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WHY HUMAN PSYCHOLOGY MATTERS TO THE GLOBAL FINANCIAL CRISIS

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P R O C E E D I N G S

MR. GALSTON: Welcome, everybody, and let me congratulate you on the behavioral display of animal spirits that has enabled you to be here today. Not everybody is so well endowed. Alas, one of our commentators was not able to make it, but we will proceed nonetheless, and I suspect people will continue to straggle in for the next few minutes.

Let me begin by introducing myself. I'm Bill Galston, a Senior Fellow and Ezra Zilkha Chair in Governance Studies here at Brookings, and one of the things that I do is host a series, which is now in its second smash year and will go into reruns if we can maintain it for another year or two -- a series called Governing Ideas -- and the basic idea of this series is very simple. There is a lot of discussion of particular policy issues in this building on this block in this town. That's very important as we all know. But there is an environment, frequently an unrecognized environment within which these discussions proceed. It is an environment of history, of culture, of theory and vorality, and in general a climate of opinion, ideas in the air, and sometimes ideas on paper. You know John Maynard Keynes, who in a way is the inspiration for this discussion, had some very tart words to say about the way in which today's conventional wisdom descended from, in many cases, forgotten theorists of a generation or two ago.

Well, we are here to hear about and to discuss a very, very important new contribution to this environment within which public policy is going to be discussed. It is an extraordinarily not only important but well-timed contribution, and it is a book entitled *Animal Spirits: How Human Psychology Drives the Economy, and Why it Matters for Global Capitalism.*

As we hear reports every day about confidence or lack of confidence, trust or lack of trust, and the way in which these human sentiments and beliefs drive economic behavior and not only economic behavior, the timeliness and importance of this concept requires no justification.

The two authors of this book are so well known as to require almost no introduction, and so I will give them almost no introduction in part because very full information about them is contained on the information sheets that you all have.

Suffice it to say that George Akerlof is the Koshland Professor of Economics at the University of

California. We're proud to say that he's a nonresident Senior Fellow in the Economics Studies Program here at Brookings, and he was a co-winner of the 2001 Nobel Prize in Economics on the topic of Extraordinary Variety in Fruitfulness, namely Information Asymmetry. In plain English, if I know something that you don't and we're about to engage in an exchange, I have some advantages. You're at a disadvantage and this is something that has clear application to insurance markets and lots of other things besides.

The co-author is Robert J. Shiller, and he is the Arthur Okun Professor of Economics at Yale. He's also the Professor of Finance and Fellow in the International Center for Finance at the Yale School of Management, and, you know, you probably know him in various contexts. Let me just mention two. He is the Shiller of the well-known case Shiller Index, which has not been behaving very well recently but is telling the truth unfortunately, and you may also have heard of his book, *Irrational Exuberance*, which went into a second edition. It's been translated into 15 foreign language editions. And so it will be very interesting to find out how *Irrational Exuberance*, which sounds somehow negative, you know, morphs into animal spirits, which sounds, particularly in the current depressed circumstances, somewhat positive.

And the commentator, who was able to make it, I'm pleased to say, is Jeff Kling, who is Deputy Director; and Joseph A. Peckman, Senior Fellow in the Economic Studies Program here at Brookings.

And the order of events will be roughly as follows. George and Bob will present the evening findings and arguments of their book. Jeff will comment. That should occupy roughly 40 to 45 minutes, perhaps a little bit less. There'll then be a little bit of cross talk on the panel, followed by questions from the floor followed by a 15-minute book signing out at the book-signing desk right outside -- right outside the room, after which they will depart for a series of high-level meetings where they will try to persuade, no doubt, policymakers to embrace their views or perhaps not.

At any rate, we're all looking forward to this very much, and we're honored, gentlemen, to have you for this event, and, George, the floor is yours.

MR. AKERLOF: So, thank you, everybody, for being here.

So, this is an event about this book, which is called *Animal Spirits*, and I don't know if you've seen the cover but the cover is a Koren cartoon of all these little animals. Sometimes their happy, sometimes they're rather sad and gloomy, and I think that in fact this Koren cartoon captures the spirit of the book. It's going to capture the spirit of the book more than, in fact, the remarks I'm going to make. Somehow what we tried to is we tried to explain what's missing from macroeconomics by a lot of little examples, and when you up these little examples, they can lead up to something that's a very big thing, a very big thing like the current financial crisis.

So, I think the book we think is serious, because we think that the topics that it deals with are very serious, but the book is not solemn. The book is more written in the spirit of these nice little animals than it is in terms of lots of mathematics.

So, having made those remarks, I'm now going to talk about the current financial crisis, and I'm going to be a little bit more solemn about that, so -- but it's not really the spirit of the book. So, if you go to read this book, what we've done is we've tried to write a book that is accessible to everybody but we in fact think has meaning for economics graduate students.

So, I think a lot of people -- probably almost everybody here wants to know about the current economic and financial crisis, so I thought I'd talk about that in that spirit.

Okay, so governments the world over are working to try to solve the crisis, and of course they're enlisting economists to guide them through it. Now, economists are relying on their vision of macroeconomics, and currently much of that vision does come from Keynes. So getting the solution to this right calls for a correct vision of how the economy works, and the role of this book, *Animal Spirits*, is to provide such a vision. And current versions of macroeconomics greatly downplay the role of psychology in the macroeconomy. You're not -- as an economist, you're basically not supposed to have a psychology in your arguments. But as we show in the book, there are at least eight fundamental macroeconomic questions whose answers depend largely, although not entirely, on the role of psychology.

So, the first task of the book is to explain the role of psychology in the macroeconomy and its role in answering each of these respective eight questions.

So, Keynes called the role of psychology --

he calls it "people's animal spirits." And then the first part of the book describes five different animal spirits. So, what are they? They are confidence, fairness, corruption and bad faith, money illusion, and stories.

And then the second part of the book describes how these animal spirits play a key role in the answers to these eight macroeconomic questions. Now, these questions are fundamental. They're as fundamental as why the economy fluctuates as much as it does; why and how monetary and fiscal policy affect the economy; and why there's involuntary unemployment.

So, let me just review briefly how these concepts indicate how we've gotten into the current crisis, and then you -- in some sense this will be a little bit more solemn than the rest of the book, but you get a feeling for what's there.

