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FUTURISM

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1. The Basic Principles of Futurism
2. The Futurists - Where They are and What They are Doing
3. The Trend Analysis Program of the American Council of Life Insurance (TAP)
4. Possibilities for Actuaries in the Future

MR. WILFRED A. KRAEGEL: The title of this session is Futurism, and I'd like to begin it with what I perceive to be a few emerging principles of the subject.

I hope the word "futurism" doesn't put you off, but we do need some word to describe this subject. Some might prefer futurics (like economics), or futurology (like embryology), or futuristics (like statistics), but the leaders in the field suggest futurism to include the broad subject, and futuristics to refer to more specific information about certain aspects of the future.

The study of the future is more vital than ever before because the pace of change is so rapid. This characteristic of the present is quite widely recognized, but the implications for the future are only gradually being recognized and accepted. Fifteen years ago Max Ways (then an editor of Fortune) wrote an article called "The Era of Radical Change" which appeared in the May 1964 issue of Fortune. He tried to explain the nature of unusually rapid change, and its implications for the future, but for the most part I doubt that those who read it were able to grasp the significance of it, let alone do something about it--at least that's how it strikes me as I think back to my first reading of it.

But today the future is coming into its own. From its meager beginnings 10 to 15 years ago, the literature about the future has turned into a flood. The challenge now is to be able to sort it out, synthesize it (that is, to analyze it in a changing context rather than to assume all other things will remain the same) and act upon it.

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Principles of Futurism

Futurism is too new to have well-established principles. There are a few central ideas about it, though, which arise repeatedly in almost any context, and I suggest five of them as worthy of being called the tentative principle of futurism.

1. The future is a choice from among alternatives.

   This can be said in many ways: The future is inventable, not inevitable (Dennis Gabor). The future is probabilistic, not deterministic. Until the instant before an event occurs, there is a choice of alternative events. We may say, "I don't like this or that alternative because...", but we cannot say, "I do not have any choice." Our hope for the future lies in an early recognition that there are alternatives, in an evaluation of those alternatives and their consequences, in the selection of a range of preferred alternatives, and in efforts to make the preferred alternatives happen (and to prevent the least desirable from happening).

2. The future is determined in part by today's reality.

   The only way to reach the future is to start with the reality of today. This is a great strength for us, but it is also deceptive and dangerous for two reasons:

   a. Each of us regards "reality" as his/her own view of the world. But each of us has only one small piece of reality at one point in time, based on only one set of experiences (which can include learning from the experiences of a few others). There are many other segments of today's reality which will influence our futures; we cannot know them all, but we can make an effort to seek out those most likely to be significant.

   b. Our view of reality recognizes and accepts trends but balks at the idea of discontinuities. Yet there are certain realities today (usually of which we are not aware) which will shatter our comfortable trends and confront us with discontinuities. Peter Drucker popularized this idea 10 years ago with his book "The Age of Discontinuity", and incidentally the keynote speaker at this Society of Actuaries meeting, Dr. William Whitson, spoke about discontinuities.

   In spite of the problems created by incomplete versions of reality and by discontinuities, this principle assures us that by acquiring a more comprehensive view of today's reality, we can do a better job of anticipating the future.

3. The future is determined in part by today's decisions.

   Normally we make today's decisions to meet today's needs and to solve today's problems, and we see them clearly as influencing the short term future, e.g. the coming year. We do not see as clearly that today's decisions also help to determine the future beyond the immediate, e.g. 2 years, 5 years, or 10 years. There is no question that

we must continue to meet today's needs and solve today's problems. But we can make today's decisions do double duty if at the same time they move us toward the kind of future we want. And that brings us to the opportunity living in this principle: If we can set down some idea about the kind of future we want, and if we can evaluate alternative decisions and their consequences, then today's decisions can perform the double duty of increasing the likelihood of achieving both a preferred present and a preferred future. Note how this ties in with the opportunities in the first and second principles.

An important related idea is the difference between microdecisions and macrodecisions. Microdecisions are those at the personal or group level, decisions made for a specific purpose by those with some measure of control over each decision and its purpose. A macrodecision is the result occurring at a higher societal level because of all the microdecisions made earlier. There is no direct control by any person or group (except possibly in a dictatorial setting) over the results of a macrodecision. For example, millions of microdecisions have caused the macrodecision of smog over Los Angeles, of inflation around the world, of diminishing numbers of fish in the ocean, etc. Although good microdecisions often produce good macrodecisions, we are faced increasingly with the reverse, good microdecisions leading to bad macrodecisions (Willis Harman, Stanford Research Institute).

4. Everything is connected to everything.

As we make today's decisions, we tend to think of social relationships as relatively stable and predictable, much like physical relationships--e.g. raise water to 212° and it boils. For all practical purposes, we often do achieve similar results in our social-political-economic decisions. But often we don't, and the reason is the complex interrelations implicit in human decisions. We forget that we are dealing, not with physical elements in a laboratory, but with people, each with dreams and prejudices, education level and objectives, sometimes logical but sometimes irrational. Our decisions may be valid for a given situation, but they may ignore the probable changes in that situation--changes resulting partly from reactions of others to those decisions, partly from independent decisions of others, and partly from factors outside human control (floods, earthquakes, weather variations, etc.). As an aside, this principle seems to apply more and more to the physical world as well, as we come to understand it better.

5. Change is self-accelerating.

When a change is made, the condition of the person or group making the change becomes different, creating new possibilities for change. When a change interacts with others, new conditions result which are subjects for additional change on their part. Each change, then, would seem to provide the basis for more than one additional change, thereby accelerating the rate of change. One invention leads to another and another, whether that invention be technological (as we usually think of it) or social (e.g. adult education, long vacations, professional meetings, credit cards, or whatever).

