The Easterlin Paradox

Richard A. Easterlin and Kelsey J. O'Connor

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Abstract

The Easterlin Paradox states that at a point in time happiness varies directly with income, both among and within nations, but over time the long-term growth rates of happiness and income are not significantly related. The principal reason for the contradiction is social comparison. At a point in time those with higher income are happier because they are comparing their income to that of others who are less fortunate, and conversely for those with lower income. Over time, however, as incomes rise throughout the population, the incomes of one's comparison group rise along with one's own income and vitiate the otherwise positive effect of own-income growth on happiness. Critics of the Paradox mistakenly present the

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positive relation of happiness to income in cross-section data or in short-term time series fluctuations as contradicting the nil relation of long-term trends.

Introduction

The Easterlin Paradox states that at a point in time happiness varies directly with income, both among and within nations, but over time happiness does not trend upward *in correspondence* with income growth. The Paradox was formulated in 1974 by Richard A. Easterlin, the first economist to study happiness data, in an article entitled "Does Economic Growth Improve the Human Lot: Some Empirical Evidence" (Easterlin 1974). Because of data constraints, the initial time-series evidence was limited to the United States. Subsequently, relatively flat trends in happiness have been shown in additional countries experiencing growth (Easterlin et al. 2012; Easterlin 2017; Bartolini and Sarracino 2015); however, the Paradox is not based solely on studies of flat trends or individual countries. The Paradox is the contradiction between observations on the relation of happiness to income at a point in time (cross-section data) and the relation of happiness to income over time (time-series data). Today, the cross-sectional findings are well agreed upon and evidence supporting the time-series findings is based on an ever-expanding body of data that includes countries worldwide – developed, transition, and less developed (Easterlin 1995, 2010, 2015, 2017; Easterlin et al. 2010).

Data on people's happiness are obtained in nationally representative surveys in which questions are asked like "Taking all things together, how would you say things are these days – would you say you are very happy, pretty happy, or not too happy?" This type of question about overall happiness has been included in surveys all over the world and is still a standard query in the United States General Social Survey, which dates from 1972. Currently, similar questions with a larger number of response options are more often used. Thus, the World Values Survey (WVS) asks: "All things considered, how satisfied are you with your life as a whole these days?," with integer response options from 1 (=Dissatisfied) to 10 (=Satisfied) (termed here "life satisfaction"). The Gallup World Poll (GWP) uses a "Best-Worst" question (termed here "Best Possible Life") in which people rate their lives on a ladder with rungs numbered from zero to 10, where zero, at the bottom of the ladder, equals, in their view, the worst possible life, and 10, the top rung, equals the best (referred to technically as the Cantril Self-Anchoring Striving Scale (Cantril 1965)).

All of these questions ask people to step back and evaluate their lives as a whole. They are distinct from so-called affective or experiential questions, which aim to capture shorter term moods. An affective question on happiness, for example, might read "In the last 24 hours how frequently were you happy: most of the time, some of the time, a little of the time, or not at all." Note how this question omits the framing, "Taking all things together," and uses the specific and short-term time reference,

"24 hours," versus the more general time frame in the evaluative query about how things are "these days." Evaluative measures are generally preferred in economic analysis; they are more correlated with life circumstances, especially income (Helliwell and Wang 2012), and consequently provide a stronger test of the Paradox.

The Paradox is based on responses to evaluative questions. The three described above – overall happiness, life satisfaction, and best possible life – give quite similar results regarding things like the change in happiness over time, happiness differences among groups in the population, and statistical relationships between happiness and a wide array of variables.

Although they are not strictly interchangeable in some contexts – Best Possible Life is more strongly related to income in cross-sections than life satisfaction (Helliwell 2008) – they are commonly used interchangeably. For the present discussion, the more important distinction is between affective and evaluative measures. Thus, evaluative measures are referred to jointly as measures of "happiness." Affective measures are not discussed in the remainder of the chapter. For additional discussion on the types of happiness questions see the chapters: ▶ "The Economics of Happiness" and ▶ "Measuring Subjective Well-Being".

In what follows "income" always means *real* income, what money will buy. At the national level, it is typically approximated by per capita gross domestic product (GDP, the economy's total output of goods and services) because of the ready worldwide availability of reasonably comparable GDP statistics. Per capita GDP here will always mean *real* GDP per capita, a country's average *quantity* of goods and services per person.

The relation between happiness and income (GDP) is assessed at the national not individual level. This is partially due to the availability of internationally comparable data, but more importantly due to the nature of the question being addressed. The original question – does economic growth improve the human lot – is societal in nature. The answer indicates whether policymakers should seek to increase GDP to improve society's overall well-being. Assuming the goal of government is to promote the collective well-being of its constituents and if GDP is taken as the measure of well-being, as many contemporary economists imply, then policymakers need look no further. But if GDP is not accepted as the be-all and end-all of well-being, then policymakers need better measures. Indeed, in light of the Easterlin Paradox and other contributions (from environmental economics for instance), there now exists a movement to go beyond GDP to measure social progress, as with measures of happiness (Fleurbaey 2009; Stiglitz et al. 2009; Kubiszewski et al. 2013; Easterlin 2019a).

Finding GDP growth does not lastingly increase happiness does not mean we should drop GDP. But it clearly illustrates that GDP does not represent a broad measure of well-being, implying policy makers should focus their attention elsewhere. However, this chapter is not about policy per se. It clarifies the meaning, explanation, and evidence behind the empirical finding known as the Easterlin Paradox.

Concept

It is the *trends* in happiness and income – the long-run tendencies – that are not related. In the short run, happiness and income typically go up and down together for reasons described in the section "Understanding the Easterlin Paradox" – essentially, the loss of income is felt particularly harshly. The Great Recession of 2007–2009 provides a recent example of the short-run relationship. As American incomes hit the skids, happiness plunged to the lowest level ever recorded (O'Connor 2017). Then, with the economy's subsequent recovery, happiness improved (Graham et al. 2010; Deaton 2011). Countries in Europe and Latin America, for which happiness data are available on a yearly basis, display similar concurrent short-run movements in happiness and income (Easterlin et al. 2010).

One can see the difference between the short- and long-run relationships of happiness and income in Fig. 1. Note that the peaks and troughs ("p"s and "t"s) in both happiness and income occur simultaneously – in the short-run, happiness and income fluctuate together. As income goes up and down, happiness follows suit (the solid lines). But if one fits a trend line to each series to identify the long-run tendency (the broken lines), it turns out that the upward trend in income is not matched by a corresponding uptrend in happiness. The fluctuations in income are occurring around a rising trend line; those in happiness, around a level trend line. The fluctuations in happiness and income – the short-run movements – are positively related, whereas the trends – the long-run tendencies – are not. In Fig. 1 the trend of income is upward, but that of happiness is not.

