

Lecture 2

Income and happiness: rethinking economic policy

Habituation

Rivalry

Rethinking public economics

Changing values

The fallacy of consumer sovereignty

The record of the 80s and 90s

Equality

Looking forward

Genes and previous experience



*"Researchers say I'm not happier for being richer, but
do you know how much researchers make?"*

Yesterday I showed that in advanced countries happiness has not risen, despite unprecedented increases in income. Today I want to try to explain this, and to draw some policy conclusions.

But first I need to start with a caution (Figure 1). As the golfer says, “Researchers say I’m not happier for being richer, but do you know how much researchers make?”

In one sense the golfer is on to something. For there are **two** key facts that we have to explain. First at any one time rich people are on average happier than poorer ones. And yet over time advanced societies have not grown happier as they have grown richer.

What is happening is illustrated in this table (Table 1). In 1975 rich people (in the top quarter) were happier than poor ones (in the bottom quarter). The same was true in 1998, when both groups were both richer than before (especially the top group). But in 1998 each group was no more happy then before, despite its higher income. That is the challenge, and the paradox.

Table 1
Happiness in the US: by income

	Top quarter of income		Bottom quarter of income	
	1975	1998	1975	1998
Very happy	39	37	19	16
Pretty happy	53	57	51	53
Not too happy	8	6	30	31
	100	100	100	100

Source: General Social Survey tapes. People over 16.

It is an absolutely standard pattern in all countries. And indeed we find much the same if, instead of taking two dates for the same country, we take two countries at the same time – with one country being richer than another.¹ So what is going on? On the one hand a given individual in a given country becomes happier if he is richer,

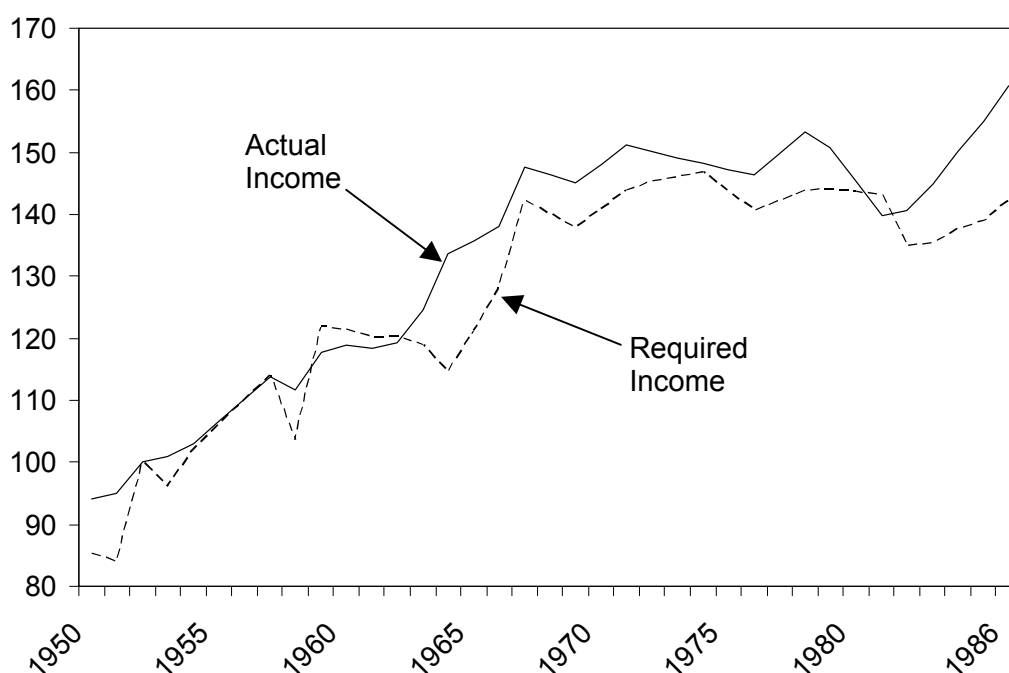
¹ Parenthetically, if we take health and compare richer and poorer countries in the old OECD, we find the same again: within any country the richer individuals are healthier than the poorer, but across countries the poor country is as healthy as the rich one. At least that is true of life expectancy, which is about the best objective measure of health that we have. Wilkinson (1996).

and that is why most people want to be richer. But at the same time, when the whole society becomes richer, nobody seems to be any happier.