Let me close this section with two final thoughts about considering the future in today's decisions:

> First, recognition of the future is not the same as making tomorrow's decisions today. Rather, it is making today's decisions today in a way which will move us toward the preferred alternatives for tomorrow while keeping tomorrow's decisions open. Our preferences may change and/or our means of reaching them may change, but we should continually move to improve the chance of achieving them.
>
> Second, being pragmatic is regarded as important, especially for a business organization. Although a primary function of a business is to serve the consumer, it also needs favorable results. It must make a profit now to stay in business so that it can continue to serve the consumer. Taking the future into account in today's decisions is also pragmatic, but over a span of time, not just a point in time. Span pragmatism does not replace point pragmatism, it enlarges it.

Broad Trends and Discontinuities

We go about our day to day business with one extremely important assumption, namely, that we can continue to rely on a stable social-political-economic structure. We don't think much about it, just as we breathe regularly without thinking much about the importance of the continuing oxygen supply. By and large that may be justified, because life does go on. But if we ignore danger signals about impending discontinuities in the foundations of that stable social-political-economic structure, then we are simply "rearranging deck chairs on the Titanic."

There are danger signals, loud and clear:

1. Population--

   Although the United States, Canada and most of the Western World have reached a relatively stable population level (though still increasing in total because of the "echo of the WWII Baby Boom"), the world as a whole is still increasing at 1.8% per year, a rate which will double the population in 38 years. This is clearly the most important problem, because it amplifies and aggravates every other problem. The world has 4.4 billion now, projected to reach 6 billion by the year 2000. What will be the fate of these additional people--and of those already here? Unless we somehow isolate ourselves (undesirable and unlikely), those population pressures will be as critical to the U.S. as to the rest of the world. Boat people and illegal immigrants are samples of problems to come.

2. Food--

   This is the clearest enlargement of the population problem. There are partial solutions, but they are short-lived. Better distribution systems? Yes, but cultural patterns are not changed overnight. More use of the "green revolution"? Yes, but where will we obtain the energy required? (A Cornell professor estimates that feeding the world according to U.S. food methods and standards would use up all known oil reserves in 13 years). More fish? Yes, but the fish population is already declining.

3. Energy--

   No need to say much about this one to prove the point. Confusion reigns.

4. Pollution--

   We are just beginning to understand the importance of clean air, clean water and clean land--and that they are not "free." What we fail to control in the manufacturing process comes back to haunt us in cancer rates, smog, inedible food, property deterioration, crop damage, etc.

5. Raw materials--

   Not yet as severe as the first four problems, this one could rapidly become so, especially if energy falls short as population increases.

6. Inflation--

   Tying all the others into a neat package is inflation, caused basically by the excess of demand over supply. Is demand too high or supply too low? Whichever, if the imbalance isn't resolved, the political glue of society can come apart.

Those are generally the "horribles" listed as part of the "world problem." They are listed, not because any one individual, or one company, or one industry, or even one powerful country can do much about them directly, but because we are all part of that problem and we should be aware of it as we make our major decisions. If we make our micro-decisions with an eye on the macro-problems, working with others whenever possible, then we will make progress, and little by little we may turn this thing around. If we don't believe that, then it doesn't make much difference what the decision is. The Titanic will hit the iceberg.

And just maybe one person, one company, or one industry can make a difference, presenting a new idea which is rapidly and widely accepted.

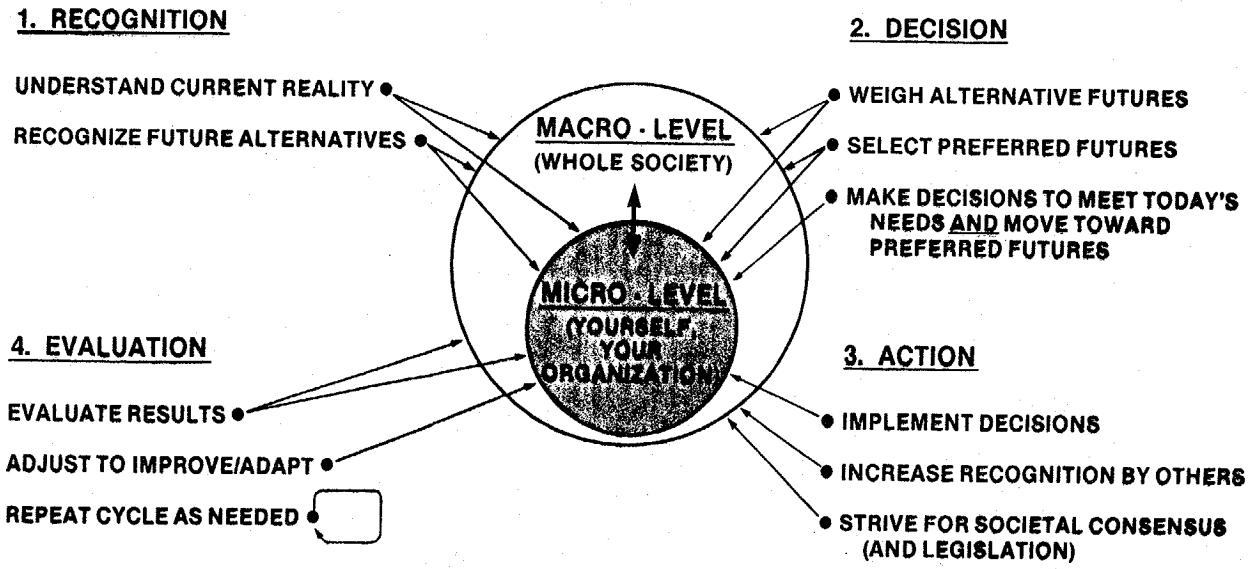
A Model for Consideration of The Future

In order for decisions to be most effective, they should meet today's needs and move toward preferred futures. How can that be done?

