Life satisfaction and the 'end of history illusion': A reply to Quoidbach, Gilbert, and Wilson (2020)

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ABSTRACT

Contrary to the 'end of history illusion', in a longitudinal sample of American adults Harris and Busseri (2019) found that most individuals were accurate or expected too much change in their future life satisfaction, rather than expecting too little change. Quoidbach, Gilbert, and Wilson (2020) suggested that the discrepancy in conclusions arose because we focused on mean-level trends rather than individual differences. Here we clarify that the discrepancy stems from the analysis of directional versus absolute change, with the latter preferred by Quoidbach et al. (2020). Both approaches are informative. Indeed, in addition to determining whether the altitude of an elevator in a skyscraper is changing over time, it matters very much whether the elevator is going up or down.

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When individuals peer into the future, do they overestimate or underestimate their future life satisfaction? In a recent paper examining this issue, we (Harris & Busseri, 2019) reported results from a three-wave longitudinal study of American adults (Brim, Ryff, & Kessler, 2004). We compared individuals' ratings of their recollected past (10 years ago) and anticipated future (10 years from now) life satisfaction made at Wave 2, with ratings of their present life satisfaction made at Wave 1 (9 years prior) and at Wave 3 (9 years later). This approach allowed us to directly evaluate the extent to which participants overestimated or underestimated their recollected past and anticipated future life satisfaction. According to the 'end of history illusion' (EOHI; Quoidbach, Gilbert, & Wilson, 2013), individuals typically underestimate that amount of future change in their personalities, values, and preferences. If so, we reasoned, individuals might also expect *too little change* in their future life satisfaction. Yet previous research on life satisfaction indicates that younger and middle-aged adults tend to view their lives as becoming more satisfying into the future, whereas older individuals tend to anticipated declines (Busseri, 2013; Röcke & Lachman, 2008). Longitudinal findings also indicate that life satisfaction is generally stable over time, rather than consistently inclining or declining over time (Cummins, 2014; Fujita & Diener, 2005). Such previous findings led us to predict that younger and middle-aged adults would

expect *too much improvement* in their future life satisfaction, whereas as older adults would expect *too much decline*.

We presented two sets of results to test these notions. In the main text, we presented results concerning mean trends in ratings of past, present, and future life satisfaction, along with comparisons of relevant mean differences (e.g., mean ratings of anticipated future life satisfaction from Wave 2 vs. present life satisfaction from Wave 3). We also presented results based on individual differences, including the percentages of individuals who predicted too much or too little change. These individual differences results were summarized in the main text and detailed in a Supplemental Results file. Both types of analysis supported the same conclusion: Although some individuals anticipated too little change in their future life satisfaction as predicted by the EOHI (i.e., their life satisfaction increased or decreased more than they thought it would), most were either accurate in their predictions or anticipated too much improvement or too much decline (depending on their age), rather than too little. More specifically, among younger and middle-aged adults, the means-based analysis indicated that participants anticipated too much future improvement in their life satisfaction, on average (i.e., life satisfaction in the future was lower than predicted; thus, life satisfaction increased less than expected); further, the individual differences-based analysis revealed that most younger and middle-aged adults overestimated their future life satisfaction (i.e., their life satisfaction in the future end up lower than they predicted; 56% and 41%, respectively) or were accurate in their predictions (29% and 34%), rather than underestimating their future life satisfaction (i.e., their life satisfaction in the future was higher than they predicted; 15% and 25%). In

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contrast, older adults anticipated too much future decline in their life satisfaction, on average (i.e., life satisfaction in the future was higher than predicted; thus, life satisfaction decreased less than expected); and most underestimated (40%) or were accurate (32%) in their predictions, rather than overestimated (28%) their future life satisfaction.

We also examined absolute change, through converting the directional predicted and experienced change scores to absolute values. Results indicated that a minority of individuals (36%) anticipated too little (absolute) change in the future life satisfaction, consistent with the EOHI (including 32%, 37%, and 39%, respectively, for younger, middle-aged, and older adults). However, most individuals were either accurate in their predictions or anticipated too much absolute change (38% and 26% of the sample, respectively). We concluded, therefore, that although the EOHI did characterize some individuals' views of their life satisfaction, for most individuals it did not.

1. Commentary from Quoidbach, Gilbert, and Wilson (2020)

In a recently published commentary on our work, Quoidbach, Gilbert, and Wilson (2020) took issue with our conclusions. These authors reported results from several additional analyses with the same longitudinal study we examined. Their results indicated that the absolute amount of predicted present-to-future change in life satisfaction was significantly less than the absolute amount of experienced change in life satisfaction in the sample overall, and particularly for those in their 40s through their early 70s. Quoidbach et al. (2020) thus concluded that participants generally expected too little future change in life satisfaction, consistent with the EOHI. These authors suggested that the discrepancy between their findings and ours was due to the fact that we focused on mean-level change in life satisfaction over time, whereas they focused on individual differences. Examining mean-level trends, they proposed, obscures important variability between individuals.