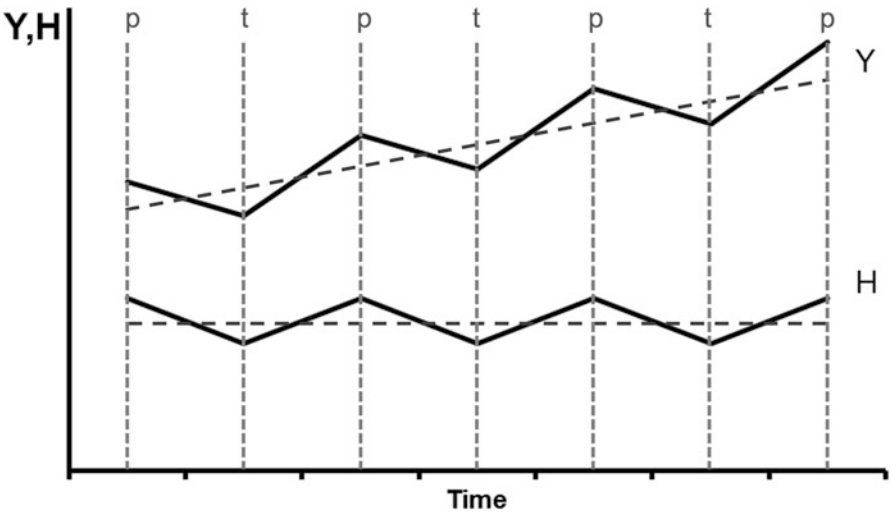

Fig. 1 Short-term fluctuations and long-term trends in happiness (H) and income (Y): An illustration. (Notes: In the short-run happiness (H) and income (Y) go up and down together (solid lines), but in the long-run the trend in happiness does not correspond to the trend in income (broken lines). Source: Reprinted with permission from (Easterlin 2017, p. 313, Fig. 1))

Grasping this distinction between the short- and long-run relationships – between the positive correlation of fluctuations and the nil association of trends – is crucial to understanding the Paradox. For example, a knowledgeable economist writes, "The silliness of the notion that rising GDP does not increase happiness at all is even easier to see when you remember that a recession, when GDP declines just a little, makes people very unhappy" (Coyle 2014, p. 113). Here, the positive correlation between the short-run fluctuations is used in an attempt to disprove the nil relation between long-run trends. This is a common mistake, but not one that all economists make. Bartolini and Sarracino (2014) empirically test the theoretical difference between fluctuations and trends, and find the relation between happiness and GDP declines in magnitude as the time-horizon increases. In the long run, a period they consider to be of at least 15 years, they find no significant relation between GDP and happiness. Note, a nil relationship, or no relationship, is taken to mean insignificant in empirical terms, whether defined statistically or economically. Economic significance may be described as substantive or meaningful (McCloskey 1985).

Another misconception is that the Paradox says that happiness is constant over the long run. But the Paradox is not about happiness alone; it is about the relationship of happiness to income. As discussed in numerous articles, constant happiness in the presence of economic growth does *suggest* there is no relation between the two. However, the analogous observation that both happiness and GDP trend positively does not mean they are related. Because countries can have rising, constant, or falling trends in happiness that are independent of economic growth, more countries are necessary to establish a happiness-income relationship. *The crux of the Paradox is this: There is no positive correlation between the happiness trends and those in income.* Steeper uptrends in a country's income are not accompanied by greater growth in happiness.

Assessing the Relationship Between the Trends in Happiness and Income

The Easterlin Paradox is an empirical finding. To understand it, one must first understand the estimation approach and data. Presented here is the approach used in an ever-expanding body of evidence of the Paradox, based on articles by Easterlin and his collaborators in publications listed in the References. Relevant data and alternative methods are also briefly discussed.

Approach to Estimating the Relationship Between the Trends in Happiness and Income

The nature of the empirical analysis can be illustrated via Fig. 1. Imagine the broken line trends shown in the chart are those experienced by country A. One can picture a second figure, that for country B, with somewhat different broken line trends for happiness and income, and a third, country C, with its particular trends, and so on.

The empirical analysis addresses this question: if one compares countries with regard to their broken-line trends, does one find that sharper uptrends in income are typically accompanied by greater uptrends in happiness, that is, is more rapid economic growth associated with a larger increase in happiness? Or does one find the nil relation suggested by the Paradox?

As is clear from Fig. 1, in order to estimate trends, the longest time series available are desired. If the time series are short, for example, just covering very recent years, then one is liable to be finding the short-run relationship, say, the solid line trough to peak ("t" to "p") positive relation in the last expansion shown in Fig. 1.

The procedure, therefore, is first to estimate for each country the broken-line time-series trends in happiness and GDP per capita. For happiness, the average absolute change per year is estimated, as given by the slope of an OLS regression line fitted to a country's time-series observations. For constant dollar GDP per capita the average percentage change per year (compound annual growth rate) is calculated from the observations at the start and end of each country's happiness time series. Based on the trend estimates of happiness and GDP per capita for all countries, a regression is then calculated to see whether the trend in happiness is significantly greater when the growth rate of GDP per capita is higher. Examples follow in the "Latest Time-Series Evidence" section.

Some Eastern European countries present a problem for trend analysis. All of the countries transitioning from socialism to capitalism invariably experienced an initial severe economic contraction, usually in the 1990s, followed by a long slow recovery. (See Fig. 2, which shows for each country GDP per capita before and after the post-transition economic trough.) The impact of this collapse differs from that of ordinary economic recessions – among other things, individuals lost guaranteed jobs, health care, and childcare, creating new and severe strains on family relationships (Easterlin 2009).

Unfortunately, the happiness data for many of these countries do not encompass the period of economic collapse. This is demonstrated by the countries in Fig. 2 where the start of the happiness data, indicated by the short vertical line passing through each country's GDP series, occurs near the end of or after the period of GDP contraction. These countries are referred to as Expansion-Only transition countries (ETCs). In contrast, for the transition countries in Fig. 3, the data cover most or all of the economic contraction at the start of the transition; these, along with the non-transition countries, are referred to as the Full-Cycle Countries.

For the Expansion-Only Countries any empirical analysis of the happiness-GDP relation is necessarily limited to the long period of economic expansion. This means that for these countries one is, in effect, estimating the positive relationship shown in Fig. 1 by the solid line "t" to "p" movements in the last expansion, not the broken line trends. Under these conditions, it is advisable to present two estimates of the happiness-GDP relation, one including all countries, and the other confined to Full-Cycle countries, for which the estimated relationship is based on trend data only. Clearly, it is this second estimate that provides the proper test of the Paradox.

Bartolini and Sarracino (2014) similarly exclude Eastern European countries from their analysis, and Kaiser and Vendrik (2019) note that the Eastern European time series are not sufficiently long for a proper test of the trend relationship (they should be longer than the period 2004–2015).