The model shown on the next page is a first attempt to set down a sequence of steps which might accomplish that dual objective for decisions. The dual objective is identified in the model as relating to the micro-level (what does the decision do for yourself, your organization, etc.?) and to the macro-level (what does it do for the broader society?). Obviously, the consideration of the macro-level will be incomplete, but generally some measure of consideration will lead to better ultimate results than no consideration.

The four key steps are: recognition, decision, action, and evaluation, repeating the cycle as needed. First is recognition; this involves understanding today's situation and recognizing the alternatives and their consequences, at both the macro- and the micro-level. Next comes the decision

A MODEL FOR CONSIDERATION OF THE FUTURE



process, including the weighing of alternative futures and the selection of the one or more preferred alternatives; then the decision can be made which will both meet today's needs and move toward the preferred future situation.

The third step is action, primarily to implement the decisions at the micro-level. Related action at the macro-level is to work toward increased recognition by others and to strive for societal consensus and relevant legislation as called for. This may seem like a big order, but if greater awareness of today's reality occurs among a large number of individuals and groups, a consensus becomes much easier to achieve. Each of us can do only a tiny part, but those tiny parts are indispensable to the total result.

Finally, we come to evaluation of the results, at both levels, and adjustments to improve or adapt at the micro-level for minor changes. Periodically, the situation will have changed enough for a new look, at which time the cycle can be repeated.

Will it work? Only experience will tell. Perhaps there are other and better approaches which may come to mind. We need dialogue and action to find the best ways.

MR. DONALD R. ANDERSON: I remember a flash of insight that came to me over ten years ago, while I was contemplating my own plans. That flash set me in certain directions which led me to where I stand today.

It was the realization that actuaries are basically futurists - pragmatic, business-oriented futurists who make their living out of a form of prediction - and who have been doing so for a long, long time - over a hundred years. What's more, actuaries work for insurance companies that put hard cash on the line, and enter into binding legal contracts based on the actuary's predictions.

After all, I realized, the survivorship table itself is a model of the future of a group of people, and the policy reserve is that amount which when combined with the future premiums to be received, is judged to be sufficient, with interest expected to be received, to pay the future claims.

As a by-product, I also realized that if the actuary built models of the future, he shared common ground with the operations research experts. But I realized with some dismay that the operations researchers build many different types of models and choose among them, while the actuary usually sticks to only one, modifying only the assumptions.

So, with this humbling thought, I decided I was a futurist, but probably was doing a very poor job of being a futurist, so that it seemed to be important that if I was to be proud of myself, I would have to learn what other futurists were doing and saying.

With that in mind, I started to collect a library of resources on futurism, and to attend meetings of futurists. In the process, I came to certain perspectives, which you might be interested in knowing.

First, I realized that there are many different types of people who think about the future. A spectrum includes:

(a) Everybody - we all plan our own lives in some way or other

(b) The Mystics and Oracles - who seem to see possibilities most of us miss

(c) The Science Fiction World - who dream of possible realities, but whose emphasis is sometimes more on good entertainment and the stimulating of imagination rather than accuracy of prediction

(d) The Professional Planners - such as those who plot the course of companies into new markets, mergers and acquisitions, with a shrewd eye on profits and risks

(e) The Academics - many colleges and universities have departments dealing with futurism

(f) The Dedicated and Concerned - people in many different occupations who are worried about the destruction of our environment, the possible collapse of the economy, the danger of war, and so on

(g) The Professional Futurists - people who make their living as futurists and who may be to some extent corrupted by their own need to earn a living

I have concluded that all of these people have some unique insights but some limitations of perspective, and that we should be careful to listen to people from all segments of the spectrum and form our own opinions.

I think it is also useful to realize what schools of thought exist among the professional futurists, so that we can balance them against each other and minimize risk of inappropriate action.

Currently, there are three main schools of thought:

(1) The Optimists - who believe that we as a society will find solutions to emerging problems of population, food, energy and environmental damage, through further expansion of technology. There will be some disasters, to be sure, but there always have been disasters.

(2) The Pessimists - who believe that we are going to hell in a handbasket, and that global collapse is virtually inevitable

(3) The Engineers of Change - who believe that many fundamental changes are necessary, that these changes must start within the individual, where there is great resistance to change, but that a reasonably satisfactory future is possible, even if very challenging and difficult to achieve

In evaluating what these people say, I have tended to look at what motivates the particular speaker or writer. If he thrives on media coverage, I worry about whether he will tend to say things that make good press such as predictions of disaster or of things most people never dreamed of. If he makes his living on books, speeches or seminar fees,

the question occurs, in what way could he be slanting his message to play to his market?

My personal view of the futurists is one of considerable skepticism and caution. We need only to look around us to realize that many of the major changes that have recently taken place were unpredicted, or predicted only by a very small unheralded voice. Further, I believe that the frequency and extent of vast social change is increasing and that as a result the future is less and less predictable. Sometimes a technological change that might have seemed very specialized, such as microcircuitry, can have a vast impact on society. Also, we have to be cautious about assuming the obvious. Herman Kahn in 1967 predicted, as part of his long term multifold trend, an increasingly sensate society. Is it now more likely that we will have a decreasingly sensate society, more concerned with survival than pleasure?

Some predictions, by their very nature, are not likely to be made. If you predict nuclear war and it does not occur, you are regarded as a foolish alarmist. If you predict it will not occur and it does, who will be around to mock you? The same might be said about predictions of certain other mass disasters, plagues, or unpopular outcomes.

Having said this, I still don't believe in tuning out the future. On the contrary, I think we should devote substantial effort to consideration of what is being said about the future, and ponder seriously its implications for our work and our communities and our personal lives.

It is with that thought that I took a week out in 1975 to attend the Second General Assembly of the World Future Society, held in Washington. I found it extremely informative, stimulating and insightful and resolved that if there were a Third General Assembly, I would be sure to attend.

