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# DIGEST OF DISCUSSION AT CONCURRENT SESSIONS

## MUTUAL LIFE INSURANCE COMPANIES—THEIR OBJECTIVES AND OPERATING PHILOSOPHY

1. What relative weight might be assigned to objectives and philosophy involving the following?
   *a*) Product cost and surplus development
   *b*) Quality and range of services to policyholders
   *c*) Compensation and working conditions of administrative and sales staffs
   *d*) Recognition of corporate social responsibilities
2. What considerations might determine the balance of obligations among the following?
   *a*) Policyholders
   *b*) Agents and employees
   *c*) The general public
3. How should achievement of the objectives of mutual companies be measured?
4. To what extent and in what manner does the actuary contribute to such matters?

MR. J. HENRY SMITH: Many weeks ago, when this topic was proposed, it seemed intriguing and easy to handle. As today drew nearer, however, and as the language of the agenda crystallized, it became increasingly clear that again the actuary, as is so often the case, is seeking neat quantitative answers to incommensurable problems and specific guidelines in a nearly trackless sea.

Furthermore, the framework of the text for this discussion seems to imply that one should expect sharply differing answers in the case of stock and mutual companies. I seriously question, however, whether the practical answers as they appear in the marketplace and the social setting can be very different. The mutual philosophy may provide a different starting point for deriving weights for the items listed under question 1 of the topic outline or for resolving the conflicts implied in question 2; but the difference blurs as the practical answers come into play. We are all subject to much the same moving forces, stock and mutual; we live in the same world, we face the same markets, and we square off against each other daily. The perennial, all-compelling force of competition is often the real determinative factor.

However, let me try to approach the topic in this manner: recently at the Equitable our senior staff has been engaged in constructing an up-to-date version of our statement of purposes and fundamental objectives. Any of you who have tried this with more than one partner can testify that it is a baffling and exasperating undertaking. But, for whatever it is worth, let me draw on that experience as indicating the way one mutual company lays the foundation for the answers to the questions asked in today's program.

First, we express our basic business purpose as follows: "The Equitable's primary purpose is to provide sound, equitable, and economical protection against financial hazards arising from variations in health and length of life."

Consistent with the mutual idea, our emphasis is on the provision of a service, not on the accomplishment of a profit. I would be inclined to guess that a stock company would start with much the same idea, but I presume that it would at once have to bring in explicitly the purpose of making a profit. In any case, when we come down to assigning relative weights, our stated primary purpose dictates minimum product cost, and it would call for only such surplus development as seems necessary and prudent, recognizing, of course, the various uses to which surplus may be put.

In this connection, we are still lacking—perhaps we always will—workable criteria as to what constitutes prudent surplus. For most companies, I suppose that this is not a serious concern in practice because it is difficult to find the margins from which to accumulate much surplus. The restrictions of the New York law are seldom repressive, either for stock or mutual companies.

As to quality and range of services to policyholders, a mutual company must put heavy weight on quality. The underlying purpose, as expressed, for example, in the Equitable's statement of purpose quoted earlier, implicitly dedicates the company to quality products, although there is a constraint on cost. On the other hand, there would be less weight on range of services. In this connection, our new statement of purpose carries the following dictum: "The Equitable engages in ancillary activities to enhance and support its business and social purposes. Special emphasis is accorded those activities and opportunities for which The Equitable is particularly qualified because of the experience and capabilities of its people." Hence, without being sharply constrained, our philosophy with respect to the range of services would perhaps be somewhat more limited than that of a profit-making institution.

I do not mean to hold out the Equitable as the ideal in these respects.

Obviously some mutual companies are taking a different tack as to range of services, especially those which are entering the fire and casualty field. It seems to me, however, that when they do so they become something other than, or more than, life insurance companies, and that I am not out of bounds in using the Equitable's point of view as an appropriate answer to the agenda question, since it seems to contemplate mutual life companies in the narrow sense of the term.

As for compensation and working conditions, I doubt whether any of us are really governed by special philosophies; we all must accommodate to competition in the marketplace and to modern, acceptable standards of treatment of employees and sales staffs. It is as simple as that.

I suppose that one could assume that mutual companies might naturally feel somewhat less constraint (lacking stockholder profit expectations), and somewhat more responsiveness, as to the various theses in the area of social responsibilities. Again, as a practical matter, however, it seems to me that businesses of all kinds are coming under the same kind of pressure and are coming to be remarkably responsive. They will be more so in the future. I rather doubt whether one could isolate much difference between stock and mutual companies in actual activities and results in matters of social concern. We are all going to be under the gun for about as much expenditure of resources as we can afford.

In this regard I cannot, however, resist putting in a plug for the life insurance business. By nature we are a social institution. We have always been in the business of trying to improve the quality of life through our protective mechanisms. We have every reason to feel that one of our prime responsibilities to society in the large is to conduct our business as well as we can. When we perform well, we are discharging large social obligations. Yet there are peripheral concerns of great importance which, like other businesses, we must attend to, including such matters as corporate contributions to worthy causes, employment practices, helping with inner-city problems, and a myriad of opportunities in the field of health.

To give some sense of the emphasis which is placed on this matter, again I will presume to quote from the Equitable's statement of purpose, which pledges us to "take a strong part in helping to improve the quality of life in America . . . through our employment practices, investment policies, corporate contributions, and the activities of our people . . . ."

As for question 2 of the topic outline, on considerations determining the balance of obligations, we arrive at much the same set of responses as those applicable to question 1. We revert to the basic purpose of serving our policyholders, and that duty outweighs all others. However, we know

that we can fulfill that obligation only through well-qualified, reasonably paid agents and employees. For this reason it sometimes happens that something less than ideal service may have to be provided in order to make it possible financially to retain a full measure of productive and operative capacity.

In these times of ever increasing inflation, pushing wages up ever closer to our income, which is largely dependent on fixed premiums, we are under severe expense constraints that bring exceedingly difficult decisions as to the extent and quality of our service. In recent years the budgetary ax has been swinging in a manner that is distressing from the larger point of view. We can only hope that inflation will be brought under control and that the future will give us a little more leeway to re-emphasize service to policyholders to a greater degree.

