

EEP100 Lecture 20 (Nov 5, 2009)

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It's lecture 20! We have seven more lectures in this class. One of them next week is going to be a guest lecture from a guy named Ties, from the Netherlands. I have no idea how he talks. I pretty much think he's going to talk about Dutch water stuff, but that might be false also.

So we're moving right along. Some people asked about a good thing to read on Lynn Ostrom. I just started reading this interview with her husband Vincent and her that was done a couple years ago. I will upload this on the resources page for bSpace as well as on my blog, because a lot of people were asking on the blog as well. And if you want to know more about Lynn Ostrom's philosophy and work, this interview is actually quite a good channel for understanding how they do (the Ostrom's) their work, and how the so-called Bloomington School of thought works more or less.

In economics and other academic fields and disciplines, there's a notion of a school. There's the Chicago school, which is very free market. There's the Harvard/MIT school, which is the...we can all figure it out and make the economy function according to a little machinery. There's the Keynesians...the blah blah blah. The Bloomington's had to do with how do we...what do we see in the real world and how does that work, and does that match what we see in reality, which I've been mentioning to you repeatedly, doesn't often match up...sorry...does what we see in reality match what we see in theory? And as I've mentioned to you many times, we don't see that economic theory. So Bloomington school is one of those big challenges to economics.

Of course, the political scientists and economists have tried to ignore them, but the Nobel Prize is kind of an "eff you" as far as that's concerned. So that will be uploaded.

I will talk about the water bill later today in this lecture. I have strong opinions about it. pretty much...the bottom line...as far as I'm concerned is that it is a fail situation, and I will outline political economy in that, the water bill, will actually help you understand some of the issues on your briefing, in a sense of how is that we...that the legislature...what was that expression? So rarely have so many done so much and produced so little. So it's not going to fix our water problems. It might make it worse...I'm not quite sure, but we'll see.

In the meantime, let me get into more principle agent stuff.

Oh sorry. Any questions? Any open questions? You had a question about Schwarzenegger—he's not running in 2010. There'll be a new governor. Any open questions? Q & A stuff? Okidokie.

I've got some people kind of sending me test balloons on e-mail...how does this briefing look? And I was like whoa...looks like you should read the assignment and get back to that and answer that question. So no, I will not read your briefings ahead of time and tell you if you're doing an awesome thing. This is a clarification of what I wrote in the e-mail—it is okay for your solution to benefit a special interest group as long as it is increasing overall social welfare and the social welfare not going to special interest groups. And you don't have to sit here and run a spreadsheet and find out what percentage changes are happening. I just want you to concentrate on policy actions or advice to your political boss. I want you to concentrate on the advice that is going to

benefit the general public. The nameless person. The Joe Plumber. So that's your goal. How do I bribe my politician/boss on how to benefit Joe Plumber to the detriment, potentially, of special interest groups, and get reelected in that two-year cycle, okay?

Is there any other questions about other stuff? Before I get to principle agent stuff? No? okay.

So I've been mentioning to you that there's this principle agent relationship, and I want to clarify the flow of activity here, okay? So what's happening is the principle is going to be worried about what two things? Jargon?

Moral hazard...

Moral hazard...which means...how do I account for moral hazard?

You monitor it?

Monitor, okay...what else are they worried about?

Adverse selection?

Right. Adverse selection. And how do they account for that?

Signals.

Signaling. Sometimes streaming or filtering, and the best thing of all in terms of making these two procedures work better is to do what with your agent, if you're the principle? How do you magnify the quality of the feedback on your monitoring and your screening? Yeah?

Repetition

Repetition, right? You want to have many interactions with your agent. So it's a repeated game. It's much, much easier if you're doing a principle agent transaction over and over and over again because you're going to get some feedback as to the quality of the work of your agent, for example okay? So when you go to work day in and day out, and day in and day out, and you serve hundreds of cups of coffee, for example, your boss will have a pretty good idea about how good of a job you're doing in terms of working for your three dollars or ten dollars or whatever dollars per hour living wage...whatever that is. But if you're just doing one 200 thousand dollar transaction one time with one person that you've never met and you will never meet again, that creates...it makes it a much more high stakes game.

And that's what I mentioned before. One of the reasons that real estate agents tend to get paid so much money...this whole...6% commission, 6% of the average house in California...I don't know...\$500,000 in Berkeley...maybe a million dollars...6% of 500K is \$30,000. If you're the person who's buying or selling a house, technically the fee is paid by the seller, but split by the buyer and the seller, right? So if you're selling your house, you're basically saying...I'm selling my house for 500 grand. I will pay \$300 thousand dollars in commissions.

So it doesn't make sense on the one hand because...wait, why would I pay such a huge commission if the agent might screw up? But on the other hand it makes sense because you want...it's such a high stake game that you want to make sure that the agents who are working

this business have an incentive to do a good job. You want to attract high quality talent into the real estate agent business. Because if someone's going to sit there and say...I'll do it for \$100. Maybe they don't care, right? Now, congratulations, you just saved \$29,900, but your house sold for \$100,000 less. So then you lose money. Does that make sense? So you want that agent to work on your behalf to get a higher price. And in some ways it's like...I will pay you a huge amount of money if you're working hard for me.

There are obviously problems, and the real estate business is like famous for having problems, right? The whole fraudulent real estate agents...but the whole idea of paying a huge fee is that you're going to actually attract a quality agent into the game, right? In a sense...you want real estate agents to be on par with lawyers and doctors and accountants in terms of quality of work that they can do. Although people still complain about that fee. So that is actually called, in the jargon, that's called an efficiency wage. Did I tell you guys what that was before, yes? Okay, I'm just reminding you. Okay, good.

Now, so this is the typical principal agent dynamic. What's happening is the principle is in a sense, monitoring and screening the agent. And in exchange, the principle is getting back what from the agent?

Service?

Service. It's a benefit. It's like...I, as a principle, put in effort, right? In terms of screening and monitoring. And I will get back a benefit. And the reason is that typically a principle will hire an agent because the principle...although the principle might be able to do the job them self, mow their own lawn, sell their own house...the agent will either save them merely time...say that you're a lawyer who charges \$400 an hour, and you don't want to mow your own lawn for \$10 an hour when you can get the kid on...down the street to do it. So that'll save you time, and potentially the agent can do a better job than you because the agent is specialized in that task. Even the lawn mower kid can probably mow the lawn faster than you can.

So that's the tradeoff. It's essentially...if you put in effort, and then you get back some kind of financial benefit, let's just say. Now this is an important...what happens is...in a lot of situations...you have this third person who shows up called a beneficiary. And a beneficiary is getting the benefits, alright? And I will use the example that is most obvious to me...it's that you've got a principle agent beneficiary relationship when you have a politician, and a water manager, and who? A citizen. A customer.

