

Why do economists study happiness?

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Abstract

Recently economists have expressed increasing interest in studying the determinants of happiness. Their main task has been to identify economic and non-economic sources of well-being to define policies aimed at maximising happiness in nations. As yet, it has not been precisely explained why ‘happiness economics’ is actually a part of economic science. In this article, we show that happiness can be an economic concept providing a critical review of the literature on (a) economic applications of happiness data and (b) economic consequences of happiness. Happiness data have been used to analyse microeconomic phenomena and to value non-market goods. Happiness may act as a determinant of economic outcomes: it increases productivity, predicts one’s future income and affects labour market performance. A growing number of happiness studies indicate a role of personality traits in understanding the link between well-being and economic outcomes.

JEL Codes: C50, I31, J20, J30

Keywords

Happiness, labour market outcomes, personality traits, productivity, subjective well-being, utility

Introduction

Why do economists study happiness? To find the answer to this question, we review the well-being literature and show that economic research on happiness should not be seen as simply the *econometrics* of happiness, that is, defining the determinants of well-being

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but rather as an actual *economics* of happiness, that is, implementing happiness into economic models and using it as a predictor of economic outcomes.¹

Initially, economists studied happiness in relation to economic growth. Easterlin (1974, 1995) showed that even though the average level of reported happiness is higher in richer countries, economic growth is not followed by happiness growth (a result known as ‘Easterlin Paradox’). This is because people compare their incomes with others, that is, social comparison, and because people become accustomed to higher incomes, that is, hedonic adaptation. In consequence, the happiness–income relationship has a ‘static nature’; there is a positive correlation at a given time, but no correlation is found between changes in time, so raising the incomes of all will not increase the happiness of all. More recent studies have proposed an alternative approach to explaining the Easterlin Paradox. Whether economic growth improves the human lot, or does not, may depend on its social costs. If the economy continues to grow at the cost of other components of well-being, such as human relationships and social cohesion, it may lead to a drop in people’s well-being (Bartolini and Sarracino, 2015). Mikucka et al. (2017) show that economic growth has a positive effect on life satisfaction in the presence of increasing social trust and decreasing income inequality.

The original and the alternative explanations of the Easterlin Paradox all treat happiness as a dependent variable, explained with various economic and non-economic factors, and this has been the standard approach in ‘happiness economics’ (MacKerron, 2012). But why should studying happiness be considered a part of economic science? What does happiness have to do with the key concepts of economics, such as efficient use of resources, decision making and productivity? Are happiness regressions the final scope of well-being research, or can we use them for further economic analysis? Is it plausible to perceive economic circumstances of life (e.g. income and unemployment) solely as *determinants* of happiness or also as outcomes *determined* by happiness?

In the first part of the remainder of this article, we summarise works using happiness as a proxy of utility in economic analysis. ‘Happiness data’ have been applied to empirically test certain microeconomic phenomena and to value non-market goods, such as health status, family size, climate and noise.² Next, we review recent results showing that well-being may be a determinant of economic outcomes. Happiness increases productivity, predicts one’s future income and affects labour market performance. Finally, an increasing number of happiness studies indicate a role for personality traits in assessing the link between well-being and economic variables.

Economic applications of happiness data

Happiness and microeconomic phenomena

In their textbook *Economics*, Krugman and Wells (2013) state,

You might imagine that the efficient use of resources has something to do with money, maybe that it is measured in dollars-and-cents terms. But in economics, as in life, money is only a means to other ends. The measure that economists really care about is not money but people’s happiness or welfare. (p. 14)

Indeed, the argument that initially encouraged economists to apply happiness data in their studies was that reported levels of well-being could serve as a measure of utility. Rayo and Becker (2007) proposed considering happiness to be a part of economic science relating it directly to the process of decision making and maximising utility:

[W]e presume that maximizing happiness is the fundamental goal of the individual when making decisions. In fact, we believe that happiness evolved precisely as a decision-making device. In this sense, we consider that maximizing happiness is closely linked, if not identical, to maximizing utility in the standard economic way. (p. 487)

Using happiness data to estimate utility function has created an opportunity for empirical tests of certain microeconomic concepts. According to the principle of *diminishing marginal utility*, ‘the more of a good or service you consume, the closer you are to being satiated – reaching a point at which an additional unit of the good adds nothing to your satisfaction’ (Krugman and Wells, 2013: 272). Analysing data from more than 450,000 respondents surveyed in the Gallup-Healthways Well-Being Index study, Kahneman and Deaton (2010) show that emotional well-being rises with the level of earnings, but there is no further progress in happiness beyond an annual income of USD75,000. Using six different national and international data sources, Layard et al. (2008) find evidence that marginal utility of income declines with income and estimates a numerical value for the rate at which this occurs. On the basis of their estimates, the authors conclude that marginal utility of income decreases somewhat *faster* than in proportion to the increase in income.