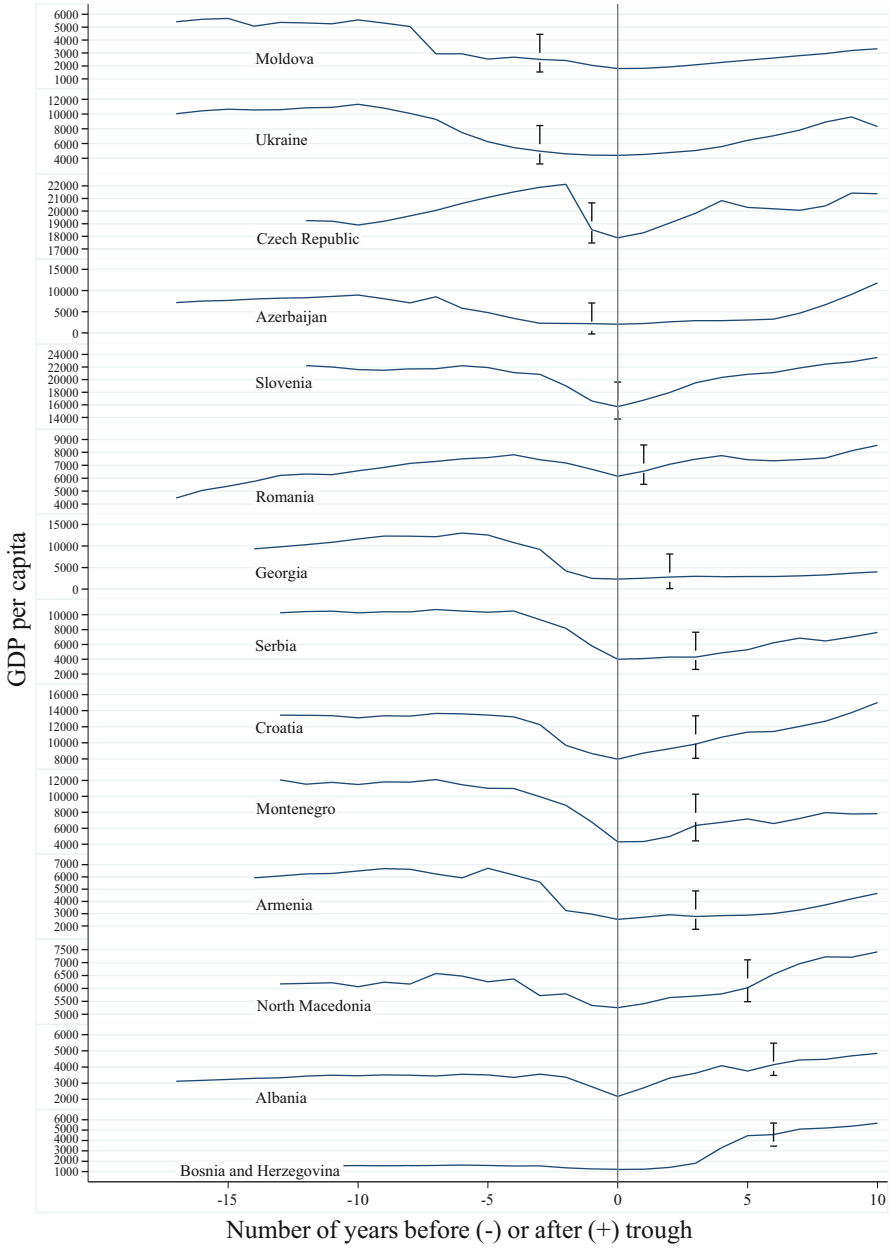

Fig. 2 GDP Per Capita in Eastern European transition countries before and after first post-transition trough (Period covered by life satisfaction data is to right of short broken line). (**Source:** Author calculations, life satisfaction data are from the World Values Survey and European Values Study (EVS 2015, 2020; Haerpfer et al. 2020; Inglehart et al. 2018); GDP data are from (Bolt et al. 2018; Feenstra et al. 2015; World Bank 2020))

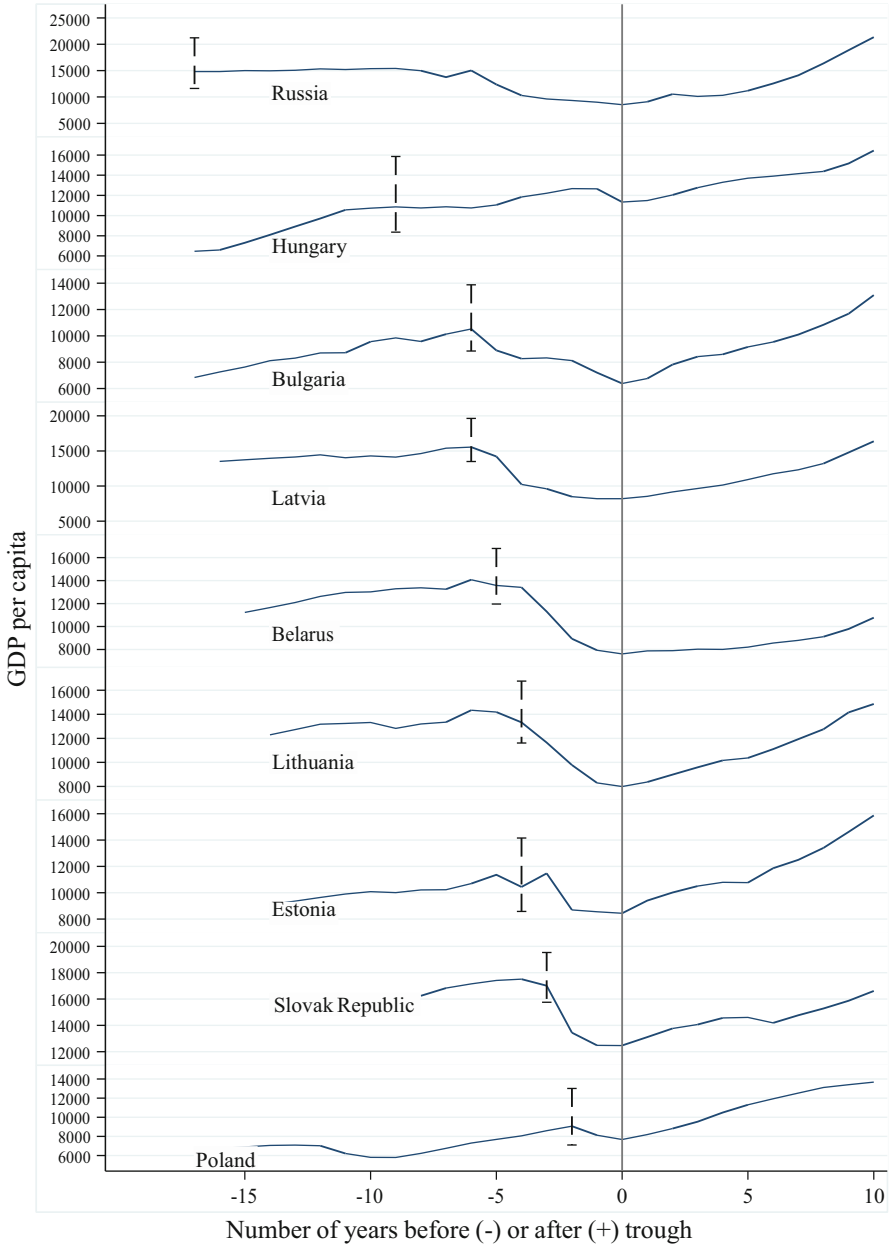

Fig. 3 GDP Per Capita in Eastern European transition countries before and after first post-transition trough (Period covered by life satisfaction data is to right of short broken line). (**Source:** Author calculations, life satisfaction data are from the World Values Survey and European Values Study (EVS 2015, 2020; Haerpfer et al. 2020; Inglehart et al. 2018), Russia 1981 uses the life satisfaction data from Tambov Oblast (Easterlin 2009); GDP data are from (Bolt et al. 2018; Feenstra et al. 2015; World Bank 2020))

Additional approaches typically have limitations, the most famous of which are discussed in section "Criticisms of the Paradox." Perhaps the best-known alternative is to consider the trend of happiness in one country alone. Indeed the first time-series evidence on the relationship between happiness and income is for the United States alone (Easterlin 1974), but as mentioned above, single country studies may support the Paradox but are insufficient to disprove it – observing positive trends in both happiness and income does not necessarily mean they are related. As illustrated in the next section, countries may have trends in happiness that are independent of GDP – so-called autonomous trends by Kaiser and Vendrik (2019).

