

# THE ECONOMICS OF SOCIAL POLICY

**Douglas Clement** talks with **Kevin Murphy** about addiction, inequality, education and fertility.

**T**he first thing you notice about Kevin Murphy is the baseball cap. Amid the imperious architecture and soaring intellects (or vice versa) of the University of Chicago, the cap is disarming. It immediately sets you at ease. This is a guy you can talk to, somebody who grasps everyday reality and speaks in plain language—he is not, it would seem, an economist.

But, of course, Murphy is one of the world's finest economists. In 1997, he received the John Bates Clark medal, awarded to the most promising economist under the age of 40. A year later, he was elected to the American Academy of Arts & Sciences, rare for an economist so young.

In 2005, the MacArthur Foundation gave Murphy one of its so-called genius grants in recognition of his research on 'seemingly intractable economic questions, placing them on a sound empirical and theoretical footing.' And in 2007, he won the prestigious Kenneth J. Arrow award for work on the economic value of health and longevity. 'He's brilliant, very brilliant, and I don't use that term often,' said Nobel laureate Gary Becker in 2006. 'He is at the top ranks in economics.'

Despite the accolades, Murphy remains remarkably well-grounded. Indeed, he's been virtually rooted at Chicago since arriving as a graduate student in 1981. (He made full professor just three years after getting his doctorate.) Close colleagues are part of the reason for staying put; his office is sandwiched between Becker's and Robert Topel's, his two most frequent co-authors.

Moreover, as the baseball cap might suggest, Murphy has always focused more on work than

reputation. And that work—research on inequality, addiction, unemployment, and economic growth, among other areas—is proof of the power of investing in human capital, from a man who worked full-time in a grocery store to put himself through college.

In 2009, Murphy spoke with Douglas Clement, editor of *The Region*, published by the Federal Reserve Bank of Minneapolis. The full interview is available at [www.minneapolisfed.org](http://www.minneapolisfed.org).

## Inequality and economic growth

**Clement:** Let me start with a 2001 paper that you wrote with Finis Welch, which built on previous work you had done with him and others. You review trends in wage inequality over several decades and show that a coherent story of supply and demand for high skills does a good job of explaining these trends.

Many are concerned about the growth of inequality in the United States, but you suggest a more optimistic perspective in light of the growth of human capital and economic growth. Could you share that perspective?

**Murphy:** Sure. First, you have to think about the growth of inequality and where it's coming from. Probably the easiest place to start is education and the return that people get on their education. From the 1980s through the 1990s, we saw growth in the premium for going to college. This can be seen best by comparing the average amount earned by college graduates to the average amount earned by high school graduates. In the late 1970s, the ratio of the two averages was about 1.35, which shows that college graduates earned

on average about 35% more than high school graduates.

By the late 1990s, that number is more like 1.7, meaning that by the late 1990s, the average college graduate earned 70% more than the average high school graduate. Thus, between the late '70s and the late '90s, the return on going to college roughly doubled. If you look at the return on going to graduate school compared to stopping after high school, that gap increased even more.

On the one hand, you could say, well, that means there's more inequality. College graduates used to earn more than high school graduates. Now the gap is even bigger than before. That's sort of the downside, and I think that's one of the first reactions people have.

Of course, the other side of the equation is that the return on going to college—that is, the return on your investment in the time, money and effort to go to college—is higher today than it's probably been in half a century. That's a good thing. When we say we have a higher return on investment, whether you earn more on your stock market investment or on your college investment, we think that's a good thing. It means there's greater opportunity for individuals and society as a whole to increase their incomes by increasing investment in people, by investing more in education.

If we look beyond education, we see an increase in the skill premium generally, the gap in wages between skilled workers and unskilled workers, whether highly skilled high school graduates compared to less-skilled high school graduates, or highly skilled college graduates compared to less-skilled college graduates, those differences have gone up as well. So the return on being more skilled today is higher than ever.