Because what's going on is that...it's very, very common and you'll have politicians that are appointing water managers. The Los Angeles Department of Water and Power is a public utility. The biggest public utility in terms of retail in the country. And their directors and managers are controlled by the LA city council (the LA Mayor). So that's the politicians. They are appointing the water managers. The water managers are working on behalf of the citizens, the customers in LA, right? So then what you see that's going on here is that...by distributing the benefits of monitoring and screening, the benefits are no longer going to the politicians. They're going to the customers. So the politicians have a stronger or weaker incentive to do that oversight job?

Weaker?

Weaker. A weaker incentive to do that oversight job. Now theoretically, there is a feedback loop called...the citizens elect the politicians, right? Very, very few mayors of a city are elected or reelected based on the quality of their water supply. Potholes in the road, maybe, but not necessarily the water supply.

Can you say that the customer is the principle, and the principle...

Well there's different sets of relationships, and the relationship as far as water supply is concerned...this is what's going on, okay? In the citizen-politician relationship, then there's another thing going here, which is that feedback relationship, right? So that's a different set...so that's...someone pointed out...I think it was an e-mail...well can't all principles be agents, and agents be principles? In a sense, you can get that because say that you have...this is a paper I've been working on for a million years...in the case of international aid, you might have a taxpayer sending money to a politician who sends to a bureaucrat (a US bureaucrat) who sends it to a [inaudible] bureaucrat, who sends it to a guy in the field, who sends it to the poor person.

Principle, agent, right? And that person is a principle to an agent, and so on. There's this baby chain of principle agent relationships. By the time you get down to this poor person, the length of the chain between the taxpayer and the poor person is extremely weak, which is one reason why international aid rarely works because if you think about the whole problem, the whole reason why the principle agent...the whole dilemma described by principle agents...is that this agent here might not care about working on behalf of the principle. That's what I was saying to earlier on.

If the agent is getting paid a salary to take care of the principle's business and decides to go take the day off, it might help the agent, but not help the principle. Does that ring any bells? Does that make sense? So this is the dynamic.

But you know for the water supply problem? Wouldn't it make sense also for the water manager not to do a good job? Besides the politicians? Because if the water manager is not reporting back to the politician...just serving the customer...it doesn't really care like...

Who doesn't care? The water manager or the customer?

The water manager.

The water manager may not care to do hard work on behalf of the customer or on behalf of the politician?

Yeah.

Yeah. that's the problem. That's the problem, right? So the problem with all principle-agent relationships is that...you've got your coffee shop owner, and you've got your coffee shop employee, right? They're getting paid dollars per hour. If they push through \$80 per hour or a \$100 per hour, it doesn't change their hourly salary. It could change their tips, but let's just assume their salary. So the agent might say, "Hey, you know what? I don't want to work that hard." But that hurts the principle. So there's always this problem of effort on behalf of the agent. And the principle might worry about that and might want to monitor the agent in a sense because of intrinsic motivation. I'm just throwing in another complication here.

There's intrinsic and extrinsic motivation right? So if you're a coffee shop guy, and you hire somebody to work for you, and they're like, "I love serving coffee. I can't wait to serve 200 cups an hour." Then you, the owner of the coffee shop, are going to be psyched. Because that person would actually...would probably work for free, even. Just to serve as much coffee as possible because they have high intrinsic motivation. But if it's just a normal person who's like, "I don't care, I just want the money from my job." Then they have an incentive...or they have an issue with working hard.

The problem when you bring in the water manager scenario, the principle agent beneficiary scenario, is that...this person is still just as lazy as before. Let's say, in terms of additional effort, but now the benefits to monitoring don't even go to the principle. So the principle's like...I don't even care. I'm just going to go do something else because the benefits are going here, so the monitoring gets weaker. And the agent has even less incentive, extrinsic incentive, to do harder work.

And intrinsic incentives are not going to be altered, right? But the extrinsic incentive for the agent will be weaker because there's less monitoring going on. Yeah?

But wouldn't the politician also be in a beneficiary situation?

That would be when the principle is intrinsically motivated. Right? Because they want to do the best thing for the people. If the politician is like...well if the water supplies don't work, I don't care. It doesn't affect my reelection process. But the politician's like...I want a great water supply because I love my people, my citizens. Then the politician will have strong intrinsic motivations to monitor. So this is this intrinsic extrinsic thing that matters, and it really does matter. If everybody was just...politicians really just want to serve the people, and the managers really want to serve the people...the whole public servant thing? Then we wouldn't have these principal agent problems. And for many years, it was assumed that we didn't. I mean...then people started to be economists and there's no theory.

But then economist started thinking, why do these bureaucrats not work? And the whole jokes about bureaucrats is that they're around for hundreds of years. Thousands of years. And they started to think...well maybe the bureaucrats don't want to do that job, because they don't really care. This is known as public choice economics, if you didn't hear this before. Did I say that before? Yeah. public choice. So the school of public choice economics came around in the 1950s, 1960s maybe. And that's mentioned explicitly in this Ostrom interviews.

But that doesn't mean that the bureaucrats suddenly got lazy in the 1950s. we've had problems with bureaucracy...actually, this is an important point. In the United States, bureaucracy became bigger in the 1930s with the new deal. In the 1940s and 1950s, and especially the 1960s, the Great Society, right?

So as bureaucracy in this country expanded from essentially 10% of the GDP going into the government...we didn't have income taxes, even, in the 19...until 1913. So the government started to grow in the 40s, 50s, and 60s, and as the government is growing, it's running more goods and service through the government, which means that the people in the government...you have to pay more attention to the people in government. And Europe has been that way for a

much longer time. And in some ways, the culture of the bureaucrat in Europe is more of a public service, right?

In some ways, the status of public servants in Europe is much higher. In China, you've got thousands of years of history of bureaucrats doing a good job. Including...you'll get killed if you don't. So they had pretty good penalties as well. So now they have a problem with party, not necessarily the bureaucrats.

So in the US, the public choice school of thought kind of originated when all these people started thinking about, "Wait a second. We've got all of these...more and more bureaucrats in this country. And what are they doing, and why are they doing a bad job?" Because they just got hired to things that weren't done before.

So I don't know...that kind of just rolled around in a circle in terms of answering your question. But that's what's going on.

But if you can get a good agent, say you are more efficient than...then you'd be...make it more efficient because...the other choice would be for the mayor to personally manage the water and electricity, and everything else.

