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Upjohn Institute Press

Retirement Incentives- The Carrot and the Stick:
Why No One Works Beyond 65 Anymore

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Chapter 4 (pp. 57-76) in:
Current Issues in Workers' Compensation
James Chelius, ed.
Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 1985
DOI: 10.17848/9780880995498.ch4

4 Retirement Incentives—the Carrot and the Stick*

Why No One Works Beyond 65 Anymore

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Introduction

The topic of this year's Economic Lecture series is the Economics of Aging. I am delighted with this choice of topic. It is an extremely interesting, important, and timely one, and it is one of the few issues on which I have any expertise. There are many aspects of the economics of aging that you will hear discussed this year. I have chosen only one of them, the retirement decision—"Why No One Works Beyond 65 Anymore: the Carrot and the Stick."

The presentation has four parts. I will first point out that something is happening. Retirement patterns have changed, and changed dramatically. Second, I will speak briefly about why this is important. Third, I will ask why this is occurring and finally, what we can do about it.

I will concentrate on the third of these. Why is it that these changes in retirement patterns are occurring? Why are peo-

*Much of this presentation was drawn from an article by Richard V. Burkhauser (Vanderbilt University) and Joseph F. Quinn, "Influencing Retirement Behavior: A Key Issue for Social Security," *Journal of Policy Analysis and Management*, Fall 1983. More technical background material can be found in two earlier papers by the same authors, "Is Mandatory Retirement Overrated? Evidence from the 1970's," *Journal of Human Resources*, Summer 1983 and "The Effect of Pension Plans on the Pattern of Life-Cycle Compensation," in *The Measurement of Labor Cost* (Jack Triplett, editor), NBER Studies in Income and Wealth, Volume 48, University of Chicago Press, 1983.

ple retiring earlier than they used to? I will emphasize only one component of the answer to what is obviously a very complex question. That component concerns economic incentives—incentives imbedded in our social security and pension systems, incentives that induce retirement, I will argue, by penalizing the work effort of older workers. Social security and employer pensions impose pay cuts, large pay cuts in some cases, on older workers. These cuts do not occur through the paycheck, but through a much more subtle but no less effective mechanism. Many older workers respond exactly how you might expect to the pay cuts—they stop working and retire.

Retirement Trends

Table 1 lays out the facts to be explained—the mystery to be solved. It includes longitudinal data on labor force participation rates from 1950 to 1981, by age and by sex. I draw your attention to the last two columns—data for men and women aged 55-64 and 65 and over. You will notice here a remarkable demographic trend. As recently as 1950, nearly half of American men over 64 were still in the labor force. A mere 30 years later, that proportion is down to less than 1 in 5.

Obviously, my title is a bit inaccurate. It is not true that nobody works beyond 65 anymore, but it is true that what was once a very common phenomenon, men over 65 working, is now relatively rare.

For the next category of men, 55-64, people of early retirement age, the pattern is similar though less dramatic. Within these same 30 years, the proportion still in the labor force has dropped from near 90 percent to near 70 percent. Something is happening.

As you can see, the statistics for women are quite different. The reason is that there are two trends underway

simultaneously. First, folks are retiring earlier. But second, more women are working than used to. These trends tend to offset each other for women over 65. The participation rate has stayed in the 8 to 10 percent range since 1950. For women of early retirement age, the increased labor force participation has dominated the early retirement trend, and the proportion working has grown from 27 to 41 percent.

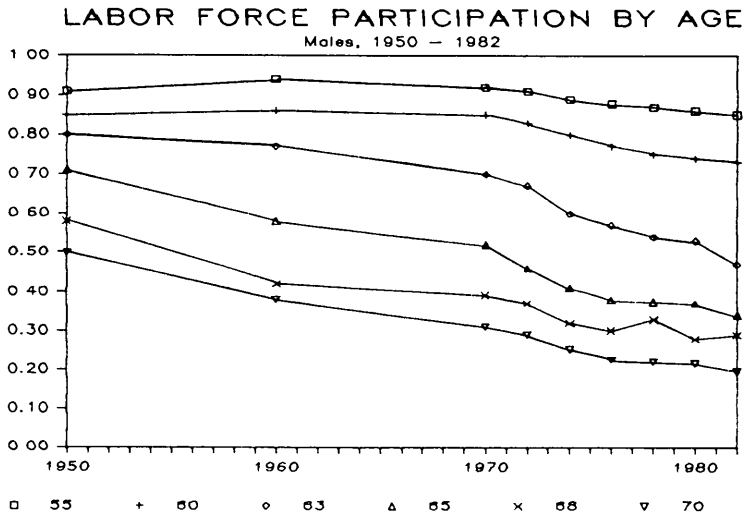
Table 1
Labor Force Participation Rates
by Age and Sex