What can we do as individuals, and what can we do as a society? The answer is obvious: Invest more in skills, which will benefit individuals and society as a whole. That opportunity has now become available.

**Clement:** Can you elaborate on the benefits for society as a whole? Are there significant externalities?

**Murphy:** Well, I think there are some externalities associated with going to school. But the gains to society are the sum of the gains to

individuals. So if we expand our education levels as a country—we get more people going to college, we get better trained high school graduates and college graduates—the improvement we'll get out of that as a group is probably double what it would have been a couple of decades ago.

Education and training have always been priorities. They have always been important to an economy. They're more important today than ever. So if we're going to focus our policy and interests on improving society, one of the major places to look at is enhancing our human capital investment. The natural reaction to rising returns on investment is to do more of it.

**Clement:** If externalities aren't really the issue here, then it would seem there's no real market failure. That is, people would invest in their own education sufficiently to reap those individual gains. Why is there a role for government investment in education?

**Murphy:** I think the role for government policy comes from two things. First, government is already heavily involved in education, particularly elementary and secondary schools, and thus the fact that many students are poorly prepared is a policy issue. Maybe the answer is less government, but something needs to be done. Second, children cannot fully contract with parents—Gary Becker and I wrote about this in 'The Family and the State'—and this creates a role for government funding, particularly for poor families.

## Inequality and skill-based technical change

**Clement:** There's a near consensus among economists about skill-biased technical change as a key source of inequality, but David Card and others have suggested that there are still some puzzles with the theory, such as the slowdown in wage inequality growth in the 1990s, or trends in gender and racial wage gaps.

Do you agree that there are puzzles, or have those puzzles been resolved?

**Murphy:** I think there are a few puzzles, but I don't think puzzles really jump out at me as the main thing. What really jumps out at me is

the congruence of many different things. It's the similarities and commonalities of the explanations that strike me much more than the remaining puzzles.

One of the things that we've known over time is that some technological and other changes have favoured more-skilled workers. That's not new; it's been going on for at least the entire twentieth century. What happens over time is that technologies and the types of activities in the economy change, which raises demand for more-skilled workers, and the economy responds by creating more-skilled workers. In the early part of the twentieth century, that response was more and more people going on to high school and finishing high school. Later it became going on to college and finishing college. So there's been this process whereby the demand for skilled workers rises and the supply comes along with it, and that's been true for a century.

In the last 30 years, the nature of that technological change has changed somewhat. In the 1970s and 1980s, we saw a rising demand for what you might think of as the top half of the skill distribution relative to the bottom half. And we saw that as expanding inequality throughout the range of wages. As we moved into the 1990s and the 2000s, much more of the contrast in demand was between workers in the top 20% and the bottom 80%.

So we've had this long-run process of growing demand for skilled workers, but the nature of that demand shift hasn't remained constant. The change has always been in the same direction, but its character has changed over time. It's become more and more concentrated at the top end of skill distribution.

### Unemployment and labour markets

**Clement:** In 1997, you wrote with Robert Topel that 'the unemployment rate has become progressively less informative about the state of the labour market' because of the rising number of American men who have dropped out of the labour force or stopped looking for work. 'Non-employment' was your term.

Do you think that an employment/population ratio would be a more useful indicator of economic well-being rather than the unemployment rate as currently defined?

**Murphy:** It's difficult to look at, for example, the very low unemployment rates we saw in the early 2000s and say that represented an economy in which everyone was working. Unemployment rates were at roughly the same level that they were in the late 1960s, but if you look at prime-age males, the fraction actually working who were, say, 30 to 40 years old was quite a bit lower in 2001 because there was a big increase in the number who were out of the labour force in that age category.

