

**Brookings Warwick Conference**

**Why Inequality Matters:  
Lessons for Policy from the Economics of Happiness**

**The Brookings Institution**

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**MR. ANDREW OSWALD:** Thank you very much for coming, Strobe.

**MR. STROBE TALBOTT:** Thank you. Also thanks to Bob Frank for what I know has been his participation in the preparation of this conference.

There is only one dent in my happiness today which is that I can't spend the whole day with you learning and no doubt being made intellectually happy, although perhaps discouraged on other subjects that will come up in the course of things.

There are lots and lots of events going on around these premises and every now and then there's one I would like to just clear my decks and be able to sit in on for its entirety. I can't do that, unfortunately, today.

I'd be in an even worse mood if we had our typical weather, by the way. Those of you who have come from elsewhere may think that you are seeing the kind of late spring, early summer day we always have in Washington. Not true. In fact Carol and Andrew I would really suggest that you adjourn to Dupont Circle and hold the conference there because no doubt we'll have thunderstorms by the evening and blizzards by tomorrow.

In any event I wanted to just say a couple of words about the context of what you all are doing here today in terms of not only Brookings' agenda, but I gather that of the University of Warwick and perhaps other participating institutions.

We here at Brookings pride ourselves on a couple of things, one of which is an attempt to take difficult and important subjects that are suitable for serious economics and social science and make them comprehensible to laymen including policymakers. I think you are to be congratulated, among other things, for taking what I gather social scientists have usually called subjective well being and calling it happiness. I think that's definitely a step in the right direction. That's a campaign I associate Carol with very particularly.

The other thing is partnership. Brookings has believed very much in partnering and collaborating with other institutions over the years so this is by no means a new theme, although it's one that in the 11 months since I've been here I've tried to emphasize in every way possible. I think that Andrew, what you and Carol and Bob have done by way of bringing together several institutions, notably including your university, is something that we need to do a lot more of. And the fact that there is a trans-Atlantic and international dimension to it makes it all the more valuable.

The final point is the one that you stressed, Andrew, in opening the session, and that is the interdisciplinary nature of the group that's here and therefore the work that's going on.

We have three departments here at Brookings -- Economics Studies, Governance Studies, and Foreign Policy Studies, but what we're finding increasingly -- and by the way Bell Sawhill who is down at the end of the table finishing her breakfast, later this summer is going to be taking over as the Director of our Economic Studies program. During the course of the 11 months that I've been here we have tried to accentuate interdisciplinary approaches to the whole agenda of public policy issues, and I think by the example you're setting you're going to help us do that both within these walls and what we're able to do with our partners.

With that, I just would wish you a good conference, and I will look forward to maybe poking my head in from time to time and I'm sure Carol will give me a full report when it's over.

Thank you very much.

**MR. OSWALD:** Thank you very much. Thanks for coming.

I'd like to say something just for a minute or two technical, about technical economics, and then I'll hand over to Carol and then Bob who also have been allotted five minutes of introductory time.

I wonder if I could get you to turn to the handout which is labeled "Does Inequality Reduce Happiness?" Just to give you a background set of correlations. If you're short of that handout we've got some spares here.

If you estimate happiness equations, in other words let's say you pool up the general social surveys for 20 or 25 years and estimate equations where subjective well being is the dependent variable, control for many kinds of demographic and personal factors also control out for so-called year effects and state effects, then you find that when a state becomes more unequal its average happiness level drops.

Rafael di Tella with Robert MacCulloch and Alice Seiner have also produced this kind of results so this is not the very first, but if you haven't seen such regression equations I think it's worth knowing about this pattern.

We don't know why when inequality arises the average recorded level of happiness declines, but from what I've seen in U.S. data I believe it to be robust. Not enormous in size, but certainly not negligible.

I won't say anything more about that at this stage. Perhaps I could hand over to Bob Frank from Cornell who has a few points he wants to raise.

**MR. ROBERT FRANK:** Thanks, Andrew.

Carol and Andrew and I agreed that I would try to say something about how this meeting came to fruition. As we were trying to reconstruct the history of it I believe at any rate my link started with a conversation with Andrew and a few others of us who have been working for a long time on the link between relative income, relative consumption and well being. I was the oldest in the group and I'm just starting to feel apprehensive that I'm going to tumble off into the same abyss that's befallen everyone else who seems to have committed any significant amount of career effort to this topic. Bev Veblin sort of generated some interest when he first wrote about it; Dusenberry came along and stimulated some interest for awhile; but invariably after a flurry of interest this topic just recedes from view and nobody pays any attention whatsoever to it.

There's not a single macroeconomics textbook anywhere published in the English-speaking world that makes mention any longer of the relative income hypothesis, even though it's the only one that can explain the patterns and cross-section time series data consumption.

So my concern was that we somehow give this set of ideas a little bit more of a push if we could, especially since there's this emerging set of findings from across several disciplines that all seem to be mutually reinforcing. So the idea for a conference on inequality, happiness, and the consequences of low relative position was one that we discussed at that time.

Andrew told me that he and Carol had already been planning a meeting on inequality and happiness so the first thought was maybe we could fruitfully combine these efforts and view this meeting really as a prelude to perhaps a series of meetings in which we'd try to sort of push these questions a little bit further and try to rescue this set of ideas which at one level seems so transparently obvious from the obscurity they always seem to fall into.

The economics profession today recommends a whole spectrum of policies based on the idea that relative consumption doesn't matter. The whole Bush tax policy is based on that idea of tax cuts for people at the top will stimulate effort and spending by people at the top which in turn will trickle down and make everybody better off.

The best understanding we have from the evidence is they'll do nothing of the sort. They'll increase spending at the top. The primary effect of which will be simply to raise the bar that defines what people at the top feel they need without creating

any measurable impact on happiness, and yet they will cascade down through the middle and low income families creating additional senses of need to spend money to keep up with community consumption standards, and in the process make well being levels go down, not up.

So this whole wrong-headedness of the current economic policy picture I think was also another main motive that we sort of attacked the idea for this set of meetings with. I hope this will prove fruitful from the beginning. I'm really excited to see the people who have come and assembled to talk about this stuff.

**MR. OSWALD:** Thank you very much Bob, and Carol has various points.

**MS. CAROL GRAHAM:** First of all, it's a real pleasure to see everybody that's here. It really meets the idea behind the conference which is to bring together key people from different perspectives -- happiness, health, development, economics, inequality, psychology -- to address the question of why inequality matters, or does it matter.

Much of the literature, and certainly a lot of just looking around suggests that inequality has consequences for well being, and via channels that can be influenced by policy such as health, insecurity, savings and consumption behavior. And I think in discussing the topic of inequality, I know Andrew and I had had discussion about this, the literature of the happiness approach seems to be particularly illuminating in terms of why inequality matters.

The rationale for holding this conference at Brookings is in part because myself and many other colleagues here -- Bell Sawhill, Gary Burtless, Payton Young, others in the room -- have thought about various aspects of the inequality topic, but also because Brookings is a good venue for merging both academic and public policy perspectives and a good venue, as Strobe mentioned, for interdisciplinary work. And as Andrew mentioned, we have economists, political scientists, psychologists, epidemiologists and legal scholars here today. That I think is a real bonus.

This certainly isn't the first conference on inequality at Brookings. The seminal work of Art Okun in the 1970s among others sort of put Brookings on the map in terms of thinking about inequality and we'd like to continue that. It certainly is the first major conference on happiness to be held here, and I hope it's not the last. So our hope really is that merging the themes of happiness and inequality will help us better answer the question of why does inequality matter for policy.

As Bob mentioned, I think this is a particularly important time for the U.S., at a time that the direction of policy suggests that inequality doesn't matter at all.

Lastly, thanks to Andrew and Warwick University for co-sponsoring this, co-organizing this. To Bob Frank also, for his involvement. And a very important note of thanks to Fiona Brown at Warwick for all her organizational help and to Maggie Kozak who's been unbelievably patient in really helping pull this whole thing off.

Just a note about procedure. You'll note that there are not any formal paper discussions because there were just too many good participants to choose who should be a paper discussant, so you're all discussants on every paper. So that's quite a burden, but that's the way it is.

In terms of the presentational *modus operandi*, the norm here tends to be that people interrupt throughout the presentation and I think we'll follow that. If any paper presenters are uncomfortable with that, please just state up front that you'd like to get through your whole paper without any noisy interruptions and we will definitely defer to your wishes.

Lastly, very quickly before we start, why don't we just go around the table and everybody introduce themselves and with that we'll turn to Richard Wilkinson's paper.

**MR. CLIFFORD GADDY:** I'm Clifford Gaddy from Brookings.

**MR. TOM MANN:** Tom Mann from Brookings.

**MR. RICHARD WILKINSON:** Richard Wilkinson, University of Nottingham.

**MR. BRUNO S. FREY:** Bruno Frey, University of Zurich.

**MR. OLIVER STUTZER:** Oliver Stutzer, University of Zurich.

**MR. ANDREW SHARPE:** Andrew Sharpe, Center for the Study of Living Standards, Ottawa, Canada.

**MR. ANDREW EGGERS:** I'm Andy Eggers, Brookings.

**MR. JOSHUA M. EPSTEIN:** Josh Epstein from Brookings.

**MR. \_\_\_\_\_:** [Inaudible]

**MR. RICHARD REEVES:** Richard Reeves. I'm self-employed [inaudible]. [Laughter]

**MR. RICHARD M. SUZMAN:** Richard Suzman, National Institute of Aging at NIH.

**MR. MICHAEL MARMOT:** Michael Marmot, University College London.

**MR. RICHARD LAYARD:** Richard Layard, London School of Economics.

**MR. MOSES SHAYO:** Moses Shayo, Princeton University.

**MR. ED DIENER:** I'm Ed Diener, Psychologist from the University of Illinois. And I think I might have been the person who made up the term subjective well being. I'm not sure. [Laughter] However, let me point out to you that I didn't have tenure, and then I started using the word happiness after I got tenure. [Laughter]

**MS. CAROL GRAHAM:** I've certainly introduced myself, but just a note, after you use your microphone please turn it off because we can only have three on at a time. It affects the transcribing. Thanks.

**MR. ANDREW OSWALD:** I'm Andrew Oswald. I'm a Professor of Economics at Warwick University in England.

**MR. ROBERT H. FRANK:** Bob Frank. I'm a Professor of Economics at Cornell.

**MS. ISABEL SAWHILL:** Bell Sawhill, Brookings.

**MR. CASS R. SUNSTEIN:** Cass Sunstein, Law and Political Science, University of Chicago.

**MR. ANGUS S. DEATON:** Angus Deaton, Princeton University.

**MR. ROLAND J.M. BENABOU:** Roland Benabou, Princeton University.

**MR. MICHAEL R. HAGERTY:** Michael Hargerty, Psychology, University of California Davis.

**MR. RICHARD A. EASTERLIN:** Dick Easterlin, University of Southern California.

**RAFAEL di TELLA:** Rafael di Tella, Harvard Business School.

**MR. HENRY J. AARON:** Henry Aaron, Brookings.

**MR. ROBERT MacCULLOCH:** Robert MacCulloch, Princeton University.

**MR. MICHAEL HOUT:** Ike Hout, UC Berkeley.

**MR. CHRISTOPHER JENCKS:** -- Jencks, Kennedy School at Harvard.

**MR. GARY BURTLESS:** Gary Burtless. I'm an economist here at Brookings.

**MR. OSWALD:** Thank you very much, Gary. It's always worse going last, I think on a huge roundtable like that.

Thanks very much. I think we'll have a break now and let the TV cameras go and Strobe, if he hasn't, is welcome to depart and do his duties.

We're going to move to the first proper paper which will be by Richard Wilkinson.

Richard Wilkinson is an epidemiologist, I think a social epidemiologist might be an apt description but he can speak to that, from the University of Nottingham Medical School in England. Richard is going to talk about individual vulnerability and social structure.

Some of you will know what I call the Wilkinson Hypothesis. I don't know whether this is accepted jargon, but that's what I view as the idea that the amount of inequality affects the average health, perhaps even the average longevity in a country.

Thank you very much, Richard.

**INDIVIDUAL VULNERABILITY AND SOCIAL STRUCTURE:  
SOCIAL CAPITAL, HEALTH AND INEQUALITY**

**Richard Wilkinson  
University of Nottingham Medical School**

I want to put together a picture of how I think the individual variables are affecting health, just like the social variables, relate to social structure. Our individual sensitivities to our immediate social environment affect, or give us a clue how the social structure affects health more widely. But I'm going to start with what I hope is a good beginning for a meeting like this.

This is a graph showing the size of the neocortex as a proportion of the rest of the brain in a large number of species of primates -- the monkeys, the prosimians and hominoids -- in relation to group size. I'm aware that archaeologists assume that the relationship is from group size, despite the way these axes are, from group size to the neocortex ratio, but whichever way around the relationship is, it seems to me to be telling us that our brains are a much more social organ than we usually imagine. And in some ways I think what I want to say is unpacking what we mean by saying that we are social animals.

My interest in this whole subject started with health inequalities and I'll just show you a little bit of British data. Michael Marmot I think is speaking tomorrow and will show you some of the things that I normally like to include in my talks but haven't this time.

This shows differences in life expectancy between professional occupations at the top and unskilled manual occupations as they changed in the early to mid '70s, a difference of sort of five, five and a half years in life expectancy between those groups. In the early to mid '90s expanded dramatically to nine and a half years in men, six and a half in women; and some diminution in the latest period. It's not quite clear whether that's the result of government policy. It looked as if it's the result of a slight pulling up of the lowest group.

These health inequalities, as most people here know, go right across the society. Michael will tell you tomorrow about the two major Whitehall studies of 17,000 and 10,000 civil servants which are exclusively studies of office workers, people working in the same government offices and we see a social gradient in health right across -- three-fold differences in mortality amongst people working in the same offices nearly all of whom would call themselves middle class. It excludes the

unemployed, the homeless, people like that. So we need to think of this not just as about poverty.

Although of course material factors, bad diets and housing and so on make an important difference, I want to talk about the part of the picture which I think has become, which has impressed us by its importance perhaps over the last five or ten years. The psychosocial factors which turn out to be a much bigger part of the explanation of these inequalities than we originally thought.

I think one can group them into these three major categories and there are of course a lot of other elements but I think I've packed most of them away here. For instance, hostility is an important risk factor for health, but it's very closely related to social status. And sense of control I put here. Workplace control, which a number of studies have shown is important to health. Again, I suspect that is the sort of fine grain of social status.

