Results of 3-Level Models Predicting Actual Affect and Ideal-Actual Discrepancy as a Function of Age and Affect Type

	Actual Affect			*Ideal-Actual Discrepancy*		
	Estimate	**SE**	***p***	**Estimate**	**SE**	***p***
Intercept	.7327*	.0274	.001	.1021*	.0286	.001
Affect Type[a]	−.2028*	.0152	.001	.1050*	.0162	.001
Age (linear)	.0800*	.0182	.001	−.0649*	.0189	.001
Age (squared)	−.0277	.0203	.174	−.0036	.0211	.864
Affect Type X Age (linear)	−.0508*	.0102	.001	.0019	.0109	.863
Affect Type X Age (squared)	−.0132	.0113	.243	.0042	.0120	.726

[a]Coded 0 for low-arousal positive affect (LAP) and 1 for high-arousal positive affect (HAP).

*$p < .05$.

Table 3

Results of 2-Level Model Predicting Daily Desire to Change Emotions as a Function of Daily Ideal-Actual Discrepancy and Age

	Daily desire to change emotions		
	Estimate	**SE**	***p***
Intercept	2.7761*	.1464	.001
Daily Ideal-Actual LAP	1.7509*	.2514	.001
Daily Ideal-Actual HAP	1.2722*	.2294	.001
Age (linear)	.0990	.0993	.321
Age (squared)	.1715	.1081	.115
Daily Ideal-Actual LAP X Age (linear)	−.0880	.1670	.598
Daily Ideal-Actual LAP X Age (squared)	−.1227	.1863	.510
Daily Ideal-Actual HAP X Age (linear)	−.5026*	.1726	.004
Daily Ideal-Actual HAP X Age (squared)	.2200	.1736	.205

Note. Fixed effects are shown.

*$p < .05$.