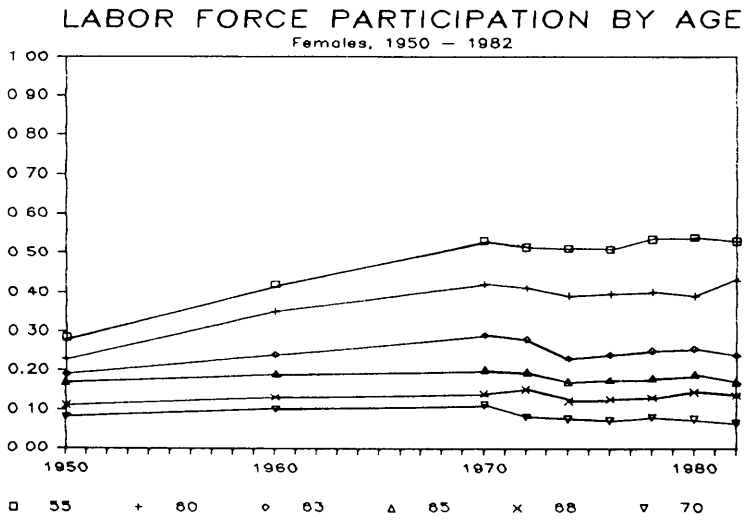
	Age				
	25-34	35-44	45-54	55-64	65+
Males					
1950	96.2	97.6	95.8	86.9	45.8
1955	97.6	98.1	96.5	87.9	39.6
1960	97.5	97.7	95.7	86.8	33.1
1965	97.3	97.3	95.6	84.6	27.9
1970	96.4	96.9	94.3	83.0	26.8
1975	95.2	95.6	92.1	75.6	21.6
1981	94.9	95.4	91.4	70.6	18.4
Females					
1950	34.0	39.1	38.0	27.0	9.7
1955	34.9	41.6	43.8	32.5	10.6
1960	36.0	43.4	49.8	37.2	10.8
1965	38.5	46.1	50.9	41.1	10.0
1970	45.0	51.1	54.4	43.0	9.7
1975	54.9	55.8	54.6	40.9	8.2
1981	66.7	66.8	61.1	41.4	8.0

SOURCE: U.S. Department of Labor, Employment and Training Report of the President (1982).

Chart 1 is a picture of the same phenomenon, except that it uses individual ages rather than broad categories. If we define normal retirement age as the age at which half of the cohort are out of the labor force, we can use this chart to

Chart 1
Labor Force Participation Rates
Males and Females, 1950 to 1982





show what has happened to normal retirement age over these years. Back in 1950, for example, it was not until age 70 that half the men were out of the labor force. By 1970, 20 years later, 65 was the age at which half the men had withdrawn. Today that age is below 63. As you have seen, the picture for women is different. Despite a downturn in the early 1970s, a time, by the way, when social security benefits rose dramatically in real terms, the general trend for women has been up or steady, even in the oldest categories.

When one aggregates men and women, which I have not done here, the conclusion is clear: people are retiring earlier than they used to. Our mission, should we decide to accept it, is to find out *why* people retire when they do. It may be that people retire when they have to, when debilitating health problems or mandatory retirement rules drive them from their jobs. On the other hand, people may retire when they choose to. They face financial incentives that encourage retirement, and many may be induced to do so.

A Source of Concern?

My second question is "why is this an issue?"—a polite way of asking "who cares?" Until recently, I think there was no particular alarm over these retirement trends. If anything, they were applauded. One of the goals of the early architects of the social security system, it has been argued, was to induce older workers out of the very weak labor markets of the 1930s.

But that goal, I suspect, faded during the war years and the more prosperous decades that followed. Nonetheless, this trend towards early retirement was viewed as a logical development in an increasingly wealthy society. Some of this wealth was spent on leisure, and some of this leisure was taken in the form of early retirement.

But this retirement trend is no longer viewed as benign for at least two reasons. One is the financial crisis facing social security. The social security trust funds are basically nonexistent these days. Current receipts from social security contributors are paid directly to current recipients. It is a pay-as-you-go system. There is nothing wrong with a pay-as-you-go system as long as future receipts are adequate to meet future obligations. But this was recently not the case.