It was with considerable delight that I learned that the Third General Assembly was scheduled to be held in my own home town, Toronto, in July of 1980.

I quickly found myself involved in the organization of this conference.

A further source of delight was to see how Don Toppin, the key organizer, with genius, creativity, personal world wide top level contacts and personal drive, transformed what might have been simply an update of the Second General Assembly, concentrating on the American perspective, into a truly global conference, with major input from the third world nations, from varied ideologies, from key U.N. sources, and from virtually all the frontier thinkers of our age, and all the leading organizations that are concerned with futurism. I believe it is fair to say that this conference will be a really major event, not just an update.

My role in it has been to try to ensure that the people who should be coming to this conference from poor nations will not be deterred by lack of finances, and a major fund raising drive has been launched among the leading corporations to obtain a pool of funds for this purpose. In that role I am one of the five directors of the First

Global Conference on the Future, Inc., with the Treasury and Finance portfolio.

I invite you who wish to participate and learn more about the future of our race, to register early. Attendance figures are variously estimated in the 5,000 to 10,000 range.

MR. GEOFFREY N. CALVERT: Having read Don Anderson's comments since he could not attend, I would now like to add a few comments of my own. I attended the 1975 General Assembly of the World Future Society in Washington; it was said to be the greatest intellectual show on earth, and I think that that's not perhaps too much of an exaggeration. It certainly was stimulating, and I would personally encourage you to go to the one in Toronto. Item 2.a. in the program for this session refers to the areas of activity which so far have taken up the time of futurists. Having read many issues of The Futurist, the topics which seem to have had the most attention relate to energy, resources, food, population and urban affairs. Also social changes, such as family, marriage, religions, and work. And the theme of holism, which means looking at the whole picture, not just one little segment of it. Questions of the space age -- space colonization and communications, both satellite and microcircuitry, and what they will do to education, work, etc. Matters of the environment and technology assessment, relating to the unintended effects of new technology. Many organizations now have full-time futurists as staff members, including business, industry and committees of Congress. Many universities have courses on future studies. I believe this is the early stage of the emergence of a new field which will become very important in shaping the world ahead of us.

MS. RONNA KLINGENBERG: By 1967, after signs of social unrest had grown too stark to ignore, it became clear that reactive management styles were inappropriate in times of rapid change. For example, the life insurance business was marketing to the nuclear family, but women were surging into the labor force and the proliferation of unmarried couples was catching everyone by surprise. Could the nuclear family be in real danger? In order to find ways to anticipate changes like this, the Institute of Life Insurance undertook a Future Outlook Study. The study recommended that the Institute create an early warning system that would keep abreast of emerging ideas and social changes that could affect the operating environment of the life insurance business. That system, still sponsored by the American Council of Life Insurance, is the Trend Analysis Program (TAP).

TAP is based on the concept that various changes in society result from changes in ideas, and assumes that publications are a principal means whereby ideas circulate through society. In a search for influential ideas, the TAP volunteers monitor over 100 publications, ranging from Harvard Business Review to Mother Jones. The volunteers who scan these publications are life insurance executives; we call them monitors. Every "monitor" is assigned a publication and asked to note any articles which involve ideas or events that indicate a trend or shift in the social environment and that have some relationship to the long-range concerns of the life insurance business. Monitors summarize, or abstract such articles, comment on the articles' potential relevance for the life insurance business and send the abstracted material to the program director.

The incoming abstracts are analyzed every two months by the Abstract Analysis Committee, which is composed of staff members from various Council departments. In the AAC meetings, the group looks for patterns of change in the abstracts; many times trends not evident in one abstract will materialize when two or three abstracts are considered together. These regular discussions also provide a basis for determining trend velocity, the speed at which a trend is developing or waning. Minutes of the AAC meetings are reviewed three times a year by the TAP Steering Committee, composed of twelve senior officers from the member companies, who act as advisors to the program. The Steering Committee's understanding of the business assists them in determining the relevance of various trends to the Council's member companies. The abstracts are used once again as the basis of TAP reports. TAP reports are issued two or three times a year and contain themes presented in thesis, scenario and statistical formats.

In the past year, a bi-monthly newsletter, "Straws in the Wind," has been distributed to TAP monitors. Based on AAC discussions, "Straws in the Wind" keeps the monitors informed of slight changes in the social environment and issues that may warrant a closer look in the future. Monitor response to the newletter has been very positive. Throughout the year the TAP staff also engages in informal issue identification and issue tracking.

Other Council social research efforts provide additional trend development information through survey research and data collection, which gives the Council a continuous environmental scanning system. DataTrack compiles data from a variety of sources, mainly government, on one particular subject, such as population, minorities and households and families. DataTrack reports provide statistical trend data on a subject for a 25-year period. The Council's nationwide opinion polling, interpreted in the Youth survey, Health and Health Insurance: The Public's View and the MAP survey help track changes in the public's attitudes toward the life insurance business and current political and social issues.

Report topics are selected by the Steering Committee on the basis of relevance to near- and long-term concerns of life insurance companies. For example, TAP #18, "Power and Decisions: Institutions in an Information Era," explored how the power of business institutions and their decision-making capabilities will be decisively modified by emerging technologies and by changes in American cultural attitudes. The growing use of computers and the pervasive influence of smaller, more efficient and less expensive information and communication technologies will alter companies' relationships with their employees and their clients. Other issues explored in recent Trend Analysis Reports include: new attitudes toward work; changing attitudes toward death and dying and potential effects of new life extending technologies; shifting residential and housing patterns; and the possibility of a new societal ethic underlying social and economic institutions. Each report includes an extensive section on the possible implications for life and health insurance company management; the areas discussed might include public relations, marketing, human resources, the agent, new products and practices and disability. Once TAP reports are published, they are distributed to monitors, to member company executives and to an outside mailing list which includes universities, government agencies

and business and non-profit associations.

