RECORD, Volume 23, No. 1*

Palm Desert Spring Meeting
May 21–23, 1997

Session 55IF
Applied Futurism

Track: Actuary of the Future/Futurism
Key words: Futurism

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Summary: As a group, the forum participants brainstorm to identify several key factors affecting the actuaries' future. Then the participants develop two or three scenarios or "stories" that will represent possible future directions.

Mr. Dorn H. Swerdlin: I'm representing the Actuary of the Future Section, and one of the things that we do in our section is try to anticipate employment and other directions that we'll take in the future as actuaries. This session is sponsored by the Actuary of the Future Section in combination with the Futurism Section, which should give you a little more insight into what we'll be doing. Dr. Bishop is going to lead us in an actual futurism exercise where we'll be looking at what actuaries could be doing in the future. We'll be developing scenarios based on the input that we, at this session, give to the process.

Dr. Peter C. Bishop: This session will be, to some extent, an introduction on futurism and applied futurism, but the session will actually serve more of the needs of the Actuary of the Future Section. Now, I'm going to speculate on the title of the section. This is a section thinking about major changes in the profession as it is going to respond to the needs and the challenges of the future. That sounds like a mission statement.

I'm with the University of Houston—Clear Lake. I'm on the faculty of a unique program there called studies of the future. I was in this program about five years.

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I'm a sociologist by training and have a number of other unmentionable things in my background that have led me to realize that I don't know very much about any one thing, but I know a little bit about many different things and, therefore, come to futures actually very well prepared because that's the way futurists are.

The program at the University of Houston is one of the only two such programs in the country that focus on and have a degree in the study of the future. It is unfortunate that the other program is at the University of Hawaii, which is kind of tough competition from a landscape and a weather point of view, but we're a little bit more reasonable. The University of Hawaii program is actually within a political science department headed by one of the internationally, best-known futurists; it's an excellent program. Ours is really the only one whose explicit purpose is the preparation of professional futurists. I guess you didn't know there were such people, but I am one. All those who practice, except for the graduates of our program, are futurists by self-selection. If anybody listens to us, we have demonstrated that, in fact, we are futurists.

There is no certification. There's no exam. I mean there isn't hardly even an educational program, which is kind of unusual when you think about it because we have many departments and courses about the past. Every year you went to school you probably took one or more courses about the past, which we should have; however, haven't we forgotten the other side? I think actuarial science is one of those areas of study that indeed looks at the future, as do some others, such as economics and market research, demography, and other kinds of forecasting. We do not, however, share our knowledge, our skill, and our perspective with the general population at large. This is particularly lacking in the schools, and one of my missions is to make the future a little bit more of an acceptable term in business, education, government, and places like that.

We really have two objectives here—investigate the potential changes in the actuarial profession over the next ten years. I've chosen ten years as kind of an arbitrary boundary. It's a little bit longer than the standard business planning horizon of three to five years, but it's not quite as bad as trying to project out 50 years. We do talk about 50-year projections, but we won't talk about 50 at this point. Ten years is still within most of our professional lifetimes, and, therefore, this will be the future that we, in fact, will share and work out. We'll identify some ways to prepare for those changes and, as a sub-theme, demonstrate the techniques of applied futurists when dealing with these types of problems. That's generally what we're going to do.

We have three primary exercises on what are the change drivers and their

implications. In other words, what's happening in the environment that is changing the profession? What might happen instead of those change drivers? What can you do about it? What you will notice when you work in future studies is that there's nothing here that is very difficult. Often we have to be reminded that we should talk about these things. Nevertheless, they're not as technical or as complex as what you happen to be dealing with.

From the Floor: I would like to know how can I apply this to my life.

Dr. Bishop: But what is the “this”?

From the Floor: Futurism.

Dr. Bishop: The "this" is basically a distinction between what we in futures call the difference between predicting and forecasting. Predicting is the relatively single valued, strong evidence, strong assumption, kind of forecasts that we would love to have but in areas of human systems forecasting are very difficult, if not impossible, to achieve. Forecasts tend to have a set of multiple possibilities. Futurists don't think of the future as a single-valued function. We think of it as a set of possibilities, most of which are quite plausible, and, therefore, we need to prepare for them. The problem, of course, is the degree of uncertainty. Who would like to talk about uncertainty? Just give an impression of sources of uncertainty.