Some of the social security funding crisis was a temporary phenomenon due to the recessionary years of the 1970s—if you are willing to call more than a decade of recession temporary. But part of the crisis is also due to these trends towards early retirement and to the early receipt of benefits by recipients.

The other reason for concern is anything but temporary. It derives from the well-known demographic fact that the age structure of America is changing. Currently, about 11 percent of our population is 65 or older. By 2025, this will grow to between 17 and 20 percent. The whole country will soon look like Florida, not with respect to winter weather, unfortunately for you Michigan residents, but with respect to the age distribution.

Even without changing retirement patterns, fewer workers per retiree would put strains on the social security system, implying either higher taxes for contributors, lower benefits for recipients, or both. When this demographic trend is combined with the fact that people are retiring earlier, the problems are compounded.

I think that older workers will be very much needed in the labor force of the future because they will be a larger proportion of the population. I fear that the elderly may be unwilling to work unless the financial incentives that I will discuss this evening are changed.

Retirement Determinants

In 1977, Congress changed the age of earliest mandatory retirement from 65 to 70. With a couple of minor exceptions, it is now illegal to have a mandatory retirement prior to age 70. Many people, including President Reagan and Rep. Claude Pepper, a leading spokesman for older American in Congress, favor outlawing mandatory retirement altogether. The entire concept may be legislated out of existence.

An interesting research question is whether this would make a difference. At first blush, it appears that it would. Prior to 1977, mandatory retirement provisions were a widespread phenomenon in the U.S. Between 40 and 50 percent of workers faced them, and many people retired at their mandatory retirement age. When one compares the behavior of people with and without mandatory retirement, their behavior is quite different.

Richard Burkhauser and I followed a sample of employed older workers (aged 62 to 64 in 1983, drawn from the Social Security Administration's Retirement History Study (RHS)) over a two-year period during which some of them faced mandatory retirement. Of those who did, only 17 percent were still working in 1975. Of those who did not face mandatory retirement, nearly 60 percent were still employed. This is a big difference in behavior and a large potential mandatory retirement effect.

But coincidence does not imply causation. I will argue tonight that there are important financial incentives that go into effect (or increase in magnitude) at exactly the same time that mandatory retirement occurs. It is difficult to say without considerable investigation that mandatory retirement was the reason why these people retired when they did. It is not easy to discern "who dunnit?" or in this case "what dunnit?"

Social security, pensions and mandatory retirement are all very closely intertwined. It is extremely important to understand how each of these determinants (and others, such as health, marital status, attitudes and expectations) influence the retirement decision. Why is it important? If mandatory retirement was forcing people out of the labor force at age 65, then a change in the mandatory retirement law, as we had in 1977, or its outright elimination will have a substantial impact on aggregate behavior. On the other hand, if it was not mandatory retirement but other factors that occur at the same time, then changing the mandatory retirement law will have very little effect on retirement trends.

Mandatory retirement and pensions tend to come hand and hand. In the sample of older workers mentioned above, nearly all (91 percent) of those facing mandatory retirement also had pensions. Most became eligible at exactly the same time as mandatory retirement and most were eligible for full rather than reduced benefits at that time. On the other hand, of those people who were not subject to mandatory retirement, fewer than half (47 percent) had pensions. If pensions induce people to retire, and I think they do, then much of what may look like a mandatory retirement effect may be the impact of these pensions.

Mandatory retirement and social security are even easier to link. The age of full social security eligibility is age 65. That is also the age, we will see, when a very important change in the social security law occurs. This change will play a key role in solving the mystery below.

Age 65 is important for another reason. Prior to 1977, this was by far the most popular age for mandatory retirement. If social security induces people to retire, and I think it does, much of its effect might also be attributed to mandatory retirement.

Let's look at the modus operandi of our suspects. Mandatory retirement is the simplest, although there are subtleties in some of the provisions. They generally state that an individual must leave the job when turning a certain age, or at the end of that calendar year. It is a straightforward and blunt instrument. It is the "stick" of the title of this talk.

Social security and employer pensions, on the other hand, are promises of income streams in the future. They are very complicated promises, and have many important dimensions, such as the age of eligibility, the size of the retirement benefit, whether that amount is adjusted for inflation after retirement, and what happens to that amount if one decides to delay retirement and continue working.