The first of these animal spirits is confidence, and when we think about confidence, the dictionary in fact tells us that confidence means trust, but what does trust mean? Trust means that people go beyond the usual rational use of information to make judgments, and that's just we found in the boon that just ended. People were making all kinds of business investments. Especially they were purchasing and selling complex financial instruments on the basis of their trust. This was not just in the housing and mortgage markets; it occurred in financial markets much more generally. Furthermore, they would have not made these investments if they'd rationally analyzed the basis for making them. They made them because they were confident. In fact, as it turns out, they were overly confident. So, that's the first concept. The first concept is confidence, and that's the first of our animal spirits.

So, let me now describe the role of corruption and bad faith, which is the third of our animal spirits. Very few economists foresaw the problems that were developing. The standard view among economists was that private markets would be self-policing. It assumes that people would be knowledgeable buyers and sellers and they would only undertake increased risk if they were duly compensated by higher expected returns. Thus, there was very little worry about the lack of regulation above the securities and the real estate markets. There was much too little worry both amongst the regulators themselves, amongst the government officials who should have been telling the regulators what they should be doing, and amongst economists. But the self-policing view does not take appropriate account of the fact that people were over-confident, and therefore they did not do the self-policing that they were supposed to do because of this overconfidence.

Well, there's a principle of capitalism which means that capitalism will take advantage of over-confidence. So, the standard view I think is that capitalism produces what people really want as long as firms can make a profit. But that's not the correct view of capitalism. A somewhat expanded view, which usually doesn't make much difference, is that capitalism produces what people think they want as long as firms can make a profit.

Let me give you an example where this might make a difference. For example, unregulated capitalism may produce good medicines that cure our ills -- in fact, they do -- but unregulated capitalism also produces snake oil that does not cure our ills and may even find it profitable to produce the desire for the snake oil itself. In fact, that's one major reason for the FDA. It is -- one reason for the FDA is to guard against the production of bad medicine of snake oil.

So, this principle in fact has special relevance for asset markets. So, assets to most people are only pieces of paper. What do you get when you buy a stock? Who knows? So, in fact, what most investors do is they surmise the value of financial assets from what others, such as accountants and rating agencies, tell them about them. And these accountants and rating agencies we now know also have their own incentives, and those incentives are not fully aligned with the public's interests. And so when people are overconfidence, financial markets tend to produce assets that take advantage of that over-confidence. If unprotected by effective regulation, people will be sold snake oil assets and an industry will arise to produce them. And that's what we have just seen on Wall Street and beyond. So, that's the second -- the snake oil -- the over -- the corruption and bad faith is the third of our animal spirits.

Then there's a further animal spirit which bolsters the previous two. People act and live according to stories. That goes for their economic decisions as well as their personal decisions. How we live depends upon the story that we tell about ourselves. What we buy and what we sell in the economy depends upon the story that we're telling about how the economy works. And so there's usually a story about how the economy is behaving as it does.

Now, these stories usually have some grain of truth that people often are over-exuberant, as Bob would say, on the one side or the two (inaudible) pessimistic on the other. Ten years ago it was the dot-com story. In the recent past, there was a story that financial engineering could make financial assets much more safe than the underlying securities. The story was that modern financial packaging had figured out a way to reduce risk, and then people bought into these stories and they were over-confident, and then markets took advantage of those beliefs to sell what has later proved to be snake oil assets. So, these three animal spirits then explain how fluctuations in human psychology play a key role in why the economy fluctuates as much as it does. We think that that is the key role to business cycle fluctuation. The confidence comes and the confidence goes. The stories come and the stories go, and then of course the snake oil comes and the snake oil goes. So, we think that the current financial crisis is explained -- we think it's explained exactly and also easily by such fluctuations. So, this is one major thrust of the book. It sort of gives you a sample of what we're saying and especially a sample that's relevant to how we got into the current crisis.

And so I'm going to let Bob take over from there.

MR. SHILLER: I wanted to add that I have a Brookings connection, too. I've been a regular participant in the Brookings panels, including the next one, where I'm presenting the Brookings Panel on Economic Activity, and I'm presenting in the April 2 meeting. But I wanted to also say that you mentioned I'm the Arthur M. Okun Professor of Economics. Well, Arthur M. Okun left Yale to found the Brookings Panel on Economic Activity, so Brookings is kind of in my name, so.

I wanted to start by saying that I think George and I have been motivated by the impression that the economics profession is neglecting the main driving force of the economy. That's what we are calling -- we'll, Keynes called animal spirits and we think is a good name for this. It goes back, though before Keynes, and I'm reminded of A. C. Pigou's 1929 book, *Industrial Fluctuations*, and he said that what is it that drives the economy? Why does it do these ups and downs? And he gave three causes: real causes, autonomous monetary causes, and psychological causes.

The real causes were things like harvest variations, inventions. You know, it's ultimately why is it changing? What's changing behind it? Autonomous monetary causes -- this is writing in 1929, by the way -- are gold discoveries and monetary policy changes and banking changes and psychological -- and quote Pigou, "changes that occur in men's attitude of mind so that on a constant basis of fact they do not form a constant judgment," and he estimated in 1929 that the monetary causes, if eliminated, would reduce the amplitude of economic fluctuations by 50 percent and the harvest variations would be reduce by 25 percent and psychological causes by 50 percent.

Now, I think since 1929 we've seen some improvements. Harvest variations don't matter as much, and the monetary authority is now stabilizing rather than destabilizing. So, I think we're left with psychological causes. But the economics profession doesn't think that way. And it comes across -- not even applied economists.

I was just looking at this morning's

Financial Times, and James Baker has a article about the financial crisis, and he refers to the toxic assets problem which inhibits bank lending and refers to the problem of the zombie banks that Japan had. All that's fine. I think we agree that it's a problem. But if you read his article, it's kind of like that's the only thing: If we could just fix the banks' toxic assets problem, that would be it -- as if the whole Japanese problem, the lost decade, which he refers to, is just due to some failure to bank regulators.

But the view that George and I have is that the Japanese problem, the lost two decades now it's going on, has something to do with animal spirits. It's much deeper than errors made by banking regulators in Japan. What happened in Japan was a huge bubble in the stock market and in the housing market in the 1980s -- huge -- and what was driving that? It was over-confidence. It was the apparent success of Japanese companies that led the Japanese to exaggerate their long-term outlook and to just push values up really high, cause lots of mistakes. After it was corrected, they were in a funk, and the funk is psychological. This is the point that George and I want to emphasize. It's not all mechanical. It's in our minds. And yet economists tend to focus on the mechanical.