From the Floor: There are many sources of uncertainty, like human choice. We all have choices, and I would say that's the biggest uncertainty. I never know what people are going to do. Insufficient or incorrect information or understanding are things that we can control and minimize. With enough time and enough effort, I can make sure that my stochastic model has as much predictability as anything. The more information I have, the more credibility I have, so I can control those. But I can't do much about inherently unpredictable systems (chaos), inherently novel or self-organizing systems (catastrophe or complexity), or human choice. I don't know what this person's going to choose, so, there's nothing I can do to minimize that uncertainty.

Dr. Bishop: And we know now we're dealing with chaotic systems and complex living systems that inherently are unpredictable, and that makes life very difficult.

From the Floor: Are there any techniques or sources to particularly help us find discontinuities?

Dr. Bishop: That's an excellent question. First of all, tell me what you mean by discontinuity.

From the Floor: Well, discontinuity might be two different kinds of things. It might be a complete discontinuity. Things were going along, and something changed; it's totally different, or it might be a turning point.

At lunch Mike Cowell showed a population graph that was going one way, and then, because of an epidemic, went in a different direction.

Dr. Bishop: The answer to that in any kind of a closed predicted fashion is no. Discontinuities are, almost by definition, surprises because they fall outside the range of whatever framework you're establishing. It is possible, however, to first of all assume that there will be discontinuity sooner or later, and, frankly, that helps a lot. At least you realize that whatever system you're dealing with right now is not going to go on forever, and you'd be surprised how that kind of loosens everybody up.

They're not defending it anymore, and they're not so closed to the possibility. Just admitting that there will be a discontinuity in every system sooner or later means you've come a long way. Second, I look for novel arrangements or novel variables or novel strains and stresses that have never occurred before. They tend to be things that are out of bounds. The chemists who do self-organizing systems call them far-from-equilibrium conditions; it's something that has happened that has never happened before. In fact, if it's continuing to happen and continuing to grow, there's a kind of a flag associated with it.

Something is probably going to break, something is going to flip, if the system is not kind of within equilibrium bounds. We talked about social security. The plenary was on social security. That is clearly a system that can't continue the way it is. It is ripe for some kind of a discontinuity. Who knows what it is or when it will occur?

There is another one that came out in the paper. Kevin Phillips, who's a political commentator, had an interesting scenario of the current federal policy as a source of strain. The federal government has reduced inflation and has kept this recession going in almost miraculous fashion. It is solving the interests of the investment market and certainly not helping workers increase their wages because any time a slight wage increase comes, everybody starts worrying about inflation. That has led to this incredible stock market increase, but is that a fundamental possibility?

From the Floor: A business dip continuity that we all see all the time is an acquisition.

Dr. Bishop: Sure.

From the Floor: You've got this company that's going along, and all of the sudden somebody else purchases the company and combines it, and everything changes.

Dr. Bishop: So the answer: No, there is no clear way of predicting discontinuities. Admit that they're going to be there and then look for stresses and strains that have never occurred before and that people are in denial about. That's always a good one because that will tend to mean the pressure is building up, and it will break through at some particular point.

So the uncertainties are there, we appreciate the help on that one, but we resolve uncertainties by using assumptions. Dorn, why don't you tell us about this one? Do you remember what the role of assumptions was when we talked about it?

Mr. Swerdlin: I know that in futurism the assumptions are what's important, and they're not stable. They move and they change.

Dr. Bishop: We're trying to understand what our assumptions are, even the ones that we don't even know about. I have two different ways of looking at forecasting. One of those is that forecasting, the result of forecasting, in a scientific fashion is the forecast of the output. That's the number or the statement about the future. In the kind of forecasting we do, though, many times the real output is the assumptions in an iterative fashion. We only really make the forecast in order to examine our assumptions in light of what the extrapolation of that is and in light of other people's assumptions because it's a group effort. It's a team sport. It's not an individual thing. And around and around you go, each time refining your assumptions and understanding the system better and better. You have to stop some time. We're not the paralysis of analysis here, but we need some degree of assumption generation. So our output is much more an understanding of the system, given that it's uncertain, than it is the actual and specific forecast. That's why it's complementary—because the output of actuarial science is the forecast. You have to make that forecast and realize that's your job, but in the process, using futuristic techniques to continually refine and continue to uncover more and more implicit assumptions is what we're talking about.

Imagine that the Society, for instance, wants to take some initiatives to get various results for the profession. Those initiatives would result from a plan, and that plan would be informed by a number of different things. What might happen in the world that will make that plan successful or not or that will make it advisable or not? Those stories come from two different sources. One is the data out there in the world, and I use trends, events, and issues as the simple three bin set of categories of things that are changing. You'll see how that comes out in a moment. In addition, what are our mental models? How do we think the world works?