Two other microeconomic concepts well-verified with happiness data are *habit formation* and *interdependence of preferences*. As explained by Kapteyn (1985), ‘Habit formation is the phenomenon by which my behaviour in the past (or results of that behaviour) influences my present preferences. Preference interdependence denotes the phenomenon by which behaviour of others influences my preferences’ (p. 8). Numerous studies on the happiness–income relation have shown that individual well-being depends on one’s current level of earnings and on (a) past earnings (Bartolini et al., 2013; Di Tella et al., 2010), (b) the aspiration level of earnings (Knight and Gunatilaka, 2012; McBride, 2010; Stutzer, 2004) and expectations about future earnings (Liu and Shang, 2012; Tsui, 2014) and (c) the earnings of others (Clark et al., 2008; Ferrer-i-Carbonell, 2005; Luttmer, 2005).

Happiness and valuation of non-market goods

Another purely economic application of happiness data is its use as the means to value non-market goods. Deaton and Stone (2013) note that different subjective well-being (SWB) measures have been used to capture various difficult-to-measure phenomena, for example, the trade-off between unemployment and inflation, the costs of air pollution or the value of environmental amenities.

The *equivalent income* approach is a method to assign monetary value to non-market dimensions of life. As explained by Decancq et al. (2015b), ‘the equivalent income is the level of income that would make the individual indifferent ... between his current

situation and the hypothetical reference situation where he would be at the reference values for all non-income dimensions of life' (p. 94). The method has been used for valuation studies in health economics to value illnesses (Ferrer-i-Carbonell and Van Praag, 2002; Groot et al., 2004; Howley, 2017), hours of provided informal care (Van den Berg and Ferrer-i-Carbonell, 2007) and the death of a relative (Oswald and Powdthavee, 2008). In ecological economics, the equivalent income approach has been used to assess the value of climate (Brereton et al., 2008; Frijters and Van Praag, 1998), airport noise (Van Praag and Baarsma, 2005), air quality or pollution (Levinson, 2009; Luechinger, 2009; Welsch, 2006) and flood disasters (Luechinger and Raschky, 2009). Finally, the technique has also been used to value other non-income goods, such as family size (Plug and Van Praag, 1995), marriage (Clark and Oswald, 2002), social relationships (Powdthavee, 2008) and terrorism (Frey et al., 2009).

Below we describe in detail how the equivalent income approach can be used to value non-market goods. Following the example proposed by Ferrer-i-Carbonell (2013: 52), suppose we want to estimate an individual's satisfaction S_i as

$$S_i = \alpha \log(y_i) + \beta h_i + \sum_k \gamma_k z_k + \varepsilon$$

where y_i is the individual income, h_i is the variable we would like to value (e.g. individual health status measured by the number of chronic illnesses), $\gamma_k z_k$ are the control variables (i.e. socio-demographic characteristics: sex, age, marital status, etc.) and ε is the error term of standard properties. The relation between estimated α and β can be used to derive the monetary value of a marginal change of health. It is equal to the change in income that, in terms of satisfaction/utility, would be equivalent to a change in the initial health status.

The equivalent income method has two distinctive features relevant for economic definition of utility. One, the happiness equation includes income in logarithm terms, allowing for the decreasing marginal utility of income. In consequence, the monetary value of a non-market good will actually depend on the current level of income: richer individuals will require larger income compensation. Two, as observed by Ferrer-i-Carbonell (2013),

this method can only provide a monetary value for goods that have no related market or whose related market fails. Suppose we want to know the cost of commuting time. With no market failures, the cost of commuting would be embedded into wages and house prices, and thus commuting should have no impact on happiness, once we control for income. (p. 52)

The case of commuting time has been analysed by Stutzer and Frey (2008), who note that the related time loss will only affect happiness if the housing and labour markets do not entirely compensate for commuting time. Therefore, the monetary value of time estimated with the equivalent income method includes only the costs that are not already incorporated within the house prices and wages.