Obviously people must be comparing their income with some norm – some level of expectations. And that norm must be moving up in line with actual income. You can see this from the following data collected by the Gallup Poll in the US for many years. They asked, ‘What is the smallest amount of money a family of four needs to get along in this community?’ Over time, as Figure 1 shows, the answers rose in line with actual incomes.²

Another depressing fact confirms that this is the mechanism at work. Since 1972 Americans have been asked whether they are satisfied with their financial position. Although real income per head has risen by 50%, the proportion of people who say they are pretty well satisfied with their financial situation has actually fallen.³

Figure 1
Required real income and actual average real income (1952 = 100)



² See Rainwater (1990) Table 1. The question has not been asked since 1986 when Gallup moved from face-to-face to telephone interviewing.

³ GSS data. See Lane (2000) p.25.

This moving up of the norm is coming from two sources – first habituation and second rivalry. First, I compare what I have with what I have become used to (through a process of habituation). As I ratchet up my standards, this reduces the enjoyment I get from any given standard of living. Second, I compare what I have with what other people have (through a process of rivalry). If others get better off, I need more in order to feel as good as before. So, we have two mechanisms which help to explain why all our efforts to become richer are so largely self-defeating in terms of the overall happiness of society.

I want to discuss these effects in turn – and then to discuss the policy implications. I'll begin with habituation, or as psychologists call it adaptation.

HABITUATION

A key feature of any successful organism is its ability to adapt to its environment, and human beings are amazingly adaptable. This is a strength and a weakness. In the face of adversity it saves us from abject misery, but it also makes it difficult to lift us onto a permanently higher plane of experience.

On the downside, people who become paraplegic suffer greatly immediately after their stroke. But after a while their happiness is only slightly below the average in the population.⁴ The same is true on the upside – for example after people get married.⁵

So when our living standards increase, we love it at first but then we get used to it and it makes little difference. But we would find it very difficult to go back - to where we started from. I had no central heating at home until I was 40, but now I can barely imagine living without it.

⁴ Brickman et al. (1978).

⁵ Kahnemann.

The evidence for habituation comes from many sources. One approach is to compare individuals with different incomes.⁶ Each individual is asked, ‘What after-tax income for your family would you consider to be: very bad, bad, insufficient, sufficient, good, very good?’ From these answers we can pick out for each individual the income level which is mid-way between sufficient and insufficient. This ‘required income’ varies strongly with the actual income of the individual: a 10% rise in actual income causes a roughly 5% rise in required income.⁷

Alternatively we can look at reported happiness over time. In panel studies of individuals in the UK job satisfaction is unaffected by the level of wages and depends only on their rate of change – implying a strong negative effect of habituation coming from the previous lagged wage.⁸ At a more aggregate level, in a panel of countries Di Tella, MacCulloch and I (2002) found that lagged income reduced average happiness by two thirds as much as current income increased it. (Thus a steady rise in income did increase happiness somewhat, but in the historical record this effect was off-set by the negative effects of other changes – higher divorce, crime and so on.)

So people measure their situation largely by reference to where they have recently got to. They are on what psychologists call the ‘hedonic treadmill’. They try to rise up a rung but in the next period that rung is once again at the bottom, from which they again try to rise. We have essentially a problem of addiction, where people’s past standard of living affects in a negative way the happiness they get from their present living standard. In this way it is just like smoking.

If we just got used to everything equally, that might be the end of the story – with no clear policy implications. But, as Robert Frank has argued strongly, the things that we get used to most easily and then take for granted are our material possessions – our car, our house. We do not have the same experience with the rest of our life, the time we spend with our family, nor with the quality and security of our job.⁹

⁶ Van Praag and Frijters (1999)

⁷ Similar results are found in 9 different countries. The ‘required income’ also varies with family size in a way that produces sensible equivalence scales for family income requirements.

⁸ Clark (1999).