The same thing can be said, of course, about obligations to the general public, which phrase, as used in item 2(*c*) of the outline, I assume is a reference again to social concerns. Here, too, our performance is sometimes severely curtailed by budgetary considerations.

In specific answer to question 2, therefore, I would say that the most compelling consideration, at least currently, is not one of philosophy but one of expenses. I would doubt very much whether the practical result of this consideration differs much between stock and mutual companies. It is a matter for management of all kinds to deal with, somewhat expediently I fear.

Coming to question 3—"How should achievement of the objectives of mutual companies be measured?"—we first have to decide what are the objectives to be measured. Preparatory to this, one can raise the issue as to whether a mutual company has a proper motivation to seek growth and expansion. As a practical matter, however, we see it this way, again quoting from our new statement of objectives:

> The Equitable's growth objective is to grow in a planned and orderly manner at the maximum rate subject to considerations of profitability, relative prices, and social purposes. Like most organisms of life, a business is unlikely to be vigorous and successful if it does not grow. Enterprising employees and agents are more readily attracted to a growing organization because there is a greater opportunity for personal development and associated rewards. Unit costs of doing business can more readily be kept under control in an expanding situation. A large and growing organization is usually better able to assume some of the obligations of the greater society of which it is a part and thereby contribute to the general well-being. This is not to say the largest firm is always the best; frequently that is not the case. But real growth has desirable attributes even for the largest or the best.

It is clear here, as elsewhere, that from a pragmatic point of view there is probably little difference between stock and mutual company. We all want to grow—we need to grow. But there is, of course, one important apparent difference, in that the stock company has a profit objective against which achievement must be measured, whereas at first glance it would appear that the mutual company has no such worry. This distinction is somewhat deceiving, however, because the mutual company must achieve the same results in terms of providing good service, achieving low cost, and building strength. The measurement takes a slightly different form, namely, competitive prices, customer satisfaction, and extent of surplus accumulation.

Thus, to measure achievements, the mutual company needs to set up specific objectives with respect to such parameters as relative net costs, ratio of surplus to liabilities (preferably with both figured on a realistic basis), relative growth of insurance in force, gain in premiums, employee and agent productivity, lapse rates, and so forth. Objectives in some areas, such as social concerns, are elusive and probably must remain indefinite. Wherever practical, it remains for each company to determine its specific objectives, and they will differ widely among companies. Measurement of results normally is not much of a problem, although interpretation of results is important and can often be baffling or even the means for rationalizing a poor result.

The actuary is the key to much of all of this. His technical expertise is the foundation stone in helping to determine emphasis, bringing the important considerations to bear, setting up objectives, and carrying out the measurements. Increasingly he will be called upon in all of these respects, and it is heartening to see that actuaries are making good progress in improving their techniques of using models, projective devices, and computer adaptations for predictive and measurement purposes. Management should encourage them in these endeavors, and I am glad to have this opportunity to say these few words in that direction.

MR. HAROLD G. ALLEN: In my comments I should like to change the order of the outline slightly and start with item 2.

The first consideration in a mutual company, it seems to me, in determining the balance of obligations between the three entities—policyholders, agents and employees, and the general public—is that the interest of the policyholders is paramount. Other obligations, important as they are, must be subsidiary.

The mutual company is not an association of employees and agents banded together to operate an insurance business for their livelihood. It

is an association of policyholders banding together to obtain the benefits of insurance and hiring a staff to run the organization for them. They own the company. They provide the resources we manage. Their best interest is fundamental in that management. As legalistic and pedantic as that may sound, that is the essence of the mutual organization.

Now the interest of the policyholders cannot be served in the most effective way without a staff—employees and agents—of quality and competence. A part of the obligation to the policyholder is the obligation to create and maintain such a staff. I see no inconsistency between the best interest of the policyholders and a high-quality, well-compensated staff. Admittedly, there is room for conflict between them, but I believe that experience to date indicates that such conflict as arises can be resolved without a type of compromise greatly detrimental to either side.

Because our business is tinged with the public interest, both stock and mutual companies have a reason and obligation somewhat greater than that of business organizations in general to be concerned with the welfare of the general public. I am inclined to think that this should be especially true of mutual companies. If our fundamental obligation is to our policyholders and our policyholders represent a large cross-section of the general public, there is an obvious merging of interests and obligations.

In attacking item 1, I find it helpful in my thinking to start with a few fundamentals. Unquestionably, the basic objective must be financial soundness. This implies that margins for contingencies must be adequate for unforeseen and unforeseeable events. There is no reward—there is even a disadvantage—in unnecessarily large surplus funds. However, there is great penalty and potential disaster in surplus funds that are seriously inadequate. The determination of what amount is adequate is not a precise business, and differences of opinion often exist. Considering the nature of our business, a conservative approach is indicated. However, I have a feeling that as an industry we have tended to operate on the philosophy that the amount of surplus needed is "more."

With the basic objective of financial soundness in mind, high priority must be given to providing insurance at an equitable and, hopefully, advantageous cost to the policyholder. This implies quality management and the equitable reflection of developing experience in the costs borne by the different groups and generations of policyholders. This concern for relative equity among generations of policyholders is another fundamental characteristic of the mutual type of organization.

The type and quality of service to be rendered to policyholders constitute an important question which remains to be answered in our industry. By and large, the service we (all of us) are providing in renewal

years is that which is requested of us. No matter how well and efficiently we handle that portion, it is still a moot question whether we as an industry are living up to our obligation in the service area. I expect that we shall hear much about orphan policyholders, for example, in this age of consumerism.

Obviously, there has to be a fine tradeoff between contingency margins and type of service, on the one hand, and cost to the policyholder, on the other. Quality of management, efficiency of operation, and quality of service must be thrown into the equation, too—and these are dependent upon abilities and attitudes of the administrative and sales staffs. There are no neat solutions; that is what management is all about.