By low social status I don't mean just poorer material living standards. I mean something like social position, issues to do with dominance and subordination.

We know this partly because of the importance of a range of psychosocial variables, how powerful they are in the epidemiological literature, but also because if you look at the curve of life expectancy against GNP per capita, it rises sharply amongst poorer countries and then levels out amongst the rich developed countries. And if you take the 25 or 30 richest developed countries, there's virtually no relationship. In fact amongst the 25 richest countries a slightly negative relationship between GNP per capital and life expectancy, presumably partly because of the United States.

It's also a conclusion we come to that we're dealing with social status itself rather than material living standards because of animal studies. The effects of social hierarchy on animals. When you can unambiguously separate out the effects of material standards from issues to do with social status, and where you can also manipulate social status in a way you can't amongst human beings.

Weak social affiliations. Almost any measure of social connectiveness, friendship, involvement in community life, whether you have close confiding relationships, and two- or three-fold differences in mortality often found in relation to measures of social affiliation. Three- or four-fold differences in mortality sometimes found, depending on what the groups you're comparing are and which countries you make the comparison, but two- or three- or four-fold differences in mortality between high

and low social status. People with strong and weak social affiliations. And stress in early life is coming up the agenda fast.

Initially people showing, particularly David Barker, associations between low birth weight and vulnerability to heart disease, stroke, diabetes, and a number of other conditions in later life.

It looks increasingly as if that is not a story of poor nutrition in pregnancy leading to low birth weight and that to some physiological impairment, but a different process of perhaps tuning or programming stress responses early on. That in the developed world it looks as if perhaps the main cause of low birth weight is stress in pregnancy. Cortisol, one of the important stress hormones I understand crosses the placental barrier so there's a correlation between maternal and fetal cortisol, but also a correlation between birth weight and cortisol in middle age.

I suspect actually that the prenatal story is part of the same picture as the postnatal issues of stress to do with poor attachment, domestic conflict, things that psychologists have told us were important for a long time. In a way what we're doing is getting to understand the physiological side of those important psychological processes. But all of them increasing death rates in later life.

I'm not a biologist and I feel obliged to say something about the biology of chronic stress. My understanding of it is that it involves a switch in physiological priorities from all sorts of things important to health maintenance and things that if you're facing a brief emergency, a challenge, a threat, you mobilize energy for muscular activity. You become very alert or aware of what's coming at you. But during those brief emergencies all sorts of less urgent processes are down-regulated. So things like tissue maintenance and repair, digestion, reproductive functions, growth, processes like that don't matter if you're having to save your skin. Particularly if the worry, the anxiety goes on for weeks or months or years. Then you get a wide range of health consequences. You become more vulnerable to a wide range of conditions.

And this research actually, and there are some very interesting bits of work that have been done on these processes. For instance they're not just observational epidemiological studies that underlie what I'm talking about. People have, for instance, made little puncture wounds in I think the backs of people's hands and measured how fast they heal and found they heal more slowly amongst people who have bad marital relationships. What's his name, Cohen, I can't remember, at

Harvard has given people nasal drops containing cold viruses so he gives people a known measured exposure to infection and finds people with few friends, less good social networks, friends in few areas of life, are over four times as likely to develop colds as a result of that same measured exposure to infection. So there seem to be big physiological effects of stress.

I think one of the important points that comes out of this - important not just to people like myself interested in health, is that if you look at those three categories of psychological risk factor I started out with, and if it is true that they affect health through chronic physiological arousal, then in a way what the epidemiology is telling us about is those are the most important sources of chronic stress in modern societies. They're important not only because there are big differences in relative risks, as I said, two- or three-fold differences in mortality between the high and low in each of those three categories I showed you, but also because so many people are exposed to those risks. You might look at exposure to some occupational chemical and find there's a two-fold risk of mortality between exposed and non-exposed, but tiny proportions of the population will be exposed to some occupational chemicals. These are important to public health because so many people are exposed to them and because relative risks are important.

So maybe it's worth thinking about those categories as the most important sources of chronic stress in modern societies.

I think though they're telling us something else. It seems to me that maybe they are all pointers to the same, if you like, underlying source chronic stress. If you think of the insecurity that comes from early life, the personal insecurity that one can feel from early life, that perhaps is not so far away from the insecurities that come from low social status. There's some data that suggests one makes you more vulnerable to the other or can offset the effects of the other. They're both associated with higher basal cortisol levels. We use similar words. We talk about insecurity for both of them, fears of inadequacy, looking stupid, being looked down on, whatever.

But friendship fits into that same picture because if you have friends there are people around you who appreciate you, who think you're okay, and they'll find you interesting, attractive, whatever it is.

If you don't have friends, you feel left out, excluded, not invited to things, you start to be filled with all those anxieties about maybe they find me boring, I'm unattractive, all those sorts of things. I suspect what those categories of chronic stress might be telling us about is that in a way the big issue is how we negotiate the social space, social relationship,

the social environment. We are reflexive beings. That's what we mean by being social. We know ourselves through each other's eyes. We experience ourselves through each other's eyes. We have to, as social beings, monitor other people's responses to us all the time.

I'm suggesting that maybe what the social epidemiology is telling us about is that that is the central issue for people, particularly in modern societies where we're not growing up in a community of people we've known all our lives, but having to negotiate new relationships over time. I think it's interesting that even over fairly short periods of ten years or so, you can see amongst school children, for instance, increasing proportions who are dissatisfied with physical appearance and so on, more worried about being fat or their teeth or whatever it is.

This picture I'm suggesting I think is in some ways a happy one, not in the sense of this conference, because it seems to me it coincides rather with what some of the great sociological thinkers have been telling us for a long time about how the social gets into us. How we are socialized. The importance in terms of conformity of shame and embarrassment and things like this. It's about how you're seen.

But just as that's how the social gets into us and we're socialized in terms of behavior and so on, it's also how the social gets under the skin and affects health. So I think those two pictures come together in quite a nice way.

I like to show people this little quote as an indication of how the securities from early life interact perhaps with issues to do with social status. This is Beatrice Webb who I think was important in the founding of the London School of Economics, an important early socialist in the beginning of the 20th Century. Bertrand Russell quotes her saying, "If ever I felt inclined to be timid as I was going into a room full of people I would say to myself you're the cleverest member of one of the cleverest families in the cleverest class" of what we then imagined before we were overtaken by the Americans, "of the cleverest nation in the world. Why should you be frightened?"

But though she can use her social status to offset those personal insecurities, if you read for instance Simon Charlesworth's book, "Phenomenology of Working Class Experience", you find just the opposite. That if working class people want to experience themselves as knowledgeable, intelligent, generous, funny, they have to avoid socializing with middle class people, avoid going to pubs where there are middle class people because always the presence of middle class people makes them appear ignorant and stupid and all the rest of it.

So with that picture of, if you like, our individual vulnerability to the social environment I want to then move on to what makes those vulnerabilities better or worse in terms of the overall social structure. And of course any social problem, whether you're looking at unemployment or violence or who gets involved with drugs or whatever, you can always look at the individual risk factors. You can always see why it's these people who have these problems and not those people. You can find the things in early childhood, in their educational experience and so on, which explain it. But it never explains, that kind of analysis never explains why one society has 20 percent unemployed and the other perhaps two percent. You have to look at the social structure.

I'm now going to move no to talk a bit about increment equality and its affects. I think at this point I should acknowledge Angus Deaton's very important criticisms of this work. I accept some of it but I think not all of it, and I'll come -- Well, for me some of the problems that still remain after reading Angus' work are I suspect that the relationship between individual income and health should not be treated as an affect of your material circumstances on your health, but is a measure, I suspect, of your social position in society, your social class position.

Also rather than thinking of income inequality as a sort of different dimension of factors affecting health, I suspect we should be thinking of it in terms of a measure of social class differentiation, telling us something about the social distances in a society and maybe the importance of social differences in a society of dominance and subordination.

But I must say when reading Angus' criticisms in this field, with other critics I often feel anger and hurt and so on, but with Angus I always feel with adversaries like him who needs friends?

So I'm going to go through some of this, just a little bit of the material. Many people will know these relationships.

This is the proportion of income going to the poorest half of the population along this axis, so in California you have about 20 percent of the society's income going to the poorest half and 80 percent going to the richest half. And here you've got death rates per hundred thousand.

Looking at it in this age group, which typically is one of the age groups perhaps with infant mortality where you get some of the largest class differences in health. That's one indication that maybe these relationships are affecting, are related to the health inequalities that I started out with.

So you have the American states and the Canadian provinces. Interestingly, no relationship looking at the Canadian provinces on their own, though the whole of Canada is where it should be more egalitarian and better health or lower death rates than the United States.

This next graph, Nancy Ross and Jim Dunn allowed me to show. They haven't yet published it. I had some trouble from the file they sent me of getting the dots clear. The long-time Swedish dots were white.

Anyway, along here we've got the same measure of median share of income and working age mortality, in 528 cities from five countries -- U.S., Australia, Sweden, U.K. and Canada.

Interesting, I think, I suspect this is Melbourne here, that most of the big cities lie closer to the line you'd put through them, the regression line, and the outliers are the small cities. I have explained in one or two places why I think inequality needs to be measured over larger areas rather than smaller areas. Part of that is why I'm suggesting, and it's related to why I suggest that inequality is measuring basically the social class differences in a society which are usually issues to do with, the reference points are usually national.

Although in the United States you have significant relationships just within the United States a weaker but still significant relationships just in Britain. In Australia, like the data I showed you for Canada, no relationship within Canada or Australia. They're both where they should be on the graph but not relationships within them. So inequality doesn't tell you why one Australian or why one Canadian city is healthier than the other. Though it does tell you maybe why they are roughly where they should be.

**Q:** [Inaudible]

**A:** On an analysis of American cities by John Lynch and George Kaplan, they compared them with, Michael, do you remember? Violence, suicide, heart disease. A package of very substantial causes of death that they say, to give us an idea of the size of differences in mortality between, I think they said also all road crashes as well. So an important part of mortality.

I think it's interesting also, this graph produced by Michael Marmot and Martin Beauback, Eastern Europe. It's interesting also because it's looking at data dealing with changes in this period of rapidly changing economic circumstances.

What has puzzled me is -- I originally started looking at this data because I thought I had evidence that --

**MS. GRAHAM:** Could you put that slide back up? I don't think we got a chance to really see it.

**MR. WILKINSON:** Sorry.

The change in coefficients over this period 1989 to 1995 and change in life expectancy at birth. There's also a cross-sectional relationship amongst those countries that George Davis Smith showed and some evidence of relationships between the rise in mortality in the early '90s and inequality amongst the 80-something Russian regions. Frankly the ones that did worst weren't the ones that had the greatest absolute poverty, but the ones that started out, had the greatest inequality.

Although I looked at these relationships first because I thought I had evidence that the relationship between individual income and health was curvilinear and causal, I've moved on from that view. But I did start off with data from this similar group of OECD countries where I find relationships looking at changeover time, looking at life expectancy at birth. And now there seems to be only a relationship in infant mortality. Old age as the relationship in these countries seems largely to have disappeared. I don't know why. It might be given the large changes in income distribution, that maybe mortality at older ages reflects --

**VOICE:** [Inaudible]

**MR. WILKINSON:** You don't think it's correct. I wish I remembered where we got it from, but in a great many analyses U.S. mortality is a [inaudible] in that sort of way.

**VOICE:** I know that. There is [inaudible].

**MR. WILKINSON:** This is 1991 data.

**VOICE:** [Inaudible]

**MR. WILKINSON:** Yes, other people have said it holds the infant mortality in this sort of way. But anyway, why it doesn't hold it old age groups, maybe the death rates of people at old ages reflects earlier inequality. Maybe it's something to do with the changing distribution of relative poverty. It used to be the old who were predominantly the poor. Now it's young families with children. That has big implications to age-adjusted death rates and so on.

In a way what I want to emphasize throughout this is I think put best by the anthropologist Marshall Salins talking about poverty. He says, "The world's most primitive people have few possessions but they are not poor. Poverty is not a certain small amount of goods." Remember, this is an anthropologist talking. "Nor is it just a relation between means and ends. Above all, it is a relation between people. Poverty is a social status. As such is is an invention of civilization. It has grown with civilization as an invidious distinction between classes." That's very much the view that I think helps one understand some of these relationships best.

One could stop there and just say okay, health is being affected by a greater burden of relative deprivation, but I think there's more to it than that. My reading of the evidence is that more unequal societies have a different culture. They're more aggressive, they're more violent, less trusting, more discrimination both against ethnic minorities and perhaps against women, less involvement in community life, lower social capital.

In a way what I think the data shows is just as the early socialists believed that, they argued for greater equality not as a sort of fairer share-out of goods between self-interested individuals, but because they saw it as a sort of road to human harmony. Fit it in with ideas of comradeship, brotherhood, sisterhood, and so on. I think we put all that aside because we thought it belonged to a kind of utopian world of perfect inequality and it was actually irrelevant to practical life.

However it seems to me what the data is telling us is that small differences in inequality matter. I'm going to start with de Tocqueville. People often cite him as one of the first people who drew attention to the importance of social capital and strength of civic community life in the United States during his visits in I think 1830. But they never emphasize what he thought lay behind the strength of civic life in the United States. His first paragraph in the book, "Democracy in America", he says, "Among the new objects that attracted my attention during my stay in the United States, none struck me with greater force than the equality of conditions. I easily perceived the enormous influence that this primary fact exercises on the workings of the society. It gives a particular direction to the public mind, a particular turn to the laws, new maxims to those who govern, and particular habits to the governed."

He goes on in the next couple of paragraphs to emphasize the importance of what he called the equality of conditions. Of course for him, visiting the United States then what was exciting about it was that it was a society without a landed aristocracy, without a feudal nobility and so on.

Let me just show you very quickly a little bit of data on issues first to do with trust. These again are American states.

This time the Robin Hund index of income inequality. Here you've got the proportion of the population agreeing that most people try to take advantage of you if they got the chance. This is Ichiro Kawachi and Bruce Kennedy's work.

I think it's worth pointing out in this relationship where the variance in trust is, about half of it seems to be related to the variance in income distribution, that there are hugely important differences in the amount people trust each other. From around 10 percent of the population feeling they can trust others to 30 or 40 percent of the population feeling they can't trust others. Huge differences.