2. Our response

We appreciate the thoughtful commentary that Quoidbach and colleagues have provided. We agree with them that means-based comparisons can lead to generalizations that do not apply to every individual within the sample. Indeed, in our original report (Harris & Busseri, 2019) we provided results based on mean trends and means-based comparisons *as well as* individual differences. As we discussed in that work, the individual differences-based results provided valuable information that was not apparent from the mean-based analyses. Nonetheless, our main findings were consistent across approaches: Most individuals were either accurate or anticipated too much change in their life satisfaction into the future, rather than too little – and the direction of such mispredictions varied according to age. Thus, although the EOHI characterized a substantial minority of respondents, it did not characterize most individuals. Therefore, the discrepancy between our conclusions and those provided by Quoidbach et al. (2020) did not arise from the use of means-based versus individual differences-based approaches. Rather, as we detail below, the discrepancy resulted from two other important distinctions in approach.

2.1. Distinction #1: Absolute change versus directional change

The first distinction concerns our focus on directional change, versus the approaches employed by Quoidbach et al. (2013, 2020) which focus on absolute change. There are important individual differences in the directions of individuals' subjective trajectories for their life satisfaction (Busseri, Choma, & Sadava, 2009; Lachman, Rocke, Rosnick, & Ryff, 2008). Further, such individual differences are linked in important ways with other factors, including age (Röcke & Lachman, 2008). Of particular relevance for present purposes, younger and middle-aged adults tend to perceive their lives as getting better over time, whereas older adults anticipate declines (Busseri, 2013; Staudinger, Bluck, & Herzberg, 2003). Therefore, rather than ignoring such differences in direction through analyzing only the absolute amount of perceived and experienced change, we examined directional changes in life satisfaction and age-related differences in such directional changes.

In contrast, both the original work on the EOHI (Quoidbach et al., 2013) and the recent commentary on our work (Quoidbach et al., 2020) focused exclusively on absolute change. It thus appears that directional differences in perceived versus experienced changes – including whether individuals anticipate too much or too little *improvement* versus too much or too little *decline* – are not central to the EOHI. With the respect to understanding how individuals view their life satisfaction to be unfolding over time, however, there is a critical difference between anticipating too little (or too much) improvement versus too much (or too little) decline – and this difference has important implications for lifespan development and successful aging (Busseri, 2013; Lachman et al., 2008; Röcke & Lachman, 2008). Accordingly, we suggest that the direction of change in life satisfaction, whether perceived or experienced, should be examined. Ignoring directional change through focusing only on absolute change can lead to very different conclusions concerning how individuals view their lives to be unfolding over time.

To illustrate this, we ran an analysis comparable to Quoidbach et al. (2020) comparing the absolute amounts of predicted and experienced change (condition = 0 vs. 1, respectively) from Wave 2 in the subsample of 2390 respondents we examined in our original report. Like Quoidbach et al. (2020), we observed a significant positive difference between conditions ($b = 0.16$, SE = 0.03; t (2389) = 5.51, $p < .001$), wherein the average amount of absolute experienced change ($M = 0.97$) was significantly higher than the average amount of absolute predicted change ($M = 0.82$), consistent with results they presented in Figure 2, Panel A. We also found that the magnitude of this difference varied by age: M_{diff} = -0.08, 0.15, 0.21, 0.27, and -0.05, respectively, for individuals in their 30s, 40s, 50s, 60s, and 70+, paralleling results Quoidbach et al. (2020) presented in Figure 2, Panel B. These findings based on absolute change are consistent with the EOHI in suggesting that, on average, participants predicted too little absolute change; furthermore, the tendency to expect too little absolute change in LS was greatest among participants in their 40s, 50s, and 60s.

However, when we re-ran the analysis using directional change rather than absolute change, we observed a significant *negative* difference between conditions ($b = -0.26$, SE = 0.04; $t(2389) = -7.13$, $p < .001$), suggesting that participants anticipated too much improvement in LS, on average (see Fig. 1, left panel). We also found that this difference varied by age: On average, participants in their 30s, 40s, and 50s at Wave 2 tended to expect too much improvement, whereas those in their 60s were accurate, and individuals in their 70s tended to expect too much decline age (see Fig. 1, right panel). These findings based on directional change are consistent with our original report (Harris & Busseri, 2019) in suggesting that participants predicted too much change – and that the type of misprediction (i.e., expecting too much improvement or too much decline) depended on their age.