Using panels of countries, approaches often differ in how and whether they isolate trends from fluctuations. One can use a multilevel model as in Diener et al. (2013); however, this approach typically assesses the short-run relation. Using country dummies or fixed effects allows one to assess the influence of deviations in GDP from its mean on mean deviations in happiness, but these occur over periods corresponding to the data used and do not reflect trends. One could use an auto-regressive model in levels (as in, Beja 2014), but this approach also relies on a relatively short period to infer long-run impacts. Sarracino and O'Connor (2021) instead use a more complex dynamic model (error correction model) that specifically separates out short- from long-run relations. This approach, however, was not intended to test the Paradox and has significant data needs, requiring regular and frequent measurements of happiness. Kaiser and Vendrik (2019) separate out the fluctuations from trends in GDP using a time-series filter (Hodrick-Prescott). The latter two approaches have been applied few if any times in settings including many less-developed countries.

There are also numerous papers that use individual data on happiness. They have the benefit of testing the mechanisms, but are generally limited to single countries, especially those in the developed world. For example, Wu (2020) demonstrates that the positive cross-sectional relation between income and happiness is driven by conspicuous consumption expenditures on visible or positional goods (using the Household, Income and Labour Dynamics in Australia Survey). See also Clark et al. (2008b) and references therein.

Happiness Data

To assess the relationship between trends of happiness and GDP, one first needs a long happiness series. Secondarily, a large number of countries are preferred, especially different types of countries around the world. By these criteria, the best sources of data are the combined World Values Survey and European Values Study (WVS/EVS), and Gallup World Poll. The WVS/EVS includes intermittent observations from 1981 to 2019 for a gradually expanding group of countries (EVS 2015, 2020; Haerpfer et al. 2020; Inglehart et al. 2018). Presently, the data suitable for long-term trend analysis comprise 67 countries with populations over a million and a time series ranging from a minimum of 12 years to a maximum of 39. A minor limitation of the WVS/EVS series concerns question order and response anchoring,

which can affect responses. These issues are addressed in detail in the expanded working paper version of this chapter (Easterlin and O'Connor 2020) and (Easterlin 2017).

The Gallup World Poll (GWP) has been conducted annually since 2005 (Gallup 2020). As with the WVS/EVS, the country coverage has gradually expanded over time. Through 2019, the GWP data available for trend analysis covers 123 countries with populations greater than one million and time series observations spanning 12–15 years. Note that in both the WVS/EVS and GWP data sets more countries are surveyed, but countries with time series less than 12 years in length are customarily excluded in order to reduce the likelihood of including time series that are too short to estimate the long-run relation of happiness to income.

The Eurobarometer is another valuable survey; it has been conducted semi-annually since the early 1970s in the gradually expanding member states of the European Union. Thus, it has a promising series length, but precludes the study of

Table 1 Mean trend growth rate per year of GDP per capita and subjective well-being by country group

		(1)	(2)	(3)	(4)
		Transition Countries			
		Expansion Only	Full Cycle	Less-developed	Developed
Panel A. WVS/EVS Data, 1981–2019					
(1)	Number of countries	13	10	21	23
(2)	Mean growth rate per year GDP per capita	5.112	2.891	4.232	2.319
(3)	Life satisfaction (1–10 scale)	0.092	0.036	0.024	0.002
(4)	Mean time span, life satisfaction (yrs)	21.9	29.3	23.8	31.4
Panel B. Gallup World Poll Data, 2005–2019					
(5)	Number of countries	27	–	71	25
	Mean growth rate per year				
(6)	GDP per capita	4.534	–	3.187	1.714
(7)	Best possible life (0–10 scale)	0.054	–	0.006	−0.008
(8)	Mean time span, best possible life (yrs)	13.9	–	13.8	14.5

Notes: Although the life satisfaction question is basically the same in all of the WVS and EVS surveys, there are some small changes that affect comparability over time (Easterlin 2017). In the present analysis, adjusting the data to improve comparability has little effect on the results. The Gallup World Poll sample includes the countries for which there are at least three observations over a period of 12 or more years

Source: EVS/WVS data files: WVS_Longitudinal_1981_2016_stata_v20180912; WVS_Longitudinal_1981_2016_stata_v20180912.dta; EVS_WVS_Cross-National_Wave_7_joint_core_stata_v1_4.dta; ZA7546_v1–0-0.dta (EVS 2015, 2020; Haerpfer et al. 2020; Inglehart et al. 2018), GDP per capita: based on the World Development Indicators (World Bank 2020), then extended forward and backward as needed using real GDP per capita growth rates from Maddison (Bolt et al. 2018) and Penn World Tables (Feenstra et al. 2015). Additional details are included in (Easterlin and O'Connor 2020)

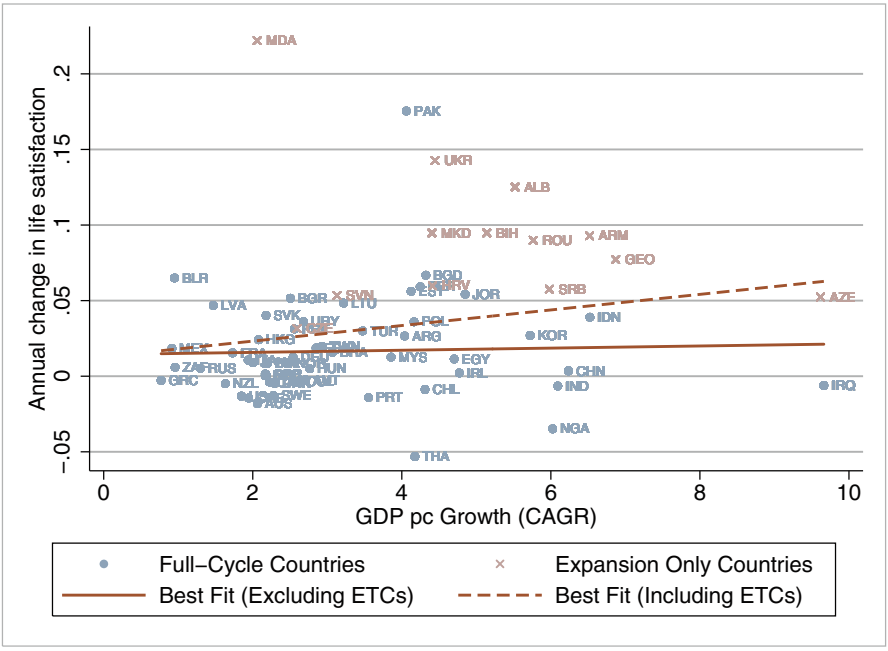

Fig. 4 Growth rates of life satisfaction and GDP per capita with and without expansion only countries, WVS/EVS Data, 1981–2019. (Notes: Regression Line of Best Fit (Full Cycle): $SWB\ Growth_c = 0.014\ [0.007] + 0.001 *$ $GDPpcGrowth_c$ [0.002]; 54 observations; R-squared, 0.001. Line of Best Fit (Incl. ETCs))

less developed countries. Additionally, responses to the life satisfaction question are limited to four options, which is less preferred to longer scales (OECD 2013, chap. 2), such as those used in the WVS/EVS (1–10) and Gallup World Poll (0–10). Moreover, the population coverage excludes the foreign born.

Table 1 presents a summary of the most recently available data from the WVS/EVS and Gallup. The advantage of the Gallup data is that it covers considerably more countries, almost all of them less-developed (lines 1 and 5); the disadvantage of the Gallup data is that the time series are considerably shorter, making trend estimates more problematic (lines 4 and 8).

In panel A of Table 1 the Expansion-Only Transition Countries have higher growth rates of both happiness and GDP than the Full-Cycle transition countries (cols. 1 and 2). This is because *trend* estimates are averages of rates in both the contraction and expansion periods; hence, the rates of change in expansion periods only are higher than the trend rate of change.