In his recent book Eric Oslaner has shown similar relationships internationally. This time instead of mistrust being at the top, trust is at the top so the line slopes down. So these are countries, leaving out the countries with communist legacies which I suppose look different. But that's copied straight from his book.

Robert Putnam in his Italian book emphasizes the importance of an egalitarian social ethos, a democratic social ethos, and goes as far as saying in his measures of involvement in community life that equality is an essential feature of the civic community. He doesn't mean income inequality, he means social attitudes to, more egalitarian social attitudes. But he does say that amongst the 20 regions of Italy there's a .8 correlation between his index of civic community and his income inequality.

He says things like, "Citizens in the more civic regions like their leaders have a pervasive distaste for hierarchical authority patterns." And you may remember that he distinguishes between horizontal relations in the civic areas and the vertical relations between patron and client in the areas of Italy where there is less involvement in community life. In ["Bowling Alone"] he shows again a cross-sectional relationship between his social capital index and income inequality. And he emphasizes over time how trends in income inequality and trends in social capital have mirrored each other. Income distribution narrowed until the late '60s in the United States; social capital strengthened throughout the early part of the century until the late '60s; and then the trends were reversed. Income distribution widened almost continuously since then, and social capital declined. He really emphasizes how close those trends are, though not surprisingly in his chapter on the causes of changes in social capital.

I had the good fortune to debate with him this relationship between equality and social capital in a meeting set up by

Michael Marmot at University College a month or so ago and I was pleased that Bob Putnam said that undoubtedly income equality and social capital went together and indeed had more data on that than I had seen. And to the extent that we had an argument it was about which way causality goes. He said that he was agnostic, actually, to which way causality went but for the sake of the meeting he would argue that it went from social capital to income distribution.

My view is that it can go either way, and I think there are particular examples where it has gone one way, but I think mostly you get exogenous changes in income distribution which then affect perceptions of social distance and lead to greater social class fragmentation and so on.

**MR. OSWALD:** Richard, if I could chip in just for a moment. It would be very nice to bring in the audience to have a debate as part of your talk, if I could persuade you to draw to a close in the next few minutes. How would that sound?

**MR. WILKINSON:** Yes.

Let me just say that the best evidence I think that income inequality affects the quality of social relations comes from relationships with homicide. Enormously well established relationships internationally and within countries. There one can see what the reasons are for that statistical relationship in that a lot of the literature on violence says that issues to do with respect. People feeling looked down on that trigger violence. This has to do with loss of face and so on. I don't have time to read you that.

But just to skip to the end of what I wanted to say, it seems to me that if those relationships of social capital or measures of quality of social relations and inequality are right, then you'd expect a relationship with health because what it is saying is that as inequality widens you get bigger problems of low social status which affects the three psychosocial factors I started out with, but you also get an atrophy of social relationships which is one of the other big factors I started out with.

So it would in a way be surprising if there weren't relationships with inequality, between health and inequality.

However, just to pull the threads together, I think one has to ask why is there this what I call double relationship between social status issues and friendship issues? They are both powerful influences on individual health but they also move inversely in societies, as I've shown you. There's no reason why they should be linked in those two different ways.

I think they're linked for this reason. In a way they're two sides of the same coin. There are two opposite kinds of ways human beings can come together. They can either come together in terms of dominance hierarchies pecking orders which are based on power, coercion and privileged access to resources regardless of other people's needs, or we can come together on the basis of friendship, reciprocity, social obligations, mutuality, sharing and so on. So in a way what we've got is either relationships based on power and position or relationships based on some social obligation and mutuality, and people often ask what is the relationship really between social status amongst the animals. We sometimes look at the effects of social status among and the health inequalities by social status in human societies.

Of course social status in animals and humans is linked because they are both about access to resources.

What I've been talking about I think is not really anything new at all. It seems to me that it's pointing to dimensions of the social environment that have long been recognized as important -- liberty, equality, and fraternity, interestingly, or death. But how does -- this is my last overhead -- how does [math on to] health is that liberty is about issues to do with not being beholden in terms of the French Revolution to a feudal nobility, being autonomous, not being subservient. All the problems of low social status come into issues to do with liberty in terms of its meaning in the French Revolution.

Fraternity easily translates into issues to do with friendship, social affiliation, social capital which we know are important to health.

But equality comes into the picture because I think it's a precondition for getting that right. If you have big inequality you have bigger problems of low social status. If you have big inequality the social fabric starts to deteriorate.

So in a way I think the epidemiology is just telling us what we used to know perfectly well.

**MR. OSWALD:** How about if you left that last slide up which concentrates the mind.

**MR. WILKINSON:** Thank you.

**MR. OSWALD:** Thank you very much, Richard.

[Applause]

**MR. OSWALD:** There's a little burst of friendship and social

support.

This has been about social health anyway, and I'll take the first question from Josh.

**MR. EPSTEIN:** One historical point before I ask my question is de Tocqueville's comments on equality you should recall were made before the emancipation of slaves in America, so I think [inaudible].

**MR. WILKINSON:** He uses slavery actually as a confirmation of his thesis. He says that because they live at such a different level, that people don't have a natural tendency to identify and sympathize and experience the sort of subjective suffering.

**MR. EPSTEIN:** Maybe that addresses the second of my points. The first was this. It's not my field, it's not my area so this may just be misguided, but it seems to me that in the case of the stress factors you cite like low birth weight and other things, is it inequality proper or is it a low absolute level of medical care or other services that's producing the bad health?

So take birth weight. If the entire birth weight distribution is shifted rightward so the lowest birth weight in society is ten pounds, I presume the low birth weight issue disappears but the inequality proper, the genie proper, is the same. So is it the distribution or is it the absolute level of the stress factor that's producing the problem?

And similarly, the same point really, you say higher inequality implies higher social capital. Well, take a country like Chad where I presume nobody has anything so the equality is nice and high but the social capital must be low.

So I'm confused as to how you disentangle the relative and absolute factors in this analysis, to which I'm sympathetic.

**MR. WILKINSON:** I believe the absolute --

[TAPE CHANGE]

**MR. WILKINSON:** -- poorer countries, although there are examples of egalitarian countries that do remarkably well in terms of health -- Costa Rica, China, Sri Lanka, and Carola, all examples of poor places that are more egalitarian. But there might be material reasons for that.

I was very interested in what Angus argues about the importance of making -- He distinguishes between different dimensions of inequality and talks about land as the key thing.

At least he discusses that argument. It might well be the very different dimensions of inequality that are important in Third World countries.

In the developed world I suspect that the social relativities show up more clearly because some of the power of the absolute living standard falls away. As countries go through the epidemiological transition and the infectious diseases associated still in the world today with absolute poverty cease to be so important. But also a number of diseases reverse their social distribution. The diseases of affluence because the diseases of the poor in affluent societies. Heart disease used to be a businessman's disease, and now is much more common lower down the social scale. But also obesity reverses its social distribution. For the first time in history we get not the rich who are fat and the poor who are thin, but slightly more obesity lower down.

But over time there is this continuous improvement in health. Every ten years that goes by we get another two or three years life expectancy. Though low birth weight I believe hasn't declined very much. It's been around six or seven percent of births below 2,500 grams almost since the 1950s. That might be influenced by different obstetric practices. I'm sure that would be an important influence.

**MR. OSWALD:** I'd like to bring in some more people if I may. Would that be all right? We'll take Carol Graham next, if I may. She reminds me a good way to signal that you want our attention is to do this with your nametag.

**MS. GRAHAM:** I very much enjoyed your presentation. Your focus on social status and alienation struck me in a way, the description was very much focused on a British class system in terms of the discussion of being middle class, lower class, upper class, and then you talked about de Tocqueville and his initial views about America.

What strikes me is that even though the U.S. has such a high rate of inequality, in fact much higher than Britain, if you look at public surveys there's a surprising percent of people that think they will be above mean income in the future, even though they won't be from everything we know in terms of the data. But the sort of myth or the image of the U.S. as a land of opportunity seems to prevail and even prevail among fairly poor people.

So I wonder how that fits into your picture. At least in terms of perception the U.S. is a less stratified society, even though in reality we know it's not. I wonder how that affects your health linkage.

**MR. WILKINSON:** It's stratified differently. Money is more the overwhelming key. In Britain there are all sorts of things to do with other markers of class that remain important. But I believe social mobility isn't dramatically different in the two countries.

Most people in Britain call themselves middle class, and we all know people who are poorer and richer. I suspect that's the reason. So I don't think I've been talking particularly about British patterns.

**MR. OSWALD:** I think Henry Aaron is next.

**MR. AARON:** This is by nature of a friendly question.

What you've described is a very complicated system in which everything is affecting everything else, and hence one gets high degrees of correlation among virtually anything that seems plausible -- income, social status, education, access to health resources, and so on.

You're making, as I understand it, a case regarding the specific effect of inequality in social status.

I'm not sure whether that is meant to encompass all dimensions or only some, but it raises a question in my mind about whether there's a possibility to drive through to an answer using animal studies and the extent to which that may have been done. Because you can do things with animals you can't do with people. At least in most places.

In particular, you can look at dynamic effects. You can start off with a population. You can genuinely randomize and create various kinds of inequality. You can look at the question that the authors of another paper here suggest as an alternative which is it's not so much inequality, it's rank that's important in explaining things, and you can do that pretty freely with animal studies.

To what extent has it been done?

**MR. WILKINSON:** I think we've been very influenced in our interpretations of health inequalities amongst humans by the work particularly of Robert Sepulsky and maybe Carol Shively, but Michael Meany and several other people working with animals and looking at the effects of social status amongst animals. And the advantage is, as I suspect you know, lying behind your question is that you can separate out the material from the social status issues. So Carol Shively puts animals in different compounds, watches their social status works out. She makes sure they have

the same diet. She then takes the dominants out from different compounds, puts them together so some become low social status. She takes the subordinates out and puts them together and some become high social status. Although I have the tendency I think to feel that one shouldn't make those analogies and comparisons from monkeys to human beings, I feel that they are telling us something very important because a number of the effects of low social status that appear under those conditions are also factors which we find related to low social status in human beings. The Whitehall studies have for instance shown --

**MR. AARON:** [Inaudible]

**MR. WILKINSON:** I don't think one can tell amongst the monkeys but certainly at times when the leadership of a troop is contested you can get reversals of the stress hormone levels in animals. There's more fighting amongst the dominants. But usually apart from those times it's the other way around. There are some studies now showing similar patterns of higher basal levels of cortisol and attenuated responses to stress amongst human beings as Robert Sepulsky found amongst the boons in the wild.

**MR. OSWALD:** I'd like to bring in another speaker if I may and I'll hand it over to Angus.

**MR. DEATON:** I'd like to thank Richard for his extraordinarily generous references to my work and I liked his neat phrase, but I don't like being characterized as his enemy in any shape or form. [Laughter]

I think that as we all got a dose of today, Richard has been a source of tremendous ideas to a lot of us and I love the way he pulls things together from a wide range of literature. If I don't always in the end convince myself that the tapestry that he weaves with them is one that I agree with.

There's not a lot I have to say. I've said nearly all I have to say in the survey paper which just came out in the Journal of Economic Literature, but I would like to make just three very quick points.

The first is that I really do, as Richard knows but not everyone here might know, I really do believe in this research strategy in which social determinants of [health] are likely to be really important and we should not be looking entirely at the individual level. Now exactly what those are is in some sense the issue.

On the hierarchy, dominance and so on, it's plausible enough that there should be a correlation with income and equality but

they're far from being the same thing. Some of the most brutal hierarchic dominant societies which you could think of as being very dysfunctional for health have nothing to do with income inequality, whether it's between animals -- you can think of the army. When I'm in Britain I like to use the example of my British public school that was inflicted on me. It's hard to imagine anything with a more exquisitely worked hierarchy brutality and unhelpfulness for people's health of any form than that. And yet there's no income there. There's no income inequality. And in fact if you think of many of the most brutal dominant societies, they make a virtue of not having any income inequality. So they don't go hand in hand.

The second point I want to make is there's a historical tradition which in some sense we're getting away from but I don't think we should get away from it entirely. The U.K., the British literature, has always been dominated by discussions of social class. The U.S. literature, by contrast, has been dominated by discussions of race.

Race didn't come up at all in Richard's talk and I think you really can't talk about health in the U.S. without patterning and structuring that discussion in terms of race. I could get into that in a lot more detail, but for instance if you're talking about infant mortality, if you're talking about mortality across cities and so on, you really have to look to racial differences. You have to look at the effects of race on one another.

For instance in my own work, once you put racial composition of cities into the correlation that Richard showed you there, the correlation of income inequality vanishes. That of course doesn't mean it's not social structure. I think it's probably something to do with the relative treatment of blacks and whites, but I don't think it's anything to do with income inequality per se.

The last final point is, let me draw attention to the time series evidence which tends not to figure very much in this epidemiological literature. As Richard said, there's been a steady progress in increasing life expectancy in most of the Western World. In the U.S. at about three years per decade. But it's by no means constant, so you see strong periods of acceleration and deceleration in the rate of mortality decline.

If you look at the time series data in the U.S., for economists who are used to thinking of the productivity slowdown and the increase in inequality, you've got the post-war period sort of divided into two halves. A first half which is sort of fast growth and very little change in income inequality and the second half which is very rapidly rising income inequality and very little growth.

If you look at what happened to the mortality decline during that period it's much slower in the first period than it is in the second period so you get a very rapid acceleration in the rate of mortality decline, exactly coincident with the period of rapidly growing income inequality.

So you can't explain it by background trends. What's more is that decline in mortality rates is common throughout Europe.

There are different lags in different countries but it's a common effect and it looks to me, having started out looking for something completely different, it looks to me like it's technology. That this is something to do with improved treatment for heart disease. It's much focused in the right age group, too. So you can't associate that with --

And this is historically a very large increase in income inequality which is not quite the reverse effects on mortality from what you would expect from the income inequality hypothesis.

Thank you.

**MR. OSWALD:** Thank you very much.

I'd like to start thinking about drawing it to a close. If you'll forgive me, may I ask one question?

This role of friendship is tremendously important, isn't it? I wonder if that is something, Richard, to do with talking or not talking? That might sound a strange thing to say but if you read the principles of psychological counseling which I've been doing recently because I'm interested in this happiness idea. The key idea is that verbalizing things is good for human beings. Holding things inside is bad for mental health of human beings. So I'm wondering whether really what friendship is about is speaking, about talking. I wonder what you think of that?