Right. So the original theory was...before these words were really coined, is...I'm the politician, I only have so many hours of the day. I need to delegate responsibilities to some people who clearly want to do their job. That was the assumption, right? And maybe it was the assumption based on past observation of bureaucrats doing a good job. Because clearly, there are some professional bureaucrats out there. But as soon as you start hiring more and more and more bureaucrats, after a while, you stop getting the people that can't wait to work in the civil service, and you start taking the people that can't get a job anywhere else. The notorious teacher-union problem.

So that's why the whole...the response to teacher failure in this country has been...Americorp... which is...let's get a bunch of really smart people who can't wait to teach. And then send them to the worst schools possible. And see if they can make a difference. Which, often they do. The Peace Corp is the exact same thing. USCID sucks, let's send them to the Peace Corp. we'll get like...instead of paying a bureaucrat \$100,000 a year to do international aid, we'll pay the Peace Corp person like...\$5000 a year? Peace Corp makes nothing, if you didn't know that, right? So we'll pay you \$5000 and get twice the results. Because the Peace Corp people just can't wait to help. So that's this dynamic around...the intrinsic motivation is really critical to this.

Other questions on this?

So the point of this principle agent beneficiary types of relationships, which is, in a sense, what you're kind of dancing around with the briefing as well, is that the...it's not just the motivation of this person that matters, which is always true, but now you're weakening the motivation for monitoring and streaming, because benefits aren't going to the principle. They're going to the beneficiary. So unless the principle cares about the beneficiary, as if that beneficiary was himself, which is a very, very, very strong assumption, then you are going to find that the monitoring and screening weakens, and the benefits to the beneficiary weakens as well. That's the whole framework for thinking about this whole principle-agent-beneficiary thing. Any questions?

We will continue on this topic. Probably, actually on number six. But we we'll see. Okay.

So let me just mention a few things on 3, 4, and 5. But once you have some jargon, it'll be on the back of your mind. Risk versus uncertainty. A whole bunch of economic textbooks says...risk and uncertainty. As if it's one sentence. Right? Like ice cream. They go together. But risk and uncertainty actually refers to two different things. And let's just say it this way.

Risk is quantifiable. In a sense that we know that there's a chance getting a heads on a coin flip on a fair coin (as I always) add, and on a fair coin, the chance of getting heads is 50%. So when someone says, I want to present you with a risky bet. I'm going to flip a coin. It'll come up heads or tails. That's what they're talking about. Risk can be quantified. You can call it...the risk of dying from heart disease. You can call it the risk of dying before your ninety when you're already 70. There's lots of data behind these things. There is a probability attached to that. Now when it comes down to...so this is the stuff that is very popular and used very often in economics, and I'll give you a use for that in a second. I just want to define the terms right now. Uncertainty is not quantifiable. And uncertainty is what we want to...

It's something that comes along. You can't predict it with statistical uncertainty in advance. So it's like the Wall Street meltdown...9/11...these are situations...you can go on and on and on. They're situations that cannot be predicted in terms of a probability in advance. No one was sitting there and saying...9/11 has a 22.4% probability. They were saying it could happen, but I mean...there was a warning that a plane could hit a building, a plane could...a ship would blow up...or the president could get shot. There's a whole bunch of uncertainty that there's no probabilistic percentage attached to.

You can't take a bet on it at the betting parlor in Vegas, for example. The election. The presidential election is more like risk than uncertainty. There was...there's this amazing website...538.com? Anybody seen, watched that during the election? That guy was like...that should be like a Nobel Prize. That was like the most awesome use of statistics ever, right?

And what he was doing was...he was taking all this quantifiable numbers...polling results...and the guy was a baseball geek, as far as I know, right? Baseball geeks are like the most incredible statisticians in the world because they know...they have amazing amounts of numbers to work with. And he took baseball geek statistical technology to apply it to the presidential election. And I think he hit the electoral vote within one vote, or 2 votes, a couple days before. So that was a guy that was working with probabilities and risk. But uncertainty...that guy doesn't even...I mean...professionally, he would not do it. He's not an idiot, right? You don't...you can't predict these things that are just...do they come or don't come? So it's...that's the difference between these two things.

Now the important part of this, as far as economics is concerned, is that you can't make this into a mathematical formula. And here's what I mean. Remember I said before, you have this expected utility...EU is equal to the probability of events, A times utility of event A plus 1 minus the probability of event A times the utility of not A. That would be an expected utility. And what you would do is you would say...well the probability of event A, for example, say that event A is...remember I was doing this thing with...it's going to rain on your way to the football game? So say that the chance of rain is 10% and 90%. And you know the chance of rain. Because it's a

climate prediction. There's these climate models that are saying...and you read it and it's like a 60% chance of showers.

Well it doesn't rain...it rains or it doesn't. But they put percentage on it because you know... 60% of the time...and for whatever reason people like to hear 60% chance of showers. And some people get more nervous when it's 30% chance of showers. Some people get more nervous when there's a 90% chance of showers. But whatever. There's some prediction of the 10% chance of showers. And given that 10% chance, you're going to multiply it times showers. Your utility from the football game might be 2. Plus 90% times your utility when there is no rain, which is 20. And then you figure it out, and it turns out your expected utility is going to be .2 plus 18 equals 18.2. This is actually your expected utility. And that's all it is. It's the probability times...one outcome...the probability of one outcome times the utility of another outcome, plus the probability of the other outcome...and you can have outcome 1, 2, 3, 4, 5 and it doesn't matter.

You just keep going on forever. As long as you have probabilities. And then you multiply...and you know you get your expected utility. So in some ways, you wake up in the morning and before you look at the weather report, you say I have an expected probability of 18.2 today. And then you look at the newspaper and it's like...or you look outside and it's raining or not. And then you realize that probability.

So this is really helpful in terms of running the economics of expectations, which is stuff about the future, right? But it has nothing to do with uncertainty. Okay? Because maybe there's something called...this and that, and you have this going in and suddenly...this is a football game, right? It's like Oakland versus San Francisco. I don't even know if that's possible. And the bridge breaks. So it's like, woah, I didn't expect that. And your utility just completely changes now. That's uncertainty. Unless Caltrain keeps breaking and we'll have a prediction after a while, right? It's like oh...it's Tuesday. I think it'll break today. So uncertainty cannot be quantified with probability. Because it cannot be quantified with probability, believe it or not, a lot of economists ignore it, which is fatal. Fatal flaw. Huge mistake. Because our lives are full of uncertainty. Either very close to us, in terms of what happens in our lives, like you come out...you don't expect that your car is burned down.

Someone's car in Richmond just got burned a couple days ago? It's like...I didn't expect my car to get burned down. That's not part of my probability calculation during the day. So that's the uncertainty part. And insurance companies, almost by definition, will not insure against uncertainty. Too risky. There's no numbers. There's no statistics. Does that make sense to you guys? Okay.