All of these aspects of the retirement contract are important determinants of how valuable these promises are. In empirical work, one must describe these complicated arrangements in a simple summary form. How big are an individual's pension and social security rights? The most popular way to answer this question is in terms of the annual benefit; for example, $6,000 per year. But that answer ignores other aspects of the pension that are extremely important. It says nothing about when one is eligible. It says nothing about what happens to the benefit after retirement. Is the $6,000 fixed, or does it grow with the cost of living? And what happens to the benefit if one decides to forgo the pension and work another year? Will the annual benefit increase, and if so, by how much?

A far superior summary statistic of the value of a pension is the wealth or asset equivalent of that promise. In economists' terms, it is the present discounted value of the future income stream—the amount of money that would have to be invested today to provide exactly the income stream that is promised. Because investments pay interest,

dollars promised farther and farther in the future are the equivalent to smaller and smaller amounts today.

As an example, with an interest rate of 10 percent, an investment of $60,000 would provide an annual income of $6,000 forever. A gift of $60,000 and a gift of $6,000 per year forever are exactly equivalent, given the 10 percent interest rate. By lending or borrowing, one could always turn either one into the other.

If $6,000 annual income will not last forever (for example, it terminates at death) then the asset equivalent is less than $60,000. The precise amount can easily be calculated.

There are tremendous advantages to defining the value of social security or pension promises in terms of their asset equivalent. First, the age of eligibility is important. The farther away it is, the lower current asset value of a given annual benefit.

In addition, inflation protection is easily incorporated into this calculation, via the discount rate that translates future dollars into today's dollars. Indexed benefits are discounted at the real rate of interest, whereas nominal benefits that do not grow with the cost of living are discounted at the nominal rate—the real rate plus the rate of inflation.

With the concept of present discounted value in mind, let me ask the following question. The answer to this question is key to my view of the financial incentives in our pension plans. Suppose an individual is currently eligible for retirement benefits of $6,000 per year until death. What happens to this annual benefit if the individual instead chooses to remain on the job and work another year?

There is good news and bad news. The bad news, with respect to the pension, is that the individual loses the $6,000. One does not draw pension benefits while continuing on the

job. The good news is that future annual benefits (employer pension or social security) are likely to exceed $6,000 because of that additional year of work.

Why are they higher? It is important to understand this. With respect to social security, future benefits increase for two reasons. First, annual benefits are based on a social security concept called average monthly earnings. With an additional year of work, average monthly earnings will rise, as will the subsequent benefit calculation.

In addition, there is a second reason—an actuarial adjustment, which is basically a reward from the Social Security Administration for claiming checks for one fewer year. Between 62, the earliest age of social security eligibility, and 65, the actuarial adjustment is about 7 percent per year of delay. At 65, prior to 1983, it dropped to 1 percent. This adjustment applies to all future checks. Most people recognize it in a slightly different form. Anyone contemplating retirement realizes that retirement at 62, the earliest age, rather than three years later, the normal age, entails a benefit reduction of 20 percent. This 20 percent is approximately three times the 7 percent annual figure that I have introduced.

Employer pensions are more complicated, because there are thousands of them, and each has its own individual requirements, rules and regulations. But pension benefits are usually based on either years of service or on average earnings over the last few years with the firm. Either of these is likely to grow with an additional year of work. In addition, some pension plans also have actuarial adjustments similar to that I described for social security.

The pension implication of the choice to retire or to work another year is not as simple as the choice between $6,000 and zero. It is a choice between two pension streams—one that begins immediately and provides $6,000 per year, and

another that pays nothing in the first year, but higher annual benefits (say, $6,500) in the future. Which one of these streams is worth more? It depends—always a safe answer in economics. It depends on whether the future $500 annual increments are sufficient to compensate for the $6,000 loss in the first year.

It is difficult to decide by looking at the streams, since the amounts arrive at different times. But as soon as they are translated into present discounted value, the answer is clear—the stream with the higher asset equivalent.

Suppose today's value of the first stream ($6,000, $6,000, $6,000, etc.) is $45,000, and the second ($0, $6,500, $6,500, etc.) is $50,000. Then working another year yields two benefits—paychecks for that year, which is certainly good news, and a $5,000 increase in the value of pension (or social security) rights. The latter increases by $5,000 *because* of the decision to work that year. As such, it is really a component of compensation. If the straight salary was $20,000 for the year, the true compensation was $25,000—$20,000 plus the $5,000 increment in pension wealth.

Unfortunately, it can work both ways. Suppose the present discounted value of the second stream were $40,000 rather than $50,000. What would true compensation be then? While the individual earns $20,000 in salary, the value of the pension rights drops by $5,000. Th true compensation is only $15,000 for the year of work.