The program has paid off for the life insurance business. Participation in the TAP Program is increasingly seen as a training opportunity in policy formulation, which is particularly important now that companies are setting up scanning activities of their own. Individuals who participate in the program become sensitized to the external environment and develop the ability to translate abstract ideas into challenges and opportunities for their companies. The increasingly sharp scrutiny of the public and regulatory agencies means that corporate decisions will have to be made with a greater awareness of the possible consequences of those decisions. As a result, the skills that TAP develops will be a more important part of every executive's repertoire.

And although any forecaster worth her salt will tell you that the value of a system like this lies not in predictions, but in an exploration of alternatives, a look at past TAP reports shows that TAP has issued its share of early warning signals. The attack on risk classification, changes in mandatory retirement and the by-products of continued inflation are only a few of the topics TAP has raised in advance of significant public pressure.

The decade ahead does not promise to be an easy one for the life insurance business. But the only known bromide for the " future shock" brought about by rapid change is a system that allows you to anticipate--and possibly share--that future.

MR. JOHN M. BRAGG: As is proper for an actuary, I have a great interest in the subject of futurism. This resulted in the paper which I authored at the time of the Society's 25th anniversary: "The Future of the Actuarial Profession as Viewed in A.D. 1974". It also resulted in the appointment of a new standing committee of the Society: The Committee on Futurism. Because of this interest of mine, it is an honor to present this discussion today. I have been asked to update my 1974 paper, and many of my remarks today are outgrowths of it.

Developing a Future Perspective

When we talk about "linking the actuary to the future" we mean: "How can we develop a way of thinking about the future?"

The first absolute requirement is: "How do we get a sense of belonging?". We cannot think logically about the future unless we answer this question first. Perhaps there are many ways to answer this question. I can only give you the answer which has worked wonders for my own personal outlook; it is an answer which I believe and recommend. The answer is this: We are all creatures of and belong to Western Christian Civilization. This civilization, which emerged about 700 A.D., is only one of more than twenty which have come to birth on this planet; however, this civilization--The West--has extended its influence across the surface of the globe and can truly be called "the great civilization". With our inner fibers we revere Western Civilizaton, and it molds our actions and thoughts. Yet, The West is in a "time of troubles"; we hope

but do not know that it will regain its vitality. Recapture of that vitality is at least 50% within our control. These thoughts give us not only a sense of belonging, but a sense of mission. That is what futurism is all about.

We are all aware of the present difficulties: shortages, crises, fatalism, rejection of leadership, meaninglessness, discontinuities, etc. A remark made in 1974 by Arnold Toynbee, quoted in my anniversary paper, bears repeating now: "Because of the depletion of physical resources the West will return to a condition of austerity like that of the world war periods."

Nevertheless, the West does have bright prospects. The following additional quotations from the anniversary paper are also in order:

> "After a gloomy period of the politicized society extending perhaps until A.D. 2000, a bright period of the corporate society will emerge, characterized by social responsibility."
>
> "The key is return to service of the public."
>
> "The characteristics of professionalism are integrity, judgement, ingenuity, competence, and humility."

And again by Arnold Toynbee: "The Great Civilization could have the capacity to enter upon a new period of vitality achieved through a revitalization of the Christian spirit."

Further to this last quotation, I would like to point out two remarkable developments which have occurred since I wrote that paper in 1974. The first is the outpouring of emotion caused by the travels and appearances of Pope John Paul II. The second is the absolutely amazing growth of the evangelical Christian movement worldwide, but especially in the United States. The (possibly controversial) "Christian Yellow Pages" and "Christian business directories" are widely followed. There are about 1300 Christian radio stations and 2 Christian television networks claiming 20% of the viewing audience. The printing press was the agent which led to the first Protestant Reformation, which brought on our familiar but now discredited (?) institutions of nationalism, eternal expansion, the Protestant work ethic, and even predestination (which we actuaries might interpret as "static assumptions"). Perhaps television is the agent which will lead to a new reformation (which might bring on a new set of ethics, such as world consciousness, steady-state existence, and identification with future generations). We are living in exciting times.

As some of you may recall, my 1974 paper contained a scenario concerning the life of an actuary, Richard McKee, born A.D. 1960; died A.D. 2058. He lived in our exciting times. It may be of interest to know that there was a real-life Richard McKee (born A.D. 1495; died A.D. 1564) who lived in another exciting era when Medievalism turned to Modernism. I would be happy to share some of his experiences with any of you who are interested.

Futurism <u>is</u> important. The reasons are two: The future is <u>not</u> predestined, but is a system of alternate models. Secondly, futurism leads to <u>planning</u>, because the alternate models are subject to control.

We must drop our static ways of thinking and recognize these facts. This should be easy for actuaries. We can throw probability distributions across those alternative futures. We can even control them, perhaps.

This matter of "developing a future perspective" should not be difficult for actuaries (indeed, for any thinking person). However, it is difficult to put this perspective into practice. But it's just a matter of seeing where we stand, analyzing the various future alternatives, recognizing their probabilities and utilities to us, and perhaps even going so far as to influence those probabilities through current strategy and planning.

Impact of Discontinuities

One of the catch-words to describe our present state of affairs is "discontinuity". In other words, the long-established order of things suddenly comes to an end and is replaced by something else. Discontinuities have occurred before; for example, they were noticed about the year 1532, even by the original Richard McKee. Feudalism ended; papal authority gave way to nationalism; collectivism to individualism; small, closeted, steady-state Europe saw the sudden prospect of unlimited expansion. The discontinuities were apparent in retrospect, but were difficult to recognize at the time. And so it is today.

However, let me point out the following discontinuities which appear to be emerging:

(1) The sudden end of abundance in energy and other material resources.