Keep an eye out for this in your future, and in the newspapers as well because people will throw out risk and uncertainty as if they're the same. And they are not.

Okay. You know like when you pick a plan to buy airport insurance, like...if the plane crashes? Is the plane crashing uncertainty or risk? Because you don't expect it to crash right?

Well whether you expect it or not, there are statistics on plane crashes.

So it's a risk.

It is a risk. And there's an insurance company willing to sell you money on it. And there's also an interesting self-selection with plane insurance. Who buys plane insurance? Plane crash insurance?

Paranoid people, right? At least paranoid about travel. It's like...it's the biggest rip off ever, right? Because if the plane crashes, you're dead anyway. That's just one point. But if you miss your plane...flight cancellation insurance. Who's selling it to you? The flight cancellation airline. So it's like...we're going to be really unreliable. You want to buy insurance against it? It's just weird. But that's for that particular product. But you're talking about risk. Yeah?

So insurance uses a formula or a formula like that to calculate the risk?

Well, what an insurance company will do is they will look at...they have expected what? Utility? No. What? Profit, right?

So what are they going to get? They're going to say...they're going to get a premium if you live...remember the joke about insurance. You're betting that you die. You only make money if you die. Life insurance, right? That's percent likelihood that you live, right?

Minus (that's their income). Minus the payout if you die. And they have good numbers on these percentages. So the insurance company's going to maximize profits based on...and what they're going to mess with is not the percentage likelihood that you live or you die...there are not hit squads out there. Actually they're probably out there trying to get you to eat more fiber, right? Brush your teeth.

So they can't affect these percentages. They can't...but they do know those percentages. And then they adjust these two numbers. Right? The premium and the payout to try and get as much money as possible.

The only reason this works also to our benefit is, in a sense, what? This get's a little bit into the whole healthcare debate. But why does this work to our advantage as consumers of life insurance?

Because you don't have to pay out of your pockets like...to...

That's the general principle, but why...what's the incentive of that company? Which of these two numbers do they want to be bigger? The premium right?

Okay so...they want that to be bigger, and they want this to be smaller, right? So why is this not a million dollars, and this is zero?

Because most people don't die.

No. On average you don't die...no. What else? Why are these numbers not a million and zero? I set up an insurance company. It's like, yeah sure, I'll insure your life. Pay me \$1000 and I'll pay you \$10 if you die. Why am I...why can't I do that...makes sense, I'm an economist. I should be able to do that.

[inaudible]

Demand, maybe. Is insurance a competitive business or not? Yes. People will come in, and they say...dude, I'll only charge you \$900 a week, right? And I'll pay you \$20 if you die. And bang, bang, bang, competition among insurance companies will drive these numbers close to breakeven. Isn't that the whole point of profitability and driving profits to zero? So here's the thing you should worry about. If the government is the only game in town in terms of insurance, they're going to...if they're a populist government, they're going to lose money. If they're a totalitarian fascist government, they're going to make money.

And that's why, for example, flood insurance in this country is such a boondoggle, because the US government will guarantee your losses if you live in a flood plain. And they will charge you very little in terms of the risk of getting flooded in a flood plain. And what do rational consumers do? They go live in a flood plain. They pay \$1 a month for insurance, with a risk adjusted premium should be \$5, or \$10, or \$100 a month. And the government's like, "Oh good, we're helping people that live in the flood plain." Right? It's like getting insurance to live in the 9th ward in New Orleans. You're underwater, congratulations. But the government helped you get there. So this is the kind of thing...you want competition in this kind of market. Competition is good for people making the right choices, I would say, in terms of prices.

Would it be a good idea to have health insurance companies sell life insurance at the same time, so they would have motivation to keep you alive?

Oh, that's interesting.

Then, couldn't....because they actually lose if you die.

Health insurance already have that incentive, because if you go in for treatment for cardiovascular disease, they're going to pay money. So they have the incentive to keep you healthy already.

Well then they find all kinds of ways to...

That's a different problem. If they find a way to not pay for your heart surgery, they'll find ways to not pay for your funeral. So the same tensions already...

So motivation is already there for the health companies because they want to keep you healthy anyways?

It's there in theory, right? In reality, the insurance situation is horrible. The biggest reason is why? Why is the biggest reason? Who here directly contracts with a health insurance company? Who directly contracts for the health insurance company? Where do you get your health insurance from? Work, students insurance, right?

In some ways, that would cut out the whole idea of competition and...

What will?

If you get your health insurance through your employer or your school or whatever...then there's really no competition in the health care industry.

Bingo. Gold star. It's because...what happens is...you've got this...in fact it's worse. It's a four way triangle...it's a rectangle...it's a quadrilateral. There's you. Your getting it from work, let's say. You're getting your insurance, and the work is paying your premium to the insurance company, and here's the doc, right? The doctor says, "Hey, you want to have a procedure?" And you're like, "How much does it cost me?" "Nothing." "Sure, why not." So you get the procedures, and the bill goes to the insurance company...sorry...the money comes back here, and the bill goes here, and the insurance company says to the employer, "Oh my god, we need premium." More money back and forth, right?

And the work says, "Your salary's going up or down" or whatever, right? I'm not even going to bother drawing accurate arrows, but you see that there is a problem here in terms of a feedback loop. If you contracted directly with your doctor, or your hair care specialist, you can go and get a haircut right? You're going to pay somewhere between \$6 and \$600, right? So you pay somewhere between \$5 and \$5000 for your haircut? It's your money, it's their haircut, right? It's a very close linkage.

You really make sure you get your money's worth. But if you were buying hair care insurance, what you would do...or you wouldn't even buy it; it would be part of your salary, which is even worse. Like...I have a salary and my haircut insurance is built into that. So...but I only get it from my work, because they have a monopoly on providing it, or it's free to the employer or the employee...sure, it's free, I'll take it.

So the employer contracts with the hair care insurer. And the hair care insurer makes a contract with a few of these hair care specialists, but not the other ones, because they make a special HMO deal or whatever, and then the hair care person says, "Sure, I'll take care of your hair." Or not. It breaks that linkage...that customer/provider linkage. And this, to me, is the biggest reason the whole health care situation is screwed up in this country. Because in the Netherlands, a place that does it very well, they've got public payment for insurance for private provision for insurance. But there's no work payment going on. So this is the biggest problem, as far as I'm concerned. And notice that no one is addressing it. Or they're kind of running around it.

If the company or the workers aren't happy with the insurance, can they go back to that? They can switch the insurance plan...