Salaries and commissions constitute a high proportion of total costs of operation and have a proportionately large effect on the costs of insurance. I am a strong believer in setting these at a level which will attract a talented, alert, and progressive organization and feel confident that this approach will in the long run produce the best results for the policyholders.

I think that a natural question for this panel is, "Are there, or should there be, differences in objectives and philosophy on these points as between mutual and stock companies?" I believe that there are and should be such differences.

The primary master for mutual insurance company management is the policyholder group. For stock company management the primary master is the stockholder group. This difference is bound to be reflected in the philosophy of management, even if not in actual objectives. I often wonder whether the disproportionate financial interests of the policyholder and stockholder groups occasionally create feelings of unrest in the minds of stock company managers as they consider corporate objectives.

In a mutual company the margin for contingencies should be that which is necessary. In a stock company the maximizing of surplus buildup should be a primary objective. My impression is that this is reflected in actual practice.

In a mutual company the type and quality of service rendered should be that which is needed. In a stock company it should be the minimum which is possible. I wish I could say that there was a substantial difference in actual practice today, but I do not believe there is. It may well be, for example, that mutual companies can and should provide some needed services for policyholders that would be eliminated by stock company management for alternative activities providing greater return to stockholders.

In the mutual company the balancing item is the developing cost to the policyholders, spread as equitably as possible over the various groups and generations. In the stock company the balancing item is dividends to stockholders and buildup in surplus for future dividends. Stated another way, it is residual cost to the policyholder, on the one hand, versus profits, on the other.

These differences between the stock and mutual philosophies are, of course, most apparent in individual insurance. The methods of doing group business in the two areas apparently do not allow for such differences.

If I have appeared to "poor-mouth" the stock companies in comparison with the mutual companies, please let me take another tack when it comes to management controls. I shall first of all state a belief that in the development parade of scientific management the life insurance industry has been a laggard. I shall follow that up by saying that within the life insurance industry the stock companies have led the mutual companies by an uncomfortable margin.

It is obvious that awareness of net profit and return on invested capital and the presence of a stockholder group looking over your shoulder are powerful incentives to good management. Looking at it from the other side, it is awfully easy in a mutual company for management to sit on its hands and coast. All of which points up the fact that there is a big difference between philosophy and actual performance! I feel that the toughest job for management in a mutual company is to maintain a sharp, progressive, alert organization.

Adequate management controls—devices to measure performance against objectives—are harder to come by in a mutual company. Their development is still in its infancy and represents a real challenge to the actuary. Some areas in which development is needed are the following:

Corporate computer models as tools for projecting financial results and strategic planning
Budgets for projecting and controlling costs
Work measurement and similar programs for measuring administrative efficiency
Proper staff planning and development
Controls on service complaints

These programs and others like them are necessary tools of modern management. The actuary is ideally prepared to produce many of them. I look for this area to be the big thrust of the actuarial profession in the future.

MR. ROBERT T. JACKSON: Discussion of the proper function of a mutual company seems to require a statement of basic philosophy. Mine is extremely simple: A mutual company should be run for the benefit of the policyholders first, last, and always.

To discuss the basic questions, it would be helpful to borrow a device from the law. For convenience and perhaps some necessity, the law has created a hypothetical creature known as the reasonable man. In the courts, in determining whether or not an individual is liable under a given set of circumstances, the answer will depend upon whether his conduct has been that of a "reasonable man."

I wish to use a parallel creature: the reasonable policyholder—that is, a policyholder of reasonable intelligence, with sufficient knowledge of what is actually happening to be able to make the rational decision based on enlightened self-interest as to what his mutual company should do.

It appears to me that this reasonable policyholder in the mutual company would put a great deal of emphasis on reducing the cost of his insurance product as much as possible. Further, he would probably consider this to be the most important single function of a mutual company.

On the question of accumulation of surplus, I am sure that he would want us to keep the minimum amount necessary to guarantee absolutely the solvency of the company. (I suspect that most actuaries would agree with him, if they only knew what that amount was!)

As for item 1(*b*) of the outline, since policyholders must pay for all services given them, the quality and range of such services should be that which they would willingly pay for. I think that the "reasonable policyholder" would feel that his company should give good service and that the range of services should include all those needed to provide satisfactory information for him and his fellow policyholders.

However, I very much doubt that the "reasonable policyholder" would willingly pay very substantial additional sums of money to get superior service. I might say, as an aside, that companies sometimes appear to use superior service as a smoke screen to hide an inferior cost.

It seems to me that a mutual company can do anything that a stock company can do. The purpose of a stock company is the return which it can earn for its stockholders; in a mutual company, the return is for the policyholders.

The compensation and working conditions of the administrative and sales staffs should be such as our "reasonable policyholder" would agree to. Since I am personally firmly convinced that top quality sales and administrative staffs are invaluable to an insurance company, it would follow, then, in my opinion, were I that "reasonable policyholder," that a

highly paid staff is entirely justified if it is indeed highly competent. Further, it would seem unlikely that a highly competent staff could be assembled without satisfactory compensation and working conditions.

Finally, we come to recognition of corporate social responsibility. Basically, this comes down to a question of costs—whether in the time of personnel to work on social projects or in money donated directly for social purposes.

It is easy to argue that the life insurance industry of all industries requires a viable social system for its very existence; therefore, we in that industry owe a special duty of corporate responsibility to the public. On the other side of the coin, probably one of the easiest things in the world to do is to give away someone else's money. I think that our "reasonable policyholder" would, therefore, wish us to adopt a policy which he felt represented a relatively generous acceptance of our responsibility to the community but which had fixed limits determined by the most intelligent means possible.

It has been suggested that 1 per cent of net income is a reasonable goal for corporate response. It is really very difficult to translate that figure into income of a mutual insurance company, particularly when it is recognized that donations of a mutual insurance company receive no tax benefit whatsoever, with the result that, while most organizations are giving away 52-cent dollars, we are giving away 100-cent dollars.