⁹ Frank (1999), chapter 6.

If we do not foresee how we get used to our material possessions, we shall over-invest in acquiring them, at the expense of our leisure. There is lots of evidence that people underestimate the process of habituation.¹⁰ (For example, academics think that gaining tenure will make them happier for longer than it actually does.) The result is a distortion of our life towards work and away from other pursuits. I want to stress that that is the main distortion rather than the distortion between spending and saving. And a natural way to offset the distortion is to tax spending (just as we tax smoking) in order to discourage excessive self-defeating work.¹¹

RIVALRY

Let me turn now to the second factor explaining the paradox of income and happiness: I mean the phenomenon of rivalry. Let me begin with a simple question. Let me ask you which of these two worlds you would prefer, assuming prices constant (Figure 2).

Figure 2
Which world would you prefer?
(prices are the same)

- A. You get \$50k a year and others get half that
- B. You get \$100k a year and others get more than double that

In a recent study, graduate students of public health at Harvard were asked just that question.¹² The majority preferred the first type of world. They were happy to be poorer, provided their relative position improved.

¹⁰ This includes those who start smoking, see Loewenstein and Schkade (1999), and Loewenstein et al (2000).

¹¹ See Layard (1980, 2002).

¹² Solnick and Hemenway (1998).

Many other studies have come to the conclusion - that people care about other peoples' incomes as well as their own.¹³ We are all upset when others get a raise but we do not. And the only situation where we might happily accept a pay cut is when others do the same. That is why there was so little economic discontent in the Second World War. By contrast the great inflation of the 1970s created great discontent, because throughout most of the year other people's wages were rising rapidly, while one's own wage was constant.¹⁴

When people compare their wages, it is generally with people close to themselves, rather than with film stars or paupers. What matters is what happens to your "reference group" because what your reference group gets might have been feasible for you, while what David Beckham gets is not. Hence much of the most intense rivalry is within organisations and within families. In organisations, calm can often be maintained only by keeping peoples' salaries secret. In families, it has been found that the more your spouse earns, the less satisfied you are with your own job.¹⁵ And among women, if your sister's husband is earning more than your own husband earns, you are more likely to go out to work.¹⁶ In other words people are concerned about their relative income and not simply about its absolute level. They want to keep up with the Joneses or if possible to outdo them.

If people change their reference group, this can seriously change their happiness. Let me give you two examples where in both cases people became objectively better off but felt subjectively worse. One is the case of East Germany where the living standards of those in work have soared since 1990, but their level of happiness has plummeted because they now compare themselves with the West Germans, rather than with other countries in the Soviet bloc. Another case is women, whose pay and opportunities have improved considerably relative to men, but their level of happiness has not. Indeed in the US women's happiness has fallen relative to men's, perhaps because they compare themselves more specifically with men than they used to, and are therefore more aware of the gaps that still exist.

¹³ Clark and Oswald (1996). Runciman (1966)

¹⁴ Ashenfelter and Layard (1983).

¹⁵ Clark (1996).

¹⁶ Neumark and Postlewaite (1998).

Given rivalry, the findings of our table are not very surprising. The rich are happier than the poor, because from their lofty position the people they compare themselves with include a greater fraction of people who are poorer than they are. And the opposite is true of those at the bottom of the pile.

But for a society as a whole the implications are massive. Imagine the most extreme case, where people care only about their relative income and not at all about their income as such. Then economic growth cannot make people better off. The only exception is if people were to adopt reference groups that were lower in the pecking order than before. But, if the reference group remained stable and relative income were unchanged, everybody's happiness would remain the same.

However the evidence suggests that things are not quite as bad as that. If we compare states in the USA we find that, if other people in your state get more, you do feel worse off.¹⁷ But the negative feeling is not so large that it completely cancels the gain, provided your income rises as much as everyone else's. So there is hope after all. To be precise, if my income increases, the **loss** of happiness to everybody else is about 30% of the **gain** in happiness to me.

