

HAPPINESS, INCOME AND ECONOMIC POLICY

LUIS RAYO* AND
GARY S. BECKER**

When pondering the link between income and happiness, it is useful to think about the human brain in biological terms (Robson 2001a). While “happiness” is a somewhat imprecise concept, its basis is the brain’s approach/avoidance system (Elliot 2008). This system operates over the full spectrum of our experience (from immediate sensations to our expectations concerning the distant future) and constitutes the essential guide for our behavior: when a stimulus causes pleasure or comfort, we wish to approach it, when it causes pain or discomfort, we wish to avoid it. Thus, the question: “Are you happy?” is, at its core, equivalent to the question: “Do you wish to continue experiencing the current set of stimuli?”

Frequently, the approach/avoidance system works best when stimuli are measured in relative terms (Frederick and Loewenstein 1999; Robson 2001b; Rayo and Becker 2007). For example, when a hunter-gatherer is searching for fruit, the quality of her actions is best measured by the amount of food she collects relative to her peers and her past gathering expeditions, rather than the absolute amount, since the latter is more likely to be influenced by variables beyond the individual’s control. Thus, an approach/avoidance system based on relative success constitutes a better guide for the individual’s behavior, and therefore increases her productivity. It follows that our own approach/avoidance system, being the product of natural selection, will tend to measure our material achievements in relative terms.

This observation explains why changes in income typically cause great pleasure (and thus we are

strongly motivated to seek such changes), but also why absolute amounts of income tend to matter much less. Indeed, the existing data from happiness surveys suggest that, once a minimum income level is surpassed, happiness is mostly affected by how an individual’s current income compares to his own past income and the incomes of his peers (see, for example, the surveys in Frank 1985; Frey and Stutzer 2002; van Praag and Ferrer-i-Carbonell 2004; Di Tella and MacCulloch 2006; Clark, Frijters and Shields 2008). In a recent comprehensive study, Stevenson and Wolfers (2008) find a robust logarithmic relationship between income and “subjective well-being” (i.e., subjective well being is proportional to log-income) both within and across countries at a given moment in time. They also find that the semi-elasticity of subjective well-being with respect to income is very similar within a given country and across countries (roughly, between 0.2 and 0.4).¹ However, as pointed out by Krueger (2008), the existing data fails to show a robust and statistically significant link between income growth and average happiness within a given country, which is consistent with the Easterlin Paradox (Easterlin 1995).

Do these findings imply that economic development is pointless? Or that government should impose larger income and/or consumption taxes? We believe that the answer to both questions is no.

Happiness can (and must) be produced

At first sight, the biological approach seems to imply that permanent increases in happiness cannot be achieved, as we only derive satisfaction from outperforming our peers, and even if we succeed, we rapidly habituate to our new higher social rank. Nevertheless, some types of activities are less subject to comparisons and deliver satisfaction in a reliable way. Perhaps the most extreme and objective exam-



* University of Utah. Rayo is grateful to Alexandra Cieslik for valuable suggestions.

** University of Chicago and Hoover Institution.

¹ It is worth noting that some of the questions used to measure well-being are worded in such a way that tends to exaggerate the importance of income (e.g. Krueger 2008). For example, a typical question is: “All things considered, how satisfied are you with your life as a whole these days?” It is reasonable to expect that the answer is directly influenced, among other things, by the respondent’s current level of income.

ple is meditation. Brain scans performed on Buddhist monks show that sustained meditation alters the brain in such a way that approach feelings become the dominant mental experience, as measured by asymmetries in frontal brain activity (Davidson et al. 2003 show that even a few months of meditation can have a striking effect). Of course, meditation is not the only example. Individuals variously report that exercise, engaging work, outdoor activities, and social contact produce reliable satisfaction (Haidt 2006).

While the satisfaction derived from any specific activity is highly idiosyncratic, it seems clear that, regardless of the individual, the following inputs are essential for the household production of happiness: market goods, time, and human capital. For example, some people feel happy when they swim in the ocean, for which they might need: (a) food, a swimsuit, and a ride to the ocean, (b) a free afternoon and (c) the ability to swim as well as the knowledge that swimming leads to happiness in their particular brain. Notice that time and human capital are essential, since simply buying a fashionable swimsuit will have very little effect.