They should do that. Now, if you're a worker, and you're upset with the quality of work that you're getting, and say that you work at a medical corporation. Or even a little corporation. There's a hundred of you. Say this whole classroom has one insurance provider. And you're like, "I hate this company." And you just tell everybody, "This company sucks. Let's switch." And everybody's like, "No." Then you're screwed.

They don't have to switch. When you're not getting the coverage that you need...

Say that you hate the company because of the color of their logo.

Well that's not a reason that happens in the real world...

Okay. Come up with a reason. Say that you don't like it...

They're not covering my son's [inaudible] and other people in the company are having this same problem, but it's just random that this company...

Maybe there's only 20 people that have kids.

You go to the company that you work for, and you complain about it. There's more than one person...it's happening all across the workforce. And then they switch. Because the worker's are unhappy with...

And they switch to what?

That's what I'm talking about. There's a competitive market of insurance. They switch to another company.

That would be good, right? But unfortunately, the HR department, which, by definition, doesn't answer your call, doesn't care, necessarily, about switching because that's work for them. Whoa, you want to us to get another company? We just got a company. You know how much work that was? I've got to go get coffee. And then if you want to coordinate with all the other dissatisfied employees, who are like... "Yeah, my son's healthy. I don't care about my medical plan." It's you who has the problem. Your son needs the meds. But everybody else has either no sons, or their sons are healthy. So there's a coordination problems between you and all the other employees.

Then say you manage going into HR, and you manage to make them care. Then they have to go around to shop, maybe they get a worse company. Because that company's even worse. They're giving them a kickback, right? To screw over the employees.

It's either that or the entire workplace just quits.

You're going to quit your job for health insurance? How often does that happen?

If there are enough people that need to[As a percentage of people that quit their job.

]...are not benefitting from the insurance that their company's providing? There's an incentive...

I have a solution. Here's what happens. You, as the employee, get more salary and less health insurance. In fact...zero. You go get your own insurance. You don't have to worry about coordinating with all these guys who definitely don't know what's going on, or don't care. Then you also get to choose the exact company that you do like. That fixes your problem, as well as this problem.

So the problem I'm pointing out is the problem that the employers provide health care. Health insurance. We should just have our salaries go up, and we all get our own health insurance. Then your problem will be fixed much easier, which is what you want. You want to fix your problem, right? You don't necessarily...it's not free, right? The health care from your insurer is not free; it's just taken out of your salary.

But isn't there another part like...even if we did that, there are only 3 or 4 huge health insurance companies out there...

Oh no. There's many, many health insurance companies. There are 3 or 4 huge ones, but then there's a lot of small ones too.

So most contract with the huge ones, and I thought that the small ones would be...because of the cost is so high (the healthcare cost) that it's much harder to enter this kind of market because you need a...I mean...people are like...well, if I can only go to this one doctor because it's the only one I have a contract to because my insurance company is so small, if I go to another state I can't...so isn't there also a problem in terms of making it competitive.

I wouldn't say there's a problem at all. What you need is you need to have these numbers. Percentages. Because insurance, essentially, is a breakeven plus a profit. Based on statistics, right? You have to have a big enough pool. But some of these pools are only a thousand people. There's 300 million people in this country. There could be 300 insurance companies that could have 100 million people in each one. That's pretty good in terms of probabilities. So the insurance companies...they don't need to be big in terms of scale, in terms of building an SUV. They need to be able to run the money back and forth. In the same way a credit union can run a bank. The campus credit union must have less than 1000 clients, I'm sure. And they're still running a profit-making bank. Or not profit. Breakeven.

Don't most companies have more than one choice for health insurance?

Often they do. Sometimes they don't. Sometimes. It's not even close though. If you sit there and like...an employer provided 401(k)'s. You could choose among these ten funds. If you go to the financial pages of the Wall Street Journal, there's like 6000 funds. There's clearly more choices in the open market.

Isn't one problem that companies just stop giving insurance and not paying...

Well it's a huge disaster, right? If you don't have insurance at all. I'm just saying like...the employer providing the insurance is not good...having no insurance at all is a bigger problem.

Isn't that declining already too?

The employers are basically...what they're saying is...it's gotten out of control, here's an extra 200 dollars a month, go take care of yourself. On the one hand...I mean...I was getting insurance when I didn't have a job, and I was paying \$50 a month for what's called catastrophic insurance. The first \$3000 bucks is on me, and 100% is on them. I worry about those 90% co-pays because 10% of \$100 thousand dollars is a lot of money, which is the cost of getting your leg fixed or something. Crazy healthcare cost. More hands, more questions?

Okay. Moving right along.

More jargon. For game theory, we're going to do more game theory. But I want to point out one of the things that most economists don't consider when it's talking about game theory. It is the whole definition. The definition of game theory is that it is a game, right?

If you're playing chess, and you're on a board with 64 squares that I'm going to draw inaccurately here. You get the point. If you're playing chess, there are rules. You've got a piece, this is a legal move. White and black and white and black. That is what really game theory and

economics is about. There's a game, and there are rules. This is called ludic, which is some Latin word for game. The reason that you have to say the word ludic and say wait...let's talk about ludic game theory versus what I'm calling...and I don't know if it's a technical world...but I'm calling it conflict game theory...is that if you're playing a game of chess with somebody, and they say, "I'm going to take your queen" and they say, "I've got a gun", you're not playing chess anymore, right? You're doing a conflict theory. That actually really matters. What if you are playing the game and someone brings a gun or a bat. It's like...don't bring a knife to a gun fight, right? That's the expression?

So you have to think of conflict theory in terms of...how do you play the game if there are no rules? Period. And it doesn't necessarily mean, by the way, that you just...everybody carries around guns and starts shooting each other. Because the whole point of playing with somebody (in a vaguest sense of the word "play") is that you have gains from trade. I will play with you because I've got something that you want including...you want me alive, right? And so you want to keep me alive, and you want to give me some goodies for being alive...

You won't kill me, and I will give you some goodies. And that has a lot to do with actually... some theory around...remember I told you at the start of the semester...the natural state versus the open access state? The idea that...how did society evolve? But what happens in terms of how society evolve in terms of conflict is you've got a whole bunch of people (this is the whole hunter-gatherer idea).

They're running around. The biggest dude with the biggest glove is in charge, right? And he can bit the shit out of everybody but then they're all dead. That didn't help, right? So what he does...let's just say there's a bunch of these guys. And I'm saying "guy" on purpose. That's the whole point. Guys are into violence because this is how we started. There's a whole bunch of guys running around. There's a guy here, and there's a guy here, and if you're over here, this person might come over and exploit you and take all of your goodies. And then you have nothing, right?