What is important? It's a convergence of the data and our interpretation of those data that creates a set of scenarios.

From the Floor: What does heuristic mean?

Dr. Bishop: Heuristic is something that you do for the sake of argument. The intention is that the forecast itself is only a means to an end. It's kind of for the sake of argument. It's different than predictive forecasting where you make the forecast, and you're done.

The very first exercise pertains to an assumption that each of us has, believe it or not, an opinion about how much change we're going to be seeing in the next ten years. If our task is to envision scenarios about the actuary in the future, how much do we think it's going to change? I'd like to go through this exercise in a number of steps.

First, list for yourself some of the major changes in the actuarial profession in the last ten years, say from 1987 to 1997. What do you think has changed significantly over that last ten years? No more than three. This will be the foundation. Second, if there was an indexed number of 100, how much change would you expect in the next ten years, until the year 2007? In other words, if you expect the same amount of change, then you would put down 100. If you expect more, your index number would go up some percent. If you expect less, your index number would go down below 100. Give yourself a number. Write down one number.

Did anybody write down a number less than 70? Meaning 30% less change and more stability. Nobody did that. Any between 70 and 80? Eighty and 90? Ninety and 100? You said 100. Oh, there's a nice middle-of-the-road person. About the same.

So we have three people there. Who said 110? One. One hundred and twenty? Six. One hundred and thirty? One hundred forty? One hundred fifty? Two. Who put more than 150? Two. What did you put, really?

From the Floor: I put 350.

Dr. Bishop: Three hundred and fifty!

From the Floor: I put 500.

Dr. Bishop: Five hundred! Wow!

From the Floor: Three hundred.

Dr. Bishop: Three hundred. I'm going to have to make a new category for more than 300. How many had over 300? Three. And how many had between 150 and 300? Just one.

These are what are called transformationalists in our business. They are people who expect enormous amounts of change. Is it possible that they're right? It is? OK. That's why we have the diversity, and the reason this is a team sport is because we need to hear from these folks even though the probability of their being right is less than the probability of all these others. It is most probable that it's more in the under 150 range, but it is plausible that it's in the over 150 range, in which case we have an example of multiple scenarios. We have two different views, and this is not even in terms of what will happen, just how much will happen.

From the Floor: Did you compare the change in the last ten years with the ten years before that—1977–87?

Dr. Bishop: Oh, I didn't do that.

From the Floor: You stated that it's more plausible that it's going to be in that 100 range, so there must be some basis for that. Is that basis in history or not?

Dr. Bishop: The basis is that those transformations are plausible. They are generally not probable, and I use probable to mean the most probable scenario. The expected future, the baseline future, the way we think of it, is it's one of a whole set of futures, but it's the one with the highest probability. That doesn't mean that it's 50% or more probable.

You know that if you have ten different outcomes, you can have the most probable future at 15% which means that 85% of the time, if you bet on that one, you'll be wrong. So it's not probable in the sense of better than 50%, but it is the most probable outcome. I generally believe that the baseline forecast shows that things will stay pretty much the same and it is more probable that things will change. Systems do have an inertia. I'm not the kind of futurist who says, get ready, the thing is about to change tomorrow. I can't say that each and every time. In fact, I can't say that in most cases. What I do say is that it could.

From the Floor: No change is 100?

Dr. Bishop: No change would be zero. One hundred would mean the same amount of change as you've experienced in the last ten years.

From the Floor: I thought you said that it was more probable there would be no change rather than the same amount of change.

Dr. Bishop: That was wrong, yes. That was incorrect. It's more probable that the change will kind of go about the same. Now, how much has there been? Has there been a transformation in the last ten years in your profession? I don't think so. Not yet. Now, our three transformationalists believe that is going to happen, and I appreciate that. That's great. But I would say it's not probable, but it is quite plausible.

So if I calculate this, 75% of you all say that the system will stay relatively within bounds, and 25% say, no, it's going way out of bounds. Now, how much of this should we prepare for? That's really the purpose of this. Should we prepare for this or not? Is 20-25% enough of a risk factor to think about? Do we want to do some preparation here, or is that so far out that it's not worth our time?

From the Floor: I'd say we should prepare.

Dr. Bishop: Sure. Twenty-five percent risk is enough.

From the Floor: Maybe it will be such a change that we can't prepare for it.