So, I'm reminded of Robert Solo, the economist who years ago said that his vision for economics -- we ought to think of ourselves as plumbers -- this is famous quote of his -- I'm probably not saying this exactly right -- but that economists basically should be dealing with very practical problems and we should be calling in an economist just like we'd call in a plumber when the toilet is plugged. And that's the way we should think of ourselves. But I admire his modesty. But I think maybe people have taken -- for the profession -- I think maybe people have taken his advice too literally and we tend to approach all economic problems as mechanical problems and that we think of ourselves as plumbers. But the problem is we're dealing with people, and we're dealing with people who have changed their thinking.

This reminds of -- our last chapter in the book is about poverty among minorities, and one of the reviewers at Princeton Press suggested that we cut that chapter from the book, and they said what does this have to do with macroeconomics? Well, to George and me it does matter, at least by analogy, because the same thing that's going on that's creating a vicious cycle of poverty -- the same kind of -- and George emphasized "stories" -- it's stories about ourselves, who we are, what we can do that encourage a -- among the chronically underemployed it encourages a defeatist self-attitude. The same thing goes on in the macroeconomy, so we think they're very tied up.

We talk in our book about social psychologists who emphasize that human thinking is substantially narrative based. In fact, Roger Schank and Robert Abelson wrote a paper arguing that the brain is organized that way. We tie everything onto stories. We like sequence stories of narratives, and these stories tend to live on and affect our culture and our thinking; and so if you've lived in poverty for generations, you just have a whole view about yourself and the world that's different, and if you're entering a depression or a severe recession, your whole personality, your whole sense of who I am and how I connect changes.

There's one thing that we emphasize here. You mentioned trust, that what happens when an economy falls into hard times is that we lose trust in our institutions and each other, and we are unwilling to just go ahead with plans without doing due diligence, and then we become kind of in a quagmire where we have to do too much due diligence.

What's happening right now? Part of it is very practical. I'll give you a couple of examples from my own recent experience. Just the other day our president of Yale University announced that he was putting on indefinite hold plans for new construction of new colleges and a campus for the business school. First of all, why is he doing it? Well, because we're in bad times.

Another thing, I was reading *USA Today*, and it had an article yesterday about new tips for saving, how you can do things like not eat out, order -- buy foods in the grocery stores that are less expensive. This is the new attitude. This is pretty fundamental. How are plumbers who are trying to fix the toxic asset problem going to deal with the new habits that we've suddenly come up with? These things are going to be with us.

That reminds me -- this is a flippant, but I just saw on the news that Starbucks -- we see Starbucks coffee right back -- has just announced that they are introducing a line of instant coffee, all right? And the commentators all attribute this to the economic -- this is the time for Starbucks to bring out instant coffee, all right? So, we're going to see a new brand.

Now, this reminded me about Miracle Whip. Do you know Miracle Whip? It's a brand of mayonnaise, and my family has been buying it all my life and we have it in our refrigerator, and I was wondering what is this stuff, Miracle Whip, why -- my mother told me it was good. So, I looked it up. It came out in 1933 at the Chicago World's Fair, and it was called imitation mayonnaise and it was cheaper then the then common brand, which was Hellmann's mayonnaise, okay? So, apparently for years they labeled it as imitation mayonnaise, and my grandmother bought it because it was part of our efforts to deal with the depression. They've dropped calling it imitation mayonnaise now. They don't call it anything. But their competitor, Hellmann's, which goes back to 1900, if you notice -- you'll see it -- says "Real Mayonnaise." That's a jab at Miracle Whip. None of us know these stories anymore, right? But it's still there in our culture. That's an example of how stories persist and change the way we think.

So, just to go on. Robert Barro recently --

the profession doesn't get this as I see it. I'll give you an example. Robert Barro, a distinguished non-behavioral economist said about this current stimulus bill, and I quote, "It is probably the worst bill that has been put forward since the 1930s. I don't know what to say. I mean, it's wasting a tremendous amount of money." Robert Barro is famous for the theory which he calls Ricardian equivalence, and what he said is that rational people would recognize that anything the government spends will come back in the future as taxes, and according to his model it should all have no effect on anything if everyone is completely rational and discounts all the future.

Somehow, you know, he seems to be really missing the point about what the stimulus package is about, and to me the stimulus package is about preventing semi-permanent damage to the way we think about ourselves to the kind of stories we tell, that -- and so I just wanted to conclude by saying that we think -- George and I think that it is really urgent that we get a aggressive, fiscal, and credit policy going before we see more damage to the stories about ourselves and our sense of who we are and our sense of confidence in our economic system. So, in the book we talk about setting up a fiscal target that is enough to produce full employment and do it fast. We have, of course, the recent stimulus bill that Congress passed -- a $787 billion stimulus package -- that will come on gradually over the next couple of years. It isn't enough, and so what's going to happen -- and we see this unfolding -- is a change in our sense of ourselves and our relation to the economy.

Secondly, George and I argue that we need a credit target, which means not just fix the toxic asset problem, but we've got to do something aggressive to get lending going again, because as this progresses we see more and more people running into personal experiences that are devastating to them, notably foreclosures on their home. Fortunately, Obama has set up a Housing Affordability and Stabilization Program with at least $275 billion. We don't think that's enough either, and it isn't coming on fast enough, because people are being foreclosed. So, the thing is that we want a twin target, and we want it to be enough -- aggressive enough to stop the bleeding before it changes our whole view of ourselves and our lives. And it doesn't seem that economists sense the urgency, because the typical models are models that don't represent any of this change in animal spirit. The models would say you can put it on and the economy will go up. There's a multiplier. It goes up by some constant number. and then if you take it off again it'll just go down. But it's all mechanical. We don't think it's mechanical. We think it operates through psychological feedbacks and that these feedbacks have long repercussions that last over many years, and so we need much more aggressive policy now before this happens.

MR. KLING: (Inaudible) to resist the podium, because it's really designed for people who are not six foot four. But I'll start from here. I'm going to talk a bit about the labor market as a complement to sort of the financial crisis and the credit market that George and Bob focused on, and I think as everybody knows we've lost 500,000 jobs a month on net for the last four months. We'll have new job numbers at the end of this week. It probably won't be any better. And so I'll -- I'm going to talk a bit about how at least I've been thinking about applying some of the principles of behavioral economics and how to think about incorporating psychology into how we think about labor market policies and how that relates to some of the things that they have written about.