So then you're like...I'm going to hide my stuff. But then this guy comes over here and takes his stuff, and then it really sucks because you can't win. There's just too many bandits running around. It's the sense there's no point in actually producing anything so you stay at the hunter gatherer. If you can't find it, you leave it immediately. You don't sit there and save everything up. It's too expensive to save, because one of these guys is going to rob you. But what happens is this guy here says, "I will protect you from that guy, there." I will use violence and force to protect you from the other person. And then you can either leave or you can stay. Now why would you stay here with this one guy?

And you're protected. So what does that allow you to do when you're protected? You're not getting robbed by the other guy, but is this first guy going to rob you? 100%. You almost make a deal right? I can give you some of my stuff if you don't rob me. But if you do, I'll just go to this guy over here. So what happens is you end up getting a territory with...let's call it a stationary bandit. That's basically our government. The government, the state of California, is our local stationary bandit. The government says look...we kind of like it here. We've got some beaches, we've got some trees, we've got some hills.

We're only going to take some of your money, and you produce wealth, so...you have to produce wealth to give us some taxes or whatever, and if you don't like it, you can go to Nevada. Or if you really don't like it, you can go to Canada. Or wherever. So the whole idea of a stationary bandit is the origin of, essentially, territorial governments, and the deal is...citizens will produce some goodies and share some of the goodies with the government or the bandit (the politicians and what not). The military...same game. In exchange for being left alone most of the time. that is a non-ludic equilibrium. That's the conflict type of equilibrium.

There are no rules, because you can always walk away from that game and go somewhere else. Because if you do game theory and you say...well I assume the laws work, or contracts are maintained, or people do not inflict violence on each other, now you're getting into a whole bunch of rules that are imposed from outside. It really matters that they actually work. I assume that the public servant is honest and does not steal taxpayers' money and go on holidays in the Bahamas. But unfortunately we see public servants doing that all the time. Or executives, but executives are a much smaller problem.

But with the government...it's not always true that there are these rules in terms of...[inaudible]

Yeah, but you can go to Nevada, right? You can make some movement.

Some movement.

In fact all these visas and rules...the illegal Mexican migrants...is the most common example that come to California...are clearly leaving the game in Mexico. It's like...why are you going to America? Because Mexico sucks. I'd rather just take my chances in California being an illegal, right?

In fact, they're actually in a lawless society over here as far as they're concerned. Because they have no legal protections. But even no protection here is better than whatever protection they're supposed to get in Mexico. This is, essentially, what refugees do. Political refugees being the most huge example because they're government literally wants to kill them. That's why political refugees are a much more touchy subject, right? Economic refugees are basically...they're talking about the same thing. I hate my government because they're exploiting me too much. I'd rather go.

Back in the day in World War I, there were, essentially, no visas. Or passports for that matter. And you could just move around and find the least worst place to live, in a way. So the massive migration that came to this country was part of that.

Oh absolutely. It doesn't serve those migrants. And in some ways, it doesn't serve us (Americans). There's this notion of migrants who always want to close the door right behind them. In a sense, they don't want competition. There's a lot of populism as well (those people of the wrong color or the wrong religion, whatever). It's just...but you know, it's...if you open up the border with Mexico right now, 90 or 100 million people in Mexico? That would be troublesome in terms of flows into California into the southwest. Because a whole bunch of them would say, "Great, I'd rather go do whatever I'm doing right now in America del Norte." It would be nicer. But then a whole bunch of them obviously...

I mean...if the whole community left, that would be cool. A lot of people don't migrate because they like their community. They like they're family. That makes sense. That's why the back, in fact. But they tend to leave to go get money so that they can escape the problems they're experiencing at home. People in this...I mentioned this in lecture the other day, this guy Cameron, the director. He lives in Hollywood; he makes millions and millions of dollars, but he's a Canadian citizen because he wants to keep his options, right? Because he...if Bush gets elected for the fourth time, or whatever.

I'm going to do incomplete contracts in the next lecture, and then we'll talk briefly about the water bill as an example.

The California Assembly passed...there's a senate and an assembly...I actually have a very vague...I know more about the federal government than the California government, which is kind of pathetic. I don't even know...who knows who the mayor of Berkeley is? What's his name or her name?

Tom Bates.

Tom Bates. Who else knew that? Awesome, you guys rock. Okay, so...I have no idea about local politics, but I have a little bit more of an idea about state politics. I know much more about...what's going on in German politics right now. So the California legislature and assembly just passed a package—a water package after having their heads banged together by the governor and staying up all night. And the package consists of 5 components. I'm going to tell you about the 5 components not just because I'm going to give you some legal mumbo jumbo. I'm going to tell you what the implications are, and if it actually fixes any problems. The first thing that they did is they tried to fix the delta. And I'll describe what these things mean to you guys in a second. The second thing they did: they went after urban water. Third: ground water. Four: illegal diversions. And five: money. 11 billion dollars. \$11 billion dollar bond.

So there's five components of this package. The first idea is that we're going to create a delta council. That delta council is meant to manage the Sacramento San Joaquin Delta. This is California, as you would obviously recognize. And we're here. This delta here is where water is exported to Southern California. The Sacramento River flows down here. There's some river flows going this way, and that water goes out under the Golden Gate Bridge. The Sacramento San Joaquin Delta...the Delta is a critical ecosystem in California. The most important ecosystem in California. It is essentially collapsing, or collapsed...depending on whether or not you're an optimist or a pessimist. And it's been under a lot of stresses...environmental stress from waste water flows from Sacramento and agricultural run off from pumping water out of the Delta to go to Southern California.

This is the notorious...it's gone on since the 1940s, but it's also what people call the peripheral canal, which is supposed to take water around the delta and down to southern California to keep it cleaner. Because what goes into the delta is kind of brackish. This delta is essentially the Wetlands, right? So freshwater comes in on the Sacramento River, and mixes with the salty water here from the Bay. And then it gets pumped down. They want it to go down clean. So the idea is...let's build a peripheral canal to make it cleaner. People in Southern California like that idea.

The people in Northern California (the environmentalists) don't like that idea because then it's like...you're taking our water. "Our" meaning...we in Northern California. You know the whole NorCal hat type of thing? Like...we don't belong to SoCal, right? There's kind of this North versus South thing. The peripheral canal is not operating, and I'll get to that in a second. So the delta is environmentally in bad trouble. There's also a huge problem of invasive species. All the ships come in. they drop these muscles and snails and all kinds of stuff. The bass. The fish...is eating all the local fish. Huge problems environmentally. So delta council is meant to be a seven person council that will govern the delta and make sure that it is ecologically sound or healthy and economically functioning in terms of exporting water. They're called co-equal goals, which are political words for "impossible to happen" right? You cannot have co-equal goals. We maximize utility, we maximize profits. We don't maximize utility and hamburgers right? We're just going back to one thing, right? But the idea of co-equal goals will maximize two things at once, which are actually in direct conflict.