Economic development increases the availability of all three of these inputs. The benefits of economic growth are most obvious when it comes to market inputs. It has been observed, however, that wealthy economies waste considerable resources in the production of goods that are merely positional (i.e. valued by the social rank they convey rather than their intrinsic functionality). Examples of such waste include sports cars that remain stable at 200 miles per hour, but are driven in Manhattan, and wristwatches capable of operating 12,000 feet under water, involving several tons of pressure, but worn in corporate meetings. Nevertheless, on the positive side, economic growth has also delivered numerous goods that constitute legitimate inputs for the production of happiness. For example, technology-intensive sports equipment – ranging from global positional devices to breathable fabrics – has made outdoor activities more accessible and enjoyable.

The availability of time for happiness-enhancing activities also increases sharply with economic growth. Technological innovation and capital growth expand the consumption-leisure budget set through their positive effect on wages and also free up time by improving the efficiency of household production. Moreover, economic development significantly improves health and life expectancy, thus increasing the ultimate availability of time.

A frequently overlooked aspect of happiness is that knowledge of our own household happiness production functions is not automatic. In other words, the human capital necessary to produce happiness must be developed. After all, we innately seek social recognition and material wealth – as did our successful hunter-gather ancestors – which are precisely the outcomes that are subject to the strongest comparisons. But as economies advance, scientific knowledge expands and becomes more widely accessible – including knowledge of the previous fact. Indeed, the most prominent happiness research has been conducted and disseminated in wealthy nations.

Happiness science is still young

If economic development expands the means to produce happiness, why then has it failed to translate into larger increases in happiness?

Our answer to this question is simple. It is only decades ago that happiness became a subject of serious scientific investigation. Thus, very little is yet known about the human brain, and even less has been communicated to the general public. Once we combine this fact with our innate tendency towards comparisons, and modern levels of income being a recent phenomenon, it is hardly surprising that the methods by which income is transformed into happiness have not yet been perfected.

Tax policies

The fact that happiness surveys have shown a relatively weak link between income and happiness has prompted some economists to recommend a sharp increase in income and/or consumption taxes, especially for the highest income brackets (e.g., Frank 1999; Layard 2005). Such recommendations have been further motivated by the observation that many forms of consumption are positional, and therefore wasteful (as noted above). The basic argument is that visible forms of consumption cause a negative externality on other consumers by making them feel less satisfied with what they own. Similarly, it has been argued that conspicuous consumption increases social status. But since status, by definition, is in fixed supply, when one consumer gains status, another consumer must lose it – therefore experiencing a type of negative externality.

Before a firm policy recommendation can be made, however, the exact nature of the negative externality must be identified. For example, if the externality is “local” in the sense that higher consumption primarily affects individuals with similar consumption levels, then, other things equal, the optimal tax rate should be proportional to the population density around the target individual. This observation leads to the rather surprising implication that the marginal tax rate should decrease with income for individuals in the highest segment of the income distribution, since this segment of the distribution is sparsely populated and rapidly loses density (Rayo and Becker 2006). In contrast, if the externality is “global” in the sense that only the amount of conspicuous consumption, and not the identity of the consumer, causes the negative externality, then marginal tax rates on conspicuous goods should be flat over the entire income distribution. Moreover, as shown by Becker, Murphy, and Werning (2005), not every status race creates inefficiencies. For example, if a society allocates status through ownership of a conspicuous “status” good that is in fixed supply, such as land, the negative externality caused by consumption of this good is merely pecuniary. In this case, the externality is fully reflected in the equilibrium price of the status good, and is therefore internalized by the consumers.

Calculating the *magnitude* of the optimal taxes on positional goods is also a nontrivial matter. In fact, virtually every good in the economy can be used for positional purposes, with each good potentially affecting a different subset of the population and to a different extent. For this reason, to be successful in targeting the negative externality, the tax system would need to be highly discretionary and complex. (For example, should a 2,000 designer jacket be heavily taxed? But what if this jacket protects from ultra-low temperatures and might potentially be used in a rescue operation?). Consequently, when facing such a tax system, producers of conspicuous consumption goods would inevitably engage in wasteful tax-avoiding activities, such as influencing public officials and altering the design of these goods to game the tax system.

It has also been argued that the pursuit of status causes individuals to work excessively hard (and therefore enjoy an inefficiently low level of leisure) in order to “keep up with the Joneses.” However, before a corrective policy is carried out, it is essential to understand not only the effect of peer consumption on the marginal utility of consumption, but also

its effect on total utility. Indeed, peer consumption may impact the marginal utility of consumption quite differently than it does total utility – with the sign and magnitude of this impact varying substantially across goods.