In my own company we have fixed on 0.3 per cent of the gain from operations before taxes or dividends to policyholders as a standard for corporate giving. In view of the fact that a substantial portion of the dividends represents mere overpayments by the policyholders and in view also of our peculiar adverse tax position, we feel that that is not ungenerous when compared with 1 per cent of the profits of the ordinary stock corporation.

I think that it is imperative that a fixed, budgeted amount for contributions be determined in advance; otherwise corporate contributions are bound to get out of hand, particularly in a mutual company where they are unlikely to come under the hostile criticism the stock companies sometimes face.

One of the most difficult tasks in a life insurance company is, in my view, development of reliable and revealing methods of comparison. It is difficult enough to establish such methods for comparison with earlier years in the same company, and the difficulty is compounded when comparisons with other companies are sought. Actual net costs of product and amounts of surplus developed can be compared easily; but the more important consideration—where we are headed in the future—requires much

more detailed analyses which always leave room for doubt. For example, it is easy to get enough co-operation from a number of companies to find how the yield on our new investments in bonds for the year compares with them but we are still left without a key ingredient—the relative quality of the bonds purchased.

In my company we have done a great deal with functional costs recently. We feel convinced that they will be very useful internally in developing costs from year to year of the same function, and it seems unlikely that functions will change radically enough internally to render such comparisons invalid. However, we are very much more pessimistic about how useful they will prove to be on an intercompany basis, simply because it is difficult to find identical functions performed in two companies, and it takes a great deal of time to sort out what you are talking about when you are discussing a functional cost with another company.

Some vague idea of the quality of service to policyholders can be gained from the number of policyholder complaints received, but this is a crude measure at best and represents a measure more of the total breakdown of service than of its quality. We do attempt to have in our company service standards for every major function performed, and these are reviewed approximately quarterly. While with such a device we can tell whether our standards of service are improving or deteriorating, we have no fixed external criterion as to what reasonable service should be.

The final topic is the extent to which the actuary can contribute to these matters. About a year ago, we formed a new department consisting of the actuarial department, the accounting department, methods, and auditing. This department is charged with the primary responsibility for long-range planning and budgeting and also for all cost studies. It has been very active in pursuing the functional cost studies which I mentioned earlier.

It seems to me that the actuary by training is ideally suited to establish the necessary bases of comparison to find out how well a company is doing and to recognize the limitations on the accuracy of results.

MR. KENNETH R. MACGREGOR: It is my understanding that this session was prompted mainly by questions raised by some of the younger actuaries. If they have been confused by conflicting views expressed about mutual life insurance companies over the years, that is understandable. Who has not read or heard at some time that mutual companies are better than stock companies or vice versa? or that the concept of "profits" is irrelevant to mutual companies? or that the policyholders are not the owners of a mutual company? or that mutual companies ought not to offer

nonparticipating policies? or that mutual companies are a haven for entrenched management? To add to the confusion, many stock companies (in Canada, practically all) transact both participating and nonparticipating business; the great majority of mutual companies began as joint stock companies and later mutualized; and there are a few examples of small mutual companies that were subsequently capitalized with stock.[1]

Obviously, this tangled skein is not going to be unraveled and woven into a neat basket in the hour or two available this afternoon. Henry Jackson, one of the foremost students of mutual companies, described this situation very succinctly many years ago when he said:

> The truth is, I think, that mutual life insurance is too vast a subject with too intricate a history to permit a brief discussion of its present practices to prove very illuminating, without due regard to its evolution and to the actual conditions—competitive, legislative and economic—under which it exists and thrives in America.

If I were allotted only one minute to summarize the objectives and philosophy of mutual life companies, I would quote the recent Response of the Joint Actuarial Committee on Financial Reporting as follows:

> The objective of the mutual undertaking is to provide insurance as close to averaged cost as possible, whatever that cost may turn out to be.
>
> A basic operating objective . . . must . . . be to assure that the financial position of each dividend class is strong enough that there is very little likelihood of its ever falling into a deficit position over the course of its future lifetime.

Going back to 1865, Elizur Wright asserted that the stability of a mutual life insurance company depended upon two things: "1st. The

[1] Actuarial literature on the philosophy of mutual life companies is rather scattered, but, as a basis for forming his own opinion, a student would find it interesting to begin by perusing *The Bible of Life Insurance* (Chicago: American Conservation Company, 1932), which contains the original studies and official reports of Elizur Wright. Other helpful material can be found in the following papers:

James E. Hoskins. "Some Fundamental Characteristics of Mutual Life Insurance," *TASA*, Vol. XXXI (October, 1930).

Henry H. Jackson. "The Wisdom of Mutual Insurance," *TASA*, Vol. XXXIII (May, 1932).

Joseph B. Maclean and Edward W. Marshall. "Distribution of Surplus." Actuarial Studies, No. 6, 1937.

Robert T. Jackson. "Some Observations on Ordinary Dividends," *TSA*, Vol. XI (June, 1959).

Charles L. Trowbridge. "Theory of Surplus in a Mutual Insurance Organization," *TSA*, Vol. XIX (October, 1967).

A. N. Calder and A. D. Shedden. "Allocation of Surplus in a Mutual Life Office," *TFA*, Vol. XXXII (November, 1970).

maintenance of an adequate premium reserve. 2nd. The preservation of equity between members." These dicta are still valid but should be supplemented by Henry Jackson's further comment in 1931:

> But I do wish to emphasize the point that in the conduct of a great business, fairness, (that is, reasonable equity) must be consistently maintained, but that absolute mathematical equity is unattainable this side of the Isle of the Blessed.

Having cited these authorities, I hope I am now free for a few minutes to roam as I please, off the leash of the specific program questions.

Perhaps the main reason for disagreement about the proper operating philosophy for mutual companies stems from an inadequate understanding of the true nature of this unique form of corporate organization. Most of our knowledge of corporations comes from joint stock companies. There is thus a tendency to assume either that operating a mutual is no different from operating a stock company or that a mutual is so different that one must scrap all the dynamic notions involved in a successful stock company, because a mutual is no more than the sum of its policyholders and hence it would be unfair to them to expand their company past the static state.