So, when looking through the lens of behavioral economics, they gave you five organizing principles of thinking about confidence; thinking about fairness, corruption, money illusion, and stories. I actually think that stories is a bit different than the other categories in the sense of it's not really a mechanism that has an impact on people in the way that, say, confidence does. I think of it as more a way in which actions propagate or that are amplified through stories but the building blocks are more, say, in confidence or in fairness as opposed to those are the things that motivate people to act in the way in which then that gets amplified. I think of it as being through stories.

But in any event, I had been thinking about how to look through the lens of behavioral economics, about economic policy questions quite independently, and so it was a pleasure to read their book last week and think about and see how their thinking had evolved in a somewhat different way than mine and some of my collaborators. So, we've been thinking about it in terms of more from building up from individual decisions, and so starting from a place where people are thinking about choices that they're going to make and what decisions do they need to make in economic life, and so there's a set of things that you might call limited computational capacity, that there's a lot of things that you might need to try to consider when you're making an economic decision and it's hard to gather all those things together to hold them all in your mind and make the right calculations about them to have a sense of whether your estimates about, say, what's going to happen to housing prices if those are generally on target or if you're too overconfident and you think that they're never going to go down, if there's a lot of things to try to keep in mind. So, we have a bucket of thinking about limited computational capacity that I think maps back some into both money illusion, which they didn't talk about very much, the sense of the difference between the nominal prices that you pay and how you might adjust those for inflation. I think of that as one specific type of computational complexity, and then a bunch of things about confidence and how people make decisions about that.

Then another bucket that we think of as being referenced -- dependent preferences -- so, thinking about you have a -- some kind of reference point of which you might be making a decision, and that maps most closely to their concept of fairness about what it is, say, that you have currently and particularly in the labor market thinking about what's going to happen for wages for the next year. Are we going to have wage increases? How much should they be? Even if prices are falling and the economy is not going so well, would you want to think about having wage decreases? What's the tradeoff between that and laying people off? Those are hard questions and we sort of group those into this bucket of reference-dependent preferences.

And there's a couple of things that they didn't talk about so much that we think are important. One is about limited attention, so people often make choices in a way that's fairly local, and it's hard to pay attention to all the different things that are going on globally that you might want to take account of. This comes out more in their chapter on savings than in any of the other chapters where they talk some about, say, framing and the importance of how savings decisions might be framed or the importance of defaults and the extent to which that encourages people to make different choices. But we sort of group that into this bucket of limited attention.

And then there's another set of actions around bounded self-control, so can people act out on the intentions that they actually have, and there's I think an important category of behavior that isn't really captured, I don't think, in sort of the five animal spirits that they gave you, but it's an important part of how psychology affects human behavior and economic decisions.

So, with that as backdrop about some of the ways that we think about psychology affecting economic decisions, there's -- we wanted then to try to apply this lens to some country problems, so I'll talk about labor market problems next, but more generally there's -- the extent to which you want to diagnose what the problem is then there is figuring out what the policymaker tradeoffs are that need to be made and then there is figuring how out to design policy solutions. I think of that as sort of the three main steps of how to think about applying behavioral economics to country problems, and so the book is, as I think, a very good book about diagnosing the problem part, and so I look forward to seeing the next steps of their work where they might get into some of the things that they mention at the very end of the book, which are the things that are sort of the most personal interest to me about how to design solutions to some of the problems that they identify as being very important.

For one -- to take one of the examples that they talk about in terms of diagnosis, there's the sense in which fairness is very important in setting wages, and so they have a nice chapter about understanding why there is unemployment, and farmers might want to pay than more than necessary, pay efficiency wages in order to try to get people to be happy about what they're doing and well motivated and want to stay there, and this can lead to unemployment and then explains one of the important stylized facts about how quits go up when unemployment falls and sort of that makes sense as a way of thinking about what's happening about unemployment.

But then I want to sort of push on to the next step of well, if you find yourself an economy where the consumer price index is actually off maybe 3 or 4 percent relative to last June so -- and the unemployment rate is 7.6 percent and is going to be higher for the next month -- if that's sort of the world that you find yourself in, then -- but -- and you believe that fairness is an important part of how firms set wages, then what should you be thinking about doing as the policymaker? If you think that wage rigidity is really important, then should you be entertaining the idea of having a employer-side payroll tax cut? That would be a way to specifically try to subsidize employment to try -- to combat this particular type of wage rigidity that might be leading to even more layoffs than we would have otherwise. That's something that you might think about doing, and then you have to think about whether this is really a good idea, how it trades off against some other things that you might do -- in particular, what's the role of supply increases and raising output in the short run, which is something that macroeconomists don't particularly agree on what the effect of that is. You might just try to not run the economy where inflation and productivity are so low at the same time but we're all sort of already pressing on the monetary policy accelerator more or less as hard as possible, so you have to think about what are some other things that you might do, and so those are the sorts of things that I imagine that both George and Bob have started to think about in the back of their minds, and so it seems like those are things that are going to be important practical things for us to wrestle with going forward.

There's a set of other things about -- in labor market policy about what happens when people lose jobs, which there's some interesting psychology to think about there, too. So, over the course of time, we used to have a labor market policy in the U.S. where we focused on creating some slots for people to have job training in, and so we would find a provider, create a course, encourage people to go to it, and that required knowing something about which providers were doing a good job in order to choose them and knowing something about who it is, which occupations we might want to be focusing on that might be growing and likely to do well, but government has to do a good job in picking these things, and Bob Reich, the Secretary of Labor in the early 1990s very much had the view that the government wasn't especially good at doing this and that we had -- we were spending quite a bit of money on pretty low-quality training, and so if we gave people vouchers to be able to go out on some marketing, get the training for themselves, then they would be able to choose what it was that was best for them, the things that each person would have a big stake in what the choice was and they could probably do better than having the government create these training slots. And so --

So, we had -- we've shifted our policy much more towards the training voucher model of what to do when people become unemployed. Where behavior economics comes in here is that this is a choice once you have a training voucher like this that turns out to be pretty difficult. It's very hard to evaluate what the quality is of the training providers, and it's also relatively difficult to know as an individual which things to go into in terms of occupations, and so there's a potential role for creating some improved choice architecture in this situation where the choice architecture is a term that's I think been usefully coined by, I think, Bailer and (inaudible) and some of their work to try to find a way to help people be able to make good choices, and so in this situation it might be something about providing good, easily available information about occupational projections. We spend a lot of money at the Bureau of Labor Statistics trying to do occupational projections, but they aren't especially accessible to people, and we don't really do anything about promoting better information on the quality of training providers, and so there's, I think, a role for creating that kind of information and making it easy for people to use.