An interesting question is which of these two scenarios is more likely to describe the situation facing older workers today. Before presenting some actual data, let me just summarize the results and describe the bottom line. Social security and many pensions are structured so that at some point—and certainly by 65—the second scenario holds. The present discounted value of social security and employer pension rights begin to decrease with continued work. One

pocket is filled by paychecks, while the other is picked by social security and pension rules. One's true compensation is less than it looks. This is the surreptitious pay cut I alluded to in the introduction.

When do these losses occur? They occur at different times for different people. But a major change in the incentives happens at age 65—precisely the age at which mandatory retirement was most likely to go into effect back when the Retirement History sample was being studied. This simultaneity makes it difficult, through not impossible, to discern exactly what was influencing individual behavior. Was it mandatory retirement, "the stick," or these financial incentives, "the carrot"—the pay cuts that often accompany age 65?

Table 2 shows actual data for a sample of employed men aged 63 to 65 in 1974. It illustrates what would have happened to the present discounted values of pension (top) and social security (bottom) rights if these workers had chosen to work another year. For 63 year old men, for example, there is relatively little change in the asset value of pensions. Similar proportions have them increased and decreased (the median is -$148), and most of the change is less than $1,000. (The 43 percent "unchanged" are those not eligible for pensions.)

At age 64, however, there are significantly more losers than gainers, and the size of the losses has increased. The median person, ignoring those unchanged, would lose over $1,100 in pension wealth. By age 65, nearly everyone loses and the median loss exceeds $2,000.

The changes in social security wealth are much more dramatic. Until 65, the median person gains—over $1,800 at age 63 and $800 at 64. But at 65, beware. Everyone would lose social security wealth with continued work. The median loss for this particular sample of men was over $3,000.

Table 2
Changes in Present Value[a] of Employer Pensions and Social Security Associated with an Additional Year of Work, for Full-Time Employed Men Age 63 to 65 in 1974
(Distribution in percent)

	Age of employed men		
Employer pensions	**63 (percent)**	**64 (percent)**	**65 (percent)**
Reduced by more than $5000	2	1	6
$3001 to $5000	2	4	8
$1001 to $3000	7	26	27
$1 to $1000	20	19	11
Unchanged	43	46	47
Increased by $1 to $1000	22	4	1
$1001 to $2000	3	0	0
Total	100	100	100
Median[b]	-$148	-$1,156	-$2,062
Social Security			
Reduced by $3001 to $6000	0	0	48
$1501 to $3000	0	1	43
$1 to $1500	12	16	3
Unchanged	6	3	6
Increased by $1 to $1500	29	45	1
$1501 to $3000	51	34	0
$3001 to $6000	3	1	0
Total	100	100	100
Median[b]	$1,852	$857	-$3,044

SOURCES: Data from the Retirement History Study of Social Security Administration; calculations by Burkhauser and Quinn.

a. Present values calculated with a 5 percent discount rate.

b. Median calculation omits those with no change.

Why the big change at 65? The reason is the legislated decrease in the actuarial adjustment, from 7 percent per year of delay between 62 and 64 to only 1 percent (in 1974) for each year of postponement after 65. The social security reward for continued work decreased dramatically, and became insufficient to compensate for a year of foregone benefits.

Whether these gains and losses are considered big depends on the object of comparison. Table 3 compares them to the individual's before-tax earnings. It calculates the wealth changes as a percent of salary.

The top half of the table refers to people who do not have pensions and are eligible for social security only. As was seen in table 2, the median person gains social security wealth at 63 and at 64, but loses substantially at 65. The median loss in this sample is estimated to equal about a third of an annual salary.

Below are individuals eligible for both social security and pensions. At the median, there is a modest net gain in total retirement income wealth at 63, a small loss at 64, and a dramatic loss at 65. The median 65 year old in this sample would be working for approximately half pay because of the penalties implicit in the social security and pension systems.

These estimates are very rough, and may exaggerate the size of the pay cut. They ignore issues of taxation, and assume that anybody who works full time loses all social security benefits. In fact, with low enough earnings, one can both work and collect social security benefits. The point of the table is that the work disincentives can be large. And keep in mind that there are distributions around these median values. There are losers even at ages when the median person gains.