This is a form of pollution, and to discourage excessive pollution, the polluter should pay for the disbenefit he causes. So the polluter should lose 30 pence out of every 100 pence that he earns – a tax rate of 30% on all additional income. Assuming the tax proceeds are returned to him through useful public spending, he will work less hard – and the self-defeating element in work will have been eliminated.

But for this conclusion to be correct, one further condition must be satisfied: though people are comparing their **income** with that of other people, they must not be comparing their **leisure**. Is that in fact how we behave? To throw light on it, we need to look at a second question which was asked of the Harvard students. They were offered two further possible worlds, C and D (Figure 3).

¹⁷ Blanchflower and Oswald (2000).

Figure 3
Which world would you prefer?

- C. You have 2 weeks vacation, and others have half that
- D. You have 4 weeks vacation, and others have double that

Only 20% of the students chose world C. So most people are not rivalrous about their leisure. The result is that we consume too little leisure, unless this is corrected by public policy.

In reply to this argument, libertarians often argue that the rivalrous person has only himself to blame, and he should not be protected by public efforts to discourage others from earning money. But this is to miss the mark. We may be able to modify human nature. But we cannot annihilate our existing nature – and libertarians should be the first to take that as their starting point.

RETHINKING PUBLIC ECONOMICS

In fact the phenomena of rivalry and habituation are so important that they require a complete rethinking of the theory of public economics. By public economics I mean the theory of microeconomic policy as developed in particular by James Meade, Amartya Sen and Tony Atkinson, all from LSE, as well as James Mirrlees.

The normal starting point in that theory is that taxation distorts the choice between leisure and income – making people work too little. The taxation may be justified by the value of the public expenditure or the redistribution which it finances. But, when comparing the tax cost with the benefits of the spending, we should always allow for a substantial “excess burden” of the tax, coming from the distorted choices it is supposed to have caused. In this sense the presumption is always against state activity.

Rivalry and habituation lead to a quite different conclusion. They tell us that in an efficient economy, there will be substantial levels of corrective taxation. And so long as taxation is not higher than that, cost-benefit analysis of public expenditure need not worry about any excess burden coming from the costs of financing the expenditure.

So what **is** the appropriate level of taxation at the margin? The quantitative evidence is only beginning to accumulate, but I have already suggested 30 per cent to deal with rivalry, and the evidence suggests at least as much to deal with habituation. Thus 60 per cent would not seem inappropriate, and that is in fact the typical level of marginal taxation in Europe – if you allow for direct and indirect taxes.¹⁸ I suspect that in some almost unconscious way the electorate understand that the scramble to spend more is in some degree self-defeating and this makes them more favourable to public expenditure. But the time is now ripe to make this argument explicit – as one of the central features of Social Democracy, or dare I say it the Third Way.

We should be clear that such taxation is almost certainly reducing our measured GDP, by reducing work effort. But we should be equally clear that this does not matter, because GDP is a faulty measure of well-being.

CHANGING VALUES

So far we have taken people's values as given, and thought about how people can have the best life, given these values. That is a reasonable first step and it is one that economists are good at.

But values are not of course given, and society has a major impact on them. So I want to end this lecture by discussing first how far our rivalrous attitudes can and should be modified, and second whether existing tendencies are tending to exacerbate them.

¹⁸ See also Layard (2002). This argument assumes that few people compare their incomes with those in other countries.

Clearly a degree of rivalry is wired into our genes. Among our monkey relatives the top male monkey gets the females. In consequence monkeys with the strongest drive to reach the top reproduce most and that drive has become spread throughout the species.

The mechanism that produces that drive is interesting. It is not so much the desire to reproduce as the sheer pleasure of being top. Serotonin is a neurotransmitter that accompanies good feeling, and McGuire and his colleagues at UCLA studied how the level of serotonin varies in vervet monkeys.¹⁹ When a male monkey becomes top monkey his serotonin level soars. But, if the researchers artificially displace him from that position, his serotonin level drops. Similar effects are evident in humans, so that people who win Oscars live 4 years longer than people who are nominated but fail to win.²⁰ So the desire for position and status seems to be a universal among our ancestors and among ourselves.

Clearly this competitive instinct enhanced reproductive fitness in the wild. But, since our life has become easier, we have reconsidered our situation. We now preserve weaker members of the species who would have perished in rougher times. What should we do about our competitive instinct?