When people are receiving unemployment insurance, there's roles for thinking about how to help keep people motivated, so one of the forces that I mentioned before, sort of this idea of bounded self-control, is that people would like to be working. It's not that they wouldn't, for the most part, but there are various things that get in the way of that. Sometimes it is lack of information and sometimes it's procrastination and there's things that incentives could potentially do to help people solve those problems. We've experimented some with reemployment bonuses. If you have a big incentive at the end of the job search, then that could, in principle, help people solve this problem.

The psychology of this design probably suggested having a larger number of smaller incentives that are more tied to the kind of intermediate targets so that -- Bob was talking about monetary policy -- having intermediate targets for what's happening during job search would probably be more helpful to people as a particular way of thinking about ways to use psychology in job training.

There's another important issue thinking about when people have lost a job when you're then looking for a new job. If you have a strong sense of this reference point in your mind of the wage that I used to earn is $14 an hour and so I'm not really going to look for anything that is less than that. Then that puts that you in a particular box for how you're thinking about doing a search, and so there's a couple of things that government as a policymaker might be able to do for that in this situation.

One would be to close up the gap between what your old job wage offer was and what's happening on the new job, so some form of wage loss insurance could close up this gap.

There's also things that could be done in the job search assistance process about debiasing people in their wage expectations in helping provide the kind of information and counseling about what the prevailing labor market conditions are for people who have certain sets of skills so that if $14 an hour is just not achievable for the sets of skills that you have, that you can get that information and be able to incorporate it.

So, anyway, I wanted to give you just a

number of examples of thinking about how we can move from the first question of diagnosing what some of the problems are through an intermediate stage of thinking about, say, what kinds of distribution of outcomes do we want or how do we want to trade off people's short-run considerations versus their long-run views. There are certain trade-offs that policymakers will need to make decisions about, and then once you have a sense of how the policymaker wants to weigh those different things, then how do we design solutions that are going to be able to actually help people out, and so actually I think about plumbing as the economist trade not so -- I don't -- I didn't -- I don't think about it as being mechanical so much as being practical, so I'm interested in the practicality of it, of there are a bunch of design questions that urgently need attention and there are some ways of thinking about how looking through the lens of behavioral economics can help us do a better job into designing those solutions, and so I think that the book, *Animal Spirits*, helps us set the stage and there's a lot more work to be done.

So, I will stop there. Thanks.

MR. GALSTON: Thanks, Jeff.

We will now, I hope, (inaudible), yes? And I will make the announcement.

Well, we now proceed to the question phase, and a couple of preliminaries.

First of all, as some of you know, George Akerlof's wife, Janet Yellen, is the president of the San Francisco Fed, which means that George is a member of what is called the Fed family, and that imposes what the political theorists would call discursive restraints on him, and in particular if you have any questions about Federal Reserve Board policy or monetary policy, some of the innovations that Mr. Bernanke is pursuing, anything in that zone, please address them to, you know, to Bob or Jeff. If you really feel full of animal spirits, you could address them to me for some generally eccentric responses as a non-economist, but George asked me to make that announcement.

And as moderator, I will give myself the privilege of posing the first question, and it is this, and this comes out of my role as a denizen of the Governance Studies Department here at Brookings as opposed to Economic Studies. The two of you -- the two of you talked about the policies that the government should pursue, and in particular these two concepts in your book about fiscal targeting and credit targeting. What you didn't talk about was the psychological dimension of public leadership. Now, when Franklin Roosevelt declared that the only thing we had to fear is fear itself, you could argue that he was behaving in accordance with the tenets of behavioral economics, even though it hadn't been invented at that point. So, broadly speaking, what does your analysis -- what conclusions does your analysis lead to about the psychological role that political leadership ought to be performing at this point?

MR. AKERLOF: I think I've got an answer to your question. So, what was the purpose of this book, *Animal Spirits*? This was written in a very broad brush way, so this is about what macroeconomics should be about that we think macroeconomics, as officially taught, is currently missing. So, this is the nonofficial version of macroeconomics. And so I think actually in terms of the book -- I was thinking this as Bob was talking -- what we do is we create -- people do live by their stories. When you think about it, for the last 30 years since the beginning of Reaganomics, the economic policy of the United States government has, to a great extent, been determined by a vision of how the markets work, and the economy that's consistent with this Reaganomics. Now, that Reaganomics actually, as we discussed, in its failure to see the need for regulation of financial markets, had an implicit story behind it. That implicit story was about markets work, people act according to their best interest and markets are going to be self-policing. So, what we we're trying to do in this book is we have -- this is a broad-brush story about how the economy works. It's very much at variance with this -- the tradition that it only depends upon self-interest and is going to give us a lot of different conclusions.

Actually, Jeff was talking about why in fact at a lot of micro level it's going to give you different conclusions. So, I think one of the things that we're trying to do in this book, *Animal Spirits*, is to create a different story, and that's a story that we -- we hope everybody's going to read this book, so we hope that the public will read it so they understand how the economy works so they're not going to -- when in fact people propose the proper solutions to the current crisis, people -- it's going to be consistent and people are going to say oh, yes. We hope the graduate students will read it and also undergraduates so they have a correct view of macroeconomics, which in fact corrects the official view of macroeconomics, which is mainly based upon only economic model. And then we hope that the policymakers -- they may already in to it and have in mind exactly what's here. But the thing is we think that putting out a book that has this will then give -- it will give legitimacy to how they think and they'll be able to carry on.

I may be talking too much, but I'll just say one more thing. So, I'll say one more thing.

Sort of basically in the great depression, they sort of Hoover and Roosevelt -- they sort of basically do what was to be done. And they sort of went in that -- sometimes they went in one direction and sometimes they went in another. But they sort of did -- they did run up deficits and things like that, and that was the right thing to do. But the thing is in the absence of Keynes, in the absence of a theory which pinpointed exactly what they were to be doing and that would give them confidence, they didn't go far enough and they didn't have the appropriate targets. So, when we called for these appropriate targets and we associated this with this book, this book gives the spirit under which you should have those targets, and we think then it should give the public officials the confidence to do what's needed to be done and that also we think it should give the Congress and the public the reasons why it ought to support these policies.

So, anyway, I've said enough I think.

MR. SHILLER: Can I --

MR. GALSTON: Please.