Dr. Bishop: That's a very good point. It's what we call the nuclear winter scenario. I mean should you prepare the actuarial profession for the pestilence that blights all the plants in the world? In that case we'll then be able to judge which of these we can really do something about and which of these we can just say, "If I get hit by a truck tomorrow, I'm not going to be involved in the actuary of the future at all." So I'm not going to prepare for that. And that's a very good point. The point is that in most groups like this, you're obviously self-selecting because you came to a session on Applied Futurism. In most groups like this there are people who believe that there is the possibility of significant change. Even 150 is significant. That's 50% more than the past, and that's a substantial amount of change. So there is a belief, at least in this group, that there will be some degree of change. This is not anything like a scientific sample, but it's a nice way of getting people to articulate their assumptions about the future, and we're not going to say who's right and who's wrong. One thing you did say is that there is not going to be less change, and that's an interesting assumption. There may be somebody in the convention who would have said, wait a minute, we've just been through all of this, and it's actually going to calm down for a while. That would be an interesting set.

From the Floor: It's true that there is a somewhat subjective input about how much change there has been. I mean one person views the changes that have gone on as

relatively small, so his or her percentage could be really high for the future; whereas, if someone views recent change as revolutionary, then he or she might be more likely assume lower rates of change for the future.

Dr. Bishop: Right. That's a very good point. In other words we're each using a different base, which equals 100. If we'd had more time, we would then have done an exercise to process what have been the five or seven major changes that we would agree on. We would essentially normalize the base, and we'd all be using the same thing. This is just a quick way of kind of moving on with it, but I'm glad you did point that out because that is a problem with the technique we've used.

From the Floor: We listed one or two specific areas, and I thought you shifted to the whole system.

Dr. Bishop: Right.

From the Floor: I picked one of the areas for which, ten years ago, we had zero change. We've done very little in the last ten years. So I said we've gone from no change to very little, but we're going to have to learn much more in this area.

Dr. Bishop: Notice that he's lobbying for his number down here. See how he's kind of trying to get to the content here in a second. All we're doing is talking about the total change, and we will talk about what those things are.

Let me move on then to the second section which is the first thing that one typically does and something that we do all the time in futures, and that's scanning and gathering the data. We tend to gather data in a wider set than most people, largely because we're not specialists but also because most people focus their attention on a particularly narrow range of the present, and that tends to be the range that they're responsible for. It's their field, it's their specialty, it's their firm, it's their market, and that's what they're paid to look at, and they don't look very far afield into the other areas of the world.

That's the expanding set of possibilities, and those things, if they just advance as they normally will, begin to impact possible scenarios in the future. In other words, there are things going on out in the world today that, frankly, are not going to affect you, your business, your company, or anything you have to do with in the next year, two years, or three years. But if we're talking about ten years, there will be technologies, there'll be value changes, and there'll be political laws. There'll be international relations, there'll be demographic changes, and that will be the top of your agenda in the year 2007. Wouldn't it be nice to have some sense of what those are today so that you can start getting prepared for it? Again, I don't want you

to be futurists, but you are forecasters and should obviously have an awareness of that.

Alan Mills asked, what information goes into the creation of mortality tables? Certainly there is much trend data and assumptions about rates of this and rates of that, but does anybody talk about major shifts in medical technology? Does anybody talk about major shifts in social values such as the introduction of physician-assisted suicide or euthanasia? Does anybody talk about a cratering of the medical system or insurance system and, therefore, not having medical? There is that kind of stuff. It's not probable, but possible, and that's where this stuff is. So when we scan we ask people to look out quite a bit farther than most people do for a brief period of time. This is the wider part. We also ask people to look more deeply into what's going on, and when we have time, we really want to try and create a story. What are the fundamental patterns here? Finally, look out farther than the typical three-year time horizon out about ten years.

Basically, this is out-of-the-box thinking. Everybody wants to get out of the box. What's going on in your business? What's the pattern of what's going on? One thing I like to do is look back on the present with the eyes of the future. Wouldn't it be nice to know what the first decade of the next century will hold in the same way we understand the 1980s or 1970s or 1960s? Unfortunately, we don't know our own time in that same kind of a deep pattern.

Within the social security system, there are six different domains: population, technology, social values, government, the economy, and the natural environment. All of these domains interact with each other. My point is that every single domain affects every single other domain in the long term, and, therefore, we must try to understand that type of complexity.