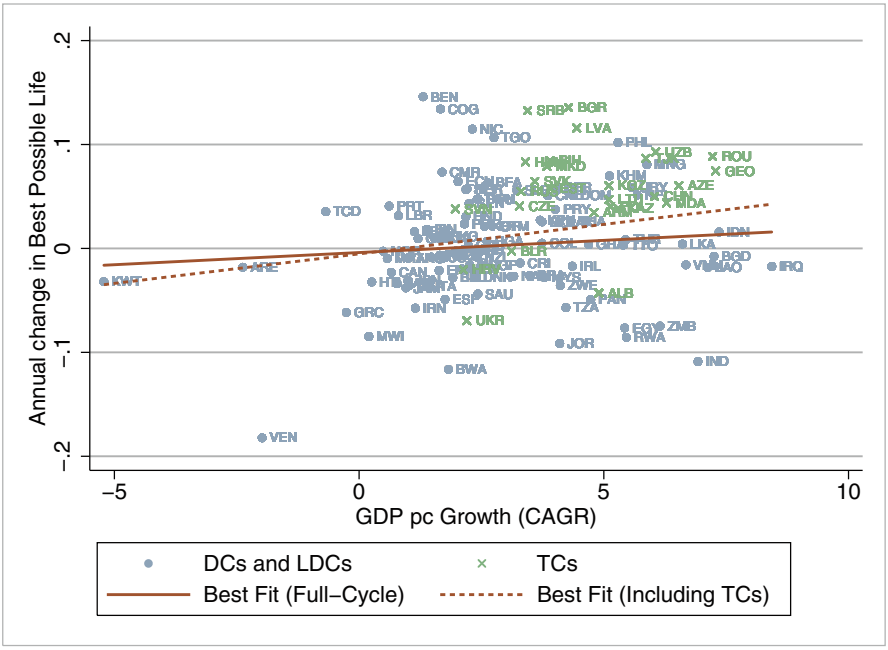

Fig. 5 Growth rates of best possible and GDP per capita with and without transition countries, Gallup Data, 2005–2019. (Notes: Regression Line of Best Fit (Full Cycle): $SWB\ Growth_c = -0.004$ [0.010] + 0.002 ∗
$GDPpcGrowth_c$ [0.003]; 96 observations; R-squared, 0.010. Line of Best Fit (Incl. ETCs))

Latest Time-Series Evidence

The cross-sectional relation between happiness and income is well agreed upon. For this reason, cross-sectional evidence is omitted here. It is the time-series finding of the Paradox for which evidence based on the latest data (as summarized in Table 1) is presented.

There is no significant relation between the trend in income and that in happiness, when the sample is confined to countries with sufficient data, as presented for the Full-Cycle countries in Figs. 4 and 5. The Paradox holds – economic growth is not related to improvements in happiness. This is evident in both the WVS/EVS data (54 countries, mean time series duration, 28.0 years), and the much shorter but more comprehensive GWP series (96 countries, 14.0 years mean duration). The regression lines are slightly positive in each data set (the coefficients are reported in the figure notes), but they are both statistically and economically insignificant (cf. Beja 2014). At the coefficient magnitudes, if the GDP of a country were increased by one percentage point, it would take 1000 years to raise happiness by one point according to the WVS/EVS coefficient (0.001), and 500 years, by the GWP coefficient (0.002).

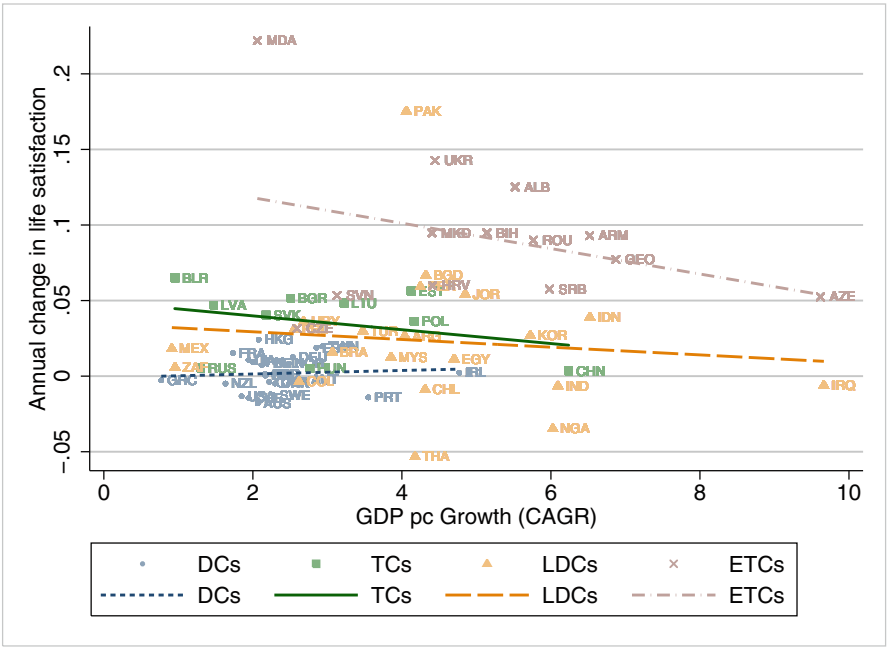

Fig. 6 Growth rates of life satisfaction and GDP per capita four samples: WVS/EVS data from 1981 to 2019. (Notes: $SWB\ Growth_{cg} = -0.001\ [0.006] + 0.001 * GDPpcGrowth_{cg}\ [0.003] + 0.136 * ETC_{cg}\ [0.058] + -0.010 * ETC_{cg} * GDPpcGrowth_{cg}\ [0.009] + 0.050 * TC_{cg}\ [0.017] + -0.006 * TC_{cg} * GDPpcGrowth_{cg}\ [0.005] + 0.035 * LDC_{cg}\ [0.016] + -0.004 * LDC_{cg} * GDPpcGrowth_{cg}\ [0.004]$)

The relations are altered if one includes the ETCs whose happiness data are confined to the period of economic recovery, and thus reflect the short-run positive happiness-income relation. In the GWP data, surveys start in 2005, meaning the series for *all* transition countries cover only the long expansion period and omit completely the transformative 1990s collapse. Including the ETCs tilts the regression line upward in Figs. 4 and 5, yielding significant positive coefficients. This result is consistent with a recent valuable empirical test of the Easterlin Paradox. Kaiser and Vendrik (2019) confirm the long-run nil happiness-income relationship, except in Eastern European countries; however, the data for these countries only cover the period 2004–2015, and, as the authors recognize, longer time series are needed for a proper test. This finding underscores the need to confine the analysis to countries with trend estimates.

The upward tilt that occurs when including the ETCs is because they have, on average, considerably higher growth rates of both income and happiness than the countries with trend estimates (see Table 1). It is not because they exhibit a positive relation between happiness and GDP. Figure 6 illustrates this point. Indeed, the ETCs exhibit a negative happiness-income relationship, though one that is not statistically different from the relation in the developed countries (DCs). Statistical

significance is included in the figure notes, based on estimates from a regression that includes each country group and, using interactions, allows groups to have both their own intercept and slope coefficients. Interaction terms are used to pool the samples (maintaining the sample size) and to assess the statistical significance of differences between groups. The regression confirms that the ETCs have a lower slope than the DCs, which serves as the comparison group, though not statistically significantly as mentioned. Instead, the ETCs have a positive and significant group effect (0.136), which when added to the constant (− 0.001) yields the ETC intercept. The intercept indicates life satisfaction increased in the ETCs by approximately 0.135 points per year (independently from GDP), which is much higher than the corresponding intercepts in the DCs (−0.001, equal to the constant), full-cycle transition countries (TCs) (0.050 + 0.001), and less developed countries (LDCs) (0.035 + 0.001). The intercept is interpreted as a common group trend in happiness that exists independently of GDP growth (referred to as an autonomous trend by Kaiser and Vendrik (2019)).