MR. SHILLER: It seems to me that politicians have an intuitive grasp of some of the things in this book, but maybe there isn't a literature or developed academic approach. Academicians just ignore it, and so it confuses politicians. If you go back to Herbert Hoover, who was President during the beginning of the depression, his instinct was that confidence was the problem and as President he should make statements that supported confidence, and he's notorious for having predicted the end of the downturn in a couple of months and then doing it again after it only got worse. And then he became the laughing stock of the nation, because we had a President who was always saying the economy is fundamentally sound and that the turnaround is just a short while away. I think that he didn't really have help with what he as a President should do. And this is a conflict right now where Obama is being criticized for pointing out the seriousness of the problem in an effort to get his packages through or support for them and people saying that he is destructive of our confidence by saying these things, and I think that we need to help people like that with a better idea, and I think that Obama is absolutely right to do what he has done, because the story is already out there. The story of the great depression is being told every 15 minutes, and I think that for the President to try to deny that would be folly right now. The story is well-established already, and so that's the kind of understanding that we want to help promote.

MR. GALSTON: A sea of questions. When you -- when you're recognized, a couple of things. First of all, wait until the roving mic reaches you, because otherwise nobody else will be able to hear you; and, secondly, please identify yourselves briefly; and third in a series of two, please keep your questions and your comments brief in deference to all the other people who'd like to participate.

First question, up here.

MR. BILLEN : Ken Billen, Sensea Press. The WPA example from the great depression does have relevance perhaps not for the U.S. economy, perhaps for other economies now which were worse hit than that of the U.S., and I'm wondering what you think of government-sponsored and run job creation programs like the WPA as solutions for the current problems of countries around the world and perhaps of the U.S. economy. Is there a threshold at which this becomes an attractive solution, and what kinds of WPA solutions would work best, for instance? Could the government be a prime contractor and subcontract out the various kinds of work?

MR. GALSTON: Bob?

MR. SHILLER: Well, I was saying that there are traumas that people faced recently that will leave lasting scars. One of them is eviction from the home. Another one is losing a job. And as the percent of people losing a job rises above -- if it, say, goes above 10 percent, that will be remembered. People will know that we are in a worse crisis than the -- well, actually in 1982 it got up to almost 11 percent. But we have to focus on preventing that kind of damage from being promulgated, and so something like a Works Progress Administration, because we're not proposing that at this point I guess. It's not -- Obama is proposing developing -- the Works Progress Administration did things that were kind of frivolous, right? Like, they put people out cleaning up the national parks? Obama has a different idea, which is infrastructure, education, health care. So, if he can pull that off, if he can get that going, maybe that's a better approach than the Works Progress -- it kind of told the wrong story, the WPA. It told the story about getting -- wasn't that men out in the wilderness cleaning up -- that was an image that didn't seem to be confidence-improving. So, anyway, I think that we have to do things to create jobs and to prevent foreclosures. Those are essential. Whether the Works Projects Administration is exactly the model, I don't know. Oh, for the foreclosures -- I've been talking about the Homeowner Loan Corporation from the depression as a model, and to some extent Obama's plan seems to look like that.

MR. AKERLOF: I would think there may be expenditures which -- in the budget where one can prevent job loss. For example, it seems to me that aid to state and local governments, which are cutting their expenditures at the moment, could directly transfer into jobs, and this might be a more efficient way of doing this. I mean, we should be the WPA on the table and do an analysis of it.

MR. GALSTON: Yes, sir, I'll work my way back.

MR. GINCHA : I'm Gincha, Professor of Financing, Johns Hopkins University. I'll try to keep my question short. But basically I think the problem causing the -- the cost of causing the problem is not just psychological. I would think it's still rational behavior. Actually, in the short term, right? The fund manager -- you know, people are behaving based on a short-term expectation and which causes psychology. And to address that I think -- you know, I have to address a fundamental question of, you know, the philosophies of capitalism whether to maximize profit is good. I mean, I think to rationalize that means that, you know, the corporate executive behaves the same way as a drug dealer, you know, based on the markets, but I think it should be different. You know, they should have a higher responsibility, and, you know, I'm from China, so basically in order to (inaudible) the traditional Chinese finance philosophy, I think in China, and the American people behave kind of differently because of different mindsets, and in

China people save in good times and they spend in bad times, and here basically spend in good time and they save in the bad time, which kind of make things worse. So, I'm wondering whether, you know, there need to be some change in the philosophy of the capitalism, and if you think so what is -- what should be the change?

MR. AKERLOF: Okay, I think I've got an answer. I think you're right that there was -- that there was a lot of rational behavior in terms of the people who wanted to make money. That's part of the snake oil syndrome. But I think there's actually some irrational behavior on the parts of -- the people higher up in the organizations should have seen that this was going to lead to bad outcomes. The people -- people who were buying the assets, which now haven't done so badly -- a lot of the -- that went into people's portfolios -- they should have -- that are now part of pension funds and things like that -- they should have seen this. So, it seems to me that in part there's a lot of rational behavior. Actually, we talked about in the book, how this is an equilibrium. But there was also some -- there was a lot of irrational behavior, people not appropriately foreseeing what was going to happen, because in fact they were over-confident. So, I think that's important, and so actually I'd like to see a lot of work based upon this type of thing about how snake oil gets sold, part of which is rational. but also there's an important component without which this -- these markets wouldn't have existed, but people were not properly evaluating what the risks were. People did not -- the risks were much too low, and we now know that.

MR. GALSTON: Yes, sir, in the aisle, and then behind you in the aisle. We'll just go aisle-aisle.

SPEAKER: My name is (inaudible) from Global Development Network. I think the macro short-term fluctuation -- why I think it's a very rich story, but let me ask you something about a little bit more longer term. In terms of this crisis, one would argue that there is a -- it reflects some longer-term imbalances, and to some extent -- I mean, just in order of magnitude, eventually to rebalance the world, more than consumption, production, we need to ship a trillion dollars in present day terms from America to Asia. That's what -- they need to consume that much more, you need to consume that much less. Now, is this -- that's a story one could argue that -- and you could argue it whether it's consumption of material resources, energy, etc., etc. Now, is this the type to also bring that story in, because that may enhance the credibility that, you know, we need to do this and use the fiscal space of fiscal stimulus to provide the space to make that adjustment. Or is this the wrong time? Let us just focus on the short run. But then you have the credibility problem of fiscal sustainability and whether this will ever -- you know, it'll not going to come back in one or two -- in one year. It may take two to three years.