Van Praag and Baarsma (2005: 224) apply a mixed approach to valuation studies. They value noise damage caused by aircraft around Amsterdam Airport as 'the sum of hedonic house price differentials and a residual cost component', whereas '[t]he residual

costs are assessed from a survey, including an ordinal life satisfaction scale, on which individual respondents have scored'. Their estimates show that a monthly net household income of 1500 EUR would have to be increased by roughly 34 EUR to compensate for a noise increase from 20 to 30 Ku, while an increase in noise from 20 to 40 Ku would require an income compensation of approximately 57 EUR.³

Decancq et al. (2015a) introduce an improved form of the equivalent income method in which they control for unobserved characteristics (individual fixed effects) influencing life satisfaction and, therefore, the estimated values. Additionally, they allow for preference variation among individuals releasing the assumption of identical preferences, represented by perfect substitutability between components of satisfaction/utility. In their work, they adopt a basic linear happiness equation with individual fixed effects α_i ,

$$S_{it} = \alpha_i + \mu_t + \gamma_1' \ell_{it} + \gamma_2' Z_{it} + d_{it}$$

where S_{it} is the life satisfaction expressed by individual i in period t , ℓ_{it} is a vector of variables capturing the life conditions of individual i (e.g. income, quality of housing and health), Z_{it} is a vector of personal characteristics (e.g. gender, age and marital status) which act as scaling variables, d_{it} is a disturbance term and (γ_1, γ_2) is a vector of coefficients to be estimated. In order to model the differences and changes in preferences, Decancq et al. (2015a: 1091) introduce interactions of the conditioning variables Z_{it} with income y_{it} and other life dimensions q_{it}

$$S_{it} = \alpha_i + \mu_t + (\beta + \Gamma Z_{it}) \ln(y_{it}) + (v + \Lambda Z_{it})' q_{it} + \delta' Z_{it} + d_{it}$$

where (β, v, δ) is a vector of direct effects, and Λ and Γ are matrices with interaction effects to be estimated. As pointed out by the authors, the vector of marginal rates of substitution (MRS) between income and the non-income dimensions of satisfaction will be individual and time-dependent

$$MRS_{yq_{it}} = y_{it} (v + \Lambda Z_{it}) / (\beta + \Gamma Z_{it})$$

An important remark made in Decancq et al. (2015a) is that the preference variation introduced in their model remains limited, because it still requires the assumption that individuals characterised by the same values of the conditioning variables Z_{it} have identical preferences.

Happiness as a determinant of economic outcomes

Happiness and productivity

An alternative approach in happiness economics is to treat psychological well-being as a determinant of economic outcomes. In their analysis of well-being in the context of implications for public policy, Pavot and Diener (2004) note, 'SWB is associated with good success in the work-place. Happy workers are productive, satisfied workers, and their positive affect is associated with good organizational citizenship, good relations

with coworkers, and improved conflict resolution' (p. 685). The relation between worker's well-being and productivity has been analysed in different areas of social science. In his excellent review, Russell (2008) outlines several earlier contributions from managerial and psychological studies supporting the 'happy-productive worker' hypothesis:

- George and Brief (1992) show that individuals with higher SWB are more engaged and involved in their work, earn more money, have better relations with supervisors and coworkers and are better organisational citizens;
- Staw et al. (1994) report that employees experiencing higher dispositional positive affect receive higher pay and higher supervisor ratings;
- Spector (1997) notes that employees reporting higher satisfaction with life and their jobs are also more cooperative and more helpful to their colleagues, are more punctual and time efficient, show up for more days of work and stay with a company longer than dissatisfied employees;
- Judge et al. (2001) suggest a positive relationship between job satisfaction and job performance, underlining the crucial role of satisfaction with one's supervisor;
- Wright and Cropanzano (2000), Cropanzano and Wright (2001) and Wright et al. (2002) provide evidence that employees who report experiencing a greater balance of positive emotional symptoms over negative emotional symptoms receive higher performance ratings from supervisors than those who report feeling more negative than positive symptoms of emotion;
- Harter and Schmidt (2000) and Harter et al. (2003) claim that companies with the most employees who have high levels of well-being report dramatically higher monetary returns than those in the lowest quartile of employee well-being;
- Keyes et al. (2000); Harter and Schmidt (2000) and Harter et al. (2003) point out that businesses with more employees who have high levels of well-being also tend to report greater customer satisfaction and loyalty, greater profitability, more productivity and lower rates of turnover;
- Harter et al. (2003) conclude that employee engagement generates higher frequency of positive affect (e.g. job satisfaction, commitment, joy, fulfilment, interest and caring), which then relates to employee retention, work performance, creativity and business outcomes.

