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Happiness and public policy: a challenge to the profession

Richard Layard¹

The theory behind public economics needs radical reform. It fails to explain the recent history of human welfare, and it ignores some of the key findings of modern psychology. Indeed these two failings are intimately linked: it is because the theory ignores psychology that it is unable to explain the facts.

The fact is that, despite massive increases in purchasing power, people in the West are no happier than they were fifty years ago. We know this from population surveys and other supporting evidence which I shall review.

The most obvious explanations come from three standard findings of the new psychology of happiness.² First, a person's happiness is negatively affected by the incomes of others (a negative externality). Second, a person's happiness adapts quite rapidly to higher levels of income (a phenomenon of addiction). And third, our tastes are not given – the happiness we get from what we have is largely culturally determined.

These findings provide a challenge to the theory and conclusions of public economics, as set out for example in Atkinson and Stiglitz (1980). The challenge to public economics is to incorporate the findings of modern psychology while retaining the rigour of the cost-benefit framework which is the strength and glory of our subject.³ In what follows I shall first review the measurement of happiness. Then I shall take the three findings that I discussed one by one, and pursue the policy implications of each of them. I shall end with some overall reflections.

MEASURING HAPPINESS

In the US the General Social Survey asks people “Taking things all together, how would you say you are these days – would you say you are very happy, pretty happy or not too happy?” As Figure 1 shows, there has been no increase in happiness since the

¹ This paper draws heavily on Layard (2005, 2005a and 1980).

² I do not include inconsistent behaviour which has been widely discussed (e.g. by Rabin, 1998) but is probably less important than the 3 findings discussed here.

³ By public economics I mean the broad range of issues covered by Atkinson and Stiglitz (1980).

1950s – nor any significant decrease in unhappiness. Similar findings apply in Japan and the UK and in most European countries (where the series began in 1975).

You might reasonably question whether such remarks mean anything, but significant new evidence from neuro-science suggests that they do.⁴ Richard Davidson of the University of Wisconsin has identified areas in the pre-frontal cortex where the level of electrical activity is highly correlated with self reported happiness (both across people, and within people over time). Moreover, even if the use of words has changed over time between cohorts, one would not expect it to change within a cohort – yet each cohort experienced a stable level of happiness since the 1950s despite huge increases in their purchasing power.

There is also the cross-sectional evidence across countries – among industrialised countries with incomes over \$20,000 per head there is no relation between average income and average happiness. These inter-country differences do have real information content, since John Helliwell can explain 80% of the variance across 50 countries with only 6 variables.⁵ Finally, reverting to time series, there is the clear fact of increased criminal behaviour and the likelihood that depression has increased – no one thinks it has fallen.

In due course we should have better time series on the happiness of the people, including neurological measurements, and clearer evidence on where are the real areas of unhappiness in our society. But from what we already know we can conclude that over the last fifty years happiness in the West has not risen, though it almost certainly has in the Third World, where income has a much greater impact on happiness at both the individual and societal level.

The finding about the West is contrary to standard economic theory. For simplicity we can write standard theory as

$$u = u(y, h) \quad (u_1 > 0; u_2 < 0)$$

where u is (cardinal) utility, y is real income (which has risen) and h is hours (which have fallen for most people). Clearly we need an expanded model of happiness if we are to

⁴ On this paragraph see Layard (2005) chapter 3.

⁵ Helliwell (2003). The variables are: the divorce rate; the unemployment rate; the percentage of citizens who say that “most people can be trusted”; membership in non-religious organisations; the percentage of citizens who “believe in God”; and the quality of government (an index based on 4 sub-indices).

explain what is happening. We need to incorporate the standard findings of modern psychology.