MR. SHILLER: Okay, I think it's a tragedy of our times that the U.S. is a big importer of capital from the developing countries, and so I think somehow that should be reversed. Part of the reason it functions this way is because of confidence, I think, that foreigners -- often foreign central banks -- they want to invest in this country because there's a general sense of confidence in our institutions. That appears to be damaged now, and I was just noting that (inaudible), which is a German news magazine, had a cover illustration recently showing the Statue of Liberty with her torch going out. They don't show that in the U.S. But this has been damaging U.S. credibility around the world, because it's perceived generally as having started here in the U.S. and being related to our staunch faith in these capitalist institutions that have now failed us. So, we might see a reversal of these trends. That's sounding kind of negative, isn't it, but it's positive for -- the most important thing for this half of the century is that the developing world proceed and continue to develop on a good pace India and China and other countries. It's not in our book I guess. You asked about it.

MR. GALSTON: George, do you want to add to that?

MR. AKERLOF: Well, I think we just have to wait and see, because it's a question -- going to be a question of the balance of confidence in the U.S. relative to other places, and it could be with the world crisis that you -- I think we can't predict. I mean, people from the outside may still want to buy U.S. assets, because they maybe get safer than what happens elsewhere.

MR. KLING: I was just too negative. I shouldn't have talked about that there should be (inaudible) cover here in the United States. I think that we have capitalist institutions that are going to survive this crisis and will continue to be an inspiration.

MR. GALSTON: Way to talk up the economy.

MR. KLING: But, you know, just to state the obvious, the United States over the next two years, will be asking the rest of the world to display confidence in our basic financial soundness to the tune of $3 trillion, and that's just in -- that's just in public sector issued securities and, you know -- and I do think that there is a question for the long term, as there are various indicators suggesting that global markets confidence in the soundness of U.S. public securities has waned measurably in the past year, and given the fact that U.S. securities now are considered to be the safest of safe havens to the extent that that -- the confidence in that proposition is shaken, the entire world economy could be destabilized in a very fundamental way.

SPEAKER: Can I just -- maybe I was not understood. What I'm saying is Americans need to produce more, and that needs to be consumed elsewhere in Asia.

MR. KLING: Yes.

SPEAKER: And that's -- and, you know, which may require different sets of measures and policies than the current instruments which are associated with the fiscal stimulus.

MR. SCHWARTZ: Thank you. Elliott Schwartz, the Committee for Economic Development. It seems obvious that the book is aimed at economics and has lots of implications for the economics profession and study of economics. But there's also a political dimension, which you hit on here, which is related to the narrative, the stories, which is to say coming out of this crisis our national narrative is either going to be the government can help and the government has a positive role to play in helping develop good, economic results or that the government can't help, it's no good, it got us further into trouble; and it strikes me that the pitched battle between the Republicans and the Democrats over this fundamental question is pretty obviously coming out of this emphasis on stories and animal spirits. Just want to comment on that.

MR. AKERLOF: Okay, I just want to agree with that comment. This book is fundamentally about this. The government is -- according to this book, government should play a middle road, that the government is supposed to set a background in which a health capitalism can in fact prosper, and for that we believe that what one of the first and fundamental duties of the government is to maintain full employment and that by appropriate monetary and fiscal policy and then within that background then a healthy capitalism can exist and survive. In fact, this is supposed to -- one of the purposes of this is to change the story about what -- exactly what government should do and what it should mean, and I feel that in fact that the -- that those who support this role of -- for government, which was traditional in the United States up until something like 1980 in the post-war period that that story is (inaudible) and we need narratives that support that, and that's what this book is supposed to provide.

MR. GALSTON: Next question, please. Yes, sir.

MR. ALTMAN: I'm Fred Altman, retired from NIMH, National Institute of Mental Health. It would seem that it may be important to consider some individual differences in people when the effect on the macroeconomics -- there's a recent article in the *Post* -- I didn't go back and look at the original literature -- indicating those that were exposed highly to testosterone in the womb -- and there's a finger-length measure that indicates that -- were much risk takers, and on the stock market those with the higher testosterone in the womb had an average of six times as much as those who didn't, which really surprised the authors, and consequently with -- the high risk takers would go to the stock market, which would reinforce this high risk taking, which was part of the reason we got in the mess, and I wonder if you've ever considered anything like that.

MR. AKERLOF: I don't know whether we left it in the book or cut it. This kind of neurobiology fascinates us, but we're not experts in it. But the thing that clues me in -- did we leave this in the book? I was talking about ocitosin . Maybe -- is it in the book still?

MR. SHILLER: I think I cut it out.

MR. AKERLOF: That's another thing. There's this hormone which is generated in the human body, both male and female, but it's called the warm, fuzzy hormone because it's generated in women when they nurse their babies and experimental evidence done by some people associated with Ernst Fare show that if you inject it into people's bloodstream they become trusting, and it really works, and they -- the way they play games they're willing to trust other players. It's proven. And so we think that conceivably the ocitosin level of the population fluctuates over the business cycle, which is what (inaudible) future research (inaudible).

MR. GALSTON: Yes, next question please. Yeah.

SPEAKER: My name is Brian (inaudible). I'm a journalist here in Washington, and I'm just wondering what you feel that the media's role in all this is and what kind of impact it might have.

MR. SHILLER: Who's role?

SPEAKER: The media.

MR. SHILLER: Oh.

SPEAKER: Because, just anecdotally, if you -- I was flicking through the channels and ICC (inaudible) these days on prime time there's an hour-long feature on all aspects of the economic crisis (inaudible), which the words "economic crisis" are written at the bottom of the screen the whole way, and what kind of impact that would have, and, anecdotally, I was writing an article last week and I was tired of writing about protectionism all the time so I decided

I'd see what was happening with trade liberalization, but then I spoke to my colleague. He said, yes, but you can't do that, because we're focusing on this EU summit meeting and protectionism is what they're going to be talking about, so we have to talk about protectionism. So, do you feel that with the media constantly repeating this narrative you get into this kind of like psychological vicious circle and do you think the media has any role to perhaps try and break that?

MR. AKERLOF: Can I take this?

MR. GALSTON: Yeah.