What I'd like you to do is write down within one of those six domains—population, technology, social values, government, the economy, and the natural environment—something that you believe is going to significantly change the actuarial profession in the next ten years. This is a piece of data. This is not a scenario. This is not how the actuary's going to be. This is something that, if you wanted to, you could go out and find empirical evidence for today that you think is going to rendezvous with the profession in the long run and is going to create significant change. I want one complete sentence. This is your chance to tell about your favorite forecast, your favorite trend, what's happening. When you have completed your one statement of something that's going on out there that will affect the actuary in the next ten years, pass that card to the person on your right.

You're looking now at trend generally and what's going on out there that will affect the actuary in the future. Assuming the trend that you predicted really happens, the second question then is, how will the actuary be different? Let's assume that everybody realizes that this is really the defining aspect of the actuary in the next ten years. How is the actuary different? What difference does that make to the profession, and to yourselves as practicing actuaries? If that trend is very important, it has a big impact.

You're answering the second question, the so-what question. Let's assume that trend happens. How is the actuary of the future different than the actuary of the present? What's the implication? How is the actuary in ten years different if that trend really happens in a major way?

From the Floor: You just want one sentence?

Dr. Bishop: One sentence. When you're finished with that sentence pass the card to the right. When you get the new card, then answer Question 3: What is—on this scale of 100 where the change in the last ten years was the baseline (100) how much change is represented by the sentence you just wrote? Is that about the same amount of change? Is it more? Is it less?

From the Floor: Compared to what?

Dr. Bishop: Compared to what you wrote before about the last ten years. You had many different changes.

From the Floor: You want us to put an index number on the card.

Dr. Bishop: Right, an index number on the card.

Then, within your group, describe each of those futures to each other. The object is to pick the one that's the most probable. That's not necessarily the best one, but it's the one that you believe as a group is the most probable future change. Tell me what the trend was and how the actuary will be different.

From the Floor: I think we had a few trends, and I don't think we've actually made a final decision on it. We talked about the changes in technology and how the actuary would have to handle technology and the other changes in the world. Would there be less demand for actuarial jobs, traditional actuarial jobs, but more demand for actuaries to branch out into different areas?

Dr. Bishop: So more technology means less traditional, more alternative, actuarial practice. What is the technology specifically that you're talking about? What is happening in technology that would promote this?

From the Floor: Through the Internet and the old computer and all its applications.

Dr. Bishop: Great! All right. Who else would like to tell us their trend and implication?

From the Floor: The aging of the population will change the need for insurance coverage types.

Dr. Bishop: So aging population and different coverage. How does that change the actuary of the future?

From the Floor: It's going to require more creativity to work with new data and new types of coverages.

Dr. Bishop: So you'll need more creativity in coming up with products, instruments, distributions. Great!

From the Floor: The trend we had was also for technology. Video and imaging will become commonplace, making offices unnecessary and allowing people to live anywhere, and work for other companies. The implication is that actuaries will become independent contractors not tied to any particular company or organization.

Dr. Bishop: Interesting.

From the Floor: You'd be able to pay with all the profits.

Dr. Bishop: You get to pay for it because you're so successful.

From the Floor: You'd be making all sorts of profit.

Dr. Bishop: Exactly. And you will be more selective in the value added because it's your own money, not somebody else's.

From the Floor: The social security system will have major problems.

Dr. Bishop: Specifically what?

From the Floor: I think we were looking at how the underfinancing of social security will accelerate or hit a critical point.

Dr. Bishop: And the implications for the actuary of the future?

From the Floor: More actuaries will be called on to deal with the problem, and it may cause an increase in the net demand for our services.

Dr. Bishop: Great! This is an example within futures of qualitative baseline forecasting. You have identified obvious big things going on out in the world and how the actuary of the future will be different because of those. These are well-known empirical things, and these are highly probable outcomes. So far we're somewhat close to a standard kind of forecasting. We're not into scenarios yet. This is how that is. What we have done is looked farther afield. We're in areas of technology. We're in areas of government policy. We're in areas of demographics, which, in your case, is not that far afield. So we started from a somewhat wider base but we have done essentially a baseline forecast. One thing you could do at this point is paint a future in which all of these four things happen simultaneously. That's an interesting exercise because when you bring together ideas that you don't normally think about as being related, that creates all kinds of tensions and possibilities. It opens up vistas.

Let's just imagine that all four of these things are happening at the same time. The actuary is out there more on his or her own, and in high demand because the country is approaching a significant financial crisis. This population is significantly at risk because of investments. The traditional turning-of-the-crank, routine business has all passed into the machine. It has literally disappeared, and now you're being asked to be creative problem-solvers. You're being asked to be strategists and not calculators. You're asked to be advisors, and not straight-line kind of risk analysis forecasters.