As the length of the time series included in the regression analysis is shortened, the short- run relation is more likely to dominate. As mentioned, the Gallup data are based on countries with 12–15 years duration, which is much shorter than the WVS/EVS data. Even so, the Gallup results presented in Fig. 7 yield similar

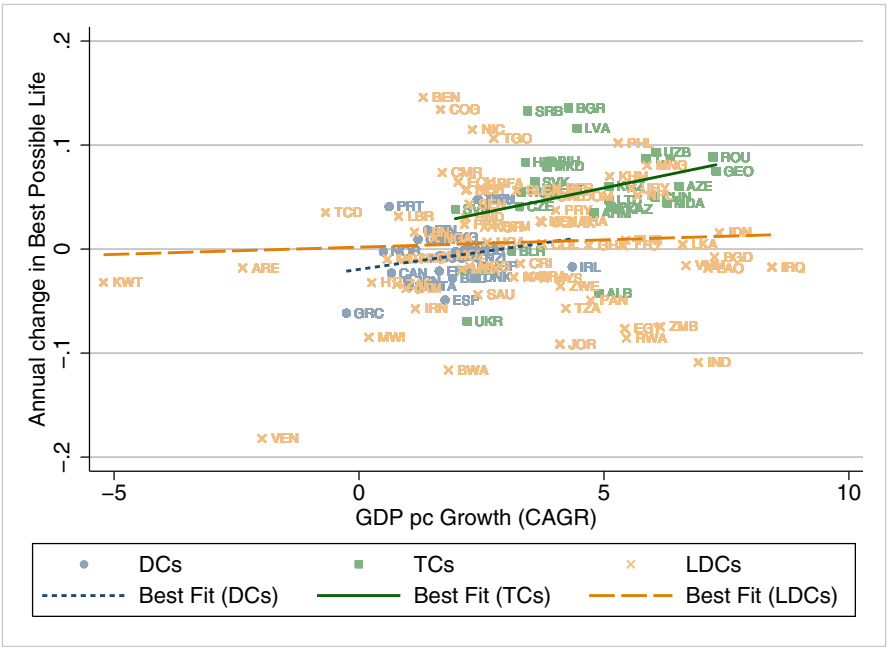

Fig. 7 Growth rates of best possible life and GDP per capita three samples: GWP data from 2005 to 2019. (Notes: $SWB\ Growth_{cg} = -0.020\ [0.014] + 0.007 * GDPpcGrowth_{cg}\ [0.007] + 0.028 * TC_{cg}\ [0.034] + 0.003 * TC_{cg} * GDPpcGrowth_{cg}\ [0.009] + 0.021 * LDC_{cg}\ [0.020] + -0.005 * LDC_{cg} * GDPpcGrowth_{cg}\ [0.008]$)

conclusions. The TCs experienced faster growth of both GDP per capita and Best Possible Life, the latter of which is confirmed by the large, though insignificant group effect reported in the figure notes. The TCs seem to have a positive happiness-income relation; however, it is not statistically different from the DCs. If we further shorten the time series, reducing the minimum from a length of 12 to 10 years, then the relation shifts further toward the short-run and a significant positive happiness-income relation emerges even in the pooled sample of Full-Cycle countries (in contrast with Fig. 5). These results are omitted for brevity, but included in an earlier expanded analysis (Easterlin and O'Connor 2020, pt. Table 3, cols. 4–6). This change, from reducing the duration, is consistent with Bartolini and Sarracino (2014), which finds the Easterlin Paradox disappears as the time series length is shortened, in effect, as the short-run positive relation comes to dominate the results.

Whether the happiness-income trend relation is statistically significant or not, the magnitude remains small. Based on the largest magnitude across all estimations, it would still take 100 years for a one percentage point increase in the growth rate to raise happiness by one point (based on the TCs slope in Fig. 7: 0.01, calculated as the sum of the main effect and the interaction term in the TCs).

In sum, when the basic data are (correctly) confined to the *trends* in happiness and income, the latest evidence supports the conclusion of the Paradox – a more rapid uptrend in GDP per capita is not accompanied by more rapid growth of happiness.

Understanding the Easterlin Paradox

The starting point for understanding the paradoxical cross-sectional and time-series findings is the discovery by psychologists Amos Tversky and Daniel Kahneman – when people evaluate a particular circumstance they have in mind a *reference level*, an internal benchmark against which they judge the situation (Tversky and Kahneman 1991). In many cases this benchmark is established by social comparison, that is, by the situation of others (cf. Clark et al. 2008b; Senik 2009). For example, is a man whose height is 5 feet 9 inches a *tall* man? The answer depends on one's reference level for height. In India, where the average height of men is 5 feet 6 inches, he is likely to be considered tall, because Indians are comparing him to an internal benchmark established by those around them. But in the United States, where the average height of men is 5 feet 10 inches, he would not be so regarded. Americans' reference level for height is greater than that of Indians, because the "others" – the persons with whom their internal comparisons are being made – are, on average, considerably taller than those with whom Indians are making comparisons.

Similarly, how a person feels about a given amount of personal income – whether it is a lot or a little – depends on how that income compares with others' incomes, that is, how it measures up relative to one's internal reference level for income. So, this benchmark enters the analysis along with income, as a determinant of one's happiness. At a point in time, those with high incomes are happier than average, because most of the people with whom they compare themselves are worse off. In other words, the incomes of the more affluent are above their income reference

levels. Conversely, those with low incomes tend to be less happy, because most of those with whom they compare themselves are doing better. The incomes of the less affluent are below their income reference levels. Higher happiness goes with higher income; lower happiness, with lower income. At a point in time, happiness and income are positively related – *the positive cross-section relation of the Paradox.* This positive cross-section relationship – the rich being happier than the poor – turns up in the data year after year, since the same types of point-of-time comparison are continually being made by rich, poor, and everyone in between.

Over time, as the economy's total output increases, the incomes of people move up more or less together, so the incomes of "others" – people's internal income reference levels – increase for both the more and less affluent as well as those in the middle. The more affluent have higher incomes, but so do those with whom they are comparing themselves. The same is true of the less affluent. For everyone, the positive effect on happiness of the growth in one's own income is being undercut by the growth in one's benchmark income. As a result, happiness, on average, remains unchanged – *the nil time series relationship of the Paradox.*

If one person's income increases substantially more than others, her or his happiness will increase. This is evidenced by lottery wins where big gains are found to increase happiness (Oswald and Winkelmann 2019). But if everyone won the lottery, no one would be happier, because then income reference levels would increase as everyone's income rose. Of course, it is impossible for everyone to win the lottery, so the positive effect of big lottery gains on one's happiness remains.

Hedonic adaptation has also been used to explain the time-series arm of the Paradox. People adapt to a great many things (Clark et al. 2008a), income included (Clark 2016) (see also the chapter "The Economics of Happiness"), thus eroding the benefits of income growth in the long run; however, adaptation cannot explain the cross-sectional findings. In order for richer people to be happier, they would need to receive positive income shocks more frequently than poorer people – meaning income inequality would need to continually grow. Empirically, this mechanism does not hold, or if it does, the positive relationship is offset by the negative aspects of income inequality (e.g., perceived distrust and lack of fairness (Oishi et al. 2011)). Both Mikucka et al. (2017) and Diener et al. (2013) find greater income inequality reduces the relationship between GDP and happiness. While adaptation cannot explain the Paradox alone, it does represent an important mechanism affecting the happiness-income trend relationship. Indeed, there is a significant, somewhat contested, literature on set-point theory within psychology, which argues individuals adapt to life circumstances, quickly and completely returning to their so-called set points (Lucas et al. 2003; Diener et al. 2006). Adaptation is likely due in part to changing aspirations over time (Van Praag and Frijters 1999; Easterlin 2001).