SOCIAL COMPARISONS

The most obvious of these is the fact that we compare our incomes with those of others.⁶ If others become richer, this reduces our satisfaction with whatever we have. The conventional wisdom is that people compare themselves mainly with people who are close to themselves in the income distribution, but if the income distribution is reasonably stable the income of this reference group will be proportional to average income (\bar{y}).⁷ So an expanded theory could be for simplicity

$$u = u(y - \alpha \bar{y}, h)$$

In every study of happiness that I have seen average income (\bar{y}) attracts a large and significant negative coefficient. This is so whether we use cross-sections of states or neighbourhoods or time-series (with time dummies). In some studies the negative effect of average income is almost as large as the positive effect of own income. There is also, I should add, no evidence that people compare their leisure with other people's and some evidence that they do not.⁸

The preceding model helps to explain the paradox that individuals seek higher income and get happiness from it (the correlation is about .15), while societies gain less from higher income than the isolated individual does.

Many small pieces of evidence corroborate the validity of this analysis. For example the US General Social Survey provides data on how the individual perceives his relative income. If we regress happiness on own actual income and perceived relative income, the latter explains more than the former. Similarly in Switzerland happiness is

⁶ For much evidence on this section see Layard (2005), Annex 4.1.

⁷ This whole issue needs more study. For example, if people only compared their incomes with incomes above their own, the optimum tax would be more progressive than otherwise. It is also sometimes suggested that people are more concerned with their rank order in the income distribution than with their relative income. Experiments with the US General Social Survey suggest otherwise, but the case for corrective taxation would be similar whether people cared about rank or relative income (Layard, 1980, p.740). A third issue is the distinction between income and spending. Frank (1999) concentrates on relative consumption, and makes a further distinction between conspicuous and inconspicuous consumption. However the comparisons people make do also focus on income, and we do not yet have enough information to distinguish between these variants.

⁸ Solnick and Hemenway (1998).

explained by income relative to income-aspirations, and the average income in the local community increases a person's aspirations.

Policy implications

This is a case of negative externality. To focus on the efficiency aspect of the problem we can assume there are n people who are identical, with the same happiness function and the same hourly wage of unity. The socially optimal level of individual work effort (h) is now given by

$$u_1 - n u_1 \alpha \frac{1}{n} + u_2 = 0$$

Here the second term reflects the external disbenefit which comes from the rise in average income, which adversely affects the happiness of all n people. Another way to think about this optimality condition is to ask: If everyone agreed with everyone else how hard to work in order to short circuit the rat race, how hard would they work? Clearly the answer is given by

$$u_1 (1 - \alpha) + u_2 = 0$$

One way to coordinate this outcome is through a linear income tax with marginal rate t . The individual will work until

$$u_1 (1 - t) + u_2 = 0$$

So the marginal rate t which leads us to the social optimum is

$$t = \alpha$$

It equals the cost to society expressed as a fraction of the gain to the individual. According to the studies I have quoted this might be quite substantial.

This does not necessarily mean that taxes should be higher than they are now. It does mean that they should be higher than they ought to be if there were no negative externality to be considered.

We are talking here of a corrective tax – one that will reduce work effort to a level where the fruitless incentive to raise your relative income has been fully offset: the

external cost has been fully internalised. This means that we need to rethink the measures of ‘excess burden’ that we use in cost-benefit analysis. The excess burden is normally calculated on the basis that any tax wedge of whatever size is distorting and reduces work effort below its efficient level. But we now know that people would work too hard if taxes were zero. So taxes only become distorting if they are levied above the optimum level to correct for the negative externality. To assert otherwise is to fly in the face of a central and well-established fact of human nature.

Libertarians object to this whole line of argument on the grounds that it panders to envy. They do not apparently mind pandering to greed. We should of course try to educate people away from both envy and greed, since neither is conducive to happiness. But at the same time we should set our other policy instruments at whatever level is optimal for the state of mind which currently prevails. (We could never completely eliminate the drive for status since it is hard wired into our biology, as studies of male monkeys show: when a monkey is moved between groups so that his status rises, there is an increase in his serotonin, a neurotransmitter associated with happiness.⁹ The reverse happens when his status falls.)