That's a much different role, and that's a potential conflict role with the emerging field of financial planners and other people who are coming along, too, because they're going to want that business. This is a different future. Is it a plausible future? Is it even a probable future? If these are big trends, and we could verify them, and these are clear implications, that is probably what you're looking at. Even at this level you see a quite big change. What numbers did you assign to these changes? Did you give yourselves a number on how much change that was compared to 100?

From the Floor: Around 100.

Dr. Bishop: How about yours?

From the Floor: One hundred and fifty.

From the Floor: One hundred and twenty.

Dr. Bishop: Mary's is still 500. So we're still in the same ballpark. That's baseline forecasting.

From the Floor: What I thought you were about to say was that we're all giving it around 100, 120, but when you put it all together, it seems like it's much bigger.

Dr. Bishop: You add all those in the interactions. You don't have an office. You're not doing calculations. You're competing with all kinds of new competitors. You're in the center of a national crisis and trying to solve it. You don't have to look far to see, there's a lot of change and you're up to 200. That was good. Dorn, let me ask you, are there other people from the Actuary of the Future Section here other than yourself? Anybody else a member of that section? Well, you get to be the expert then. Are these the kinds of things that you're looking at?

From the Floor: Exactly.

Dr. Bishop: All right. So far we've replicated exactly what you've done.

From the Floor: We like to get a little more detail, but this is exactly what we're looking for. Instead of blindly going into the future, let's do some planning.

Dr. Bishop: I like to call it the future that will happen if nothing really interesting happens. This is the stuff that's baked in the cake. This is in the pipeline already. Let's talk about the more interesting stuff.

We've been looking primarily at trends: technology, demographic, industry level. The trends are the outcome or the basis of the baseline forecast. One of the mechanisms of change that I like to look at is the discontinuity—the quick, sudden change in the rules that takes just about everybody by surprise. It means having to relearn everything all over again. Discontinuities in every system are possible and, indeed, inevitable in the long run. No system will retain that.

Some people have more influence than others, and were they to make certain choices, that would change the system a great deal as well. Clinton's decision to tackle health care after 1992 made a lot of difference to your industry and the medical industry, even though he failed. Managed care had been around for 20 or

30 years, but the possibility that it would actually be mandated by law, even though it never was, broke the whole system, and everything started moving out. That was a choice that he and his advisors made. A relatively small group of people sent medical care, and, therefore, the insurance of medical care, in completely different directions. Those are examples of discontinuities.

As a result, we talk about three different kind of futures. We've focused so far on the probable. We also have the plausible future, which is those things that could happen. Notice that I don't say possible. I mean you can have possibilities that are so unrealistic as to be ridiculous. The plausible alternatives and, indeed, the preferable futures could each have a different set of forces, a different kind of thinking, and a different set of tools and techniques that we use. Anyone who says you have to have data is only thinking about the probable future.

Anyone who says that you have to imagine and use speculation is only thinking of the plausible and then the vision and empowerment and planning. We in futures say that all those three kinds of futures are necessary and important when trying to gauge the whole future. As a result, we look at the future as a set of possibilities, a fan of possibilities, and in here is one future that is more probable than the others, though its absolute probability may be quite low. In here is a vision of a possible future, of a preferable future, that we wish would come about. Those three futures live there.

From the Floor: Does the past have multiple versions?

Dr. Bishop: You're one of the few people that has ever asked me about that.

From the Floor: Is it an inappropriate question?

Dr. Bishop: Oh, no, not at all. I love that question. That's great. I, in fact, believe that the past is also open to multiple interpretations, and that, at any one time, we have one vision of the past, but actually we change that vision as time goes on. The merging of cultures from the eastern hemisphere to the western hemisphere has created a revision of history. It changed all the history textbooks. Columbus used to be a hero, and now he's the perpetrator of oppression. Each of those is an extreme, but it has shifted away from one kind of view to another kind of view. So I believe the further you go back in the past (an example would be the paleoanthropologists who study the evolution of the human species), the less schools of thought you find.

From the Floor: Something actually happened. We just don't know necessarily what it was.

From the Floor: You can see the same picture as the present but you know it now.

Dr. Bishop: Well, that's true, too. We even have multiple interpretations of the present.

If you're interested in scenario planning, there is a definitive book called *The Art of the Long View* by Peter Schwartz who's the president of his own consulting firm in San Francisco. It's highly readable, full of nice cases. He was the director of strategic planning for Royal Dutch Shell in the 1980s and the book has many good cases and much good advice for doing strategic planning.