Description of this peculiar corporate animal is made more difficult by the fact that mutuals originated in many different ways. My company was the first and only Canadian life company organized on a purely mutual basis without external contribution of surplus other than from founding policyholders. Some other companies had surplus "lent" to them through a guarantee fund or the equivalent until they were able to stand on their own feet; a few began as fraternal benefit societies; and the rest were stock companies which mutualized by purchasing the shareholders' interest.

A mutual company is not organized for the profit of its policyholders. However, this does not mean that the profit motive does not permeate its operating philosophy. In a sense, the surplus in a mutual company can be thought of as the total proprietary stake of the participating policyholders, but the policyholders have no individual ownership rights except, perhaps, in a winding-up.

In an ongoing company, as respects surplus, the position of the participating policyholders resembles that of life tenants of an inheritance which must be conserved and strengthened for the protection of future generations. If the mutual company has nonparticipating policyholders, their position may be likened to that of debenture holders.

Incidentally, I see no good reason to prohibit a mutual company from offering nonparticipating as well as participating policies. Nonparticipat-

ing business is, in effect, an equity investment by the participating policyholders, and if mutual companies are permitted to get into ancillary fields, what business is more logically ancillary than nonparticipating life insurance? Further, it can be a useful by-product for the field force, and, in any event, it can be prohibited only in theory unless premium margins are strictly controlled by governments.

Stated broadly, a mutual company is a quasi co-operative venture of policyholders, management, staff, and field force, with each group having a definite, but not overriding interest in the enterprise. It thus has some of the characteristics of both a growth company like Xerox Corporation and a church. The resemblance to the animating urge of Xerox may be readily apparent, but the comparison with a church may seem strange. A church exists for the benefit of its members for the time being, and for future generations, and has at all times a concern to expand its membership, not so much for the prestige engendered, but because the members of the church believe that participation in it is a positive benefit. The founders of my company had a belief in life insurance and the mutual system that approached the zeal of the evangelist. They wished themselves to benefit from mutual insurance but were at least as concerned that the gospel of life insurance be preached widely, not only because of their concern for others but because they believed that their country would benefit from a strong Canadian mutual life company.

When a new mutual company is founded, it soon begins to acquire a personality and life of its own. It is not just a body corporate in the eyes of the law, nor is it a mere conduit to its members, as the Royal Commission on Taxation suggested. It is an institution dedicated first and foremost to its continued existence—its "immortality." All the partners in the enterprise join it because they assume it will have permanent existence. The people who operate the organization do so on behalf of the policyholders and are under charge to keep the policyholders' legitimate interests in mind in all their decisions. But their first commitment is to the company's survival.

If the company runs down its surplus for the immediate gratification of its policyholders for the time being, its life span may be shortened, and it will have broken an implied term in its contract with employees and agents, namely, that the company will be so managed that it will continue to provide satisfactory employment opportunities for them.

These propositions may seem self-evident. The problem arises when one seeks to balance the corporation's interest in its own permanent prosperity with the policyholder's concern for low net cost insurance. It is conceivable that management might become so remote from the policy-

holders that it was more concerned with its own aggrandizement than the common welfare of all participants in the company. Henry Jackson once remarked:

> So obsessed are we with the idea that bigger necessarily implies better, that all our expenditures, particularly in connection with the acquisition of new business, tend to be very generous. I fear that some insurance men never stop to consider, and many insurance men sometimes forget, that mutual life insurance as an institution is concerned exclusively with the redistribution and conservation of wealth and not, like many industrial enterprises, with its actual creation.

In other words, management may concentrate on the care and feeding of its staff and sales force and the erection of ever greater monuments to itself—exhibiting what one critic of our industry has called our "edifice complex." So also, as respects the recent trend toward diversification, I am old-fashioned enough to believe that few people and few management groups can be jacks-of-all-trades, expert in quite dissimilar kinds of business. Consequently, if the participating policyholders of a mutual company are to receive proper treatment, diversification must be limited to areas in which management may reasonably be expected to be knowledgeable.

Incidentally, I do not subscribe to the idea that management of a mutual company is more likely to become entrenched than that of a stock company. History alone should be enough to dispel any such notion.

The essence of satisfactory operation of a mutual company, it seems to me, is the fair balancing of the interests of the corporation and its policyholders on the one hand, and of management, staff, and field force on the other hand. I place the relative interests of these groups in this order, although it is obvious that the welfare of the first group is dependent upon the quality of the second. Clearly, the general public has an interest too, but it must rank after the direct interests of those holding contracts with the company.

The tension between these respective interests is probably nowhere more evident than in the determination of the uses and appropriate magnitude of surplus. Up to a certain point, surplus is essential as a contingency reserve against fluctuations in mortality and asset values. While performing this function, it also generates income that can reduce the insurance costs for policyholders. Beyond this point, the main attraction of a relatively large surplus is probably the power it gives management to embark on aggressive marketing and new-product developments.

Looking at the operations of the various mutual companies on this continent, it is apparent that views on the proper function of surplus have

varied considerably. Some companies have paid out a very large proportion of their earnings in dividends; others, relatively little. I recall dealing some years ago with one of the smaller Canadian mutual companies in a very strong surplus position where the consulting actuary had recommended that only the interest on surplus be distributed. Accumulating surplus beyond reasonable limits means, of course, downgrading the claims of past and present insurance buyers in favor of future generations. However, this hardly seems to be the main problem nowadays. With steadily rising expenses and, in Canada, with heavy new taxes, there is general pressure on earnings and hence a tendency to distribute a larger proportion in order to meet competition and maintain previous dividend scales.

How should achievement of objectives in a mutual company be measured? Clearly, there are many aspects and there can be no single unvarying standard. In mature mutuals, it must surely be common desire to be in the first quartile of the main competition as respects net cost of insurance and to improve one's relative position, if possible. As a standard of measurement, the interest-adjusted method may have merit over the traditional method, but to my mind actual dividend histories rank first. Frankly, I think that present sales practices give dividend "illustrations" too much prominence compared with actual dividend histories.