Table 3
Changes in Present Value of Employer Pensions and Social Security Associated with an Additional Year of Work, as a Percentage of Annual Before Tax Earnings, for Full-Time Employed Men Age 63 to 65 in 1974

(Distribution in percent)

	Age of employed men		
Eligible for social security only	**63 (percent)**	**64 (percent)**	**65 (percent)**
Loss of 30 percent or more	0	6	74
10 to 30 percent	3	4	17
1 to 10 percent	17	18	9
Gain of 0 to 10 percent	23	22	0
10 to 20 percent	24	32	0
20 to 30 percent	23	10	0
30 percent or more	11	8	0
Total	100	100	100
Median change	+13	+10	-35
Eligible for social security and employer pension			
Loss of 30 percent or more	6	15	92
10 to 30 percent	1	18	6
1 to 10 percent	18	22	2
Gain of 0 to 10 percent	18	19	0
10 to 20 percent	34	22	0
20 to 30 percent	17	4	0
30 percent or more	7	0	0
Total	100	100	100
Median changes	+12	-38	-48

SOURCES: Data from the Retirement History Study of Social Security Administration; calculations by Burkhauser and Quinn.

Let me summarize what we have seen thus far. I am convinced that there are financial incentives to retire. At some age—certainly by 65, but earlier for many people—the values of social security and pension rights begin to decline if one continues to work.

Second, these work disincentives can be large relative to the paycheck. Third, these work disincentives grow significantly in magnitude at age 65, precisely the age of mandatory retirement prior to the 1977 legislation.

What I have not yet shown is that these incentives affect people's behavior. For that to occur, people must understand them and respond to them. Richard Burkhauser and I have analyzed the impact of these incentives, using samples of older workers drawn from the Retirement History Study, and find strong evidence that this is the case. Variables describing the size of social security and pension wealth changes associated with continued work are very significant in explaining differences in individual retirement behavior. The larger the wealth losses, the more likely people are to withdraw from the labor force and retire. The people in the sample certainly behave as though they understand and respond to financial incentives.

I can summarize about four years of research in a simple analogy—much as I hate to admit it. Consider the following contract. For any hour that you work before noon, you will be paid $10 per hour; for any hour you work after noon, you will be paid $6 per hour. How would you respond? Most people would try to pack all the work hours in before noon and head for the beach in the afternoon.

To oversimplify a bit, this is exactly what social security and pension systems do, except that noon is age 65. After age 65, or earlier for some, true compensation decreases because social security and pension rights become less and less

valuable with continued work. This occurs because higher benefits in the future do not adequately compensate for benefits foregone today.

Burkhauser and I have also found that about half of the difference in behavior we observed between people who did and did not have mandatory retirement could be explained by other factors, primarily the financial incentives I have described. Mandatory retirement is nowhere near as important as it looks. We predict, therefore, that changing the law, as we did in 1977, or eliminating mandatory retirement altogether would have only a modest effect on aggregate behavior.

Changing the mandatory retirement law was a good idea, because people who really want to remain at their jobs can do so—at least until age 70. But, I think it will have only small impact on retirement patterns. Why? I return to the title of this talk—"the Carrot and the Stick." Even if deprived of the stick, mandatory retirement, employers still retain the carrot, the incentives built into their pensions systems. Mandatory retirement and actuarially unfair pension systems are alternative means to the same end.

To change retirement behavior, it is essential to change the incentives. To some extent we already have. The 1 percent actuarial adjustment that social security applies after age 65 has already been increased in 1982 to 3 percent per year of delay. Although this is still far from actuarially fair, it does decrease the size of the work disincentives, and is a move in the right direction.

The incentives will be changed even further by a rarely publicized and little understood part of the legislation passed in April of 1983. This legislation delayed the cost of living adjustment for social security recipients for six months. It introduced the taxation of the social security benefits of high

income recipients. It proposes delaying the age of full social security eligibility from 65 to 67 by the year 2027. But most important from our perspective, it increases the actuarial adjustment from 3 to 8 percent over a twenty year period beginning in 1990. This may seem like a minor component of the legislation, but I think it is an important one. It makes social security wealth much less dependent on the age of retirement, and significantly decreases the size of the implicit pay cuts accompanying old age.

As an economist, I believe that people respond to financial incentives. My research confirms this. However, I will be the first to admit, if you haven't beaten me to it, that people respond to many other things as well. I do not mean to imply that this is the whole story of retirement—the whole answer is the question of why people retire when they do. Attitudes towards work are very important, as are health status, living arrangements, and expectations about the future. But the incentives that I have described tonight are also important. And they are more easily changed by public policy, such as legislation, than many of the other determinants. Acknowledging the incentives that are hidden in our pension and social security systems is essential to understanding what has occurred in the past and influencing what will happen in the future.