ADAPTATION

A second key finding of psychology is adaptation. All living organisms respond to external changes in ways that restore their internal balance. This does not mean that for given genes there is a set-point of happiness which can only be temporarily disturbed – the clear evidence of explainable differences in happiness between societies refutes this. So does the clear evidence of long-term changes in the happiness of individuals.¹⁰ But adaptation does make it harder to secure permanent increases in happiness through increases in income.

Survey evidence shows clearly that a rise in income raises happiness more initially than it does in the longer run.¹¹ This is because income is in part addictive. Having once experienced a higher standard of living, we cannot revert to where we were before and feel the same as we did then.

To allow for this effect we can add lagged income to the happiness function, with a negative effect. Assume for simplicity that

⁹ Brammer et al (1994).

¹⁰ Lucas et al. (2004).

¹¹ On this section see Layard (2005), Annex 4.1.

$$u = u(y - \beta y_{-1}, h)$$

Empirical work strongly supports this formulation, both in studies of happiness and of job-satisfaction. In the US General Social Survey the change in income has more effect on happiness than does its level i.e. $\beta > 0.5$. In the Swiss study I mentioned earlier lagged income is a major influence on income-aspirations, and this has been confirmed by numerous studies by Van Praag and his colleagues. By contrast there is no evidence that people become habituated to good personal relationships, but there is less time for these when people work more.

Policy implications

Habituation to income is only a problem for public policy if this effect is unforeseen. But there is substantial evidence that people over-estimate the extra happiness they will get from extra possessions.¹² For simplicity assume there is no foresight: individuals do not realise that their current consumption will reduce their future happiness. Robert Frank has called this a negative externality. The result is that people will work too hard and consume too much. To be rigorous, redefine y above to mean consumption. Then if the rate of discount (d) for utility equals the interest rate and if real wages are constant, the efficient corrective tax rate is

$$t = \beta(1 - d)$$

It is the same type of correction as for an externality, except that the damage comes one period later.¹³ The required correction is towards lower work effort and **thus** lower consumption. But there is no required correction towards higher saving. This only becomes necessary to the extent that real wages are rising.

To the extent that addiction is foreseen the need for tax is less. But much of the addiction to general spending, like the addiction to smoking, is not foreseen. If we are willing to tax addictive substances, we should also be willing to tax other forms of addiction.

¹² See Loewenstein and Schkade (1999), Loewenstein et al. (2003), Frey and Stutzer (2003) and Gilbert and Watson (2001).

¹³ See Layard (2005a) Annex B which assumes an infinite time horizon See also Loewenstein et al. (2003).

Loss aversion

At this point we need to introduce a quite different consideration: loss-aversion. In the account we have given so far

$$u = u((1 - \beta)y + \beta\Delta y, h)$$

whatever the sign of Δy . But important research by Kahneman and his colleagues shows that the effect on happiness of one unit of Δy is typically twice as great when Δy is negative as when it is positive.¹⁴ This means that the utility of income function is kinked at previous period's income, reflecting a status quo bias or endowment effect. And it is this kink which makes people so risk-averse. This is a fortunate finding, for as Rabin (2000) has shown, it would be impossible without it to explain why the same people can be risk-averse to small risks yet willing to undertake very large ones if the expected gain is high enough. Given the simplicity of this explanation of risk behaviour, it is time that the text books and the theory of finance stopped using an incorrect explanation.

Clearly it is loss aversion which makes stabilisation policy so important. If Lucas (2003) had used Kahneman's estimates of this, he would have come to rather large estimates of the cost of fluctuations.¹⁵

Adaptation and poverty

Let me add one further comment on adaptation. It clearly means that the function relating happiness to income is flatter in the long-run than in the short-run. Existing studies support the idea that the marginal utility of income diminishes with income, both within societies and across societies.¹⁶ But the curvature is probably less in the long-run than the short-run. If so, the optimum degree of equality is less than if we focussed on the short-run relationships.