**MR. WILKINSON:** I rather suspect not. I see it much more in terms of an evolved attentiveness to things like social alliances. I would see it coming as much from grooming, and of course there are theories from Robin Dunbar that conversation is how we groom. But I was rather impressed by a paper, I'm afraid I can't remember who it was from, an American paper in the last few months that said the people who benefitted from friendships are actually the people who did the giving. I suspect that is part of our need to feel valued and appreciated which again I see in evolutionary terms as what we need to maintain our membership as a cooperative group. I need to be doing things that you people value otherwise I get chopped out, preyed upon, exploited, whatever. I think that desire we have to feel needed, to form social alliances, are closely related and predate our linguistic

abilities.

**MR. OSWALD:** All right. I don't really agree with that, but that's fine.

Dick?

**MR. EASTERLIN:** I'd just like to [inaudible -- no mike] -- of developed countries which is in many of them inequality is worsened and longevity and health have improved or certainly have not deteriorated in the case of health.

The question, if this relationship holds that you're suggesting how important is it in actual historical experience? Economists are fond of doing cross-sectional studies. In this case if we take just the level of economic development and life expectancy and asserting that economic development will improve life expectancy. But if you look at historical experience there's little to suggest that that's the case and that indeed the improvements in life expectancy have been dominated by advances in knowledge -- the control of infectious disease, and more recently in diseases of older age such as hearth disease.

So I have a lot of sympathy sort of with what you're suggesting, some causal connections here, but it's not clear if what one is basically interested in is the improvement of health, that reducing income inequality is going to be a big factor vis-à-vis much more direct policies that have to do with hypertension or things like that.

**MR. OSWALD:** Could I ask Sandy Jencks and Richard Suzman just to make their statements and then Richard, I'll get you to reply and we'll close. Because we're going to start to run behind.

Richard, the poker players have folded. Can I give you 30 seconds to reply and then we'll get on to the next session?

**MR. WILKINSON:** Yes.

I think, in answer to your point, I think I initially thought that income and equality relationship was a very important determinant of health. Increasingly now I think it's less important as a determinant, so much as telling us more about the fact of health inequality being about relativity -- about social instances, about social comparisons. And actually, of course, there's no reason why the improvements of health of the rich and inequality should not equal the benefits of the bottom.

So I think increasingly it is for what [inaudible] about the

nature of health inequalities. But in terms of trying to improve health I would argue that the most important thing to do is improve the quality of social relations, and that's as much to do with institutional life and working relationships. What goes on in schools, in playgrounds, and so on, about management styles.

I suppose I have to argue that income inequality is an important part of that simply because of the connections I've been showing with social relations and homicides and so on.

So in relation to Angus' points, I agree there are different dimensions of inequality and I think income distribution is only important insofar as it does measure social distances, and in other kinds of societies power can be unrelated to those including in school playgrounds. I mean people doing studies of school effects on health, looking at the popularity of kids. Again, as I mentioned, as you said, nothing to do with income itself.

I also agree that, I suspect particularly amongst the elderly there are quite new trends going on related to health care. For generations, health improved very little amongst older people and now suddenly we have rather substantial improvements which look to me as if they're about medical care, which is not such an important determinant of health amongst people of younger ages including infant mortality I think.

**MS. GRAHAM:** Richard, thank you very much for an excellent paper and discussion.

We'd now like to turn to the next paper, Rafael di Tella of Harvard Business School and Robert MacCulloch of Princeton University on "Income, Happiness and Inequality as Measures of Welfare".

**INCOME, HAPPINESS AND INEQUALITY AS MEASURES OF WELFARE**

**Rafael di Tella, Harvard Business School  
and  
Robert MacCulloch, Princeton University**

**MR. di TELLA:** Thanks very much for the opportunity to talk about income inequality and happiness as measures of welfare. It's joint with Robert MacCulloch from Princeton University with whom we've done a series of papers in this area.

Originally the invitation was to talk about a paper that we have completed on income inequality and happiness in Europe and the U.S., but the more we thought about the problem the more it took us to a relationship between income and happiness and back to the Easterlin hypothesis. So we decided to present a paper that is ongoing, and indeed we are going to present some material that is not in the draft that we sent. It's very much ongoing research. To compensate you for presenting half-cooked material, I'm going to be incredibly clear, much more than is actually advisable with this group. But I think we are ready to provide a public good, so all questions please direct to Professor MacCulloch here. [Laughter]

By way of motivation, I don't have much. I just want to read out to you what Senator Bob Kennedy had to say on GDP. So the paper is about income and happiness and Bob Kennedy talked about this and said, "It does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate, or the integrity of our public officials. It measures not our courage nor our wisdom nor our devotion to our country. It measures everything, in short, except that which makes life worthwhile, and can tell us everything about America except why we are proud to be Americans."

That's my motivation.

So that idea that Kennedy talks about, GDP is an incomplete measure of happiness or welfare is echoed in the debate about GDP. The United Nations says we should talk about GDP is a mistake because it doesn't include environment, it doesn't include working hours, stress, all these things. It says it's a mistake because it doesn't talk about the distribution of income. Income inequality is key.

Of course it's a little bit of a contradiction to say that income is not a good measure because of environment and all that,

and income inequality is a very worrying thing, isn't it? Because of course if income is not that important then we shouldn't worry too much about income inequality, right?

So I'll tell you what the plan is. The plan is I will talk about this paradox for a few minutes. I want to understand in what sense it's a paradox, in what sense it tells us something about relative income, and the role of limited variables. The variables again in the sense of again, as Kennedy was talking about, all these other things that have to be included in the measure of welfare.

The same logic means we should be looking at happiness inequality which appears to be flat.

Then I want to really burn myself and talk about cardinality and ask whether we need to talk about cardinality in order to be running this regression from. What do we actually have to say about that.

First, the Easterlin paradox. What's the Easterlin paradox? It's a fact.

If you run a regression of happiness and income, it works in [agrefection], it does not work over time, and the data is for the U.S. post '45. So if you look at one year and there is a relationship. People who are on higher income are happier. Okay? That kind of works.

Now you look at happiness over time in the U.S. and it doesn't seem that the average is growing. The paradox is that income grew like crazy in the U.S.. That's it.

So what does this imply? I think I convinced myself that it rejects the hypothesis that absolute income only matters. So that's where it is.

What does it mean? Well it works [inaudible], it doesn't work over time. It must mean -- We've rejected one hypothesis which is always hard to do. So I plan to bring this presentation by showing how wrong Easterlin was. There's a huge premium by showing that. But there is a lot of information there. He has rejected a hypothesis, I think, big time.

There is some speculation also. It may be related to income. A lot of people have seen evidence for this and it's super-intuitive. It's super-intuitive that relative income matters. And a lot of people have presented evidence consistent with the hypothesis because you put in a regression, you put in relative income and it kind of works. So then hence, it's evidence that relative income matters. Okay?

Well, there are some problems with this. There's a problem with the fact, if you run this [inaudible] in Italy or in Belgium over time, they don't seem to be as flat. If you run trends, you put a trend in each one of these European countries for which we have long enough time series, there seems to be a small, significant trend which is going up in Netherlands, Italy, Denmark and Luxembourg, significantly going down in Belgium, and no trends in France, U.K., USA, Germany and Ireland.

They're pretty small. So you eyeball the data, kind of the pattern is all over. It's flat in general, although there are small trends there.

A more significant problem I think is with this explanation based on relative income.

Relative income, what is relative income? Relative income is, by definition. The relative income times GDP. So you can multiply your income -- sorry, what is your income. By definition is your relative position times average GDP per capita in the country. Okay? That's the definition.

You can take logs. Then you can run a happiness regression equals alpha log of relative income, the beta log of GDP per capita.

People don't care about relative income. What I found comes in positive here is not a test of relative income, obviously, because relative income is a part of income. You have to have like a test of the relationship of the two. For example, that alpha is bigger than beta in some sense in order to argue that relative income comes in.

What I'm saying is you can still have in this regression alpha being significant and you still haven't proved that it comes in separated from income.

For what it's worth -- that's my first point. It's a restriction. Relative income means a restriction.

For what it's worth, we basically put all the barometer data which is 400,000 people more or less, less than that. Repeated cross-sections. OECD nations, 11 of them plus the U.S.. Twenty-two years of data, all the personal characteristics of these people, [fixed effects] for the countries, year [fixed effects], the coefficient, these are the coefficients. GDP per capita and relative income. So one is an individual coefficient and one is a coefficient on the aggregate variable.

**VOICE:** I missed that. R is the [inaudible]? What is it

again?

**MR. di TELLA:** I don't have many slides so I can spend a couple of minutes on this one. So if you want clarification please stop me.

So each individual income, your income, can be expressed as your relative position in the U.S. times the average GDP per capita in the U.S..

**VOICE:** [inaudible]

**MR. di TELLA:** It can be.

**VOICE:** The only way that can be right is if R is Y divided by GDP. You're saying it's your relative position in the U.S.. I don't know what that means.

**MR. MacCULLOCH:** It's not your position in a rank sense, you understand.

**VOICE:** [inaudible]

**MR. di TELLA:** Right.

**VOICE:** [inaudible] Is that an identity or is it not an identity? You've labeled it as an identity. If it's an identity the only way it's an identity is if little Y, if R is Y divided by GDP.

**MR. di TELLA:** Yeah.

**VOICE:** That's what it is.

**MR. di TELLA:** Yeah.

So what does it mean?

**VOICE:** I don't understand why [inaudible].

**MR. di TELLA:** The way to understand it, another way to put it is the following thing. So there is this discussion about whether income matters, your income matters, or whether your relative position matters. And all we were trying to say was that a very modest claim which is that your income contains like relative information in some sense. So that's all there is to this.

**VOICE:** But [inaudible]. Is that right? [Inaudible]

**MR. MacCULLOCH:** I think he's okay. It's just that -- Could

you put the slide up again? We can see what we're doing.

If you run equation two and relative income mattered and absolute income also mattered, you'd get alpha and beta both being the thing. So the hypothesis that beta is zero is just that it's only relative income, right?

**MR. di TELLA:** Right.

**MR. MacCULLOCH:** So you're saying that alpha is big in the data some of the time, or it isn't.

**MR. di TELLA:** My conclusion from this is that we can reject that after [inaudible] relative income the effect of absolute income measured by GDP per capita is zero. So that's what we can reject. Okay?

To build a little bit like knowledge slowly. Easterlin rejects it. Correct me if I'm wrong because I'm trying to understand what -- So correct me if I'm saying what is wrong. So very slow steps.

Easterlin proved I think that it cannot be the case that absolute income only matters. I can't say anything more on that. We are saying we can reject that. After controlling for relative income, the effect of absolute income measured by GDP per capita is zero. So there is some role for income. He proved it cannot be all the story. We proved it cannot be zero. So we are very much back to Easterlin.

**VOICE:** [inaudible]

**MR. di TELLA:** All of the countries.

**VOICE:** So for the United States even.

**MR. di TELLA:** They are part of a pattern, the pattern of variables is less [inaudible] not exactly happiness. It's a little bit different.

So I'm going to concoct a story -- Yes?

**VOICE:** [inaudible] relationship

**MR. di TELLA:** I don't want to say that.

**VOICE:** [inaudible]

**MR. di TELLA:** No --

**VOICE:** [inaudible]

**MR. di TELLA:** No, I didn't say that. It's very easy to confuse and I get confused all the time, so slowly this is what I'm saying.

I'm saying that relative income matters should involve absolute [inaudible]. So then it's alpha and beta. You can't just say look, relative income matters. That's it. Relative income matters. Because it could be the component of relative income included in individual income, you see? That's the essence of that.

Your individual income involves two things. Your average GDP of America and your relative coefficient in some sense. That's all I wanted to say there.

Now remember, the combination now of Easterlin plus this new fact. Easterlin proved that absolute income only matters, can be rejected. We proved that after controlling for relative income there is a role for income. So how come? How come happiness is flat when income went up so much?

I'm going to concoct what we think is like a natural story and then we'll show you how robust this thing is.

Maybe it's [inaudible] variables. So the way to think about it is, this is like a happiness, think of happiness now, rather than having only absolute income or only relative income, of having this combination. You have relative income somewhere then you have income, income from hours, and hours. Okay? So income comes in positively.

**MS. GRAHAM:** -- income term? Are you thinking of that as both?

**MR. di TELLA:** This is just absolutely. Okay? So imagine, the intuition of how could it possibly be that income plays a role but absolute income only is not possible? How could it possibly be the two at the same time?

So the story that we can concoct is one of omitted variables. Maybe people don't like working. Then let's imagine that it's income, income from hours and hours. So within a country people on higher income are happier. Okay?

Now let's make them work. Let's go over time to Easterlin, consideration over time. Over time they work more, income from hours is going up and hours is going up, so they are canceling each other and that's it.

**VOICE:** [inaudible]

**MR. di TELLA:** So the challenge is to get it working in a cross-section and not over time. So what I'm saying is that maybe these guys are working more. If they're working more they're earning more, but it's being canceled by the fact that they dislike working.

**VOICE:** [inaudible]

**MR. di TELLA:** The variables are you work X number of hours -- This is like from wealth, from dividends or something. I don't know. Then something from hours.

So ignore this for a moment.

Within the country, if income matters in this story, now the function is a little bit different now. It matters income and hours.

**VOICE:** [inaudible]

**MR. di TELLA:** Sure, you can completely. Absolutely. So ignore this income from hours.

**VOICE:** [inaudible]

**MR. di TELLA:** For this story, we are trying to concoct a story --

**VOICE:** [inaudible]

**MR. di TELLA:** No, I'm not presenting any variables just now. In a minute I'm going to put GDP per capita as a measure of absolute income and relative income.

**VOICE:** [inaudible]

**MR. di TELLA:** Of course. What I'm trying to say is, can you see a story where omitted variables --

**VOICE:** [inaudible]

**MS. GRAHAM:** Isn't the simple question that you still haven't answered, in your story as you're talking about income you're thinking about all income or income from earnings?

**MR. MacCULLOCH:** All income.

**MS. GRAHAM:** Okay.

**MR. di TELLA:** I'm going to go now to the variables in two

seconds.

What could the variables be? Think of the broadest [inaudible] function and some proxies, throw them in there, look at the variation over time and do some accounting to check whether we can go and get this magnitude that Easterlin required for this to be quashed. Okay?