It wasn't a random selection of people who were out of the labour force. It was primarily low-skilled workers who had withdrawn from the labour market as two things happened. One, the opportunities in the labour market for low-skilled workers had deteriorated quite a bit with the rise in demand for skill and fall in demand for low-skilled workers; two, other things like the growth in disability benefits had allowed some of those individuals to withdraw from the labour market. We saw mostly a demand shift that caused people to move out of the labour market at the low end.

What that meant was, from a pure labour market perspective, the unemployment rate really wasn't indicative of what the economy was like. Unemployment in an economic sense wasn't as low as unemployment in a measured sense.

I think that remains true today—our traditional measures of unemployment are not the best measures that we could have. We should have something that would take into account the number of people out of the labour force. When lots of 30- and 40-year-old males are not working, that's an indicator that labour market conditions are not very conducive to having them employed.

So I think if you're going to go to a more employment-to-population ratio type of analysis, you definitely have to restrict the age range, maybe weight it in various ways, and also allow for gender. For example, when women move into the labour market or drop out of it, again, we don't typically think it has the same implication as when men shift in and out.

### Addiction

**Clement:** With Gary Becker, you developed a theory of 'rational addiction.' Could you give us a description of what seems, on its surface, a very counterintuitive concept?

**Murphy:** OK. Let's take that rational addiction framework. I'll tie together—and I think this is what's really important—the predictions of the theory along with the mechanics of the theory.

We laid out in our analysis how a perfectly rational individual would behave when faced with the notion that if he starts, say, smoking cigarettes, it will have an effect on his desire to smoke cigarettes in the future—that is, our perfectly rational individual realises that smoking today raises his demand for smoking in the future. And he takes that into account in his decision-making.

He also takes account of the impact of smoking today on other things in the future, like his future health—smoking today means he's more likely to get lung cancer or cardiovascular disease.

That theory has some pretty simple implications. One is, if I learn today that smoking is going to harm me in the future, then I will smoke less—that is, people will respond to information about the future.

People will also respond to future prices. Smoking cigarettes is an expensive habit, and if they think cigarettes are going to be more expensive in the future, they will have an incentive to avoid building up a smoking habit.

A major implication that we tried to test in the data was whether anticipated increases in the future price of cigarettes impact smoking today. And we found a pretty strong pattern saying that anticipated future changes in the price of cigarettes actually show up as less smoking today.

Now, what's interesting is you can compare that with what we call a naïve or myopic model. In a myopic model, people don't look forward and, therefore, they only decide whether to smoke based on the current price of cigarettes. They don't care about the future price. And the data actually reject that simple myopic model in favour of the rational addiction framework.

So I think the empirical evidence we found was consistent with the rational addiction model. It was the evidence that convinced us, more than anything, that we were on to something. We wrote down the theory because we wanted to understand what does the theory have to say? We then took it to the data to say, well, do the data bear out this theory or do they bear out a more traditional

theory that addicts are somehow completely irrational? And we found that the data say, well, people seem to respond at least somewhat in the direction of being rational.

You don't want to overstate it, though. Our data don't say people are completely rational. They're mostly rational is the way I would interpret our data.

And I don't think it's that surprising to people. One of the things that comes into people's minds when they smoke is they think about the future, they think about should I really be smoking, it's bad for me. Most people who quit smoking don't quit smoking because they don't enjoy it. Right? There's nobody out there who said, you know, I quit smoking because I didn't enjoy smoking. You ever meet anybody who said, I quit because I didn't enjoy it?

Very few people stop smoking because they don't enjoy it. And that tells you immediately that there's an element of rationality to their decision-making.

No, people say, I quit because I worried about my health, worried about my children, it costs too much. But very few people stop smoking because they don't enjoy it. And that tells you immediately that there's an element of rationality to their decision-making. Maybe not as much as there should be, in some people's minds, but there's certainly an element of rationality in the smoker's mind.

If you ask people who don't smoke why they don't smoke, there's an element of rationality too. They say, well, I don't want to smoke because I don't want to get addicted and I don't want the bad health consequences. So I don't find it surprising that a model that says that people look forward has some predictive power. I think a lot more people would smoke if they didn't worry about the future.