Some on the Left object to taking adaptation into account, just as some on the Right object to taking social comparisons into account. Both arguments seem contrary to a humane philosophy which should both seek to modify human nature but also work with human nature as it is. If there are some experiences which are totally impossible to adapt

¹⁴ Kahneman and Tversky (2000) p.58.

¹⁵ Lucas (2003).

¹⁶ Helliwell (2003).

to, like mental illness, and some like poverty to which there is partial adaptation, that information is relevant to policy and we should use it in determining our priorities for public expenditure. At present our policies are based far too much on policy-makers' judgements about how they would feel in a given situation, rather than detailed studies of how people actually feel.¹⁷

TASTES

Economics normally assumes that tastes are given. This is clearly false in two senses. First, social factors can affect our ordinal preferences – our indifference curves. But second, they may also affect the cardinal happiness we get from a given consumption bundle, even if they have no effect on our indifference curves. Thus, as we have argued, average community income affects our happiness, as does our own lagged income. But there are many other taste variables which I shall call T , so that now we are looking at:

$$u = u(y, h, T)$$

Good tastes are those which increase happiness, and vice versa.

How far can public economics take into account the formation of tastes? If it aims to provide a general framework for policy, it must do so. I will give only three examples.

The most obvious is advertising. Though this can provide information, it almost always makes us feel we need more money than we should otherwise have felt we needed. For example the US General Social Survey provides data on how a person perceives their position in the income distribution. If we regress this estimate on a person's actual income and the hours he watches TV, we find that watching TV makes a person feel poorer,¹⁸ and thus less happy. The problem of advertising is greatest in relation to children, which explains why Sweden bans advertising directed at children.

Another example is performance-related pay. The theory in favour of this is blindingly obvious to most economists: we must align the interests of the agent with

¹⁷ Similar criticisms apply to QALYs which in the UK are based mainly on healthy people's judgements about how they would feel if ill rather than studies of how ill people actually feel. A group of us are hoping to remedy this.

¹⁸ Layard (2005), Annex 6.1. This result is unlikely to reflect only omitted variables.

those of the principal. He must therefore be directly and rapidly rewarded for his performance. The more we do this, the more we add to his motivation.

But can we assume that his tastes will remain constant? Probably not. Psychologists have done many experiments to examine the effect on a person's inner motivation of increasing the external motivating factors. Most of these studies show that extra financial rewards reduce internal motivation and can even reduce total motivation unless they are very large.¹⁹ It is easy to understand why – if someone pays you to do something, you may cease to feel you ought to do it anyway. A simple example comes from an Israeli child-care centre. To encourage people to pick up their children on time they fined parents who were late. The result was that more people were late – they felt it was alright to be late since now they paid for it.

However PRP is often a good idea when there is an unambiguous measure of performance. But usually there is no such measure and individuals have to be ranked against their colleagues. Often the rankings by different colleagues are poorly correlated. The effect of all this is to raise the salience of rank order comparisons in the utility function. Relationships between colleagues become more strained as people strain harder to climb above each other on a ladder where the total number of places is fixed. Since the extra pay is usually small, this additional stress can generally be justified only if shareholders or customers gain. But, as I have suggested, these gains are uncertain. Economists should therefore be more humble before relying on the simple rationality postulate and recommending performance-related pay: they may well be changing tastes at the same time.

Finally, let me take the most global aspect of our tastes – our feelings about what our life is about. Economists offer a fairly clear view, if we leave aside the rare studies of altruism. We say that each person seeks to be as happy as possible and the question of what makes him happy is unimportant. For example it is not important whether it makes him happy to help other people or not. (We then, according to Atkinson and Stiglitz, seek the optimum pattern of taxes and spending to maximise the social welfare function – always taking the individual utility function as given.)

This is not of course how most people feel. They think people's values matter. That is one reason why we have compulsory education – because the utility functions of other people's children put such obvious constraints on our own utility.

¹⁹ See Frey and Stutzer (2002), and Gneezy and Rustichini (2000).