There remains the question of why income and happiness fluctuate together? During a recession, income is, on average, decreasing for everyone, so if only social comparison were at work, people should not feel less happy because others are also in the same situation.

The answer to this conundrum is that in a recession income reference levels are no longer determined by social comparison but by comparison with one's pre-recession

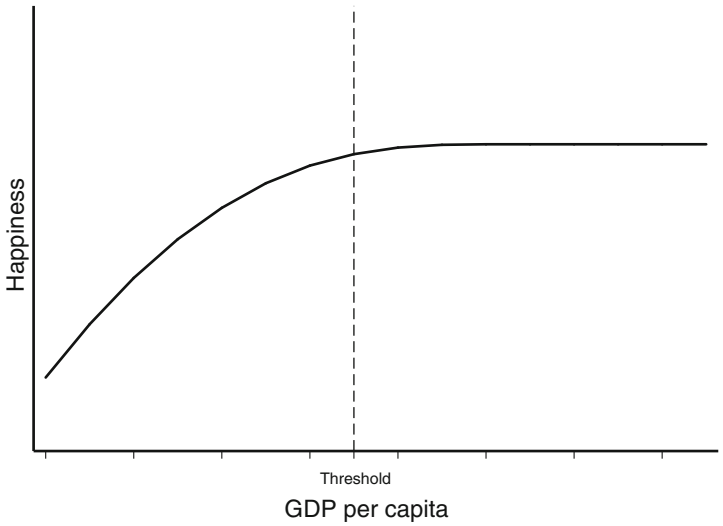

Fig. 8 Regression line fitted to international cross section of happiness and real GDP per capita: an illustration. (Notes: Among low income countries (left side of threshold) those with higher GDP per capita tend to be happier; among high income countries (right side of threshold) there is little difference in happiness as GDP per capita gets bigger. Source: Author illustration)

peak income. This shift in benchmark is due in part to the contractual debts accumulated when income was rising. Declining income makes it harder and harder to meet one's previous consumption standards and debt obligations. The reference level for income now becomes one's previous high income before the recession hit, the income making it possible to meet comfortably one's financial obligations and maintain one's customary lifestyle. True, others are in the same boat, but that does not help meet one's monthly mortgage or rent payments. As income falls, the shortfall from one's previous peak – one's current benchmark income – increases, the pressure of fixed debt payments grows, and happiness declines. After rock bottom, incomes move up, the heavy burden of debt gradually diminishes, and happiness is slowly restored.

Loss aversion also explains why individuals' reference points shift to their previous income during a recession. According to loss aversion, losses are experienced more strongly than equivalent gains (Tversky and Kahneman 1991). When incomes rise, the benefit of own income increase is relatively small and undercut by social comparison. But when incomes decrease, the impact of income loss is felt more severely due to loss aversion. As recovery kicks in, incomes return to individuals' reference points and happiness reverts to its pre-recession level. Indeed, recent research by Jan Emmanuel DeNeve and his collaborators demonstrates that the short-run relationship between income and happiness derives primarily from economic contractions not expansions (De Neve et al. 2018).

In short, social comparison can explain both the cross-sectional and long-run time-series findings. Richer people benefit from income comparisons, but when

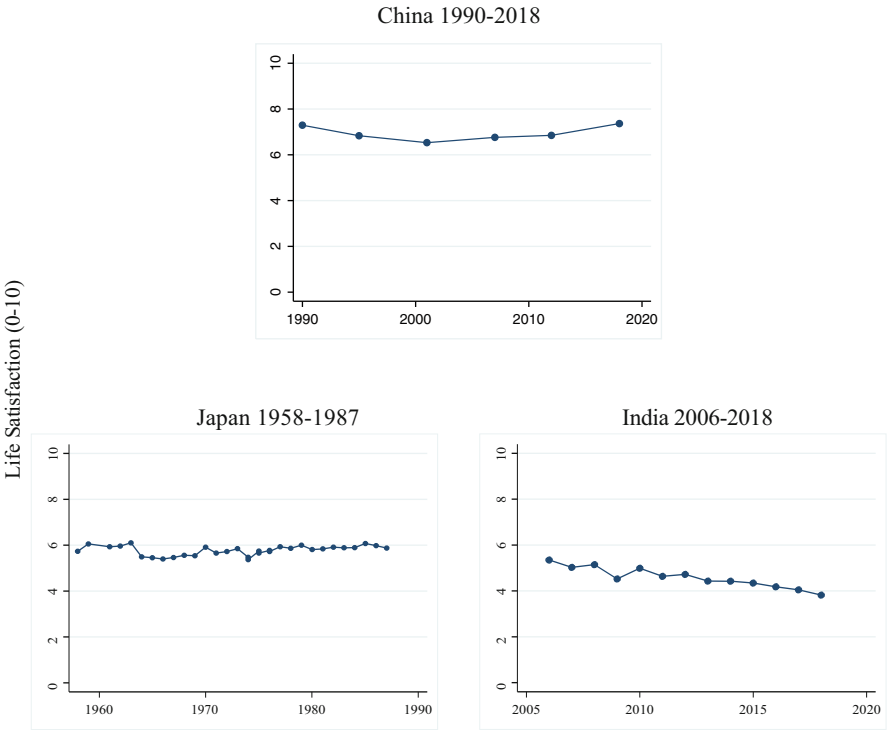

Fig. 9 Happiness in three formerly poor countries during subsequent periods of very rapid economic growth. (Notes: Despite very rapid economic growth in the period shown, happiness in all three countries was flat or declining. The response scale for Japan is 1–4 but was converted to 0–10 for comparable presentation. Source: China – World Values Survey; Japan – (Veenhoven 2020); India – Gallup World Poll)

incomes increase, social comparison determines the reference level and undercuts the benefits of income in the long run. On the other hand, happiness and income fluctuate together largely due the predominance of own-income comparison during periods of recessions. When incomes decrease, comparison with one's previous personal best takes over due to loss aversion and the growing burden of debt repayments. Of course, this is a simplified picture; in reality the switch between the two types of comparison is not instantaneous. Both when income is rising and when income is falling there is a gradual transition from one determinant of the benchmark income to the other.

Since the initial formulation of the Paradox over 40 years ago many explanations have been discussed in the literature. Two of the most prominent papers that attempt to explain the Paradox are generally consistent with each other (Easterlin 2001; Clark et al. 2008b). For more recent studies, see Becchetti et al. (2008); Bartolini and Sarracino (2014); Beja (2014); De Neve et al. (2018) . For the substantial literature

suggesting that happiness depends on relative income, see Clark et al. (2008b) and references therein.

Criticisms of the Paradox

There are three statistical relationships between happiness and GDP per capita. Cross-section data display a positive association, and time-series statistics show a positive short-run relationship, but a nil association for the long-run trends. It is the third, the trend relationship, on which the Paradox depends; critics of the Paradox mistakenly draw on the first two relationships to refute the third.

Those who see the cross-section association as disproving the Paradox tend to argue as follows. If, at a point in time, richer countries are happier, then the richer countries must have experienced at some time in the past an increase in happiness in conjunction with rising per capita income (Arrow and Dasgupta 2007; Guriev and Zhuravskaya 2009; Bok 2010). Cross-section evidence is also cited in this vein in the Stiglitz-Sen-Fitoussi Report (2009).