### Implications for drug policy

**Clement:** What are the implications of rational addiction theory for public policy on currently illegal drugs—that is, enforcing prohibition versus legalisation and taxation?

**Murphy:** There we started out from the point of view of how does an economist think about a prohibition? Why does prohibition on drugs curtail drug consumption? Well, the primary reason is it makes drugs more expensive. It raises the street price of drugs from what they would be if people could freely bring them into the country and freely distribute them. It raises the price by making them less available. If I want to get drugs, I can't just go down to the supermarket or the drugstore and buy my drugs. I've got to go to a neighbourhood, maybe it's dangerous. I also have to worry about the strength and quality of the drugs. Am I going to get tainted drugs?

All those things make drugs more expensive than they would otherwise be. And what do we know about the demand for any commodity, whether it's drugs or haircuts or strawberries? You make them more expensive, people consume less. So basically the way drug policy works in the United States is it tries to make drugs more expensive, less attractive, and cause people to consume less. In economic terms, it pushes us back up the demand curve. And rough estimates say we've quadrupled the cost of drugs relative to what they would be in a world without this interdiction.

If you quadruple the price of something, people are going to buy less of it. But, unfortunately, the way we bring about that quadrupling of price is by increasing the cost of supplying drugs. The amount of money people are spending on drugs is actually higher than it would be if the price were lower, because the demand for drugs is not very elastic.

**Clement:** You've shifted the supply curve, and moved up the demand curve.

**Murphy:** Exactly. So think about a simple world where the elasticity of demand is about a half. You quadruple the price of drugs, and the quantity of drugs is cut in half. So you've got four times the price, half the quantity. You've doubled expenditures. People are spending twice as much and consuming half as much.

Well, where did that added expenditure go? It goes to the drug dealers. It doesn't go to the government, it doesn't stay with the consumers. It goes to drug dealers. And that revenue actually

finances the supply of drugs and finances the drug lords who supply drugs to the United States. So what we've really done in this case is finance the people who are on the other side of the War on Drugs. So, the War on Drugs, in our view, has been kind of doomed by its basic economics. That is, the harder you fight the war, the higher you push up the price. The higher the price, the higher the revenue of suppliers; the higher the price, the greater the incentive to supply drugs to the United States.

Now, what are the costs to the suppliers? Well, they have to avoid detection. They fight over turf for drug territories. They pay people off. They may go to prison. All those costs are pretty much bad things. They use violence to enforce their contracts and the like. Not a good outcome.

But when you put people in prison, you have to consider that not only does it cost society in the form of people in prison who could otherwise be gainfully employed but it also costs us money to put them there. So for every dollar of cost we impose on the drug suppliers, we spend at least a dollar of our own money on top of it to keep them there. If we normalise what we would have spent in a free market on drugs at \$100, consumers are now spending \$200 on half the quantity of drugs and then spending another \$100 on top of that to put all those people in jail. So we're paying three times as much for half as much output. From an economic point of view, that's more than a little bit counterproductive.

**Clement:** So, rational addiction but irrational

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**Murphy:** Irrational policy, right. So, what's the answer? If you want to reduce consumption, raise the price. What's the natural way to raise the price of something? Tax it. We want to discourage smoking, so we tax cigarettes. If we want to discourage greenhouse gases, we'll tax carbon emissions. Whatever it is, if you want to discourage it, tax it. The advantage of that is, you get the same reduction in output; the cost of production, rather than going up, goes down. It costs less to produce half as much output as it does to produce the full amount of output. And the extra money that would have been wasted is

now going to the government in the form of tax revenues, which would allow us to reduce other taxes, or do other things.

So, a system where we make drugs legal and tax them makes a lot of economic sense relative to the current system. People say, wait a minute, we can't make drugs legal. Don't drugs cause all these horrible problems?