I am not suggesting that economists should become moralists. But in some ways they already are, and their individualistic view of the world has gained increasing influence as belief has waned in conventional religion and in socialism. Crudely the view which the public absorbs from economists is this. Don't expect people to be interested in anybody else beyond the family. But don't let that worry you, because the outcome will be as good as it could be, provided we establish the rule of law and the right tax / expenditure plan.²⁰ Given that, let's have the maximum of competition between firms and individuals.

This involves a major confusion. We do want the maximum of competition between firms, but not between individuals. We want a lot of cooperation between individuals, for one reason above all – that life is more enjoyable that way. Cooperation may also improve final output, but in many cases it will not – competition can be a formidable spur. But the final output is only justified by its contribution to happiness. A world where everyone else appears as a threat is unlikely to generate much happiness, even if it generates massive output.

CONCLUSION

I conclude that economics uses exactly the right framework for thinking about public policy. Policy instruments are set so as to maximise the sum of (cardinal) utilities, with additional weight being given to those whose utility is low. What is wrong is the account we use of what makes people happy. Broadly, economics says that utility increases with the opportunities for voluntary exchange. This overlooks the huge importance of involuntary interactions between people – of how others affect our norms, our aspirations, our feelings of what is important, and our experience of whether the world is friendly or threatening.

One might wish to say that these things are the province of other social sciences. It would be convenient if life worked that way, as illustrated in Figure 2. But it does not. We have already given important examples of this. Or take mobility policy, illustrated in Figure 3. More mobility certainly increases income but it also affects the quality of relationships in the community and in families.²¹ Economists should not advocate more mobility without considering these effects also.

²⁰ Economists rarely suggest that businessmen should think directly about the interests of consumers as well as shareholders, on the implausible ground that if a firm did not maximise profits it would go bankrupt.

²¹ For evidence see Layard (2005) p.179-180 and accompanying reference.

This requires collaboration between economists and other social scientists, especially psychologists. In my view the prime purpose of social science should be to discover what helps and hinders happiness. Economists could play a lead role in promoting this approach: there is so much that could readily be studied and has not been.

Economists have much to contribute, especially cost-benefit analysis. Eventually costs and benefits could perhaps be expressed in utils. But for the present the money equivalent of a util will do fine, provided it is specified as the extra money which would in the long-run secure for the average person an extra util of happiness.

Thirty years ago population surveys revolutionised labour economics. A similar revolution will soon revolutionise public economics, when psychological data on happiness are at last combined with the insights of revealed preference. This will lead to better theory, and to better policies.

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Figure 1
Income and happiness in the United States