There are several problems with this argument. First of all, if economic growth raised happiness of high-income countries at some time in the past, then one would expect to find evidence of this effect in current time series for less-developed countries. Yet, as the data above demonstrate, there is no systematic relationship in these countries between the trends of GDP per capita and happiness. Second, the argument assumes that the positive cross-section association reflects a causal relationship running from per capita GDP to happiness. The possibility that some other factor(s) such as public policy might be at work is not even considered (cf. Easterlin 2013a, b, 2019b). Finally, the essential meaning of "paradox" is the *contradiction* between the first and second clauses of the statement – in this case, between the cross-section and time-series results. That scholars would cite the cross-section results as disproving the time-series findings is to ignore the very meaning of "paradox." If there were no positive relation in the cross section, there would be no contradiction and no paradox! The cross section does not disprove the time series, any more than the time series disproves the cross section. The challenge is to reconcile these seemingly contradictory findings, as has been done here.

A variant of the foregoing critique is based on a plot of happiness against income where the happiness-income relationship is curvilinear, as in Fig. 8. This is because income in this case is plotted on an arithmetic, rather than logarithmic, scale. In the curvilinear case, when incomes are low, greater happiness coincides with higher income. Eventually, however, as income reaches relatively high levels, happiness levels off. In this case the Paradox does exist but kicks in only after a country reaches some reasonably high level of GDP per capita – the so-called threshold. Above the threshold, there is no further boost in happiness as income goes up. This view is popular among advocates of economic growth who point to diagrams like Fig. 8 as demonstrating that in lower income countries economic growth does raise happiness; it is only in higher income countries that the Paradox holds. Consistent with this comparison among nations, cross-section data for persons within a country paint

a picture similar to Fig. 8. In an analysis of recent United States statistics Kahneman and Deaton (2010) set the threshold at $75,000.

According to Fig. 8, a low-income country whose income is growing over time should follow the upward sloping segment of the curve depicting increasing happiness – the segment of the curve to the left of the broken line. The empirical findings presented earlier indicate that is not the case (see the less-developed countries in Figs. 6 and 7). A further illustration is provided by the experience of three countries which in recent times start from low-income levels but have had growth rates of GDP per capita that are among the highest ever experienced – China 1990–2018, Japan 1958–1987, and India 1995–2018.

In none of these countries did happiness increase as suggested by Fig. 8. In all three, despite unprecedented growth, happiness was flat or even declining (Fig. 9). Similarly, there is no time-series evidence of a happiness threshold at an individual income level of $75,000 or any other value (Easterlin 2005). Contrary to the cross-section data, the time-series evidence demonstrates that the Paradox holds for both rich and poor, whether countries or groups of individuals within countries. Social comparison is at work everywhere. As incomes rise, even from very low levels, so too do people's notions of what constitutes the good life. The result is no improvement in happiness, even though material conditions have noticeably improved.

Empirical studies trying to disprove the time-series arm of the Paradox typically rely on series that are too short to test the Paradox (Easterlin 2017). Consider Fig. 1, for example. If the data cover only the very last trough-to-peak expansion, one will find happiness and income to be positively related – the two series are moving up together (the solid lines). To test the Paradox, however, one wants much longer time series – the longer, the better – so that one can estimate the trends in happiness and income (the broken lines).

The work of Stevenson and Wolfers (2008), subsequently updated with the collaboration of Sacks (Sacks et al. 2012), provides an example of confusing the short- and long-term movements. In their most recent article, the authors rely on two data sets – the WVS and the Eurobarometer. In regard to the WVS, the authors analyze data from the first four waves.

Inexplicably, they chose not to include data from wave five, although those data were available to them 4 years before the article's publication. Including wave five would have added five to 7 years to the length of the series they were studying. By omitting wave five, they end up with most countries' series about a decade long and with a statistical result dominated by the positive association due to short-term fluctuations.

Their Eurobarometer analysis repeats this story. Although the data for some countries spanned as much as 30 years or more, the authors unaccountably subdivided the series for all countries into 10-year segments. As with the exclusion of wave five of the WVS, the outcome was a much shorter time series and a result chiefly reflecting the positive short-run association (though in this case, one that was not even statistically significant).

In sum, in their treatment of the data in both the WVS and Eurobarometer studies, the authors made decisions that go in the wrong direction, shortening the series and ending with the positive association between the fluctuations in happiness and GDP.

Others criticize the time-series evidence on conceptual grounds citing the bounded nature of happiness measurement. With happiness limited to a maximum of 10, while GDP is unbounded, it is claimed that it is not possible for happiness to increase indefinitely. While true that it is impossible for happiness as measured to improve indefinitely, there is currently ample scope and precedent for positive change over a significant period of time. According to the latest World Happiness Report (Helliwell et al. 2020), which is based on the Gallup World Poll, more than 50 countries report being closer to their perceived worst possible lives than their best. Even the highest-ranking countries report a mean score of less than 8, leaving considerable room for substantive improvement. For further discussion of issues pertaining to measurement, including boundedness, and best practices to address them, see the OECD's (Organization of Economic Co-operation and Development) recommendations for measuring happiness (OECD 2013).

Typically, many of the criticisms raised when challenging the time-series arm of the Paradox stem from a misunderstanding of the Paradox. When one estimates the relation between national trends in happiness and GDP, one obtains consistent evidence indicating there is no meaningful relationship between the two.

Some analysts think the Paradox implies that public policy can do little to help low- income countries. That is wrong. The Paradox tells us that economic growth in itself will not make people happier. But economic and social policies can. Rather than a primary focus on raising GDP, the emphasis should be on employment and the social safety net (Easterlin 2013b). There is no better example than the case of China in the 1990s. Even though GDP per capita increased dramatically, happiness declined as employment collapsed and the social safety net unraveled. Once the government took up policies to improve employment and the safety net, happiness turned upward (Easterlin et al. 2017). Further evidence comes from Japan. In the 1980s Japan's economy grew rapidly and happiness was relatively stable, while in the 1990s– 2000s, economic growth slowed and happiness began to improve. This improvement, the authors of a recent study argue, is due to an expansion of the social safety net (Sarracino et al. 2019).

Summary

The major implication of the Easterlin Paradox is that economic growth does not in itself increase happiness in the long-term. This is largely due to the prevalence of social comparison in people's evaluations of their income. As economic growth raises incomes generally, the positive effect on happiness of growth in one's own income is undercut by the growth in the incomes of one's comparison group. Happiness can be increased, however, even at fairly low levels of GDP per capita, by policies promoting full employment and a strong social safety net (Easterlin 2013b, 2021).

The Easterlin Paradox started with the time-series evidence of one country; gradually this expanded to numerous developed countries and then less developed countries. Today, with more than 120 countries, albeit over a relatively shorter period, the Paradox seems to be settled. The evidence, when appropriately considering the trends of happiness and GDP, has been consistent over the past nearly five decades of research. Growth in itself does not contribute meaningfully, if at all, to happiness in the long run. Perhaps in the future more data and more advanced techniques will be able to tease out a significant relationship, but it seems likely that it will be small and of little substantive importance. The more important research question is what does contribute to lasting happiness?. Work here is ongoing.

Cross-References

- ▶ Happiness Versus Utility
- ▶ Measuring Subjective Well-Being
- ▶ The Economics of Happiness
- ▶ Unemployment and Subjective Well-Being
- ▶ Wage Satisfaction and Reference Wages

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