So you can imagine what these things are. The big distinction we're going to be making is on whether there is, the person is employed or the person is unemployed is going to be looking at the infinite horizon, and there's the money that the person has, the leisure and the quality of the leisure. Then say the system has a way of affecting, or the utility, you are breathing very bad air or something, or crime, and that's it. Okay? Then you can --

So this is now the variables that we are on, so this is our regression at hand. All the countries, 22 years, all individual cross-sections, all individual characteristics which are not presented here. The variables, one of them is relative income, and this is GDP per capita, average GDP per capita in the country. There is no information on income in the barometer, okay? You just have whether this guy is, where is his relative position.

Life expectancy is years, people expect to live, a measure of omissions, a measure of hours worked. We don't have hours worked at the individual level. We have only hours worked at the aggregate level. The crime rate, divorce rate, inflation, growth. You can, again, cook up some story whereby this is a proxy for some of the things that are [inaudible] function, okay?

Openness, I don't know, you can imagine it's like a proxy for the risk in the environment. If you are in a very open economy you may be thrown out of work immediately. Right?

**VOICE:** [inaudible]

**MR. di TELLA:** We go to a fixed effect of a country. All right?

One thing, for people who are skeptical of happiness data, they kind of go with correlations. People have a dispositive, emissions is negative, hours worked is negative, crime rate is negative, divorce rate is negative, inflation again negative. All right? Employment benefits is a positive.

The personal characteristics, I won't bore you with them.

I'm going to skip like a lot of this stuff and then go

straight to the accounting. The point of the exercise is to go to the accounting.

One possibility that we concocted that could be consistent, make everything consistent, is the story where okay, it's not only income. Relative income, after [inaudible] GDP does play a role but there are all these other things that do play a role, that compensate. Then you can show whether the actual variation that took place multiplied by the coefficient kills the increase in happiness that you would expect from the increasing GDP per capita.

Remember, GDP in America is going up like crazy. The thing is flat. We get a coefficient on GDP per capita, so things are looking horrible for us. GDP per capita hits happiness positively. So you're expecting it to go up like crazy.

So these are all the variables. This is what I mentioned before on GDP per capita going up a lot during the period.

This is our finding. The coefficient is positive on average GDP per capita and the change is very big. You expect happiness to go up.

These other things actually provide a combined effect that you expect for this to be quite high, much higher than this which is 0.50.

Now the individual characteristics, it could be that GDP per capita is going up like crazy, the other variables don't mean anything, but individual variables are changing the composition. For example, everybody got divorced. Okay? So you need to put a weight for what happened to divorcees. So maybe it's the role of individual characteristics that is doing the squashing of the happiness that Easterlin finds. And we don't. It's very small.

So the combined effects -- Remember, the target is to get to minute point one which you observe. So the combined effect is very very large. 0.5 minus 0.05 is 0.45. So if you look at what we have explanation for you expect GDP to again -- I added the omitted variables and if anything the paradox is much bigger now. I was hoping it was going to go down but it's going up, you see?

**VOICE:** Maybe [inaudible].

**MR. di TELLA:** No. I have to think about exactly how it works, but -- I guess if the [inaudible] is constant about how much is going to the underground economy or is moving about, is shooting up, so I don't know the answer to that. I'd have to think about it.

VOICE: [inaudible] GDP per capita [inaudible].

MR. di TELLA: Is that a fact? I don't know. GDP per capita involves [inaudible]?

VOICE: Yes. [Inaudible] But it seems [inaudible].

MR. di TELLA: All right, I haven't thought through this.

VOICE: Is the bottom line here that we're still looking for a big negative variable?

MR. di TELLA: We're looking for a much bigger one now.

VOICE: I understand that, but that's the bottom line.

MR. di TELLA: Yes.

VOICE: I don't know whether this is premature, but an alternative form of misspecification is we haven't got the relative effect right. I mean you're very sensible looking for omitted variables, but an alternative is it should be pure rank which sort of by definition cannot rise through time. There's only so much rank to go around. Or something else. You see, you've kind of turned the search light onto a whole bunch of other potential omitted variables, but maybe the searchlight should be on the correct way to specify relative concern.

MR. di TELLA: Absolutely. That's exactly what I wrote down in my conclusion.

My conclusion from this part is that Easterlin showed in a hypothesis that absolute income only matters can be rejected, so that's pretty clear I think. I think we show that relative income only matters can be rejected because GDP per capital actually enters there.

So we are back on why isn't there this trend in happiness given this big increase in GDP per capita?

We produced a story based on omitted variables and it didn't work out that well, so maybe there are other omitted variables, maybe you can organize that, or we can organize a better potential for relative income maybe on rank.

So -- Well, that's that.

So there's a little bit of progress I think here on -- Remember, we are trying to talk about income with the Euro barometer which doesn't really have good income data, you see? So that's a very big limitation for everything I've been saying.

That's why I have to go to [inaudible] GDP per capita, relative income sort of combination. There are many things that could be going on. So one natural avenue is to go and look into like a good panel of following individual people over time, and that's what we're trying to do with the Germans such as [inaudible]. Okay? I'll talk about that in just a second.

But just for the sake of the argument, logically if you are thinking about omitted variables as being part of the utility function there, the conclusion with respect to inequality is exactly the opposite. If relative income matters then of course the fact that we have been [inaudible] the economy is a killer for me, so we are really desperate for income inequality. Relative income areas are very upset with income inequality. But if you are an omitted variables than you are much less so because you want to look at happiness inequality.

So what did we do? I completely [inaudible] version of happiness inequality which is putting numbers and getting the standard deviation. So this is the U.S., happiness and income inequality and the levels.

So income inequality -- So the top lines are income inequality and income. They're going up. And then the ones below are the mean happiness and the standard deviation of happiness which is pretty flat. Of course there are other ways of doing it without assuming commonality. We can look at, I have some graphs for that if you're interested. The overall picture I think is still one where these things are very flat.

If you want to have a look at more, I have some more. But I want to basically now move for a couple of seconds -- So basically another source of, one potential problem with what I've showed you is the definition of income that we have been using. You can't really be looking at all these questions without good data on income. Okay? So one [inaudible] income, and that's one thing we're trying to do.

Another thing is to think better about, we are using cardinality or not.

**MS. GRAHAM:** Can you say again how you defined happiness inequality?

**MR. di TELLA:** Happiness inequality, like give a one to the lowest answer, two, three, four, and you get the standard deviation.

Now so this assumes cardinality. One thing [inaudible] have to do I think is to agree, I don't think this is really correctly

understood by everybody, at least not by me, how much cardinality is needed?

Most economists instinctively reject cardinality so if a pauper says that he desperately wants \$10 and Bill Gates says he wouldn't mind \$10, it does not mean that the redistribution of \$10 is worth doing, okay? But this is of course a hypothesis. It's a hypothesis that the pauper and Bill don't share the language.

So just for going up in flames completely, so an answer based on happiness data. So can we use happiness data to check whether people are answering similarly?

So now we are switching to a panel, to a German socioeconomic panel. All right? So this is a panel which starts in the late '80s and goes up to now of a lot of Germans, 10,000 of them or more, tracked over time. They are asked a bunch of questions. Much better income data, much much better. And we're going to do two kinds of tests.

The tests are, one is you basically compare different regions and check if people are answering similarly. So if you think that cardinality means that people answer completely differently, why is it then that people answer similarly in some specified sense? So that's one potential test.

The other test is to compare the between and the within. One possibility is you average out all these people. We basically look at all of you, you have different incomes, I ask you how happy you are, I check what's the relationship between income and your response. That's between all of you guys.

Another possibility is I give extra money to each one and check what the change in the answer is. So that within answers. Within change.

Then we thought maybe this is a way that we can check whether these two things are equal or not. If there is real [inaudible], why should they average the same?

So I'll present the two regressions and then I'll sit down.

So this is all the regions in Germany. There are different regions. Lower Saxony, Rhine, etc. Income is now defined with much better data and you have all these coefficients. Now we have to do a proper test.

Now my question is whether if you test the coefficients and they are the same, does that tell you anything about cardinality? That's one type of test.

[TAPE CHANGE]

This is the other one which I was mentioning a few minutes ago. So between, this is Germany '84 to 2000. The first one is a cross-section of the 20,000 people in the sample. The other one is the within. You see?

The question now is, does comparing these two coefficients give you any information on cardinality?

That's it.

Again, conclusions. I'm finished. So Easterlin paradox, I think it's alive and well and phrased somewhat differently. How come absolute income is playing some role? That's another way of thinking about this.

Omitted variables, our story represented I think is not the answer. Maybe with better final data, with good income data would be good.

Happiness inequality is the logical next step, and cardinality we haven't really understood how much of that is requested.

So Robert would like to answer -- [Laughter]

**MS. GRAHAM:** That's one way to set him up.

Henry?

**MR. AARON:** This is question for you but it's probably also more for Ed Diener than anybody else.

I don't know what the happiness scales really mean, and let me pose two alternative states of the world which I think would yield exactly the same response to questions but actually correspond to very different realities and I don't know how to distinguish between them given the scale.

As I understand the happiness questions are all based on a fixed, closed-ended scale, one to some positive number, four, five seven.

One state of the world is that as machines for happiness production the human organism knows no bounds. That is we've imposed a fixed scale but there really isn't any fixed limit. These are all time series questions, not cross-section. Over time if I was given a scale to correctly measure my joy as my income rises, it would rise as some constant function of income,

but I'm not given that scale. I'm given a closed-ended scale and I cram my happiness into whatever closed-ended scale I'm given.

So if everybody's income goes up proportionately over time I get nothing happening on the happiness scale.

The other world is one in which human beings, because they relate to their fellow human beings, relative income, whatever, homeostasis, you name it, there's a fixed amount of happiness we're capable of producing. So as income rises my happiness calibrates. If everybody's income rises by a constant proportion the happiness scale tells me nothing has happened.

Now the underlying state of the world I've described here are very different but the statistical results on the happiness scale are the same.

I don't know which of those is going on. My question is how might we distinguish?

**MR. di TELLA:** GDP enters positive.

**MR. AARON:** One could allow then for some positive creep in the scale as well. I stated the question in really bald form, but it's possible you could have some creep and this question I've raised would still have force.

**MR. MacCULLOCH:** Of course in many of these data we don't know the difference between those two, and in fact in most of them. We have data where you start beeping people over time and looking at what percent of the time people say they're happy versus not happy. All of a sudden then I think we start getting a little bit of leverage on that question. Not looking at some intensity of happiness, which people can scale all different ways, but if we would assume there could be some zero point that people could say I'm happier now or I'm unhappier now and we look at the percentage of time that you're happy, and it may be homeostatic for a lot of people, around 70-80 percent. So now if we had those data -- And by the way, these scales do map onto that but at correlations of .6 or .7. So these happiness scales are obviously picking up something more. It could be this recalibration you're talking about.

But one of the things that I would say is that with the percentage time we could be looking at something absolute. It would be also nice if we had in addition to that some things that Richard was talking about like Cortisol, eye blink, frontal EEG, a bunch of biological measures in addition, if we also had some reaction time measures that we've developed, etc. We don't have any of those things over time so the calibration issue is a viable one.

**MS. GRAHAM:** I have a lot of cards up so I think we'll collect a few starting with Richard Layard. And Robert and Rafael if you can just hold your answers for a couple of times that would be good.

**MR. LAYARD:** On Henry's question, there is clearly a lot of variation across countries which I think is enough to get rid of the sort of human fixed point theorem. And as regards to the reporting, most people are way away from the [bands] and all the data we have, so I think the notion that somehow the whole thing is being constrained by the [bands] is not really correct.

But I wanted to comment on the comparability, the cardinality question. It seems to me that if you think you can learn anything from comparing people you must be assuming that comparability and cardinality of units across the people being compared, there's absolutely no sense taking some measure on the left hand side and regressing it and trying to find the relative effects of different things on it. Unless you think it has some natural units which those things on the right hand side can effect.

There are two kinds of things that can be done. One, if you have one of these scales that go from naught to ten you can just use those and assume there's equal integrals between them. That's what, for example, John Honeywell did in a very interesting study similar to the one that's been referred to today. Or you can take ordered logit and you have the different qualitative remarks, not very happy, reasonably happy, very happy. Do your ordered logit and you get the cut points. So it turns out actually that the cut points have a reasonable steppage. The difference between the cut points is fairly similar. So again, you'd probably do all right to treat very fairly, not very as one, two, three, but certainly it doesn't affect the coefficients you get very much on the right hand variables.

Having said that, let me ask the fundamental question which I think is what we're about today which is what do we learn about inequality assuming cardinality? And of course the basic belief at the end of the 19th Century was that there was diminishing marginal utility of income. The point that Rafael put up early on to do with Bill Gates. People thought they knew this by introspection. Now we do know this from the studies.

It's remarkable, very few studies have made much of this but if you look at any of the studies that I've looked at you will find they all have diminishing marginal utility of income.

John Honeywell's study which is based on the world values

survey, he has the ten practiles, decile practiles of people as the variables which he treats as a continuous variable. He has strongly diminishing marginal returns to the hither deciles. If you then try and translate that into income, but of course the higher the deciles are the further apart their incomes are. Since there's a diminishing return to decile, there's even more diminishing return to income.

**MR. MacCULLOCH:** Can I just interrupt on that point, Richard? The Honeywell study doesn't even measure the income. The Honeywell scale is a one, two, three, four, five, six, seven, eight, nine, ten. So it's not actually clear if it's capturing sort of relative income or income. It's just a one, two, three -  
-

**MR. LAYARD:** The same thing. I'm talking about the diminishing modular utility to relative income. That's enough to set up a strong presumption in favor of redistribution whether it's relative or absolute.

Similarly in your study I think you more or less, if you look at the coefficients on your quartiles, they're more or less of equal intervals between them, which again since the higher quartiles are further apart in terms of income, it's giving you diminishing modularity to income.

It seems to me a central issue for this conference is their diminishing [inaudible] to income and I would say we're beginning to get evidence, yes.

**MR. DEATON:** Almost everything Richard just said is wrong. [Laughter] Let me start with where I agree and then tell you where it's wrong.

I agree that it makes no sense to do this unless you believe in cardinality. Cardinality is fine. I than we all take that for granted in doing this, and you can quarrel with that on a fundamental, philosophical level but that's not the discussion we're having here.

What you've got here in these data, in all of these data, is an ordinal scale. That tells you nothing about the cardinality of happiness that people attach to that. So you can take these numbers one, two, three, four, five, replace them by their squares -- one, four, nine, 16, 25 -- by any power you like and nothing will change. All the cut points on your ordered logits, your ordered profits, whatever you do, will change exactly in proportion with the way of that, to keep the number of people in the same bands.