Another common recommendation motivated by happiness surveys is the use of redistribution policies to mitigate poverty. Indeed, the marginal impact of income on happiness has been found to be large for low income brackets. While we certainly agree with the existence of such policies, happiness research itself adds little to conventional arguments based on decreasing marginal utility of income and the trade-off between equity and economic growth. Of course, it could be argued that happiness research shows that the marginal utility of income falls even more rapidly than one would expect. However, given that happiness science is in such a premature state, and that there is much to be learned concerning the household production of happiness, we believe that strong inferences cannot yet be drawn concerning the value of income as an input for happiness.

Conclusion

We innately seek social recognition and material success, only to rapidly habituate and strive for more. The result is a volatile happiness level that reverts to its mean. Given that this behavior makes us productive, it is no surprise that it was favored during the course of human evolution. However, some activities do reliably increase happiness. Indeed, we view happiness as the output of a household production function that uses market goods, time and human capital as its inputs. As an economy develops, all three inputs become more abundant.

The fact that happiness surveys have failed to show a strong and robust link between income growth and average happiness does not imply that income growth is useless. We believe that this link is weak because we are only beginning to learn how happiness can and cannot be produced. As happiness science matures and its findings are communicated to the general public, it is reasonable to expect a stronger link to emerge. Moreover, once we adopt the perspective that happiness is the output of a household production function – the details of which are known best by the individual – it follows from standard economic reasoning that government intervention should be kept to a minimum.

References

- Becker, G. S., K. M. Murphy and I. Werning (2005), "The Equilibrium Distribution of Income and the Market for Status", *Journal of Political Economy* 113, 282–10.
- Clark, A. E., P. Frijters and M. A. Shields (2008), "Relative Income, Happiness, and Utility: An Explanation for the Easterlin Paradox and Other Puzzles", *Journal of Economic Literature* 46, 95–144.
- Davidson, R. J., J. Kabat-Zinn, J. Schumacher, M. Rosenkranz, D. Muller, S. F. Santorelli, F. Urbanowski, A. Harrington, K. Bonus and J. F. Sheridan (2003), "Alterations in Brain and Immune Function Produced by Mindfulness Meditation", *Psychosomatic Medicine* 65, 564–70.
- Di Tella, R. and R. MacCulloch (2006), "Some Uses of Happiness Data in Economics", *Journal of Economic Perspectives* 20, 25–46.
- Easterlin, R. A. (1995), "Will Raising the Incomes of All Increase the Happiness of All?", *Journal of Economic Behavior and Organization* 27, 35–47.
- Elliot, A. J. (2008), "Approach and Avoidance Motivation", in A. J. Elliot, ed., *Handbook of Approach and Avoidance Motivation*, Psychology Press, Taylor and Francis Group, New York.
- Frank, R. H. (1985), *Choosing the Right Pond: Human Behavior and the Quest for Status*, Oxford University Press, UK.
- Frank, R. H. (1999), *Luxury Fever: Money and Happiness in an Era of Excess*, The Free Press, New York.
- Frederick, S. and G. Loewenstein (1999), "Hedonic Adaptation", in D. Kahneman, E. Diener and N. Schwarz, eds., *Well Being: The Foundations of Hedonic Psychology*, Sage Foundation, New York, 302–29.
- Frey, B. S. and A. Stutzer (2002), *Happiness and Economics: How the Economy and Institutions Affect Human Well-Being*, Princeton University Press, Princeton and Oxford.
- Haidt, J. (2006), *The Happiness Hypothesis: Finding Modern Truth in Ancient Wisdom*, Basic Books, New York.
- Krueger, A. B. (2008), "Economic Growth and Subjective Well-Being: Comments and Discussion Reassessing the Easterlin Paradox", *Brookings Papers on Economic Activity*, Spring, 95–100.
- Layard, R. (2005), *Happiness: Lessons from a New Science*, Penguin, UK.
- Rayo, L. and G. S. Becker (2006), "Peer Comparisons and Consumer Debt", *University of Chicago Law Review* 73, 231–48.
- Rayo, L. and G. S. Becker (2007), "Evolutionary Efficiency and Happiness", *Journal of Political Economy* 115, 302–37.
- Robson, A. J. (2001a), "The Biological Basis of Economic Behavior", *Journal of Economic Literature* 39, 11–33.
- Robson, A. J. (2001b), "Why Would Nature Give Individuals Utility Functions?", *Journal of Political Economy* 109, 900–14.
- Stevenson, B. and J. Wolfers (2008), "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox", *Brookings Papers on Economic Activity*, Spring, 1–87.
- Van Praag, B. M. S. and A. Ferrer-i-Carbonell (2004), *Happiness Quantified: A Satisfaction Calculus Approach*, Oxford University Press, Oxford, UK.