Lucas and Diener (2003) make a critical remark on the results coming from the happy-productive worker line of research. The authors emphasise that even though happier individuals are more sociable, active, self-confident, healthier, more creative and more likely to use quick and efficient strategies for processing information, the specific impact of these factors on worker's productivity will depend on the nature of the worker's task.

More recent psychological studies on the happiness-productivity relationship have used more sophisticated measures of SWB and more developed methodologies. In order to distinguish between happiness as a *trait* and happiness as a *state*, Zelenski et al. (2008) introduce multiple measures of happiness, repeated measures (i.e. experience sampling) and prospective measures. In their study of 75 directors employed in the private sector and the Canadian federal government, they find that happiness may, indeed, foster productivity: happy workers are productive workers (trait level of analysis), and workers are

more productive when in happy moods (state level of analysis). Tsai et al. (2007) investigate 306 sales agents and their immediate supervisors from five insurance companies in Taiwan and show that ‘employee positive moods predicted task performance indirectly through both interpersonal (helping other coworkers) and motivational (self-efficacy and task persistence) processes’ (p. 1570). Boehm and Lyubomirsky (2008) review the literature in support of the view that differences in individual happiness explain why some workers are more successful than others. The outlined studies use three different methodological frameworks to answer three different questions. One, cross-sectional evidence: do happy people engage in successful behaviours? Two, longitudinal evidence: does happiness precede success in the workplace? Three, experimental evidence: does happiness lead to success in the workplace? Boehm and Lyubomirsky (2008) emphasise that the first two approaches do not resolve the issue of causality, while the shortcoming of the third approach is a limited sample size and, therefore, an inability to make concluding general statements based on the results. These issues are overcome in two most recent contributions to the ‘happy-productive worker’ literature: Oswald et al. (2015) and Di Maria et al. (2017).

Di Maria et al. (2017) tackle the issue of generalisability and analyse the happiness–productivity relation at the aggregate level. Using representative micro-data from the European Social Survey (ESS) merged with AMECO⁴ macro-data for 20 European countries, they establish that SWB can be a candidate variable to study total factor productivity, and they adopt data envelopment analysis (DEA) to compute productive efficiency indices. Their results indicate that happiness is an input and not an output to production. Oswald et al. (2015) overcome the issue of causality and provide a clear evidence of the existence of a causal link between human well-being and human performance. In their study, a group of randomly selected participants are exposed to different types of short-run happiness shocks, for example, watching a short happiness video clip or receiving some chocolate, fruit or a drink. Importantly, the impact of these shocks on happiness was confirmed by the participant’s answers to SWB questions asked before and after the treatment. Next, all the participants (including the control group, who watched only a calm placebo film) carried out various tasks measuring their productivity, for example, timed mathematical additions, and were paid for the correct solutions. The results showed that the treated individuals had approximately 12% greater productivity. Oswald et al. (2015) also studied the productivity effects of major real-life shocks, such as bereavement and family illness. They concluded that the lower happiness caused by bad life events is systematically associated with lower productivity.

The results obtained by Oswald et al. (2015) are in line with those coming from behavioural studies: current emotional state has a significant effect on decision making, problem solving and behaviour (Hermalin and Isen, 2008); unhappiness may lead to a lack of mental concentration (Killingsworth and Gilbert, 2010).

Happiness, wages and labour market outcomes

The positive impact of happiness on productivity explains why some other key economic outcomes may be determined by individual well-being. According to the neo-classical approach, the value of the marginal product of labour is equal to the wage at

the profit-maximising level of employment (see Krugman and Wells, 2013: 536). That is to say, a worker's productivity will strictly determine his or her earnings. In consequence, happiness, as a determinant of productivity, becomes in a natural way also a determinant of wage.