Let's talk about what might happen. Uncertainties are resolved by assumptions. We assume certain things to happen. Let me ask each of you to focus on the probable future that you described. You had much more material on the other cards, but let's just focus on this for right now. What in this trend and/or in this implication are you uncertain about?

In other words, another way of saying it is what do you have to assume for this future to really occur, for this trend to continue? What do you have to assume for that to happen? I believe that in every one of these, there are some critical assumptions about which we are unsure.

So, first, what do you have to assume for your prediction to occur? Everyone in your group should write what they think the key assumption is. A key assumption is what's needed in order for this future to come about.

Second question. If that is the assumption for the expected forecast that you all made, how could that assumption be wrong? In other words, in your own mind, create a story about how that assumption could be wrong. In other words, what might happen? What discontinuity, what choice, or what change in the system could occur that would make that assumption incorrect? How could that assumption be wrong? In a plausible way what could happen that would make that assumption incorrect and, therefore, the probable future not happen? What would cause it to not occur?

From the Floor: It's a sure thing. No possibility.

Dr. Bishop: Oh, I love when people say that. That's a challenge to me.

From the Floor: I was supporting what you were saying. I don't disagree.

Dr. Bishop: Third question then is about the implication. What is the actuary of the future if the other thing happens, if that little story does, in fact, occur? What is the actuary of the future like in that case compared to the case that you had before? What is the implication?

From the Floor: The impact on the actuary?

Dr. Bishop: Right. If that happens, what does it mean for the actuary of the future? Relate it to the hundred that you had before.

From the Floor: Or do we relate it to the number that we had before?

Dr. Bishop: No, relate it to the 100. We're always using 100. What has happened in the last ten years? How much change is that? Rather than picking the most probable scenario, because we're not talking probabilities anymore, pick the scenario and the outcome that is the most interesting. What is the most interesting outcome and implication for actuaries?

From the Floor: The assumption we had was that there would be more products because of the aging of the population, and the key assumption for that is that the insurance industry remains the same kind of player that it is now.

Dr. Bishop: How could that happen? Hasn't the trend been more products.

From the Floor: Right.

Dr. Bishop: What's going to stop that trend?

From the Floor: What's going to stop the trend is a government takeover of some of those provisions. So it wouldn't be possible to provide those products with the government delivering the products themselves.

Dr. Bishop: So government takeover in a crisis situation. Why would government want to take it over? It seems like the trend is towards more privatization and less toward government involvement. What could happen that would reverse that trend?

From the Floor: If enough people wanted it politically, it would happen.

Dr. Bishop: Right, and what could induce them to want that? Why would they want more government intervention rather than less?

From the Floor: A crisis.

Dr. Bishop: So a crisis in the industry could touch off all the fire alarms, and something would have to be done here. Now, you all can probably look into the scenarios of how those insolvencies might occur. So with government takeover, there would be less products. What's the implication for the actuary?

From the Floor: Job loss. Actuaries would have to either work for the government as government employees or perhaps advise people about whether or not they should buy insurance from the government. Or maybe they can work outside the U.S.

Dr. Bishop: Where there's no government takeover. Interesting. Let's hear. What was your preliminary assumption?

From the Floor: The preliminary assumption was we'd have the video conferencing and everything that would make us independent contractors.

Dr. Bishop: And what might happen instead?

From the Floor: There might not be acceptance of that cultural change or the timing would not occur. It would not happen in the next ten years.

Dr. Bishop: Cultural rejection. In other words, the people who say you have to be face-to-face end up being right. We can't do it remotely, and we can't do it in a distributed fashion. Have we ever had that happen before where culture has rejected something that looked like it was an ironclad, rock solid, cold certainty? What's an example?

From the Floor: Laser discs.

Dr. Bishop: Laser discs?

From the Floor: Video laser discs. Better technology.

Dr. Bishop: That was a product that never made it.

From the Floor: Edsel.

Dr. Bishop: Edsel. The video telephone. AT&T has been pushing that old warhorse for about 20 years. It never happened. The big one of all of our generation is nuclear energy. The forecasts about nuclear energy in the 1950s and

the early 1960s predicted that it would solve all the energy problems, and it never did, for whatever reason. Just because something is gathering steam doesn't mean that it might not end up coming to fruition. So what happens then to the actuary in that future?