To question the competitive instinct is not to be a Communist. We all know that life goes better when most people make most of their own arrangements for satisfying their needs. The market system delivers better products and more personal autonomy.

But there remains the problem that actions undertaken in pursuit of status are truly fruitless at the level of society. In case this is still not obvious, I want to spell it out once more. For I can hear people saying, I don't mind if my carmaker is only motivated by status, provided he gives me a good car.

¹⁹ McGuire et al (1993).

²⁰ Redelmeier and Singh (2001).

THE FALLACY OF CONSUMER SOVEREIGNTY

The fallacy here is to think of consumers and producers as different. We are each of us at one and the same time a consumer and a producer. We both consume the output and produce it. Of course I value much of what I consume, for its own sake. But, if I also seek further income and consumption as a route to status, that part of my effort is self-defeating.

To see this let's look at the happiness function of the i^{th} person.

$$\text{Happiness}_i = f(\text{Leisure}_i, \text{Valued Consumption}_i) + \alpha \text{Rank}_i \quad (1)$$

I sacrifice Leisure both to increase Consumption that I value for its own sake, and to get Rank. But, if I now look at society as a whole,

$$\sum_i \text{Happiness}_i = \sum_i f(\text{Leisure}_i, \text{Valued Consumption}_i) + \text{Constant}$$

So, even if we do value much of our consumption for its own sake, the extra work that is done to achieve rank is totally counterproductive. It achieves nothing because the total of rank is fixed. The game is zero-sum. When we bring people up, we should therefore try to reduce their α s and avoid creating institutions that focus attention on rank.

That is the negative agenda: it says we should avoid those games against other people, which are intrinsically zero sum. But there's also a positive agenda: to promote enjoyment of games against nature, where we develop our talents to the highest possible level because such achievement gives us satisfaction.

We should support benchmarking designed to show us what we could achieve. But we should question benchmarking where league table scores are highly public and deliberately made public in order to motivate people through the quest for rank. For this condemns as many to fail as to succeed – not a good formula for raising human happiness. The utility function we should be promoting through our system of childrearing is

$$\text{Happiness}_i = f(\text{Leisure}_i, \text{Valued Consumption}_i) + \alpha \text{Rank}_i + \beta \text{Output}_i$$

where α is as small as possible and β as large as possible. Above all we want people to enjoy their contribution to the social product – a notion unknown to standard economics but experienced by each one of us. The virtue of the last term in the equation is that when summed across all people it can grow without limit – it is non-zero-sum.

THE RECORD OF THE 1980s AND 1990s

Against this background, how has society evolved in the 1990s? I would say: α up and β down. There has been increasing stress on “getting ahead”, and on financial incentives as the way to motivate people. The whole aim in modern pay policy is to align pay and output as closely as possible – in other words performance-related pay. This is easy to do when output is simple to measure, as it is for many mechanical tasks and for some individualistic ones in the financial sector. It is more difficult to align pay with output the more the task is multi-dimensional, long-term and based on teamwork. In these cases people have to be evaluated by a relative rather than an absolute standard – how they compare with their peers. By focussing on comparative performance, this inevitably raises α .

And there is also another effect. Economists and politicians have tended to assume that when external motives for performance are increased, other motives remain the same. But that is not so, as our colleague Richard Titmuss pointed out long ago when discussing the supply of blood.²¹ Let me report two suggestive studies. Edward Deci gave puzzles to two groups of students.²² One group he paid for each correct solution, the other he did not. After time was up, both groups were allowed to go on working. The unpaid group did much more further work – due to their intrinsic interest in the exercise. But, for the group that had been paid, the external motivation had reduced the internal motivation that would have otherwise existed.

²¹ Titmuss (1970).

²² Deci and Ryan (1985).

A second example is a real life case from Switzerland in 1993 when two communities had been selected as potential sites for the storing of radioactive waste. An economist Bruno Frey arranged a survey of most of the inhabitants.²³ They were asked two questions. First, “Would you be willing to have the repository here?” 51% said Yes. Following that they were asked, “If you were offered a certain amount of compensation (specified), would you be willing to have the repository here?” To this second question under 25% said Yes. Thus focussing on financial rewards reduced people’s willingness to act on the merits of the case.