Another measure demands that the surplus of a mutual company in relation to its liabilities (or assets) be maintained at a satisfactory level. What the percentage should be depends upon many factors, and it is unwise to be arbitrary. In Canadian legislation dealing with mutualization, the maximum amount that may be applied at any time to purchase shares of the company's capital stock is the excess over

> 6% of the total assets of the company, or such lesser percentage of the total assets of the company as may be approved by the Treasury Board, upon application by the company, as safe and reasonable in the circumstances having regard to the bases and methods used in the computation of the policy reserves of the company, the quality of its assets, the nature of the business transacted by the company, the earnings of the company and any other matters deemed by the Treasury Board to be relevant thereto.

A third measure to be considered is the company's growth in business in force relative to the growth of the industry as a whole in the same operating area. At the same time, management should not be satisfied if the growth in business of the industry as a whole is not at a rate equal to or greater than growth in the economy as reflected in personal disposable income. If the company is carrying on an ancillary business through a

subsidiary, one should at least expect the normal rate of return for that particular business.

These, and other, measures of achievement are all difficult to quantify precisely. Further, each measures only certain aspects of a company's over-all performance. What really counts is the effectiveness of the total package of insurance services provided by the company. To meet this test, the company must attract and retain first-class employees and agents, which rules out noncompetitive compensation and development programs that would subsidize dividend schedules through inadequate rewards for proper service. Such a shortsighted course violates the commitment to immortality, because the long-term attrition of human resources in a company is as surely fatal as long-term deterioration of financial resources.

Important as it is to measure achievements in financial terms, it is becoming increasingly necessary to measure the success of the real service function of the industry and of one's own company. Lapse rates and surrenders are probably the best indexes of general policyholder satisfaction. Experience points to the desirability of showing greater concern that policyholders have products which really reflect their needs and are not merely the favorite policy of the agent involved. In this age of growing consumerism, companies should be concerned about the real value of their services and products, if only because the industry is not likely to be left with a large portion of the nation's financial resources by a dissatisfied or uncertain public. One cannot maintain a low profile with billions in assets.

Measurement of real performance is difficult enough under present reporting methods, but, if the ideas of the accountants are accepted, the best attempts to judge companies by over-all long-range standards would be replaced by a short-term "adjusted-earnings" test. We live in an impatient society, and some of this impatience seems to be spilling over into our own industry. The current debate on adjusted earnings is a disquieting symptom of this trend. One immediate result of adjusted earnings is to present management in a better light. In the long run, such window-dressing can only spawn a more liberal attitude toward commissions, dividends, and expense control, with the inevitable result that the future health and strength of companies will suffer.

I believe that the most important contribution that actuaries can make in helping companies to balance the various interests in the enterprise is to ensure that their role remains in the forefront and is not subordinated to that of the accountants, with their intended misapplication of generally accepted accounting principles. "Natural reserves" and "generally accepted accounting principles" are such enticing phrases that the tradi-

tional role of the actuary could go by default. After all, who wants to argue for anything that is "unnatural" or "unacceptable"? The issue is not a question of standing up for our profession because of parochial pride; it is a question of protecting the standards of an industry that has stood the test of time with a considerably better record than those industries whose financial reporting was dictated by "generally accepted accounting principles." The melancholy record of Atlantic Acceptance, Rolls-Royce, and Penn Central—all of which, shortly before their collapse, had pleasant-looking financial statements certified by reputable accountants—suggests that present practices should not be undermined.

The final point I should like to touch upon is the question of corporate citizenship. Policyholders in life companies (whether mutual or stock) probably have the greatest stake of any group of comparable size in the preservation of an orderly society that respects private property rights. It would seem, therefore, that, as stewards of their resources, the companies should participate to a reasonable degree in programs that will assist in the maintenance of an acceptable quality of life, so as to silence the guns of those who would use apparent weaknesses in the social order as an excuse to destroy our society. This means making ourselves not mere passive agents of the policies of any government of the day but creative partners with governments and citizens' groups in projects of enduring significance. By so doing, we are also working toward that first goal I mentioned—the "immortality" of the corporate enterprise itself.

CHAIRMAN GEORGE RYRIE: Harold Allen said that the life insurance industry is a laggard in the field of scientific management as compared with other industries and that the stock companies are ahead of the mutual companies. Do the other members of the panel agree with this assessment?

MR. JACKSON: While this may be true in the Northwest, we are moving ahead rapidly in the East. I do not think that the stock companies are far ahead of us, but there is still a long way to go.

I want to take issue a bit with Mr. Allen, who has suggested that mutual insurance companies' management may not be very efficient relative to that of other corporations. I am not sure that I am any more impressed than he is with the efficiency of mutual insurance companies' management, but I think that we are very much inclined to overrate the efficiency of other corporations. At least, in the mutual insurance business there is no Penn Central or Lockheed, nor have we as yet invented our own Edsel.

MR. MACGREGOR: I believe that it is not true that the progress of scientific management is generally poor in mutual companies in Canada, and it is certainly not true in my company.

CHAIRMAN RYRIE: If the interest of the policyholder demands maximum growth and ultimately maximum size, why do we not see more mergers?

MR. SMITH: Mergers in themselves do not necessarily result in a benefit to the policyholder. One reason why mutual companies rarely merge is that it is extremely difficult for them to do so. In any case, momentum and growth can be maintained without mergers.

MR. MACGREGOR: I do not consider that "bigger" necessarily implies "better." One immediate result of the merger of existing companies is to give rise to the creation of new companies. For this reason, the Treasury Board in Canada discourages mergers unless they are necessary to protect the interests of policyholders.

CHAIRMAN RYRIE: If mergers were encouraged, and the process were carried through to its logical conclusion, the result would be a single mutual company—the government. In regard to another subject, how does a mutual company justify taking risks with present policyholders' money in enterprises in which the results will not be forthcoming for many years, such as variable insurance and health insurance?