Diminishing marginal utility has completely gone out of the

window. It is mathematically impossible to test diminishing marginal utility with ordinal data because you can impose any scale on that. So everything could be cardinal, everybody could use the same cardinal scale, but with these data you are inherently incapable of testing diminishing marginal utility. Furthermore, they're inherently incapable of measuring inequality of happiness.

So cardinality is not the issue. It's your cardinality. You've imposed a zero, one, two, three, four, five or whatever the numbers are on this thing. You impose a different set of numbers that are completely consistent with your data. I can call them zero, .1, .2, .3, .4 and 50 million. That's perfectly legitimate. That will blow your inequality things out of the water in most circumstances.

So typically you can get any inequality result you like with a given set of ordinal data. James Foster has a paper on this and he tells you under which circumstances you can and cannot say something about inequality change with ordinal data. In general you can't, but in some cases you can. But these ordinal data are not capable of measuring diminishing marginal utility, period.

**MR. LAYARD:** I accept what you said about the cut points which is a throw-in at the end. But the presumption has got to be that if you ask people to record their happiness, sometimes you give them a real line just like that. You just say this is the most happy you can imagine, the least happy. Where are you?

Somebody is doing something real when they make a point on the real line. If you give them naught to ten it's not unreasonable to think that they are treating it as a real variable. Certainly that would be the first way one would think of -- albeit if you ask people to say how tall is somebody and they weren't in the room and you give them a line and they made a mark on it, you'd think it meant something cardinal which it happens to in that case.

**MR. DEATON:** Also people will tell you that a minute is smaller than an elephant, right? Something like 90 percent of people agree that a minute is smaller than an elephant, right? [Laughter] Same thing.

**MS. GRAHAM:** This one I think may have to be continued over coffee.

We have ten minutes and I have a list, so people try and be brief. I have Ed Diener, Jonathan Gruber, Bell Sawhill, Richard Easterlin and Michael Hout. Am I missing anyone? Okay. Then I'll give the authors a moment to respond.

**MR. DIENER:** I just wanted to clarify. Just because it's logically possible that these are social referencing effects, I don't know that we have evidence that they are. But one bit of evidence about that is from Japanese versus American data on ratings of conscientiousness.

Japanese students are more conscientious than our students in many ways but they rate themselves as less conscientious. It's been shown that the reason is they compare themselves to their friends who are extraordinarily conscientious so they all think that they're not as conscientious. But if you look at some absolute standard of cleaning up your room and being to things on time and so forth, you find out that it is a social referencing effect.

But what I wanted to ask the author is something, it seemed like Dick Easterlin and Robert Lane pointed out. If you put in what people think they need or require or desire, then these things disappear. Namely, people's desires have gone up, or what they think they need at the exact rate of our income. So people now think they need a vacation home where they used to think they needed an indoor toilet. If you put that in, if you had some measure of need, would this discrepancy disappear?

**MR. GRUBER:** This paper is really fundamentally about omitted variables bias and one way we can deal with that is by putting in the omitted variables or trying to get as many as we can. But that's of course very difficult.

In the cross-sectional context, one way of dealing with that since income is obviously correlated with many omitted variables, is to look at lottery winners and that's been a useful way in a cross-sectional context.

I wonder if in a cross-country time series context there's a parallel approach which is to look at countries which got rich exogenously. So countries that had an oil shock, they suddenly got rich without working harder, and even with the environment getting worse, it's not purely exogenous, but at least trying to think about exogenous income shocks or at a micro level the Indian tribes that got casinos and suddenly exogenously got richer. Trying to look at, trying to bring that same kind of innovation that we've done in the cross-section to thinking about the time series. Maybe that would be more fruitful than this kitchen sink regression of throwing in as many omitted variables as you can.

**MS. GRAHAM:** Okay, I have Bell, Angus, Michael Hout and Richard Easterlin. Let's just go down the table.

**MS. SAWHILL:** I find this omitted variables thesis quite

intriguing and even though when you tested it empirically, given what you put in your equation, you didn't find any support for it, quite the opposite, I wonder if you pursued some other angles on that you might get a different result.

The one that appeals to me is the notion that, and this relates back to the prior paper, that as in modern life things become mores stressful and in particular the group that you're comparing yourself to becomes larger. We all live in bigger ponds because of communication, television, travel, etc. So that keeping the unit for the reference group constant may not be the right thing to do. If most of the empirical literature is based on states or provinces or regions of Germany or whatever it is, and I'm increasingly relative to 30 or 40 or 50 years ago comparing myself not to the people in that smaller geographic area but in a larger area, then maybe we're measuring the relative effect in the wrong way.

**MR. DEATON:** Very quickly. I thought, and maybe this is related to what Ed said, psychologists tend to summarize a lot of the research by saying that nothing keeps people happy for long. If you think about that, that's not an interpersonal comparison, it's a comparison with your own previous standard of living which [Disenbry] also wrote about too.

I've always found that tremendously compelling. They seem to have done a pretty good job in this paper of showing that it's not your income relative to other people but your income -- that still leave the issue of your income relative to your own income in the past, the adaptation or aspiration change or whatever you want to call it, sort of wipes out these happiness gains, at least from material goods.

If that's true, a really interesting question is whether some goods, whether it's health goods or something of this sort that are not subject to this sort of adaptation.

Thanks.

**MR. EASTERLIN:** Let me say on the measurement thing, it seems to me that, my own feeling is there has now been such an accumulation of evidence by economists and by psychologists that show regularities in kinds of data sets that are being used here, that arguing about whether or not the measure is good or not or this or that isn't the most interesting thing to do. It's not to say it's not worthwhile, I suppose.

The real issue is how do you explain these regularities? It seems to me the paper before us is an attempt to do that.

I like the fact that the paper tries to look, goes back to

the Bob Kennedy thing and looks at a variety of circumstances to no avail, it turns out. And I think the reason it's to no avail is what Ed Diener suggests, the paper's only looking at objective circumstances in relation to subjective well being. One needs to look also at the kinds of standards or aspirations that people have with regard to these various domains. And until those are incorporated in these models, you're not going to get an adequate explanation.

Now Angus' comment summarizes I guess the worst of the psychology literature which is nothing makes people happy for very long. I think that's wrong. I think that it varies by domain. That people's aspirations in some cases change rapidly with a change in their objective circumstances and in other cases they do not change with their objective circumstances or they do not change completely with their objective circumstances and I think probably Ed Diener would agree with that, too, though he's not necessarily the only spokesman for psychology that is present.

But it seems to me that what one wants to do is have a model that takes account of people's aspirations in these different domains and I think one will find that adaptation is less than completely in some circumstances such as family and health conditions than it is in the pecuniary domain of income.

**MS. GRAHAM:** The last comment from Michael Hout?

**MR. HOUT:** Thanks.

I have two unrelated comments to make. The first is before we get rid of hours as the omitted variable here it might be useful to do a little bit of an autopsy on why it didn't work. And I think the main reason it didn't work for the U.S. anyway is that people who work more hours are actually happier than people who aren't. And you even get a little bit of a hint of that in aware result where you've got a stronger result when you throw the U.S. out and only look at the OECD countries without the U.S.. This is a pretty regular or pretty robust finding that actually hours worked is -- People who are working part time are doing so involuntarily and it makes them unhappy.

The second point is to ask a question about whether GDP per capita is the right measure. Is the mean right, instead of the median. We've got a lot of movement in GDP per capita in the U.S. over a period during which the median family income is barely moving at all. If we're interested in inequality which you don't actually have a direct measure of in your equation, but if we're interested in inequality we might be more interested in separating the effects of that other measure of where the center of the distribution is than 90/10 or some other kind of genie or

some other measure of inequality rather than letting the growing incomes of the top tail drag the whole distribution up.

**MS. GRAHAM:** I'd like to turn to the authors. I have maybe two questions to think about going forward. One comes from this whole issue of adaptations that Ed and Angus raised and then how one could capture that in the omitted variables.

The second is this point about measures of inequality. Certainly the work I've done suggests that inequality at the aggregate level tends to matter less to individuals than how they compare themselves to a few people around them or the people in their reference group. I don't know how to capture that in a larger cross-section or time series sense, but it's something to think about going forward.

Rafael, Robert, do you have --

**MR. di TELLA:** Most of the points are well taken so I won't answer maybe some of them. I just want to say a couple of things with respect first of all with the facts of inequality on our previous paper, the paper on inequality and happiness across Europe and America.

We do find that the effect of inequality varies across the two places and particularly across the beliefs that people have. For left wingers, inequality is a very big deal. You're not asking are you a left winger, do you dislike inequality, which of course they would say yes. I'm asking you are you happy or not? And then I check independently whether inequality matters or not. And I also check whether you're a left wing or not.

Now for left wingers, it's a much bigger deal, it's kind of related to your beliefs, I would say. So there's some evidence on that.

On the issue of whether GDP is affecting the rich particularly and not the rest, we don't find a differential effect of GDP per capita across different income groups. But we're sympathetic to that.

On the issue of cardinality, just one short issue. It's not a question of whether -- We agree with most of what has been said, particularly with [contradiction], but the point we were trying to raise is is there a way of doing a test for cardinality? You see? That's what we were trying to think of. Maybe a test of cardinality is that if you give the income to the Bavarians they respond in this scale in some way, and they respond the same way in this other. Angus, you're shaking your head.

**MR. DEATON:** -- means that they have the same cardinalization. It doesn't mean they have your zero, one, two, three, four, five cardinalization. That's all.

**MR. di TELLA:** I agree with that part. So you see, there is a sense in which we need to understand exactly what amount of cardinality is being implied by these responses. And whether between or within maybe I'll ask Angus later on.

Robert?

**MR. MacCULLOCH:** On the hours [inaudible], guess that's an unobserved heterogeneity problem. I guess with the German panel if you follow individuals over 10 or 20 years we have information on their exact income and their exact hours and we could put an individual fix to fix and get at that.

There was a question at the back that the reference unit might be changing. I guess people have been thinking about the role of the media and TV in that. That's been discussed before and perhaps widening reference groups.

On the adaptation issue of whether changes in income are maturing and whether people are adapting.

We have a slide or two actually using the German panel on whether changes matter and tests that relative to the level of income and also tests for whether there are asymmetries and whether people seem to care more about losses rather than gains and [inaudible] for loss aversion. It does seem that the change matters a lot. It does seem that losses matter much more than gains to people.

Angus, could I ask you one example on this issue of cardinality. Say Bill Gates didn't change his score at all if you offered him a million more dollars. That the poorest person in America went from one to ten but Bill Gates did not change at all. What would that tell us? Nothing.

**MR. DEATON:** [Inaudible]

**MR. MacCULLOCH:** Regardless of any cardinality issue, if it means absolutely nothing to him on any scale, it still tells you nothing.

**VOICE:** That seems extreme somehow. I take the technical point you're making, but it seems to me that we might expect Bill Gates and the pauper to agree, that if the pauper had a million more and Gates had a million less, Gates would say well that wouldn't make me feel significantly less happy, and I predict it would make him feel significantly more happy and the pauper would

make the same prediction about Gates and himself, and in some sense it would just be odd if they weren't both exactly right in that prediction.

**VOICE:** But that's not cardinality, is it?

**VOICE:** That's what I think we understand by cardinality. It makes a bigger difference to the poor person's quality of life than it does to Gates' quality of life. That same sum.

**VOICE:** The example that Richard gave, if you actually asked people to draw lines or something which is interpretable as a cardinal score, then that's okay. But those are not the questions we're talking about here. We're asking people how would you rate your overall life satisfaction on a scale of one to five, and those one to five's can be transformed by any monotone increasing transformation. Any results you conclude have to be robust to the selection of that monotone increase in transformation. These inequality measures are not.

If Bill Gates is jammed at the top of your scale, then you have Henry's point that you're not going to get any more, but if it's true, you could do limited things. Bill Gates is at five and you offer him another million dollars, it doesn't have any affect on him; and the guy at the bottom says you offer me one dollar and it will move me up from one to two, then you have a limited cardinality from that and you could make Richard's point which for maximization of total happiness, taking a million from Bill Gates and giving it to the poor guy would improve aggregate happiness. Yeah. But I don't think that's where we are on these one to five scales.

**MS. GRAHAM:** I'm going to suggest that, Robert, do you have any last comments?

**MR. MacCULLOCH:** No, that's fine.

**MS. GRAHAM:** I'm going to suggest that we continue this discussion over coffee.

What we've decided is that everybody needs a 15 minute coffee break so we'll stick to that even though we're running late and take that time out of the lunch break because there's some extra time there. So we'll reconvene at 12:15 and let the next paper go until 1:15.

[Break Taken]

**MR. FRANK:** The next session is a joint session, Gary Burtless and Sandy Jencks. Gary will present. Let's follow the format we followed in the previous sessions if we could. Give

Gary rein to get his ideas out and then we'll try to save a more concentrated spell of time at the end for some questions and discussion.

**AMERICAN INEQUALITY AND ITS CONSEQUENCES**

**Gary Burtless, The Brookings Institution  
and  
Christopher Jencks, Harvard University**

**MR. BURTLESS:** -- to income inequality and why has that happened? The second question is what have been the consequences of greater U.S. inequality? The third is, what should we do about it? That's the agenda part of the question.

Those of you who read the paper or even looked at the synopsis will recognize immediately that we answered questions A and B and said very little about C. Forty percent of the paper is devoted to what's happened and why it's happened. Fifty-nine percent is devoted to what have been the consequences. And one percent is devoted to what should the agenda therefore be.

The consequences we examined are first the consequences of inequality on economic growth; second on educational or inter-generational mobility; third on longevity; fourth on the distribution of political influence within American society; and given the conference title I thought I would add and update the paper by figuring out what the consequences have been on average happiness by income quintile in the United States.

Given the diverse backgrounds of the people around the table it might be worthwhile to summarize what's happened to American inequality and why we think those things have occurred. If this group consisted only of fellow labor economists I wouldn't think that would be necessary, but people come from a lot of different backgrounds so you might want to hear our take on what's happened.

There's no reason to keep you in any suspense. If you read the synopsis you already know that we do not find an overwhelming case that greater inequality in the United States either accelerates or depresses growth; that it greatly changes the rate of social mobility from generation to generation; or that it has a large impact on average American health. This doesn't mean that we think there are no consequences for these things, but we think that the effects are uncertain and likely to be small enough so that within the range of inequality observed in the OECD countries this is not, changing inequality isn't going to be the preferred way that you would generate an improvement in intergenerational mobility or average health.