In the light of this it seems that British governments over the last 20 years have made serious errors in their approach to the reform of public services. They have stressed ever more the need to reward individual performance, rather than providing an adequate general level of pay and stressing the importance of the job and the promotion of professional norms and professional competence.

I want to end this section with one other issue. As you will remember, we are trying to explain why happiness has not risen, and why depression, alcoholism and crime **have** – especially in the golden period of economic growth 1950-73. It is no good blaming economic growth in general since in some earlier periods of economic growth like 1850-1914 alcoholism and crime both fell. So what was new in the post-war world? The most obvious transformation of our life was the arrival of television, which shows us with total intimacy how other people live. Where people once compared themselves with the people round the corner, they can now compare themselves with anyone they like, up to J.R. in Dallas. It would be astonishing if such comparisons were not unsettling.

Television differs from any previous medium of communication in two ways. The first is immediacy. But the second is the sheer amount of exposure. The typical (median) Briton watches television for 3½ hours a day – roughly 25 hours a week.²⁴ Over a lifetime a typical Briton spends more time watching television than doing paid work. In most European countries viewing is rather lower but it is above 2 hours a

²³ Frey and Oberholzer-Gee (1997).

²⁴ Smith (1995).

day in most countries. So it is not fanciful to suppose that TV has had a profound influence on our lives and on our well-being.

Most of the public discussion about television has focussed on the issues of violence and sex. This research generally supports the commonsense view that repeated violence on TV tends to legitimise violent behaviour, just as repeated scenes of adultery tend to legitimise adultery. For example in the 1950s television was introduced in US different states in different years and the research has estimated that in the year that it arrived it increased larceny by 5% and we can only guess its subsequent cumulative effect.²⁵ Moreover this research says little about the direct effect of TV upon happiness, so that here we are forced to rely on conjecture and indirect inference.

The following research must be relevant. In a series of psychological experiments with women, Kenrick showed them pictures of female models.²⁶ He evaluated their mood before and after doing this. After seeing the pictures of the models, the women's mood fell. So how must television affect the mood of the women who watch it? In 3 hours of viewing TV each day a woman cannot fail to see a parade of beautiful women. This is unlikely to enhance their mood. And what about the effect on men? Kenrick also showed the pictures of models to a sample of men. Before and after this, he evaluated their feelings about their own wives. After seeing the models, most men felt less good about their wives.²⁷

This research provides clues to a more general hypothesis. Television creates discontent by bombarding us with images of body shapes, riches and goods we do not have. It does this both in TV drama and in advertisements. Among the most impressionable viewers of advertisements are young people – and it is them the advertisers target most assiduously. Because all children see the same advertisements, they must all have the same thing in order to keep up with the Jones'. That pressure, which is deep in human nature anyway, is inevitably increased through television. In Norway and Sweden advertising directed at children under 12 is

²⁵ Hennigan et al (1982). In the year when transmission began, it reached 50% of households.

²⁶ Kenrick et al (1993).

²⁷ Kenrick et al (1989). See also James (1998).

banned. Why not elsewhere? And why should advertising not be limited to the provision of information?

EQUALITY

Finally let me revert to the theory of public economics. The proponents of that theory from James Meade onwards insisted bravely that utility was measurable, for without such a notion it is impossible to consider the question of the optimal distribution of income. They assumed that extra income was more valuable to the poor than to the rich. But they were unable to produce empirical evidence in support of this. We can now do so. For example using Eurobarometer, to compare individuals, one can show that the marginal utility of relative income diminishes sharply as income rises.²⁸ Equally, using the World Values Survey to compare countries, John Helliwell has estimated that increases in average income only raise average happiness in countries below around \$15,000 per head.²⁹ So here we have strong arguments for reducing the inequality of incomes both within and across countries. And these arguments are reinforced by the low excess burden of taxation, which I discussed earlier.

SUMMARY

So what have I been saying?