MR. MACGREGOR: More than thirty years ago, my company saw a need among its policyholders for accident and health insurance. It went into this field to satisfy that need. The same thing is true today when we branch out into other fields and provide new services for our policyholders. I feel that it is quite justifiable for us to do this if surplus is available to finance the new product or venture and if we expect it to be profitable. If the new venture does not go as we expect and we find that it cannot be made to pay, we must of course get out of it.

If there is a need to be met among our policyholders for a new service, the industry should do its best to provide this service. Otherwise, the government probably will. In Canada the accident and health business of mutual companies is mostly group. In my company our accident and health business has been paying its own way. Under Canadian law, a company diversifying into accident and health business must establish a separate branch for this purpose, with separate accounts, funds, and assets. If it is a mutual company, a special general meeting is required

before any subsidy can be transferred into that branch. For a stock company it is easier, because nonparticipating surplus can be transferred into stockholders' funds and the subsidy provided from there. This separation of accident and health business has undoubtedly helped to keep it on an even keel.

CHAIRMAN RYRIE: Mr. Jackson, would your "reasonable policyholder" give any money at all to charity?

MR. JACKSON: I believe that he would, after studying what is done in other companies and industries. It is not easy for a policyholder to become involved in company affairs; too much study and hard work are required.

MR. ALLEN: I would question whether there is much difference in this respect between policyholders of a mutual company and stockholders in a stock company where the ownership is widely spread.

CHAIRMAN RYRIE: Should a company become involved in socially useful projects if such projects involve a greater risk or a lower rate of return than the company would otherwise accept?

MR. JACKSON: Our present investment in improving conditions for minority groups is just such a project. If all companies share such burdens, the losses incurred will not show up as relatively unfavorable results in a single company.

# STATE, PROVINCIAL, AND MUNICIPAL EMPLOYEE PENSION PLANS—FINANCING AND OTHER PROBLEMS

1. Are these plans in trouble?
2. How are the demands for higher benefits, often bolstered by collective bargaining, being reconciled with other needs for the tax dollar?
3. How should these plans be funded, if at all?
4. How safe are the employees' expectations?
5. What should the actuary do to explain alternatives to government, employees, and taxpayers?
6. Are the assets of public systems being invested properly?

CHAIRMAN THOMAS P. BLEAKNEY: The sources of financing of retirement systems in the state, provincial, and local areas are quite vulnerable to budgetary pressures. Excellent examples of this situation are occurring in my own state at the present time in three large retirement systems.

For nearly twenty years I have been associated with one of the affected systems, the Washington Public Employees' Retirement System. This system was formed in the late 1940's and covers state and local employees. At the present time there are approximately 40,000 active state employees and 40,000 active local employees in the system, and an additional 25,000 retired or with vested benefits. The retirement benefit provided by the system is the sum of an annuity as provided by the accumulated employee contribution and a pension of 1 per cent of final average (two years) salary for each year of service plus $8.33 per month. This system has been financed by a 5 per cent employee contribution and a 6 per cent employer contribution. The assets of the system exceed $400 million.

By statute the funding of the system has always been on a projected benefit basis with supplemental liability. It is on this basis that the employer contribution rate of 6 per cent was set, as determined most recently by a valuation of the system at December 31, 1969. Of the employer contribution, 4.36 per cent was the normal contribution and 1.64 per cent was for amortizing the unfunded liability. This rate was sufficient to provide a period of amortization somewhat less than the statutorily required forty years.

As the 1971 session of the legislature approached, the Office of Program Planning and Fiscal Management (OPPFM), the governor's budget office, was concerned about the deteriorating condition of the state's economy and its effect on projected tax revenues. A constitutional amendment was

submitted to the voters in November of 1970, approval of which would have eased the pressure by the adoption of an income tax; but this proposal was defeated. Rather than ask for an increase in taxes, the OPPFM instead proposed severe reductions in expenditures. A major element was the complete elimination of state contributions to three retirement systems, the Public Employees' System, the Teachers' System, and the Law Enforcement Officers' and Firefighters' System. As a justification for this, the OPPFM obtained a report in secret on a fundamental change in the methods of financing the systems. This report was made public at the opening of the legislative session in January, 1971.

The change which the OPPFM recommended would limit the state's contributions in any year to that amount necessary to maintain a reserve equal to five years' benefit outgo. The report which was presented to the legislature, although not specifically recommending such a program, contained arguments which the OPPFM used to support this proposal, including the following:

> An arbitrary reserve equal to five years' benefit outgo is an attractive compromise between full funding and pay-as-you-go. It would permit a reduction in the State's benefit contributions to the retirement systems. The fund would be sufficient to maintain employee confidence, to allow funding flexibility in a crisis and to provide substantial interest income.

The legislature struggled with the issue through its entire session. In the final day, it achieved a compromise incorporating the peculiar logic which only legislators, faced with balancing the political pressures inflicted upon them, can know. The state is paying the normal cost (4.36 per cent) for the Public Employees' System but not the unfunded liability contribution rate. Further, no contributions are being made to the other two systems. This action with respect to the Teachers' System is being tested in court.

As an actuary deeply involved with the systems, I presented arguments against the proposal to the various legislative committees. A portion of these are quoted below:

> The governor's proposal has two facets:
>
> —discontinuing $162 million in state pension contributions due in 1971–1973 under present law;
>
> —justifying this action by a permanent, sweeping change in financing methods.
>
> Obviously, any postponement of contributions for pensions must be made up eventually. If the present financing method is retained, but one biennium's contribution of $162 million is deferred and then repaid over 40 years, loss of interest will increase future taxes by more than one-half billion dollars. Even

worse, if the governor's financing method is adopted, our children will be left a legacy not only of vastly increased taxes for benefits earned in the next biennium, but also of snowballing costs as the deferral is repeated in future biennia.

Avoidance of current payment of current costs is directly contrary to the statutes carefully worked out for the three systems involved. It breaks a trust with the 150,000 members and their families. It violates guidelines established for financing public pensions in an extensive study ordered by the 1961 legislature.