2.2. Distinction #2: Mean change vs. individual-level change

The second distinction between our approach and Quoidbach et al. (2013, 2020) is that in the individual differences analyses reported by Harris and Busseri (2019) we identified how much
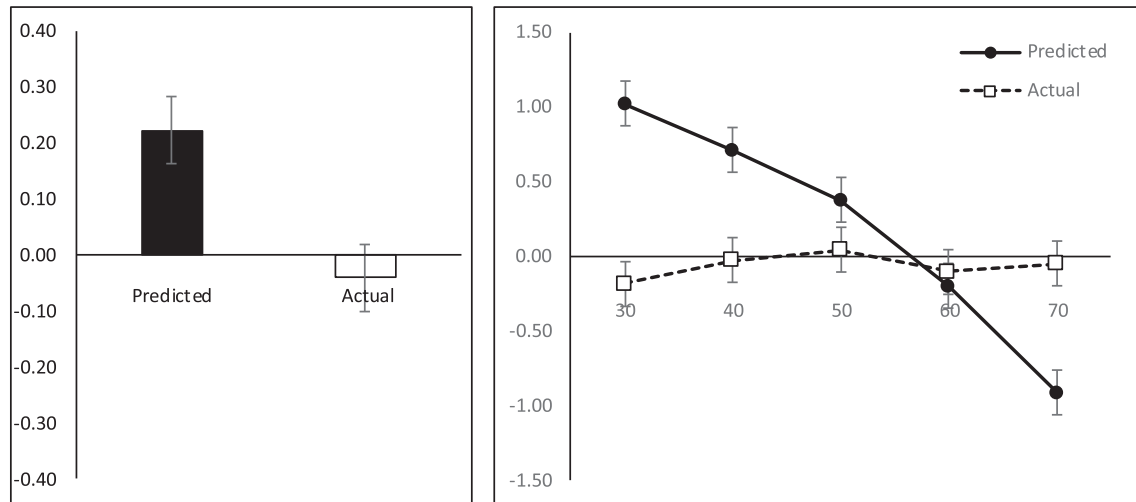
Fig. 1. *Predicted* versus *actual change in life satisfaction*. Left panel displays mean directional change in life satisfaction (y-axis) by condition (x-axis). Right panel displays directional change in life satisfaction (y-axis) as a function of age decade (x-axis). Error bars display 95% confidence intervals.

change in life satisfaction *each participant* predicted and experienced. Because the life satisfaction rating scale comprised whole numbers ranging from 0 and 10, participants were categorized as having anticipated too much or too little future change in life satisfaction based on differences of at least one scale point. This approach allowed us to report the percentages of participants who predicted too much versus too little improvement or decline based on the directional change scores, and too much versus too little change based on the absolute change scores. Importantly, even the results based on categorizing each respondent in terms of their absolute change revealed that only a minority of individuals anticipated too little future change in their life satisfaction.

In contrast, Quoidbach et al. (2020) reported comparisons between the absolute predicted versus experienced change scores across participants using summary statistics, such as regression coefficients and mean differences, as well as age-based trends. Critically, these approaches do not reveal how many participants were actually characterized by too much and too little change in life satisfaction based on at least a 1-point difference – which is the minimum difference by which any given individual could be characterized as expecting 'too much' or 'too little' change (as well as too much or too little improvement or decline) on the single-item LS rating scale. Had Quoidbach et al. (2020) examined individual-level results in this manner, they would have observed the same results that we did.

3. Summary and conclusion

The differences in results and conclusions between our work (Harris & Busseri, 2019) and the recent commentary from Quoidbach et al. (2020) stem from (i) examining directional change versus focusing only on absolute change; and (ii) identifying individuals characterized by at least 1-point discrepancies between their predicted and experienced change in life satisfaction, versus relying only on summary statistics and parameter estimates. Despite these differences in approach, we believe there are several important and practical insights to be gleaned from the joint consideration of our original work (Harris & Busseri, 2019) along with the commentary from Quoidbach et al. (2020). In particular, a robust approach to examining the role of the EOHI in shaping how individuals perceive their life satisfaction to be changing over time should encompass the following features: (1) a longitudinal design allowing direct comparisons between individuals' recol-

lected, predicted, and experienced changes over time; (2) analysis of directional and absolute change to inform the absolute magnitude of predicted and experienced change along with the directions of such changes; and (3) a combination of means-based and individual differences-based approaches to evaluate mean-level trends, variation between individuals, and individual-level results. We look forward to future work using this combination of approaches to provide additional new insights concerning how individuals view their lives to be unfolding over time.

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Disclosures

Data used in the present study and the survey codebooks are available for download from the MIDUS website: http://midus.wisc.edu/. Hypotheses and methods were not pre-registered.

Both authors contributed equally to the conceptualization, writing, and analysis of the present commentary.

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