(2) The sudden end of nationalism.

(3) Replacement of the protestant ethic by a conservationist ethic.

(4) Replacement of the printing-press "closet" by the television "gold fish bowl".

(5) For actuaries especially, the evolving of the static probability system into a dynamic system.

(6) The sudden end of the stable financial climate.

This last point is of crucial interest to actuaries and its implications are not yet realized. However, some symptoms are these: seemingly uncontrollable inflation, interest rates at an astronomical level, speculation in gold, loss of confidence in the dollar.

Alternative Models of Reality

When we think about the future, we must try to visualize all possible developments. Just for example, let us think about that discontinuity I have just mentioned--the sudden end of the stable financial climate. What is going to happen to our sales, our products, our field forces,

our very way of doing business, if inflation continues in the two-digit range? What is going to happen if it returns to moderate proportions? What is going to happen if inflation is effectively cured?

On this question of alternative models of reality, I notice that we have already moved somewhat down that road, perhaps without realizing it. On the question of the value of a stock life insurance company, we now have three alternative and perhaps equally valid models: statutory accounting; GAAP accounting; and purchase accounting. Regarding our static mortality model, we are stunned to be confronted with the "overlap" model now enshrined in the Manhart decision.

The futurists do use alternative models of the future. Their typical device is the "standard" future--that which is considered most likely--that which is generally extrapolated from current conditions. Then, alternative models are postulated. The futurists have a sophisticated term to describe these variations on the theme: "canonical variations".

As actuaries, we too need to think in terms of standard futures and variations--not just in static averages. Our assumptions relating to mortality, interest, expense, inflation, persistency, etc., must be made subject to ranges. Probability distributions should be put across these ranges. The result will be outputs in terms of costs, premiums, reserves, profits, surplus results, dividends, etc. which themselves will be in ranges. We will try to simplify the outputs by classifying them by such terms as pessimistic--average--and optimistic; or low--medium--high. Computers will help us cope with these complications.

Not much has yet been done on this matter of "ranges". However, I do want to commend our actuaries in the Social Security Administration. They have long made their forecasts on a pessimistic--average--optimistic basis.

Future Uses of Actuarial Talent

Perhaps I should again refer back to that 1974 paper: "The Future of the Actuarial Profession as Viewed in A.D. 1974". It contained a forecast of the need for FSA's and ASA's in 1978, 1983, 1988, and 1993. In 1973, 3665 members of the Society were employed. The need in 1978 was forecast at 6007 (a 64% increase in just 5 years). I am told by Society staff that the actual number of members on July 1, 1978 was very close to this forecast need. Clairvoyance is not claimed. However, the paper forecast an increase in need between 1978 and 1983--the period in which we now find ourselves--of only 16%. We have probably reached a point which was predicted in the paper: "The historical shortage of actuaries will end." However, the career will continue to be fascinating, worthwhile in every respect, and possessed of a bright future.

The paper pointed out specific future developments that could increase the need for actuaries. I still stick with that list and will not repeat it all here. Its main components were the employee benefit supermarket, internal problems of companies, pensions, and proliferation of regulations. In the pension field, the whole ERISA phenomenon has arisen since

the paper was written. And regulation is proliferating, even into the federal arena.

The paper referred to nine new services needed in the politicized society. They are still needed. Surely I can add to the list--now that we are 5 years later on: marketing strategy, including a study of the probability of sale; policy readability; computer science, now all-pervasive; forecasting; and corporate planning using an assessment of the alternative futures. The question should not be "What will happen?". It should be "What will happen if . . .?".

Perhaps--and I do say "perhaps" because this next point is one involving only hope, going beyond the mundane world of business affairs--perhaps our profession, which is intelligent and even "clever," can do something about the settlement of human disputes. "Conflict control" if you will.

Perhaps I could give you some brief inkling about the way in which that science of conflict control might work. For Party A in the dispute, all of the alternative futures are to be defined; many of these futures depend of course on the various actions that might be taken by Party B in the dispute. Each of Party A's alternative futures must then be analyzed in terms of its value to him--in other words, its utility to him; this must be done in quantitative terms. This very same exercise must then be performed from the point of view of Party B in the dispute. The two parties then cooperate to the extent of throwing out all the alternative futures which have utility outcomes to both parties which are lower than the utility outcomes to both parties of any other alternative future. Cooperation to this extent is logical to both A and B. This process usually eliminates 99% of the alternative futures, leaving only a "negotiation set". Cooperation can go no further; arbitration must then occur among the alternative futures which are in the negotiation set. But there is a science even to this arbitration, because the arbitrator should pick that one future which maximizes the product of the utilities of the parties. All of this would involve teams of conflict control specialists, computers, and perhaps a supreme arbitration authority. It is my hope that our profession--which does deal with human affairs in analytical terms--can make a contribution in this field.

Possible Changes in Actuarial Background

To do all of this I believe we will need to develop a greater facility in dealing with the future. We will need to increase our awareness of reality. We will need to increase our humanistic backgrounds. And we will need to stress the characteristics of our professionalism: integrity, judgement, ingenuity, competence, and humility.

MR. STEVEN R. LINNEY: My first question is, why should actuaries be involved in futurism? Maybe a response would be that it is related to "the actuarial method." Also, yesterday William Whitson and Judith Skutch talked about nuclear war and the long-held assumption that it would be necessary to kill 20% of the Russians in order to be effective and win the war. Would we come up with the probability distribution that would say only 10%

would have to be killed in order to win? Is that a kind of actuarial question that we should be answering? Finally, how judgmental can we be as actuaries? If we talk about Social Security, or whatever, should we be making the choice?