1. If my income rises I am happier, especially in the short term.
2. But this makes others less happy and the effect on me fades in ways I did not foresee.
3. So corrective taxation is needed if my work-life balance is to be efficient. This should be a key doctrine in the Third Way.
4. We ought not to encourage income comparisons and the zero-sum struggle for rank.

²⁸ Di Tella, MacCulloch and Layard (2002). Happiness here is the latent variable in an ordered logit where 4 states of happiness are identified verbally.

²⁹ Helliwell (2001). Happiness here is self-reported happiness, using a scale from 1 to 10.

5. External incentives can undermine our internal motivation to do good work. So PRP should be used only with care.
6. Advertising should be controlled, especially towards children.
7. We should redistribute income towards the poor.

LOOKING FORWARD

Finally let me set the scene for tomorrow, when I shall look at all the other factors which affect happiness, and their policy implications. In designing policy our aim is to choose policies which maximise the sum of happiness, subject to our causal model and the limitations of our initial resources.

Causal model

Happiness depends on Genes, Experience, and Situation

Experience depends on Genes, Background, National resources, and Policies

Situation depends on Ditto

(Policies include economic system; education system; health system; moral system; laws about family, work, advertising etc.)

As you can see, I've included the genes at every stage in this approach, because I don't want you to think I believe it's easy to make people happier. So let me end this lecture with a word about the role of the genes.

GENES

We all know from comparing siblings that people are born different, and these differences are then amplified by subsequent experience. So our happiness depends on our genes **and** our experience (past and present). Any social reformer has to be mainly interested in the role of experience since that is all that we can change. But we will never understand that bit unless we understand the complete reality, and the complete reality includes a strong role for the genes.

Table 2
Correlation of well-being
across pairs of twins

	Identical	Non-identical
Raised together	.44	.08
Raised apart	.52	-.02

So here is a typical finding, drawn from the Minnesota study of middle-aged twins. For each pair of twins the researchers knew whether they were identical or non-identical, and whether they were brought up together or separated soon after birth. There were thus four groups (see Table 2). Each person was tested for their level of well-being using the Multi-dimensional Personality Questionnaire (MPQ).³⁰ Within each group the researchers then correlated the well-being of one twin with that of the other. The correlations were above .4 for identical twins and roughly zero for non-identical twins – and whether the twins were separated at birth or not made little difference to the correlation.

I think it is important for parents to recognise that a part of our nature arises in this way, and it is even more important in the case of mental illness where we know that heredity plays a major role in schizophrenia and in depression, especially in manic-depression. Those like Ronnie Laing who have blamed the behaviour of parents for everything that goes wrong have greatly added to the unhappiness of the world.

Having said that, I want to make an extremely basic point. If happiness depends on genes and environment and the average environment improves, average happiness increases but the standard measure of heritability may be unaffected. For heritability looks at the variation of individual happiness around the average, and then measures the extent to which this variation can be explained by the genes. If a better environment made everybody happier, heritability might remain just as high as before. But everybody's life would have improved. This is exactly what has happened with height. In the last century average height has increased by many inches. But as far as we know the heritability of height has changed little. Even if the

³⁰ Lykken and Tellegen (1996), Table 1.

heritability of happiness continues to be quite high, it says nothing about what we might be able to do to the average level of happiness, provided we focus on what we can change, rather than on what we cannot.

That's what I shall talk about next time. I believe there's a great deal we can do and I shall end with a rousing defence of the view that the good of our society should indeed be the happiness of all.