The idea for exporting water in the delta is that we can take it out of there without harming the ecology. Everybody who understands ecology will say, "Let's not take it out." So the whole idea of a co-equal goal is that you're going to push up with one hand and push down with another hand, and they're going to be co-equal, which you can't do. You either go here or you're here. So that's kind of a political farce...or a fudge or lie...about how we can have both environmental health and water exports. However, they're going to continue to maintain the lie. The irony is that the delta council, which is supposed to do this thing, has actually no political or economic power to penalize people for not doing what they want them to. Essentially, the delta council will be talking, and people will do what they want, anyway. It's kind of like the World Peace Council. Let's have World Peace, but people are out there shooting each other. Let's just be nice to each other. The Happy Smiley Face Council.

So this is, quite honestly, a complete waste of time. It's been tried for the last 15 years. It's failed. That's part one of our solution. Part II of that solution is that urban water users are supposed to cut their water use by 20% in order to conserve water. As you may know already, the split in water is 20% urban and 80% ag in terms of the diversion of water through canals and pumps like that. So the urban people are supposed to cut their use by 20%...by 20% of the 20%. That's the number. They're supposed to cut their use by 20% by the year 2020. 20 by 2020. That's the idea. That's already an idea that was out there, so basically they repackaged it and put it back in this thing, and they declared another success, which is nothing platinum; it's not 2020 yet.

The other problem in terms of this brilliant urban water move is what? Anybody see a glaring issue?

Right. We left ag-water off the table, right? Ag-water uses are going to be required to use best management practices. Which means...do what you've always been doing. So nothing.

The other question is that...do they have...do they maintain the same amount of people? I mean...every person has to cut by 20% or are there more people moving in and having to...

Oh, it's even worse than that. So say that you have a per capita consumption of a hundred gallons per capita per day in the Bay Area. We have fog...it's kind of cold...people don't have any lawns; they live in apartments. And let's say that they have...let's go to San Diego. They

have 200 GPDs. Everybody has to cut back by 20 percent. So now...these guys have to go to 80, and these guys got to go to 160. Anybody see an equity issue, here? In fact, even worse...if you just left your hose on all day, and you were using 6000 gallons per day, then you only have to cut it back by 20% of 6000 gallons, right? So it actually doesn't matter if you've been saving water already. You have to cut back. If you've been wasting water, you cut back also, but from your waste. So that's another fuck up big time, right? Equity violation number one.

So does this mean that the agriculture people can still sell their water rights, and...

It doesn't even trust selling the water rights, which is even...the most ridiculous thing, right? Because when they say the agricultural water users are supposed to follow best management practices, then what's the most important thing you have to think of in terms of water conservation if you're an ag. Why would you spend money to conserve water? That's a cost. What's the benefit? Is there a benefit if you're a farmer? What would be the benefit if you're a farmer? You use a thousand acre feet of water per year. A thousand acre-feet. 1 acre-foot is 325,000 gallons. You use 325 million gallons of water a year. You're a farmer. David the salesman comes along and says, "I can help you save 10% of that but you have to pay me \$100 bucks an acre foot to save that money. Save that water." What would the farmer do? Why would the farmer spend that money?

So they can save the money water bill?

What's their water bill? They say \$5 per acre-foot of water. Let's just say. Let's say \$20 an acre-foot. They make 20. That's actually a fair number. And I could save them an acre-foot of water for \$100. How's that for a good deal?

Let's go through the decision process for the farmer?

Would he try to save that much water so he can save that water and sell it?

Ah. But the bill says nothing about selling water, or letting it go down the river. Right? So wait a second. I could use it and make \$20, or I can save it and pay \$100. What's the farmer going to do?

Well, is that \$100 a one time fee?

No, let's say it's an ongoing fee. That's a good question. Capitalization. We're not even going to go there. That's a good example, but that's not where we're going.

Because they have to use all of their water allotted, otherwise they'll lose it

Use it or lose it is a potential idea. If you do sell your water, that's considered, still, to be beneficial use. So that is okay. You don't lose your water rights if you do that. But, as you're pointing out, there's no incentive to save this water. If I can spend \$100 to save it, but then I could sell it for \$200, would I do that if I was a farmer? Hell yea. Spent \$100, make \$200. Boy, that's a no brainer, right? But this says nothing about that. Now in some ways, why does it say nothing about ag is because the Aggies are like...don't tell us what to do. And they tend to have disproportionate power.

Remember the agriculture in California is...who thinks agriculture in California is worth 25% of the state's economy or more? Who thinks its worth between 10 and 25 percent? Other hands? Come on, you have to vote. More than 25%? 10 to 25%? 5 to 10%? Less than 5%. It's worth about 4% of the state's economy. Nobody knows that. You know why? Because the farmers are always in the news. Oh my god! No. The California economy's going to collapse. Because our economy is not driven by Google, or by the San Francisco Medical Community, or the Defense Industry, or Hollywood. It's driven by artichokes. 80% of the water in this state is diverted into agriculture, and it's used to produce 4% of the GDP. And it employs fewer and fewer people, obviously. Low wages, right? But politically, they are the gorilla in the room as far as water is concerned.

I actually have no issue with that. All I'd say is...let them sell their water; this does nothing for that. There's no...the whole thing is that that is...the urban water...first of all, putting urban water on the table is ridiculous because it cost...instead of costing a hundred dollars an acre-foot, and that's actually a real number, maybe...for conserving. It'll cost \$1000 an acre-foot to save that water in urban, because you have to put it in a low flush toilet...toilets are expensive...you take shorter showers? Smelly people are expensive...right? You have to find urban leaks? Urban leaks only might be 5%, but Ag has unlined canals (the water kind of just seeks through under the dirt). But there's no incentive to save the water in Ag if you can't sell it. And there's no provision for more of that water market, which drives me crazy. Okay. So does that answer your question about why Ag water isn't on the table?

Just go look at the state development board on my blog. It'll have the links on there or something like that. And we're not talking...there's no multiplier garbage going on. Even in Stockton. They make a lot more money off of...not even direct Ag. Because a lot of money goes into car parts and stuff like that. Ground water. The state of California has the worst ground water management of any state in the United States. As in...there is none. The tragedy of the commons is based on the concept of land and aquifer under the land. One guy's got to pump. Another guy's got a pump. Another guy's got a pump. There are no property rights. Open access. Common pool good. If Mr. A decides to pump, it affects Mr. B and Mr. C, but neither of Mr. B or Mr. C have recourse. Remember the game with the candy? Remember? That fishing game at the start of the semester? We are playing the big candy game in the central valley. They are over-drafting the aquifers like crazy. Like nobody's business.