MR. CALVERT: I think demographic and financial forecasting in Social Security is a very good example of actuaries involved in futurism. Once you have those measurements in hand, you are already involved in decision making, persuasion, and interpretation of statistical results. I do not think that an actuary should limit himself to the mere technology, to the mathematical and statistical kind of work. I think he has to see what the meaning of the figures is, and the more intelligently he can interpret those projections, the more useful he is as an actuary.

MR. BRAGG: I agree with Don Anderson that we are futurists by definition. On that basis, probably we should be more involved in the corporate planning area.

MR. KRAEGEL: Actuaries have always been concerned about the future, but our assumption has been that the future would be like the present, with certain specified exceptions. The futurist's view is that there are alternative futures, and what we decide now has an impact on what kind of future there will be.

Regarding the Russian question of our keynote speaker yesterday, that was just an illustration. We often rely on certain assumptions without going back periodically and questioning them. This applies in our own organizations as well as in the tremendously important area of national defense. And finally, on the scenarios and the judgmental characteristics that may be implied by them, I certainly agree that the Committee on Futurism should not specify what kind of future there should be. We are suggesting that this is one process to explore, learn about, and consider alternative futures. Then, which scenario is the most likely, and what you want to do with it, depends upon the individual or the group which has to make the decision. Although this dynamic approach is more difficult than the static approach, it will probably be more rewarding because of the added perspective it provides.

MS. GRACE V. DILLINGHAM: I would like to point out two traditional activities of actuaries going on in this meeting. One is the discussion of new mortality tables. This involves a certain amount of futurism as we look at past results, argue about margins that are necessary to make the new tables acceptable as valuation tables for all companies with very different underwriting techniques, and so on. It is a fair probability that there will be a new valuation law which will not only specify the 198x Commissioners Standard Ordinary Table, but will have some provisions for changing tables if necessary on promulgation by the NAIC and adoption by the state commissioner. Also under discussion is a proposed flexible valuation interest rate which would be based on an index of new money rates with weights attached according to the nature of the product. I say that puts a great futuristic responsibility on the actuary.

MR. JAMES G. BRIDGEMAN: In various futurism discussions over the last two days, I've been left puzzled, tantalized, and a little breathless by the

apparent conflict between what seem to be the two major themes in futurism. Mr. Bragg's presentation has helped put this conflict in perspective.

The first theme is "futurism as science." We are asked to put our professional expertise to work in a dispassionate, objective analysis of possible scenarios, their potential causes and consequences, all with particular emphasis on the pace of change and even discontinuity.

The second theme is "futurism as self-renewal", and that's been a surprise. We are asked to embark on a value-laden, even mystical, effort to choose among futures and to commit our personal and organizational weight toward identifying and achieving "the good" futures, where "the good" has little reference to professional analysis and a lot of reference to personal and societal values. Now Mr. Bragg asks us to search the future for a new (or renewal) ideology by which to run our organizations. A seemingly unbusiness-like and unscientific endeavor. But is it?

Surely, in the history of our enterprises there has always been an ideological force helping to drive them. In the 19th century glory days our founders, like their industrial colleagues, were righteous in an ideology that told them "the food" of society was dependent on rapid growth in the size and power of their enterprises. Through the mid-20th century, we have righteously expanded our markets (particularly group) within an ideology that says "the food" of society depends on extending higher levels of material comfort and security to broader and broader portions of the populace.

Perhaps Mr. Bragg is saying that in the future we will, of necessity, operate righteously within some ideology or other and that it behooves us now both personally and organizationally to try to identify that ideology as it emerges and to influence it toward "the good" as we see it.

MR. E. J. MOORHEAD: There is great enthusiasm within the life insurance business for looking at problems of social and economic change that are around the next corner. And yet, the life insurance business displays a lack of interest in the major changes of the current period. One example is Social Security. The great majority of life insurance executives took no interest whatever in the details of this question, leaving it to a very small group who made some suggestions and proceeded to advance them, purportedly on behalf of, to use the popular phrase, "491 companies that represent 98% of life insurance business of the country." The Future Outlook Study was mentioned, and I believe that was another example in which there was a lot of enthusiasm amongst the small group. A number of suggestions were made, but not much was done. A third example is the question of federal regulation of the life insurance business. I saw hardly any analysis of the situation. I saw a tendency to cling somewhat desperately to the status quo of state regulation without considerating what ought to be done to improve state regulation so that it would do the job properly. So my point is that there is a long way to go from the enthusiasm of a discussion, such as we are having this afternoon, to putting the principles of examination of the future into practical action.

MS. KLINGENBERG: One of the trickiest problems we are facing now, I think, is a redefinition of the role of the corporation in society. Some of the hesitancy now is a rejection of "the business of business is business" but not yet a consensus on what then is the business of business. Also, for

all the enthusiasm of some of the companies for futures research, there is a great deal of trouble integrating that material into daily decision making. The ACLI just had a study conducted by Dr. Frank Aguilar of Harvard Business School on how TAP and some other social research materials of the Council were used. He found that they aren't used unless there's a system within the company designed to accomplish that integration. We really need some good ideas on the translation element that I talked about before.

MR. BRAGG: It so happens that I listed in the 1974 paper those issues calling for management attention from Project II of the Future Outlook Study. I reviewed these, and I believe there has been significant progress made on some of them.

MR. JOHN KROEKER: Mr. Bragg suggested a while ago that futurists were actuaries, and if that is so, I don't think we need to adopt a new word. Recently I wrote to the Society of Actuaries. One of the subjects I dealt with was futurists and the Society, with particular reference to the Hartford meeting of April 14-15, 1980. I said: "I am very uneasy about the apparently effortless way futurists have been granted respectability by the Society. Does anybody know what a futurist is? Does he use a crystal ball or chicken entrails?" As you may have deduced, I came to this meeting on a pretty skeptical basis. My observations have led me to conclude that futurism seems to be a combination of the obvious and the essential, and gobbledygook. If futurism is going to become a highly significant or maybe even a predominant new subject, then we need to know a lot more about it.