From the Floor: We were saying that the actuaries were going to be the ones who prefer the face-to-face contact. What happens to the actuary of the future is that he or she will have trouble competing with other professionals who are willing to use this new form of communication, who are willing to go electronically to where the jobs are. You have actuaries competing with other professionals from all over the world.

Dr. Bishop: You're saying that it's the actuaries that reject the technology, not the society at large?

From the Floor: Right.

Dr. Bishop: So then actuaries put themselves at a competitive disadvantage.

From the Floor: Right.

Dr. Bishop: Cratering the society. Actuaries lose the business that is done remotely. Is there a strain within the actuarial profession to not accept this technology?

From the Floor: We're kind of conservative people.

Dr. Bishop: Oh, really. And that's a competitive disadvantage? You're in the consulting business, and if you need to work with a client, can you afford to get on an airplane every time and spend a day or two with the client? Can they afford to pay you for a whole day when, in fact, they need you for an hour-and-a-half meeting? In some cases, it needs to be a face-to-face meeting. It can't be done on the telephone or through a fax.

From the Floor: We're doing the social security one. Our basic assumption is that the actuaries will be valued by the government.

Dr. Bishop: Underfinanced social security?

From the Floor: Yes.

Dr. Bishop: And what happens instead?

From the Floor: Instead, the government decides to use economists for our social security reform, rather than actuaries. Is there adequate funding for social security? Is that possible? How could that happen?

From the Floor: Discontinuity.

Dr. Bishop: Such as?

From the Floor: People refuse to pay social security taxes.

Dr. Bishop: That only makes underfinancing even worse.

From the Floor: I guess we're looking at the role of the actuary in this and seeing whether it's underfunded or not. The actuary could be looked at by the government as not being involved in the change to the system.

Dr. Bishop: In other words, the actuary stays with the old competencies, the old tools and techniques which don't solve the problem. Calculating it out is not the issue. That's easy. It's figuring out what to do about it. They could turn to other consultants, other policy advisors, and people who are prepared to deal in the world of strategy, not in the world of calculations and forecasts. So actuaries again lose out to strategists. What's your alternative?

From the Floor: I'll assimilate three different things. Ours was technology, and I guess we narrowed it down to the use of the Internet. Our scenario was that the Internet was going to be used more for marketing, and we were saying that, in essence, this kind of technology could be rejected by users either because they don't have time to learn how to use it or they can't afford it or there's fraud or some other reason.

Dr. Bishop: And the implication for actuaries?

From the Floor: The implication is that there's less change for the actuaries than there would have been otherwise.

Dr. Bishop: What was the number you put on that?

From the Floor: Ten percent, but again we're limiting it to this one change.

Dr. Bishop: Right. So, it's less than 100. Maybe 80, right? What number did you put on yours?

From the Floor: Two hundred and fifty.

From the Floor: A hundred.

From the Floor: One hundred and fifty.

Dr. Bishop: So this is the only alternative scenario in which there's actually less change expected in the future than there was before because this one driver seems to peak and it goes away. If we look at the Internet, it's all buzz. It's all hype. It never turned out to be what it was predicted to be. At this point, and if we had more time, we would create and could create detailed scenarios about how these things might happen.

The last stage, which we can't do here but you could figure out for yourself, is what should the Society and the profession be doing to prepare for one or more of these scenarios? Are we thinking about contingency plans? Are we thinking about education and professional development? Are we thinking about keeping on as a profession and as a society, or are we thinking about being prepared to address some of these concerns? Dorn, I suspect that these are some of the things that have not yet come up in your discussion.

Mr. Swerdlin: That's true.

Dr. Bishop: We tend to think about extrapolating trends into the expected future, but let's hop out of the box and look at some of the other things out there in that cone of plausibility, not that you're going to redirect the whole society. This is mental calisthenics. Gee, there is competition out there, and if other professions are prepared to take on different roles and use different technologies, things could change. The traditional role of the actuary is seriously at risk, and that ought to be a topic of discussion for this section as well.

Notice how we did the regular kind of forecasting, even though it was qualitative, and now we have, just for the sake of doing it, reversed some of those assumptions and gotten into some interesting, plausible alternatives that, frankly, if I were an actuary, I'd say, Whoa, we may be looking at bigger change than we're prepared to look at. The purpose of futurism is to consider alternative possibilities. Its purpose is not necessarily to change the present but to consider these possibilities and then do the appropriate thing.

I think there are discussions about certification, professional development, the structure and mission of the profession, and that could literally be revolutionary and

prepare actuaries to do better in the future. Then actuaries would not just be threatened by them but actually expand their scope.