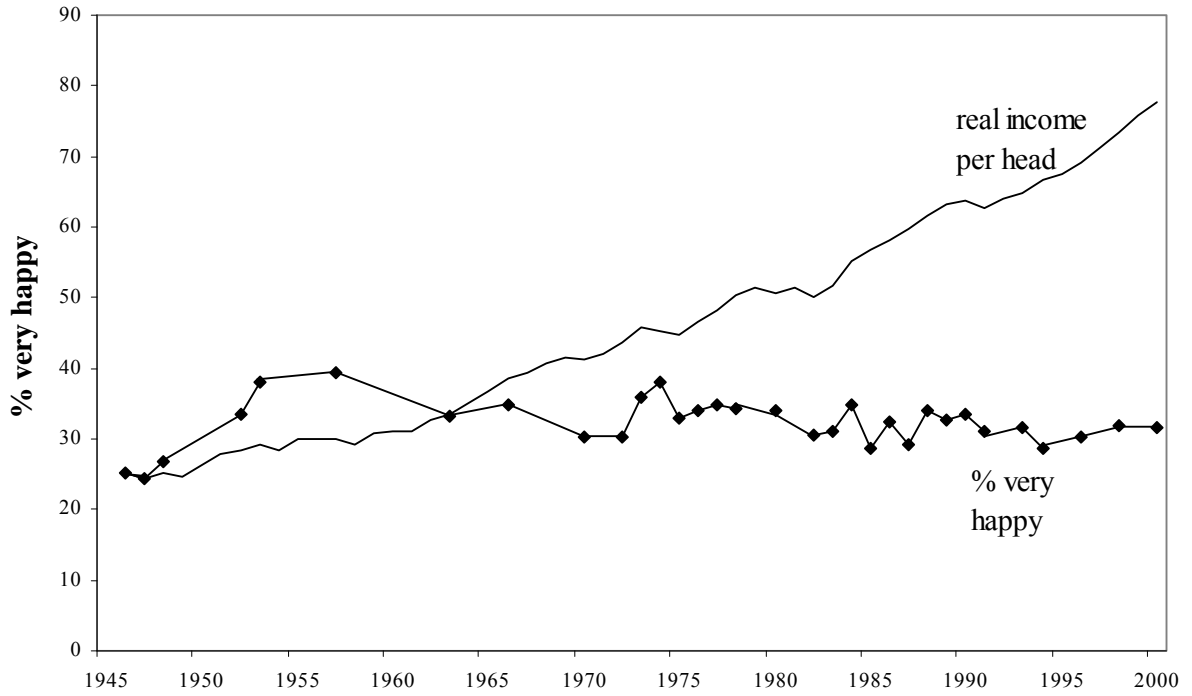


Figure 2
The policy-maker's ideal world

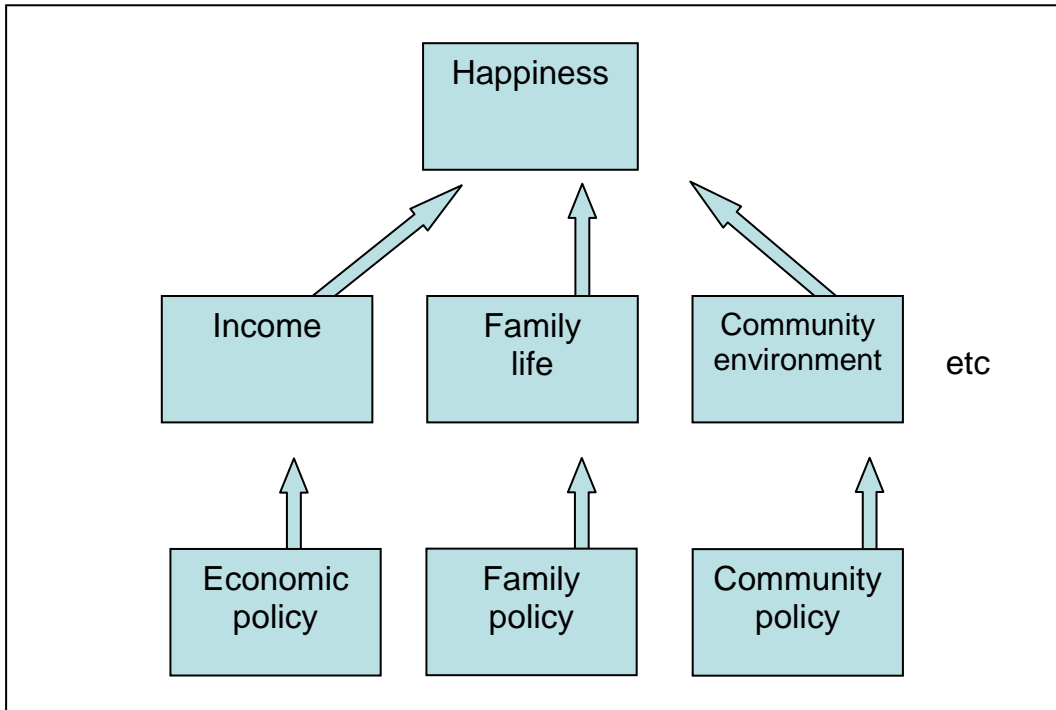


Figure 3
"Reality"