There are big differences in inequality across the OECD countries but we think these are mainly driven by policies or by

policy differences in the OECD countries.

The fact that the effects of inequality on these consequences we examined are small and uncertain probably derives from the fact that there are some other influences that are much more systemic and important in affecting these kinds of outcomes. Inequality has a small impact compared with these other factors.

In the case of health we've already heard what is the driving determinant of long term trends, namely technical improvements. And these technical improvements in the delivery of health have lifted longevity everywhere in the OECD and that improvement is very large relative to the effects of inequality.

An important caveat to this overall conclusion is that inequality probably also has important effects on policymaking. As you heard before, I said we do think one of the main determinants of inequality are policy differences across OECD countries and the fact that inequality itself affects policymaking means we can't overlook the indirect impact of inequality on these outcomes that we care about.

But if you really want to promote good health, if you really want to induce longer life spans, there are probably a lot more effective ways to go about doing this than to change the policy and economic mechanisms in society that determine basic inequality in that society. You might want to spend more on developing new health care plans, you might want to have broader insurance, you want to do something directly that affects health. You don't want to change inequality per se.

The same goes for promoting these other goals that we care about, growth and social mobility.

So the first question is what's happened and why. These pictures try to give you the basic picture. The top picture depicts pure inequality, not just in terms of a single measure of inequality but by the gap in relative incomes between people at the top, at the 9th percentile and in the middle at the 50th percentile and near the bottom at the 20th percentile compared with the median person in U.S. income distribution. The statistics go back to the post-war period. In general, inequality fell until the late '60s or early '70s and it's risen since then. The genie coefficient hasn't risen in every year but it's risen in most years. This shows how that inequality transpires.

In general, since the late 1970s, the gap between the people near the top and in the middle has risen almost continuously. Not quite, but in every decade it has increased.

The gap between people on the bottom and near the middle has

been less steady. It certainly grew during the 1980s but has been fairly stable since the early 1990s.

So even though it's correct that inequality has some kind of a fractile character, differences between people at every level have widened, the fact of the matter is the place those inequalities have changed have been different in different decades and right now in 2003 probably we're continuing to see a growth in the gap between people at the very top and people in the middle, but not people further down in the distribution.

The bottom of this picture translates these changes in inequality into trends in real living standards in different periods. We divide the post-war period naturally in the period before and after 1973 because the growth of median income in the United States slowed drastically in 1973.

You can see that in the first part of the post-war period inequality fell because incomes were rising faster at the bottom than they were at the top. But only at the very top of the U.S. income distribution have incomes continued to rise approximately as fast if not a little bit faster since the mid 1970s as they rose in the initial post-war period. So keep these two diagrams in mind when I return later on to discuss happiness.

So why have these trends occurred? Let me give you another picture that translates trends in the living standards in what we think is a more defensible way.

What we have done is come up with a comprehensive definition of income as opposed to the more incomplete definition of income used by the United States Census Bureau. This is a more comprehensive definition. It subtracts taxes from people's incomes and it adds in all kinds of near-cash transfer benefits that people receive. It excludes health insurance but it includes things like housing subsidies and foodstamps and so on.

We then adjust each household's income by its family size and we rank every person in the U.S. population by the family size adjusted income of its family. You can see the same trend here in the top panel as you saw in the previous one. Inequality between the middle and the top has risen just about continuously over this entire two-decade period, but the trend in differences between the middle and the bottom is different from that. There was some closure in the gap between the middle and the bottom in the early 1990s, and it has been relatively stable for the last few years.

So this reflects absolute real incomes adjusted by what we regard as a defensible price index at each of these different income ranks.

At the bottom you see what the trends are for the same points of the income distribution in real market incomes. Family size adjusted market incomes. You'll notice that the market incomes, that is what you derive from interest, dividends, company pensions, wages, is very very sensitive at the bottom end of the income distribution and that is because so much income at the bottom end is affected by whether or not people have had their annual incomes affected by some spell of unemployment.

What accounts for these trends? Just a brief once-over. Earned income inequality in the United States has risen significantly and I would say it depends on the metric you use for inequality. The rise in the earned income, that is labor earnings differences between people in the United States accounts for somewhere between 40 and 50 percent of the growth in income inequality. To be sure, this trend has attracted probably 98 percent of all the research on what's happened to inequality in the United States. Most people are interested in labor earnings difference. And the fact that so much research has been devoted to it may give a lot of people the impression that this is mainly what is happening to drive income distribution statistics in the United States. That's not true.

There has also been a rise in the correlation of income between the main potential earners in households, husbands and wives. So now this higher correlation has pushed people who would have a pretty good rank in the income distribution, it's nudged their real incomes up even further compared with median income in the United States.

There's been a declining portion of the U.S. population in husband/wife families which on the whole have more equal incomes than do all of the other kinds. Single member households, divorced households, lone parent families. And this trend has been fairly continuous. It slowed in the 1990s but it has certainly contributed maybe a quarter or so to the growth in inequality over this 22-year period.

The tax system in the United States has had a very small impact. There have been changes in it. But the United States government like governments in a lot of other countries seldom changes things very much. We're always tinkering with the tax system, we're always debating about how it should be changed, but except at the very top and the very bottom of the income distribution I don't think very many people have found very big changes in the final after tax/after transfer income distribution have been caused by changes in the tax system. The very bottom and the very top have been affected. The very bottom of the income distribution now receives more tax refunds every year than they pay in taxes so their after-tax income is actually higher

than their pre-tax income.

On the other hand the transfer payment has become much less generous to people at the very bottom so they're receiving less transfer payments from the government and these two effects have more or less offset one another.

If transfers are now less redistributive than they used to be it's because a lot of the transfers that are paid by the government just happen to be those that are received by people with increasingly good ranks in the U.S. income distribution, in particular retirement income.

One last thing I should mention is immigration into the United States. Probably in the period covered by these pictures immigration into the United States has been about 22 or 23 million people that we know about, and they tend to be drawn from the top and the bottom ranks of the skill distribution. Immigration all by itself accounted for all of the growth in measured U.S. income poverty between 1979 and 1997 which is the last year I checked this number. Immigrants have more poverty than native-born Americans so the fact that their share in the population rose was important, but even more important was the fact that immigrants were now poorer relative to native-born people and had higher rates of poverty.

If you think that there was a spillover effect of immigration on the wages that can be earned by native Americans in the lower ranks of the distribution which seems plausible, then perhaps in the absence of this level of immigration the poverty rate amongst the native-born population would not have remain stable, it would have declined.

How does the United States compare to other rich countries? We need to know this because some of the statistical identification that we do depends on cross-national comparisons and trying to tease out what evidence across different countries might mean.

Those bars that you see there show the genie coefficient of income inequality across countries where we have reasons to believe that inequality is measured in a consistent way using consistent income concepts with more or less good household survey data from the countries. The measure of income used is the same as in the last graph I just showed you. It's what is the cash and near-cash income received by a household, appropriately adjusted to reflect differences in household size, rank every person in society according to their income and then calculate the genie coefficient of that individual income relationship.

The United States has the highest inequality measured in

that way based on post-tax, post-transfer income.

One thing you'll notice about that picture is country size may have some influence on the degree of inequality you have. It's interesting that the bottom eight countries, the most equal in this picture, there's only one country in the bottom eight that has more than 15 million people, and in the top nine there's only one that has a population size below 20 million. So population size might matter, and since the United States is by a very large margin the biggest country, maybe that would partly explain U.S. inequality.

But probably much more important is what the country does through public policy, in particular tax and transfer policy.

The triangles at the top show the genie coefficient of inequality of the market based incomes received by people in these countries. One surprise in looking at those numbers is that market income inequality does not distinguish the United States by nearly as much from the rest of the OECD. The United States ranks is sort of a little bit above average but it's close to the average for the OECD.

What's the reason? Well, you might be surprised to see that market income inequality is the same in the U.S. and these other countries because you probably all know that sports stars and CEOs and entertainers earn much bigger incomes in the United States than they do in the other countries, and equally well known, at least to most European friends of mine, is that low wage workers in the United States receive lower hourly wages than their counterparts do in Europe.

But the fact is in the United States there are a lot fewer of those people who have zero market incomes. And as soon as you include the zeroes in with the positive numbers then the genie coefficient goes up in European countries.

There's a good reason, of course, that Americans have positive market incomes and that is that the penalty in the United States for having a zero market income is ordinarily a lot more severe than it is in a typical country on the other side of the Atlantic Ocean. That helps account I think for the bad relative position of low income people, even when you add in their market and their non-market incomes in the United States, but the fact that the low-ranking American has positive market income distinguishes him from a lot of Europeans who are in the same position. They have no market income. Their income consists exclusively of public transfer.

So why does the United States have a high rank in the after-tax, after-transfer income inequality? Well, the income transfer

system and the tax system in the United States just do a lot less to redistribute income. If we took the U.S. market income inequality and we reduced it by exactly the same proportion that market income inequality is reduced by the tax and transfer system in other industrial countries, the United States would rank with France and Canada, near the middle of this distribution. But the United States does not reduce market income by nearly as much through its public policies.

In addition, the transfer policies in the United States and other OECD countries have fairly predictable consequences for one dimension of market activity, namely how much do you work? Here Sandy and I calculate the ratio of adult work in each of these OECD countries to the amount of work in the working age population in the United States. Japan and the United States have about the same rank and all other countries sort of trail somewhere behind.

If you look at Italy, for example, it's rather startling. If you take the 15 to 64 year old population in Italy its work is about 62 or 63 percent of the amount worked by the equivalent age group in the United States. This reflects differences in labor force participation between the countries, differences in unemployment rates in the countries, differences in average amount that people work per year given that they hold a job. It's a very big difference but it also seems to be a very predictable consequence of the share of national income in these countries that is redistributed to the working age population except through the health programs of the country.

So on one axis I show the share of national income that's redistributed except through the health system to the population that's not aged. So this excludes pensions also, pensions to the aged population. This is just transfers to the working age and younger populations in the country, and there's a very strong relationship here.

Of course one other implication of this picture is that Japanese and Americans work an awful lot harder to obtain whatever level of average income they have. U.S. income is approximately a third higher or 25 percent higher than it is on average in these other OECD countries, but Americans also work on average considerably longer to achieve that income so part of the difference in average GDP per capita is caused by this higher work effort.

What have been the trends in the other OECD country? Our reading of the evidence is that market income inequality has increased in almost every OECD country where there are good measures of pre-tax, pre-transfer inequality.

However, incomes after taxes and transfer have become unequal in only roughly half of the OECD countries and in many of those countries where they have become less equal there hasn't been a very strong trend. Countries like Canada and France at least up through the mid 1990s took extraordinary measures to keep after-tax, after-transfer income inequality from rising even though at least in Canada market income inequality did rise, and I believe that market income inequality rose in almost every country of the OECD.

So what conclusions can we draw with regard to economic growth? Can we use any of the evidence that I just have summarized to say something about what the relationship between inequality and growth is?

In the paper we go through three or four major theories that attempt to link inequality and growth and we point out that a couple of these don't seem to cover the facts very well for OECD countries in most of the post-war period. Some political economy models, the relationship between economic inequality and economic growth point to an effect of high inequality on what the decision would be of a median voter when casting ballots in an election. If there's a lot of inequality the median voter might reason that it's easier to get an improvement in his situation by voting for redistribution even if it has inefficient consequences and depresses growth because that's the best route to getting a bigger after-tax, after-transfer piece of the pie and a bigger absolute slice as well. So high inequality changes the voting patterns of median voters, pushing them to favor more redistributive policies.

That doesn't seem to account very well for trends in the Anglo-Saxon countries, at least since the late 1970s. If anything, the median voter has not been supporting such strong redistribution at higher levels of inequality.

One theory that does cover some of the facts pretty well is the one mentioned by Carol at the beginning of our meeting. Arthur Okun's theory on the relationship between efficiency and inequality seems to fit at least those statistics about what the relationship is between the share of income redistributed and the mean amount that people work if they're in the working age population.

I promise you that we did look into happiness. What's the relationship between happiness -- I need you to remember the diagrams I showed at the beginning on the trend over time and actual income inequality in the United States, and Ben Keys and I obtained data from the General Social Survey on happiness in respondents between 1972 and 1998. We coded the data. We ranked everybody in the GSS according to their rank in the inequality

distribution and the year that the question was posed. We gave people ranks of one to five. One is the bottom, five is the top. And we said what has been the pattern of mean happiness in each of these groups?

We counted the least happy as a minus one. We counted the intermediate answer as zero. We counted the most happy answer as plus one. And this just is the mean in each of these groups for each of these years.

I looked at that and said well, there doesn't seem to be very much there, but it just shows that you shouldn't eyeball data, you should look at it a little bit more carefully.

This is shows the results if we average the responses in each of the successive decades of the 1970s, 1980s and 1990s. To the left in that figure you see what the trend has been in the bottom income quintile. That is a statistically significant drop. I think the key value for the drop is .01. That's a very statistically significant drop. And in the second, third and fourth fifths of the income distribution there are also statistically significant drops in mean happiness. Only in the top quintile which you will remember enjoyed almost continuous improvement and sizeable improvement in its income, real income, either slight gains, although they're not statistically significant gains.

So the change in the difference of happiness is significant for these groups. So there's a significant decline within these groups and the gap between the groups also grew by a statistically significant amount.

**VOICE:** [Inaudible]

**MR. BURTLESS:** Yes. I wouldn't make big promises about the quality of this research. Number one, the General Social Survey does not ask such good income questions as those surveys that the Luxembourg Income Study uses. So there are some real problems. But this is, we attempted to measure income more or less the way the Luxembourg Income Study does. We used the same family size adjustment and calculated family size adjusted incomes to rank people.

**VOICE:** This is all pre-tax.

**MR. BURTLESS:** Yes, unfortunately it's also pre-tax so it's not the same income measure. It's not such a good measure of income. But probably we are crudely dividing people appropriately into fifth of the distribution, disregarding the measurement problem in income. The point is that these happiness statistics show a growth in the inequality of happiness by income rank.

**VOICE:** [Inaudible]

**MR. BURTLESS:** We divided three broad age groups into three classes of income so we didn't do it in five, and yes, within age group there's also this trend. Now I will not swear because I don't remember. There's a lot of measures of the difference. I won't swear that every one of them is statistically significant, but within age group you will also see this.