Several longitudinal studies have shown that SWB should be considered a predictor of income. Marks and Fleming (1999) analysed the Australian Youth in Transition panel data, showing that, for several different cohorts, well-being increases in the preceding periods were related to future increases in earnings and to lower chances of being unemployed. In another study, Diener et al. (2002) surveyed more than 7000 students to assess the influence of dispositional affect (defined as self-rated cheerfulness at college entry) on their future economic outcomes. Nineteen years after the survey, the same participants reported their incomes: cheerful students were earning more money in their 30s compared to their less cheerful counterparts. Additionally, they also had higher job satisfaction ratings and were less likely ever to have been unemployed. These results emphasise that happier people are expected to acquire greater wealth across their lifetimes.

In a more recent contribution, De Neve and Oswald (2012), using data from a large US representative panel study (11,000 individuals), demonstrate that adolescents and young adults who report higher life satisfaction grow up to earn significantly higher levels of income later in life. Importantly, having introduced family fixed characteristics, the authors showed that the result holds after controlling for sibling effects. Additionally, De Neve and Oswald (2012) identify the decisive factors shaping the impact of psychological well-being on earnings. The mediators which carry the influence from happiness to income are higher probability of obtaining a college degree and getting hired or promoted, having greater degrees of optimism and extraversion and experiencing lower levels of neuroticism.

Graham et al. (2004), using two waves of the Russia Longitudinal Monitoring Survey (more than 5000 observations), found that people who had higher 'residual happiness' in 1995 had higher earnings and were in better health in a survey 5 years later. The term 'residual happiness' denotes happiness levels that are not explained by the usual determinants of well-being, that is, income, education and socio-demographic characteristics. The obtained results show, therefore, that happiness acts as a predictor of earnings in future periods independently of a current level of earnings. Graham et al. (2004) emphasise that their analysis 'supports the evidence from the psychology literature that happier people earn more income or, more broadly speaking, perform better economically' (p. 336). The authors conclude that 'the same positive cognitive biases such as self-esteem, control, and optimism that affect normal happiness levels may also have positive effects on people's performance in the labour market'.

Numerous psychological studies highlighted the role of emotional well-being in explaining success in employment. Burger and Caldwell (2000) demonstrate that even before finding a job, a happier person is more likely to be invited to a job interview. A study of college students showed that the higher their positive affect prior to graduation, the greater their probability of receiving a job interview 3 months later. In this manner, positive emotions are a distinct advantage when searching for a job. In addition, compared to less happy peers, happy individuals are less likely to lose their jobs (Diener et al., 2002) and more likely to find a new job when unemployed (Marks and Fleming, 1999).

In an interesting contribution to the happiness–employment debate, Lucas et al. (2004) studied 24,000 German citizens over a 15-year time span and showed that a significant drop in life satisfaction can be observed as early as 2 years prior to the job loss. Cornelißen (2009) identifies job satisfaction to be an important determinant of the self-reported probability of job search, which, in turn, predicts actual job changes. These results highlight the predictive role of SWB in understanding an individual's labour market choices and outcomes: unhappiness may cause lower performance at work and, therefore, it may lead to a job loss; unhappiness, caused by job dissatisfaction, may force a job change decision.

Krause (2013: 1) in another work supporting the influence of psychological well-being on economic performance demonstrates that happiness plays an important role in finding reemployment. The author examines the job search results of 2500 unemployed Germans and finds a 'significant inverted U-shaped effect of residual happiness on an unemployed individual's future reemployment probability and re-entry wage, even after controlling for demographic and socio-economic characteristics, labour market histories and future job prospects'. An additional finding was that happiness is a strong predictor for an individual to move from unemployment into self-employment rather than regular employment. Gielen and Van Ours (2014) using data from the German Socio-Economic Panel (SOEP, 1994–2007) found that an unemployed individual who experienced a sharp drop in happiness after a job loss searched more actively for a new job; however, it did not speed up his or her job finding. This conclusion contradicts with the results of two earlier works using data from the British Household Panel Survey (BHPS): Clark (2003) and Mavridis (2010) indicate that people who experience greater drops in well-being upon becoming unemployed have a lower probability of remaining unemployed 1 year later. Mavridis (2015) explains that these findings 'confirm the theoretical prediction from job search theory: search effort and unemployment duration are affected by the utility differential between having a job and being unemployed' (p. 1).

In the most recent contribution on the influence of happiness on labour market performance, O'Connor (2017) uses data from SOEP (1996–2013) to show that happier people have a lower probability of being unemployed. This relation is most likely to be causal as it holds in an instrumental variable setting and is confirmed within the residual happiness framework. The author shows, additionally, that residual SWB is comparable to cognitive ability in explaining wages.