That's why the land level is settling. Dropping by...I think it has to...it's something along the lines of about an inch per year. That, of course, breaks more pipes. Unsettled foundations. And destroys the aquifer, because the aquifer will compact and will never ever receive water again. Is there going to be controls on ground water pumping? Actually, they say there is something, and what will happen is if you don't record your report...the don't even record how much...we don't even know how much pumping is going on with ground water. We know far more about how many cars pass the smog test and how many particles of matter are coming out of your tailpipe than we know about how much water is being pumped in the state of California.

Remember, this concerns you because the water itself, not the rights to the water, belongs to you. The constitution of California says the water of California belongs to the people. And the people of...the bureaucracy of California is not doing anything to monitor it. We don't even know...we're not trying to control it. Right? You need to control it, if you want to stop over drafting? We don't even know how much over drafting is happening. Now there's a penalty for not

reporting, which is that they will...the government will not give state money to the counties if they don't report it. But who's in charge of monitoring ground water? It's not counties. It's irrigation districts. They're not even in charge. So they put this wording in there to say...we're going to penalize you if you don't report it. But they're penalizing the wrong people. It's like penalizing me for what you eat for lunch. It doesn't even matter. Because obviously it's not my problem. And they'll say, "Oh yeah, I guess we'll just give you the money anyway." So that's another serious fuck up right there.

Stupid, stupid, stupid, useless. Illegal diversion...this is the most amazing quote of all. I'm going to just read it to you. The deal was approved after an all night session. An increasingly familiar scene in the world of the California legislature. The major breakthrough came Thursday...Tuesday night after leaders agreed to add one billion dollars to the bond package at the request of the Los Angeles delegation. That's called pork. Earmarking and pork? You've heard about that? That was happening on Tuesday. At the request of the Los Angeles delegation...so all of us are paying for Los Angeles now. That assume the bond happens (I'll get to that in a second). In return, republicans won a major concession as democrats agreed to sever an enforcement bill from the water package that cracked down on illegal diversions of water, boosted fines, and decreased the power of the state water boards.

The republicans demanded that you allow this illegal activity to continue. And the democrats said, okay, we'll let you keep breaking the law if you give us a billion dollars of other peoples' money. That is...those are our leaders in action. These are the people who are...essentially...you're trying to write a briefing against. These are ridiculous. Non-leaders. Thieves. Mark Twain has some choice words for them, right? It's like...you know...say that I make a deal. You give me the gun, and I'll rob these guys, and I'll give you the candy, and you're like...yeah, that's a good deal. And you guys are like, "What the fuck?" You just got hosed by your own legislature. Seriously. It's like...criminal. I don't even know. It's ridiculous. The illegal diversion shall continue. Congratulations.

Now remember, by the way, in California, the amount of water...the water rights? They have issued the State Water Resources Control Board, which is the most toothless regulator in the state (this is the illegal diversion people). They have issued permits for 8 times the flow of water (thereabouts) that goes through the river. 800% overallocation. That's like issuing parking places for 8 times any parking place on the Berkeley campus. Would there be a problem if they did that here? I mean, Berkeley is relatively efficient in comparison to the State Water Resources Control Board. That's how miserably wrong and bad those guys are.

And finally, amazingly...this is the interesting thing. All those four pieces of ridiculousness are going to be put into place when the governor declares victory whenever. And does a victory dance. That's going to start happening now. But then, in a year from now, you, the voters, will be asked to approve an 11 billion dollar bond that will build more dams, in California. The cost benefit on these dams...it's just funny.

So Damien, who gave a talk to you guys...Damien did a little analysis on one of these dams. In order for the dam to make sense in terms of cost benefits, they would have to sell water to farmers for \$700 per acre-foot. Now remember, farmers pay \$20 an acre-foot for the water, right? Do you think any farmers are going to line up to buy some water? Oh yeah, \$700 bucks an acre-foot? Good deal! Right? They're going to build a huge cement elephant that will be

paid for by us, right? And then no ones going to buy the water on it because it's too bloody expensive. What are they going to do once they build the dam? Rhymes with punk. Sunk. Sunk costs. Yeah, okay...once they build a dam, what are they going to do about charging \$700 a foot?

They're not going to charge...

They're not going to charge \$700 a foot. They're going to charge \$20. Who's going to pay the difference?

We are.

Congratulations. You have been raped for the fourth time.

The interesting thing is, actually, I think that the bond for \$11 billion, of which they added \$1 billion of pork at the last minute as a negotiation, is not even going to pass, because we're going to look at that and say, "What the hell!" We have the worst credit rating of any state in the United States, and we're spending \$11 billion on dams that don't pass any kind of cost/benefit test, and spread a whole bunch money around...

Oh the other one that I love...there's another one...I'll get to your question in a second. One of these...the San Francisco PUC emerged triumphant out of the negotiation saying this \$11 billion bond issue will let us avoid raising our prices on our customers. So we will be very happy because we will be cross-subsidized by everybody over here on the East Bay. Everybody else down in wherever. In the southland. In the valley. It's like...we're not going to raise prices on our customers. We would rather deliver subsidized water to them and have you guys pay for it. Victory, right? It's just like...this is how stupid it's gotten to. It's just the most ridiculous thing I have ever seen.

You had a hand up?

Could you use the dams to make electricity?

The cost-benefit is rolled into that. The dam that really has paid for itself like a million times over is the Hoover Dam. That dam rocks in terms of electricity. Also the O' Shaughnessy Dam at the Hetch Hetchy reservoir. That's like the greenest project we've done in California.

What do these politicians know about water?

Very little.

Then how are they able to pass in the assembly? Don't they have like...you know about it...like you, or something?

They ignore us because they go to the farmers and say, "I've got a dam for you." And the farmer says, "Great!" why did the farmer want the dam? Because it's free. If I went around giving you guys free pencils, you'd be like, "This is a stupid pencil, but it's free." If you don't pay for it, then you don't give a shit. It's free. But it's paid for it out of general obligation bonds and all that other garbage.

Other hands? Yes?

I heard that they're taking down some dams...

They're taking down some dams in Klamath, yes.

Is that the only dam that they're dismantling?

Mostly. That's right. Because engineers love building dams. Ooh. More cement. And politicians love cutting ribbons in front of dams. Last question.

All this legislature...is it statewide or is there...

This is a statewide negotiation.

Okay so every county that negotiates will be under that...

Whatever, yeah. No because the state project moves water around. There's a lot of negotiations. Alright. See you guys on Tuesday!

Transcribed and checked for accuracy by Brynna Bunnag