**VOICE:** [Inaudible]

**MR. BURTLESS:** It's very low and we exclude them. Also there's non-response on income so for some people we have to exclude them because we don't know their income, but the number of people who don't answer this question is quite small.

**VOICE:** Can you put up the previous slide? They actually look inconsistent. Can you explain that?

**MR. BURTLESS:** I didn't want to confuse you by putting all five-fifths of the income distribution on it, but they are consistent. These are just the means. It's just that the year to year move is pretty big, but on the other hand there's a lot of parallels in the year to year move across these quintiles.

**VOICE:** [Inaudible]

**MR. BURTLESS:** I did the most simple thing you could do with one and a half days of labor effort. [Laughter]

**VOICE:** [Inaudible]

**MR. BURTLESS:** We ran a regression to determine statistical significance for very very simple hypothesis tests. Hypothesis tests. In the bottom quintile of the income distribution did average happiness decline from the 1970s to the 1980s? Did it decline from the 1980s to the 1990s, and so on. The only regressions we ran were to form extremely straightforward hypothesis tests.

I'm not putting any emphasis on this and Sandy should not be blamed for anything.

**VOICE:** That graph does show the bottom fifth, half year in 1998 and it was in 1972.

**MR. BURTLESS:** That's right.

**VOICE:** And your next graph shows that's not true.

**MR. BURTLESS:** That's right. And it's precisely because I averaged it. That's right.

This represents the average for all the years of the 1970s.

Michael Hout has done this research too.

**MR. HOUT:** I tortured the data a lot more than Gary has, but I wanted to make two points. One just a real quick one. There's a problem with the '72 data, you should drop it, because of the context of the happiness question. If you do that, actually that net change will be a bit different. Your question goes away, I think.

More to the point though --

**MR. BURTLESS:** I would have inferred that just from looking at the data, that there's something the matter with the first year. But go ahead.

**MR. HOUT:** Also the '85 data.

The family size issue is an interesting one. I split the family size adjustment out and added log family size to the equation instead and it actually appears that people in larger families are happier than people in small families. So by dividing the income through by family size --

**MR. BURTLESS:** Square root of family size. This is the LIS adjustment.

**MR. HOUT:** Right. The LIS adjustment I think may take away some of the income effect actually, and certainly a big chunk of the change over time because the family size changes more than income does. So I think a somewhat different specification of it would show a bigger trend in the income effect than appears here. But if you believe that it's income per square root of person in the family then you have to account for the fact that, somehow account for the fact that people in bigger families are happier than people in smaller families.

**MR. BURTLESS:** I repeat, this is the simplest kind of analysis I could do, trying to remain consistent with the way Sandy and I measured income in the United States and the way the Luxembourg Income Study measures income across OECD countries.

**VOICE:** [Inaudible]

**MR. BURTLESS:** In here? The samples are smaller, they're like a thousand each before --

**VOICE:** 1500, but yeah. Then they double the last couple of years --

**MR. BURTLESS:** But also there's undoubtedly business cycle effects. You can see that there's a degree of parallel movement from year to year in these means.

**VOICE:** How does that [inaudible]?

**MR. BURTLESS:** Nonetheless, this is a very simple summary statistics that is not inconsistent with the idea that the growth of inequality in income as measured on the LIS, as measured in the family size adjusted way by Sandy and I is mirrored -- I'm not giving causality here. I'm just saying it's mirrored in the trends in reported happiness on the General Social Survey.

**VOICE:** In passing, just in case some people here don't know, we've got a lot of I think persuasive evidence now that there are strong business cycle effects in happiness data.

**MR. BURTLESS:** That's right.

Equal opportunity or educational access. Here we wanted to focus on a very straightforward measure of mobility or opportunity. Namely, what's the relationship between the rank or the socioeconomic status or income of the parent and that of the child? The smaller the impact of parental rank or position on that of the child, the more equal opportunity many people think there is and the more mobile the social structure.

It might seem obvious that if there's a growth in inequality of income, that should give a bigger advantage to youngsters in the families that have gained the most in relative income. But that would only be true if the better-off parents devoted some of their extra income to improving the fortunes of their kids in some systematic way. And number two, those ways that they spent the money actually had this payoff in improving the position of the kid. And one or both of those assumptions might be incorrect.

One problem with this line of reasoning is that social scientists have actually found it rather difficult to find strong evidence that if you parachute extra money on top of some households the kids really fare better in terms of lots of measures that we care about -- school attainment, criminal activity, school achievement, single parenthood and so on.

The background of the kid certainly matters on average, but the question is what does parachuting extra money onto the kids do to these outcomes, and we've had problems finding big effects there.

How does the United States rank in this kind of mobility? Our reading of the evidence is it ranks about in the middle. Some countries have more mobility, some have less, but the extreme rank of the United States in pure inequality is not the same as the rank of the United States in social mobility which seems to be about average. I recognize that in the United States Americans have this view that they're very mobile and more mobile than Europeans, but the best evidence does not suggest that that's true. But they're not less mobile either.

Now the question is how about the extra inequality of the last 20 years? I think it's a little early to say what those influences are because it takes awhile but here is one straw in the wind. Namely, how has going on to college changed over time by rank in the income distribution? And here you'll notice there's been a bigger rise in the high income than in the low income youngsters. So if we think this is going to be eventually reflected in social status and position, then it does appear that the youngsters from the better-off families are doing what they should be doing given the increased payoff to a higher education.

**VOICE:** One point about that chart. Those differences are not explained by [inaudible]. If you run the regression of the [inaudible] sample, the distribution [inaudible] doesn't make that disparity go away. [Inaudible]

**MR. BURTLESS:** I hesitate to say anything about health given the people who are present but I will say a couple of things.

Here's a well-known picture based on a survey in the early 1980s in the United States and then following people for the next eight years or so and seeing how many of them die. It's a picture that shows that there's a real gradient in longevity with respect to family income and it's also a non-linear relationship which suggests that transferring from the top to the bottom ought to raise average longevity.

One calculation we performed was to say suppose we take all the income and make it equal across everyone here. How much longer would life spans be? I think that the answer is for men there should be a 1.3 year increase in life spans, and for women a 0.6 year increase in life spans. But to put those numbers into perspective, the actual increase in male longevity from 1979 to 1997 was 2.7 years and for women it was 1.2 years. So this sort of underlying trend increase is very large relative to what you would infer just from this picture.

We thought of other ways of arranging the data. One is how does longevity differ if you look at countries where we have good measures of inequality and measure inequality in a consistent way. If you exclude the United States from this picture there

isn't much there. If you include the United States it does look like inequality reduces life spans. One country that isn't there but which we could put in is Japan which is both unequal and has very long life spans and that would reverse the correlation.

What about changes in inequality within one country in recent years? Do we see any pattern? This is a lot fewer countries because we tried to restrict ourselves to countries where there is a consistent measure from an early to a late point in time in inequality. Suppose we looked at the changes in inequality in that smaller handful of countries. Is there some correspondence between the change in inequality and the change in longevity? And there is some.

So if you think -- And we would never promise that this is a precise or robust estimate of the influence of --

**VOICE:** [Inaudible]

**MR. BURTLESS:** We will promise it's imprecise. But if you thought that an imprecise estimate that says that the United States could have increased its life spans by an additional, I don't know, one-tenth, one-quarter maybe over the last 15 years relative to the increase that was already occurring, if you thought that that imprecise and not terribly reliable estimate was enough to change your mind about whether redistribution is okay, it would be a good thing. That's fine. But changing the distribution of income in order to achieve that gain seems like a very round-about way to do it and it strikes us that there's probably less expensive, less politically decisive, more straightforward ways to try and engineer an improvement in longevity in the United States.

The last thing we consider is the influence of changing inequality on the distribution of political influence in society. I think at the very outset both Sandy and I agreed that this is a very distressing possibility, how we would go about finding how it has changed the distribution in political influence I don't know. This is not a very empirical part of the paper. It's certainly something that we think should consider us. It seems to us it's fine if the United States has the degree of inequality it does because everybody is thinking very conscientiously how high should the minimum wage be, how much redistribution should there be, and everybody gets their vote in with a good equal weight. But if the outcome of the debate is heavily influenced by the fact that the distribution of political influence has shifted to favor people who would oppose higher minimum wages, who would oppose redistribution at the bottom, then we do think there's a sort of a self-fulfilling prophecy to growing levels of inequality and that does concern us. Without, however, us taking a strong stand on how big a role this has actually played in the

distribution of political influence.

**MR. FRANK:** -- behind schedule, but [inaudible].

**VOICE:** I have a suggestion and a question. The suggestion is, I suggest that you test the robustness of your results by using the World Values Survey data on happiness in the United States. We're using that right now and actually we found from the early 1980s to the mid 1990s was actually a six percent increase in happiness in the U.S. on a scale of about 3.2 on a one to four to about 3.6. That was pretty well all explained by an increase in the number of people who reported themselves very happy from about 31 percent of the total to about 46 percent.

What's really amazing on this number is that the U.S. actually ranks number two out of 50 countries in happiness in the mid '90s compared to 11 out of 22 in the early '80s.

So I don't know the relative merits of the GSS versus the World Values Survey in terms of the happiness, but I'd suggest you at least test your results to that.

The question is you point out that there's this intense political resistance to egalitarian policies of the U.S. and I guess the question is do you think that reflects just the fact that inequality doesn't really matter for happiness in the U.S.? Or is it really due to the lack of political power on the part of the disadvantaged?

**MR. BURTLESS:** One thing that we state at the beginning of our paper is that when you survey Americans, I can't quite remember how we phrased this or how the question is phrased, but Americans are dissatisfied with inequality. In other words they don't like the present amount but they're not as dissatisfied as people in other countries are so that does indicate some difference. And they certainly want to do less in terms of the government doing something about it. Maybe they don't trust the government as much. I don't know. We just have smaller majorities saying it's a terrible thing.

**MR. FRANK:** [Inaudible] make their comments in sequence and then we'll let you respond [inaudible].

**VOICE:** A comment and a question. The comment is on the political finding which my summary of it would be that we're more worried about rising income inequality in a system where money can buy you power to some extent and blur the line between a democracy and an oligarchy which means interestingly that Europeans should be less worried about inequality than Americans, although of course the opposite tends to be the case. But I wonder if there is also a happiness issue there as well? When I

read it I thought of Bruno Frey and Oliver Stutzer's work suggesting that there may actually be a link between political participation and happiness. So if there's an effect on political participation from inequality, there may be a second round effect on happiness from that.

The second point is a question, really. What jumped out from the paper to me was the levels of market inequality in particularly the U.K. which comes out at the top versus the U.S. which is counter-intuitive given as you say what we tend to look at is wage inequality. It seems almost as if the market could be seen to be having unequalizing effects through the wage distribution but equalizing effects through the creation of employment, particularly for those at the bottom of the distribution, and through the provision of retirement income for those who are out of the labor market at the other end.

We tend to think of the market as having an unequalizing effect. It looks like the American market in the '90s may have been having that equalizing effect. So there's another way to say that is to ask the following question. If one were able to hold wage inequality constant through the '90s would market inequality in the U.S. have dropped rather than risen?

**VOICE:** I noted the tradition this morning by starting off by saying I heartily disagree with what's just gone before. I'm not going to continue [inaudible]. I thought as I said to you privately, I thought it was a brilliant paper with much of interest.

I did however want to draw attention to the issue -- you raised it, Angus raised it previously. You said why would you want to invest in social conditions to improve health? Why not do something simpler which is invest in medical care I think was the implication, if you want to improve health.

I'd say that the history of public health is against you, and there are separate questions here. But if you look at what WHO did last year, the World Health Report 2002, of trying to look at the burden of disease worldwide and there's something like 60 million deaths worldwide and they try to look at the risks. It turns out interest [inaudible] the number one risk for death worldwide is blood pressure, raised blood pressure; and in the top list is over-nutrition, under-nutrition, unsafe sex, smoking. Prima facie you wouldn't say that the way to deal with there risks is to invest in more medical care.

Take the blood pressure one where you might say that. The main complication of high blood pressure is stroke. Stroke mortality in the United States dropped like a stone from probably the 1930. And when the National Institutes of Health introduced

its national high blood pressure education program in the '70s and we started to get safe anti-hypertensive treatment in the '70s, if you do it on the log scale you can just about see a blip in the age-adjusted mortality cause for stroke, but most of the decline in mortality from stroke occurred way before that. The introduction of medical care. I have colleagues who say that the big public health boon was the refrigerator because people no longer used salt to preserve their food.

You could go through on safe sex, smoking, and the under-nutrition, over-nutrition and so on. So one issue is, really is it true that the major burden of disease is due to lack of medical care which seems to be the implication, by saying the best thing you could do so invest in more medical care. It certainly isn't what the people have actually tried to look at.

I see this curious dysfunction between arguing over whether things are cardinal or ordinary or log scales and so on, and then just blithely assuming that this unmeasured variable must be medical care.

Then there's a second, related issue which is even if you're willing to accept, as I am, that some of the improvements in health are due to improvements in medical care, I'm trained as a physician. I'm willing to accept that what my colleagues and I do helps people. But that doesn't necessarily deal with the inequality question.

Again, to take the blood pressure example, we know in Britain that people of lower socioeconomic groups or Afro-Caribbeans have higher mortality from blood pressure associated disease. When we looked at the proportion of people who are being treated successfully for their blood pressure the group that's being treated best are Afro-Caribbean women, the group with the highest stroke mortality. So prima facie when you start to go into it and actually ask is it differences in medical care that could account for these differences in inequalities that we see, the answer doesn't come roaring at you yes, it's just more medical care that's needed. In fact when we had a commission in Britain, an independent inquirer named The Coalition of Health, to look at what we could do about inequalities in health, of our 39 recommendations there related to the National Health Service and the other 36 related to these wider social issues.

So in fact, I do want to take issue with, if you want to improve health invest in health care and forget the wider social conditions.

But the last one that I would say, and I agree with the thrust of your paper completely, is that it's not income. I followed your arguments, whether it's children's education,

whether it's health, it's not parental income that the main thing driver of the inequalities in society. So it might well be that if you changed nothing other than income you wouldn't actually change the major inequalities in health breaks, unless you change the other things.

**MR. FRANK:** Thank you, Michael.

Rather than miss lunch we're going to ask the rest of you who wanted to make a comment to find Gary or Sandy individually or work it in somehow in the afternoon sessions. Thank you very much for a very stimulating paper, both of you.

We're going to tart again at 2:15 sharp.

[Recess for lunch]