The problem is, most of the things that people point to when they talk about the horrible things generated by drugs are actually the horrible things generated by the War on Drugs. The violence and the corruption we have, and the corruption in foreign governments—that's because drugs are illegal. If drugs were legal, we wouldn't have a violence problem. We wouldn't have tons of people in prison. Those people are there not because drugs did anything but because we made them illegal. People still want them, and when people still want something illegal, we have a black market. And if we imprison people who engage in a black market, we're going to increase the size of the prison population and make all the associated expenditures.

We see that in the recent War on Drugs. We saw that with prohibition in the 1920s. It's an old phenomenon. You may enact a prohibition, but it doesn't get rid of demand. People still want the commodity. You've just forced production to occur in the black market, and when demand is inelastic—and that's what's key—when people are going to still demand it even as you push the price up, the black market is very inefficient because you're raising costs and expenditure at the same time.

### **Economic growth and fertility**

**Clement:** In 1988, with Gary Becker and Robert Tamura, you wrote an influential paper on the relationship between human fertility, human capital, and economic growth, suggesting that parents face a quantity/quality trade-off in deciding how many children to have—in the sense that they can better nurture the human capital of their kids if they have fewer of them—and further, that this increased human capital contributes to economic growth.

What do you consider the most promising future directions for research on the mechanics of economic growth?

**Murphy:** There are two things I really want to work on more. One is a tighter marriage between work on economic growth and work on investment in human capital. I think we need a better understanding of how investing in human capital, and changes in the cost of investing in human capital, feeds into growth.

Second is the fundamental question of fertility. We now know that more than 50 developed countries are below replacement fertility. In many places, we are far below replacement fertility. And the question is, where are we going on that? Is there a force out there, be it economic growth or the economics of the family, that's going to allow that to stay, or is there going to be a force that's going to push fertility back up? We have no really good macroeconomic theories of fertility in developed economies.

A system where we make drugs legal and tax them makes a lot of economic sense relative to the current system.

What happens is when you start developing, you start getting human capital; as human capital goes up, the costs of children rise, the return on quality rises so you get fewer children, more investment in each child.

But I don't think we understand anything about the determinants of fertility once we get to the modern advanced economy. I think it's an incredibly interesting question, what's going to happen in a country like Japan, which is way below replacement fertility? What's going to happen in southern Europe? The United States has a relatively high fertility, but still way below historical standards.

Gary Becker and I are working on those two prongs of the equation. What's going on with fertility? And what's going on with human capital investment—particularly human capital investment in women? One thing we've seen worldwide is very rapid growth in human capital investment in women relative to men. That is, the fraction of women going on to college has increased faster than it has for men. That's true on a worldwide basis.

And to me that's a really interesting question: How do the two things fit together? What do they say about fertility? What do they say about women's involvement in the labour market? So my research agenda is to try to bring all those pieces together. The final piece of the puzzle, which is again related—what's interesting about this is it kind of brings all the research we've done together—is the realisation that education is not just important in the market but also in the household.

Differences in, for example, longevity by education level, have been growing, and one of the reasons is that with the growing availability of the various things you can do from a medical standpoint, there's more you can do to help yourself. More care has moved out of the hospital into the household. There's more outpatient care, there are more drug therapies, there's more patient monitoring of their own health. There's more knowledge of what's good to do diet-wise, exercise-wise. We know also that more-educated individuals are more successful at following those regimens than less-educated people.

So human capital is not only affecting how much you can earn in the marketplace, it's affecting how well you can run your life generally, and I think that's another part of the equation we want to bring in. We have this integrated program, thinking about fertility, and human capital in the household and in the market. That's sort of the picture we're working on right now. And hopefully Gary and I will be able to make some progress.

**Clement:** Thank you so much.

**Murphy:** And thank you very much. Good talking with you.

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F. A. Hayek

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