Economics of personality traits

In order to fully understand the relation between happiness and economic outcomes, it is necessary to assess the role of individual differences in personality. Boyce (2010) demonstrates that when explaining SWB, personality traits account for roughly 20% of the unobserved heterogeneity across individuals. In psychology, and recently in economics, personality is assessed through the Big-Five traits defined as follows (Becker et al., 2012):

1. *Openness*. Individual differences in the tendency to be open to new aesthetic, cultural and intellectual experiences;

2. *Conscientiousness*: The tendency to be organised, responsible and hardworking;
3. *Extroversion*: An orientation of one's interests and energies towards the outer world of people and things rather than the inner world of subjective experience;
4. *Agreeableness*. The tendency to act in a cooperative, unselfish manner;
5. *Neuroticism*. A chronic level of emotional instability and proneness to psychological distress.

Several earlier contributions have demonstrated the impact of personality traits on economic outcomes. Mueller and Plug (2006) find that openness and conscientiousness are likely to be rewarded in the labour market, while agreeableness and neuroticism are likely to be penalised with lower wages. Nyhus and Pons (2005) arrive at similar conclusions and show that earnings may be additionally determined by an individual's degree of control. Groves (2005) explains that psychological traits, such as autonomy, social withdrawal and aggression, play an important role in determining female earnings. Borghans et al. (2008) note that personality assessments offer a considerable benefit to designing motivation schemes for employees. They argue that economic incentives may influence individuals differently according to the differences in personality. Uysal and Pohlmeier (2011) claim that psychological attitudes, such as propensity to motivate and control oneself, influence job search intensity. Using SOEP data (1984–2007), the authors find evidence that the instantaneous likelihood of finding a job is positively associated with conscientiousness and negatively associated with neuroticism.

The analysis of personality traits helps understand the relation between SWB and changes in income. Boyce et al. (2010) analyse the role of conscientiousness in explaining the well-being decrease following a negative income shock due to job loss. In a longitudinal study of 9000 respondents, the authors document that after 3 years of unemployment individuals with high conscientiousness (i.e. one standard deviation above the mean) experience a 120% higher decrease in life satisfaction than those with low levels of conscientiousness. These findings emphasise that conscientiousness, which itself has a positive impact on well-being, could turn out detrimental when failure is experienced. Boyce et al. (2016) examine how personality traits relate to aversion to income losses. Their results show that individuals high in conscientiousness have the strongest reactions to income losses, suggesting an elevated loss aversion effect, whereas no such effect is observed for those moderately unconscientious. Boyce and Wood (2011) give an example of how the study of personality traits can provide new insights into standard microeconomic analysis. Using data for more than 13,000 German adults over 4 years, they demonstrate that marginal utility of money changes with personality: individuals with higher levels of conscientiousness obtain more satisfaction in their lives from increases to their household income. Soto and Luhmann (2013) perform a similar analysis using data from three different large-sample longitudinal studies (BHPS, SOEP and Household, Income and Labour Dynamics in Australia (HILDA)). They show that neuroticism consistently moderates the life satisfaction effects of between-person income differences and within-person income fluctuations. In particular, highly neurotic individuals are characterised by greater vulnerability to unfavourable income comparisons (with their own past and with others) and by stronger reactions to negative changes in individual income.

Proto and Rustichini (2015) introduce a quadratic specification in the model linking individual income to life satisfaction. Using data from SOEP and BHPS, they find that neuroticism increases the usually observed concavity of the happiness–income relationship. More neurotic individuals enjoy extra income more if they are poorer and enjoy extra income less if they are richer. Friehe et al. (2014) employ data from the pretest modules of SOEP (2008–2010) to determine which personality traits relate to stronger positional income concerns. The authors provide evidence of a statistically significant link between personality and the self-reported importance of income comparisons (comparison intensity). They estimate a negative association of comparison intensity with agreeableness, which means that individuals characterised by the ‘tendency to act in a cooperative, unselfish manner’ are considerably less concerned about positional competition with others. Piekalkiewicz (2016) obtains similar results, showing that the well-being of trustful and sociable individuals is less affected by income comparisons with their peers.