References

- Ashenfelter, O. and Layard, R. (1983) 'Incomes policy and wage differentials', Economica, May.
- Blanchflower, D.G. and Oswald, A.J. (2000) 'Well-being over time in Britain and the U.S.A', mimeo, University of Warwick.
- Blanchflower, D.G. and Oswald, A.J. (2000a) 'Is the UK moving up the international well-being ranking?', mimeo.
- Brickman, P., Coates, D. and Janoff-Bulman, R. (1978) 'Lottery winners and accident victims: is happiness relative?', Journal of Personality and Social Psychology, 36, 8: 917-927.
- Clark, A. (1999) 'Are wages habit-forming? Evidence from micro data', Journal of Economic Behaviour and Organisation, 39, 179-200, June.
- Clark, A. and Oswald, A. (1986) 'Satisfaction and comparison income', Journal of Public Economics, 61, 359-81.
- Deci, E.L. and Ryan, R.M. (1985) *Intrinsic motivation and self-determination in human behaviour*, New York: Plenum Press.
- Di Tella, R., MacCulloch, R. and Layard, R. (2002) 'Income, happiness and inequality as measures of welfare', mimeo.
- Frank, R. (1999) *Luxury Fever: Why Money Fails to Satisfy in an Era of Excess*, New York: N.Y. Free Press.
- Frey, B.S. and Oberholzer-Gee, F. (1997) 'The cost of price incentives: an empirical analysis of motivation crowding-out', American Economic Review, 87 (4): 746-55.
- Helliwell, J. (2001) 'How's life? Combining individual and national variables to explain subjective well-being', NBER Working Paper.
- Hennigan, K.M. et al (1982) 'Impact of the introduction of television on crime in the U.S.: empirical findings and theoretical implications', Journal of Personality and Social Psychology, 42, 461-79.
- James, O. (1998) *Britain on the Couch*, London: Arrow Books.
- Kenrick, D.T. et al (1989) 'Influence of popular erotica on judgments of strangers and mates' Journal of Experimental Social Psychology, 25, 159-67.
- Kenrick, D.T. Montello, D.R., Gutierrez, S.E., and Trost, M.R. (1993) 'Effects of physical attractiveness on affect and perceptual judgments: When social comparison overrides social reinforcement', Personality and Social Psychology Bulletin, 19, 195-199.
- Lane, R.E. (2000) *The Loss of Happiness in Market Economies*, New Haven and London: Yale University Press.
- Layard, R. (1980) 'Human satisfactions and public policy', Economic Journal.

- Layard, R. (2002) 'Rethinking public economics: implications of rivalry and habit', Centre for Economic Performance, LSE, mimeo.
- Loewenstein, G., O'Donoghue, T. and Rabin, M. (2000) 'Projection bias in predicting future utility', mimeo, March.
- Loewenstein, G. and Schkade, D. (1999) 'Wouldn't it be nice? Predicting future feelings', in Kahneman et al (1999).
- Lykken, D. and Tellegen, A. (1996) 'Happiness is a stochastic phenomenon', *Psychological Science* 7 (3), May.
- McGuire, M.T. et al (1993) Life-lasting strategies, adaptive variations and behaviour-physiologic interactions: the sociophysiology of vervet monkeys', in Barchas, P. *Sociophysiology*, New York: Oxford University Press.
- Neumark, D. and Postlethwaite, A. (1998) 'Relative income concerns and the rise in married women's employment', *Journal of Public Economics*, (70), pp.157-183.
- Pinker, S. (2002) *The Blank Slate*, Penguin.
- Rainwater, L. (1990) Poverty and equivalence as social ??', Luxembourg Income Study Working Paper 55.
- Redelmeier, D.A. and Singh, S.M. (2001) 'Survival in academy award-winning actors and actresses', *Ann Intern Med* 134, 955-62.
- Runciman, W.G. (1966) *Relative Deprivation and Social Justice*, Harmondsworth: Penguin.
- Seligman, M. (2002) *Authentic Happiness*, New York: Free Press.
- Smith, D.J. (1995) 'Living conditions in the twentieth century', in Rutter, M. and Smith, D.J. (eds) *Psychological Disorders in Young People*, London: John Wiley.
- Solnick, S.J. and Hemenway, D. (1998) 'Is more always better? A survey on positional concerns', *Journal of Economic Behaviour and Organisation*, 37, pp.373-383.
- Titmuss, R.H. (1970) *The Gift Relationship*, London and New York: Allen and Unwin.
- Van Praag, B. and Frijters, P. (1999) 'The measurement of welfare and well-being: the Leyden approach', in Kahneman et al (1999).
- Williamson, R.G. (1996) *Unhealthy Societies*, London and New York: Routledge.