MR. KRAEGEL: The Hartford program is the spring meeting with a special topic, called Life Insurance and Annuities in the 1980's. This originally had nothing to do with the Committee on Futurism. This was selected by the subcommittee for Continuing Education responsible for life insurance and annuities. That Committee asked our Committee if we would be willing to participate to give them some perspective about the future. And that's how I see the role of our Committee -- to help other committees take the future into account more fully. We have participated in planning for the Hartford meeting, primarily in developing a keynote panel to set the stage for the other sessions.

MS. KLINGENBERG: During the past six months I have talked with people in many organizations, including federal agencies, members of Congress, national volunteer groups, universities, business schools, and perhaps 100 companies on the Fortune 500 list. This demonstrates that many organizations are trying to find a way to look at future problems and opportunities. There may be some gobbledygook in futures research, but we cannot consciously think about the future and just pretend that everything is going to be like it has been, or that we can muddle through. We can treat futures research as the art it is, do the best we can, and come up with some sort of system to anticipate future change. I also think it is incumbent upon us in the industry to do futures research simply to keep up with everyone else.

MR. KRAEGEL: Another large question is: What is gobbledygook? Today's gobbledygook is often tomorrow's truth. There are a number of instances where somebody's crazy idea, completely rejected initially by all the experts in the field, gradually became known, respected and accepted. This has happened in our own actuarial area, as well as in other areas.

MR. CHARLES F. COLVER: I would like to suggest that futurists are looking back further than actuaries are. We as actuaries tend to look back 20 years and think the next ten years will be like those 20. Futurists may look back hundreds, even thousands, of years, to observe hard data about the different cycles of events.

MR. KRAEGEL: The Kondratieff 50 year cycle for inflation and depression might be another example of looking back further than most of us normally do.

MR. EARL L. HOFFMAN: Mr. Bragg spoke about future markets for actuarial talents and I'm assuming that he was referring to areas outside of financial security systems. Assuming that actuaries can be of value in other areas and also assuming that no actuary wants to work for nothing, how can actuaries enter these nontraditional fields?

MR. BRAGG: A partial list of relatively new areas for the actuary might include marketing strategy, policy readability, computer science, forecasting and a much greater interest in corporate planning. Another example is conflict control, which I have seen used for the determination of commission rates on ordinary insurance.

MR. JOHN S. PEARSON: Anticipating the future and acting correctly on those anticipations are not what this industry has done well.

Consider those policyholders who have purchased permanent forms of life insurance during the past quarter century. A very significant proportion have terminated their coverage. The majority of this group would have been better off had they purchased term insurance and deposited the difference in a savings bank at the passbook rate. They have not been well served.

The continuing policy holders have had their money invested in debt instruments. The market value of these assets is far below cost. And in real-dollar terms the performance has been more dismal still.

Finally, there were those policyholders who died. They made out relatively well; unfortunately, testimonials from this group are generally difficult to obtain.

Can we conclude that actuaries, acting as futurists for the industry, have done a poor job? Deviation of current experience (mortality, interest, or expense) from past actuarial assumptions provides some evidence on this score. Or can we conclude that good actuarial advice went unheeded?

Or can we be more charitable and conclude that the industry was precluded from responding more adequately? Yes. For example, I believe one of the worst constraints on intelligent action has been the set of accounting rules embodied in state and federal law--statutory and GAAP principles and practices. Both accounting systems are legally required; both are economically insane; neither was designed with inflation in mind. Other constraints could be cited and we can expect

more in the future--from the IRS, from the FTC, from the SEC. Perhaps most important are proposals for limits on the industry's freedom of risk classification.

Anyone even slightly interested in the recent history and projected future of life insurance should read Security Expenditures in the United States, a research report published in 1978 by LIMRA. "Trends in security expenditures indicate that government has been encroaching and will continue to encroach on the security services market, leaving an ever declining share of the market to the private sector. Within the private sector, the importance of life insurance in the relative distribution of security expenditures is declining." The report projects a decline in the life insurance share of security expenditures from 29.3% in 1960 to only 7.4% in 1990.

Five years ago TAP issued a special report, Life Insurance Companies and the Impact of Inflation, which outlined three inflation scenarios and speculated on the implications for the life insurance business. Today the "ratchet scenario" reads like history!

These research efforts, the environmental scanning program of TAP and the activities of the Committee on Futurism can at least help us anticipate the future. Successful adaptation to the new environment will require great flexibility. Removal of the constraints that bind us may demand more political muscle that we can muster.

MR. KRAEGEL: In closing this session, I would like to give you a brief summary of responses to the first three questions on the recent Futurism Questionnaire conducted by David Ball:

1. What is your degree of interest in futurism, or the study of the future?
2. Do you consider futurism to be relevant to the professional life of the actuary?
3. Are you a member of The World Future Society or other futures organization?

Number of Responses

	Total	By Year of FSA or ASA Attainment					
		1970-79	1960-69	1950-59	1940-49	1930-39	1920-29
Question 1:							
Strong	98	57	28	7	2	2	2
Substantial	316	192	80	37	5	1	1
Casual	572	383	109	56	16	4	4
None	25	13	5	3	1	0	3
Total	1,011	645	222	103	24	7	10
Question 2:							
Very much relevant	476	306	112	42	9	3	4
Moderately relevant	492	316	104	51	14	4	3
Not relevant	29	16	4	6	1	0	2
Total	997	638	220	99	24	7	9
Question 3:							
WFS Regular	62	41	16	4	1	0	0
WFS Comprehensive	6	3	2	1	0	0	0
WFS Institutional	10	5	2	3	0	0	0
Other	9	1	4	4	0	0	0
Total	87	50	24	12	1	0	0