Importantly for economists and policy makers, psychological traits influencing SWB and economic outcomes are not stable across lifetime and may vary depending on external circumstances. Heckman and Kautz (2013) review the literature on cognitive and non-cognitive skills, and propose to consider personality as a *variable component* of human capital in equations explaining wage and job search outcomes. According to the authors, an individual’s personality should be considered as a set of ‘character skills’, defined as ‘personality traits, goals, motivations, and preferences that are valued in the labour market, in school, and in many other domains’. Heckman and Kautz (2013) explain that

Character is a skill, not a trait. At any age, character skills are stable across different tasks, but skills can change over the life cycle. Character is shaped by families, schools, and social environments. Skill development is a dynamic process, in which the early years lay the foundation for successful investment in later years. (p. 1)

The authors claim that character skills can be fostered and describe in detail numerous examples of interventions from different parts of the world: early-life interventions that begin before formal schooling, education in kindergarten and elementary school, interventions targeted towards adolescents and young adults, apprenticeship programmes for workers and interventions applied to multiple age groups.

Boyce et al. (2013: 302) provide empirical evidence on the variability of individual psychological traits and examine changes in personality of 8600 individuals surveyed in two waves of the HILDA study. Their results show that ‘personality varies at least as much as socio-economic factors that are typically considered as variable, such as income, unemployment and marital status’, and that personality variations are a strong predictor of changes in life satisfaction. Boyce et al. (2013) emphasise that these findings may help inform policy debate over how best to help individuals and nations improve their well-being. Boyce et al. (2015) identify which life events have the strongest impact on the Big-Five personality traits. They investigate data for 6700 Germans using a latent change model and find significant personality changes following a job loss. These results are consistent with the view that personality may be shaped by contextual and environmental

factors (Heckman and Kautz, 2013), suggesting that ‘public policy can play a key role in enabling psychological growth’ (Boyce et al., 2015: 1007).

Conclusion

In 1992, Gary Becker received the Nobel Memorial Prize in Economic Sciences ‘for having extended the domain of microeconomic analysis to a wide range of human behaviour and interaction, including non-market behaviour’. Ten years later, the Prize was won not by an economist but by a psychologist – Daniel Kahneman – who obtained it ‘for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty’.⁵ The first decision of the Nobel Prize Commission showed that the scope of economic analysis should be broadened to encompass the non-economic aspects of life, while the second one highlighted the importance of including psychological factors within the framework of economic analysis.

The standard approach in happiness economics, which treats happiness as an *explained variable*, has integrated ‘insights from psychological research into economic science’ in a twofold manner. One, by using economic circumstances of life to explain psychological outcomes, for example, individual income as a determinant of happiness. Two, by showing how the relation between economic circumstances of life and happiness is shaped by psychological factors (e.g. hedonic adaptation and social comparisons) and by personality traits. Applying happiness data in economic analysis allowed researchers to perform empirical tests of certain microeconomic phenomena and to develop methods of non-market goods valuation.

The alternative approach, which treats happiness as an *explanatory variable*, uses psychological well-being as a determinant of the conventional economic outcomes: productivity, income and employment. For example, it has been shown that happier people have better performance at work and are more efficient in the job search process. Importantly, as policies aimed at developing individual character skills are expected to increase well-being, they should also be seen as possible enablers of better economic outcomes.

Future research should focus on assessing the economic and non-economic benefits coming from greater happiness.

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Notes

1. Throughout the article, we will use the term *well-being* to denote subjective well-being (SWB) reported by individuals. SWB is defined as ‘all of the various types of evaluations, both positive and negative, that people make of their lives’ (Diener, 2006: 399). Dolan et al. (2011) distinguish between three broad types of SWB measures: evaluation (global assessment),

experience (feelings over short periods of time) and ‘eudemonic’ (reports of purpose and meaning, and worthwhile things in life). Overall happiness and life satisfaction are two most common evaluation measures of SWB. Following many benchmark studies (e.g. Easterlin, 2003; Frey and Stutzer, 2000), we will use terms such as *well-being*, *happiness* and *life satisfaction* interchangeably. Well-being can also be assessed by objective measures (see OECD, 2013, 2015).

2. By ‘happiness data’, we mean surveys of the self-reported well-being. Blanchflower and Oswald (2004: 1361) explain why happiness and life satisfaction scores obtained from such surveys are a reliable source of information.
3. Ku stands for ‘Kosten units’ (see Van Praag and Baarsma, 2005: 228).
4. AMECO is the annual macroeconomic database of the European Commission’s Directorate General for Economic and Financial Affairs.
5. Quotes come from Nobel Media (2017).

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