MR. AKERLOF: This is a theme that I talked about in my other book, *Irrational Exuberance*. Historically, the world became more volatile when we invented news media. It's often forgotten that the tulip mania was the first big speculative bubble that was peaked in 1637, and that came in Holland right after the invention of the newspaper. The first newspapers appeared in Holland in the early 1600s, and I don't know what they were writing about the tulip mania, but it's certainly true that the media allowed contagion of ideas much faster than used to be before the news media, and it's part of modern life -- modern being after 1610 -- and I don't know whether there's some fundamental changes in the news media since the 1600s. Big ad newspapers and they're still with us. They were weekly at first, now they're daily, and now we have the internet, so we have a little bit higher frequency, but it's the same thing. I think it's part of modern life, and I think there's a lot of advantages that outweigh these -- probably outweigh these disadvantages.

MR. KLING: But your basic argument is that the media is procyclical pretty strongly.

MR. AKERLOF: But it allows for contagion of narratives and other ideas, yeah.

MR. KLING: Yeah, and but also once a trend starts, the media tends to pile on and, you know, not talk about the contrary of that trend.

MR. AKERLOF: Well, we're not criticizing the people in the media. It's the nature of the media and the people change from time to time -- obviously they change all the time, but it's a basic fact that our communications technology has become very powerful.

MR. GALSTON: I saw one more question in the back, and then I'm going to come back to the front.

MR. NOVI : Michael Novi, Office of Tax

Policy at Treasury. Since we're applying psychology to macroeconomics, I'd like to suggest adding a concept from developmental psychology that one of the principles of developmental psych is that there are stages of development which display special sensitivity for some experience stages where there's a great suitability to learning certain kinds of things, stages after which it's difficult to unlearn things. Has your research shown that there is a stage of life at which animal spirits are particularly easy to take on? Is there a stage of life at which animal spirits want to take it on are difficult to change? And does this have anything to say about whether changing the animal spirits is sort of like changing a scientific revolution -- you have to wait for a generation to pass?

MR. AKERLOF: I think a lot of the animal spirits we're talking about are in fact socially generated, so they're group notions. So, things like fairness are something that seem to be group associated. Things like the stories that we're telling tend to be group associated. So, I think on the individual level it may be very important what stage of life you are. For the macro where this affects sort of macro development, I think what's more important is that these are passed from one person to another and that they're sort of group related.

MR. GALSTON: If I could take off my moderator's hat for just a minute, this is actually a question that I've worked on as a political scientist, because people who study American politics can see that there are distinct cohorts for generations, and what we've learned in studying cohort or generation formation is that there's a period of maximum receptivity to the formation of social and civic stories that starts in the late teens and extends to the mid-20s. Those experiences tend to become an indelible dye that then sticks with you and you can trace those cohorts for generations, and so people who came to maturity during the great depression, as my parents did, will have that indelible dye and circumstances could change, the surrounding economic narrative could change, their basic outlook on the economy did not change or did not change appreciably. One of the questions that fascinates me as the son of depression-era parents and the father of a gen-y son who's now 24 is how this generation of young adults, which has experienced in quick succession the whiplash experience of extraordinary prosperity, (inaudible) sense that the sky was the limit and that risk taking would always be rewarded, and then followed immediately by one of the most severe economic downturns in the past century in all probability. How are these contrary experiences going to be processed into a story about the economy? What will they take from this concatenation of events. That's not a rhetorical question. I have no idea. But will the good news outweigh the bad news? Will the sense that we get through this and then there will be a new era of the sky's the limit, perhaps starting from a somewhat lower ground level? Will that be the dominant narrative? Or will the narrative be you can never trust the experience of prosperity because it can be snatched away through a series of events that are unpredictable and, once they occur, uncontrollable. I mean, I think that -- so the question -- developmental psychology in cohort formation, you know, in social psychology I think is going to be absolutely critical in thinking about these events. But beyond those hypotheses and speculations, it will be hard to go at this point.

Yes, sir, in the back and then I'm going to work forward to you.

SPEAKER: I just wanted to amplify your comments. The social theory I've heard recently that fits with that is after a crash or a big war the survivors pick up the pieces and build for about 20 years. Their children spend what was built and saved for 20 years. The following generation borrows for about 20 years. And then you end up in this unstable period where, you know, you have another big war, and all accounts are settled and you start over again. So, it's about 80 years. And if you look at the American revolution, about 80 years to the Civil War, about 80 years to the first depression, about 80 years to here. It seems to fit.

MR. GALSTON: The (inaudible) with a vengeance. I'm going to give the last question to this very --

SPEAKER: (Inaudible)

MR. GALSTON: Provocative idea but it's not an Al Gore.

SPEAKER: You -- not every provocative idea.

MR. GALSTON: Sir.

MR. DIXON: Greg Dixon, retired drug warrior I guess is -- my wife had a birthday recently, and using a strategy that's worked well in the past I went to Neiman Marcus and bought her an expensive little bracelet by David Yurman. I gave it to her, she teared up, gave me a kiss, and promptly took it back. And she didn't replace it with anything else. She said thank you very much. This leads me to the point that it seems to me that things people want are changing in the environment that we're having. Many of us have long had most of what we need, and we spent money on things that we want to the extent that things that we want have suddenly changed -- houses, cars, boats, big jewelry, expensive things. What -- how can that affect the climate? If that anecdote is widespread among people who have a little bit of money, where does that leave us? Even if we're confident, how do we change what we want in terms of fueling the economic?

MR. SHILLER: I know one of the signs of the times is books are starting to come out about small houses. What's the -- Susan -- I can't -- there's a best -- a near best seller now about the small house, and so these are -- I think we're getting tired of McMansions. It may be a cultural change that will last a long time.

MR. AKERLOF: So I think that's one of the things that we see in the statistics. I mean, the personal savings rates were so very, very low in the United States and that is another area of vulnerability, because there's room for that personal savings rate. Just as you said, it's a change because of psychological reasons, and unfortunately that's something that seems to be exacerbating the current cycle.

MR. GALSTON: Well, in conclusion, first I would note that this reinforces the idea of cultural differences and underscores the importance of our Chinese interlocutor's observation that in China savings and consumption appear to be countercyclical; in the United States they appear to be procyclical, which is quite odd when you think about it.

But let me -- let me now take this opportunity to thank our two extraordinary authors and our penetrating commentator for a very fine morning.

They will now be signing books right outside.

* * * * *

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I, Carleton J. Anderson, III do hereby certify that the forgoing electronic file when originally transmitted was reduced to text at my direction; that said transcript is a true record of the proceedings therein referenced; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were taken; and, furthermore, that I am neither a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

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