If, despite these and other objections, payment of all or part of the $162 million is foregone, this should be done by refinancing within the present structure, rather than tearing it down. Adopting the governor's justification for discontinuance would completely destroy the concept of paying current payroll costs currently. The governor's method would encourage further irresponsible pension legislation, since the costs of benefit improvements would not be recognized until after retirement. Pension costs would become completely inflexible, growing rapidly even in a period of severe decline when taxes and payrolls are decreasing.

A false aura of scientific respectability has been given the governor's proposal because of its calling for a five-year payout reserve. The proposed method is still pay-as-you-go with a larger than usual cushion against cost fluctuations. Retained are the adverse characteristics which have led to painful abandonment of pay-as-you-go in other pension programs throughout the U.S. The method has been found unacceptable by C.P.A.'s in accounting for pension costs. In short, its adoption would be an irresponsible step backward for pension financing in this state.

The remark in the next to the last paragraph about encouraging "further irresponsible pension legislation" was painfully prophetic. In the same bill which provided for the partial adoption of the OPPFM's proposal, the legislature voted itself and the state elected officers a tremendous boost in pensions. Even though the legislators will continue to be members of the Public Employees' System, their benefits will be different from those provided all other employees. Their new benefits will be 3 per cent of final salary for each year of service as a legislator or elected state official. The irony of the legislature's taking this action at the very same time when it could not provide sufficient funds to meet the currently accruing cost of the present benefit program would make an interesting conversation piece, were it not for the fact that so many tax dollars are riding on the issue.

MR. GEORGE V. STENNES: I thought it would be well to trace the history of the development of some public employee retirement systems in order to get an overview of their origin, development, and problems.

In 1955, a Legislative Interim Commission was appointed in Minnesota

for the purpose of studying public employee retirement plans. It was the first major effort on the part of the legislature to fully understand the plans, some of which had been in existence for almost thirty-five years. We were engaged as actuary to the Interim Commission for the biennium 1955 and 1956 and have been re-engaged successively; we have just completed our ninth such assignment. The legislature was interested in studying plans covering state teachers, state employees, and public employees; four or five plans for cities of the first class; plans covering law enforcement officers and public health departments; and approximately five hundred plans covering police and fire units throughout the state of Minnesota which were covered by special legislation.

In my early remarks, I would like to trace some history of the plan known as PERA (Public Employees Retirement Association). This association was established in 1931. It grew from a small starting membership of 8,000 in 1946 to over 61,000 in 1971. It was voluntary in membership to 1951 and mandatory thereafter for employees not covered by other pension funds. The employees covered by this plan are employed by 1,500 different governmental subdivisions.

The association was formed at the request of some public employees with the persuasion to the legislature that the plan could be carried out based solely on employee contributions of 4 per cent. Laws were drawn to specify that no employer contributions would be required as long as a "surplus" existed, this being defined as a sufficient amount to pay the retirement benefits due in the next year. In 1951 it became necessary to make an assessment of 2 per cent of salary on all employer units, and this was the point at which the plan was made mandatory.

The fund was able to meet its obligations of retirement benefits for the next four years, and then a survey was ordered by the Interim Commission. It developed that a survey had been made on behalf of the association in 1948, but this had never been brought to light. When the survey was made and used by the Interim Commission for its first retirement study, some rather interesting and startling facts came to light.

The fund was supported by 4 per cent employee contributions on salary covering up to $4,800 but was paying pension reflecting a greater sum. Prior to this time, the plan had been amended so that terminating employees would receive seven-eighths of their contributions without interest as a means of retaining some amount in the fund for expenses.

Our first observation called attention to an unfunded liability or deficit of approximately $130 million, which came as a surprise to the Interim

Commission. Our next observation was that the 2 per cent assessment which had been made in 1951 would have to be repeated not only in 1957 but also in five out of the following six years and then would be insufficient to support the current payment of retirement benefits. As a result of the study, legislation was passed requiring a 6 per cent matching contribution with an additional 3 per cent employer contribution for amortization of the deficit over a period of forty years.

Successive commissions worked diligently during each biennium in further study of the systems, and, as a result, many other changes have been incorporated. Actually, the deficit has changed very little over a period of sixteen years because of the cost of benefit improvements that have been enacted. Opportunity was given for co-ordination with social security. The plan was extended to include such police and fire units as wished to join. Beginning in 1967, all newly hired employees were covered by social security automatically rather than on an optional basis.

In spite of the fact that the deficit has remained fairly constant, the funding ratio has improved, so that in the last study it had risen to 56 per cent; it is no doubt even higher currently. Historically, benefits were considerably better than in most private plans, since retirement was offered in some plans after 30 years of service and attainment of age 55, with even shorter periods of service in the case of police and fire plans.

Investments were handled by a board of elected state officials. As a result, the portfolio consisted almost completely of bonds, largely made up of low-yielding and in many cases low-grade bonds.

Funding obviously did not follow the pattern of private plans, with the exception that some of the private plans had started on a pay-as-you-go basis, while PERA started with some degree of employee contribution. In the first twenty-five years of PERA it was not obvious to what degree funding would be a desirable goal. Subsequently, many attempts were made on the part of separate funds to persuade the legislature that the required funding was not necessary, using varying assumptions and methods to prove their point.

Among the problems confronting the commission was the lack of systematic valuations and the variety of assumptions and methods that were used. For example, on a teachers' plan, with the apparent conservatism of projecting a high salary scale, it was shown that the percentage of salary required to support the plan produced a lower dollar commitment in the early years than other methods. Complicated benefit formulas, such as one which had an increasing percentage unit credit by years of service,

were interpreted by one actuary as a means of funding the lower unit at the lower age, thereby deferring the higher percentage unit to a later age at increased financial requirement.

With greater funds being accumulated through the increased contributions, the investment of the funds became more important. As a result, the legislature established a fund to be controlled by an investment board with a professional analyst. This was opposed not only by the funds but also by the state officials. These people argued that such a program would lead to disaster through investment in equities and that such a board would not have the public interest at heart as would elected officials. In spite of the objections, the board was established.

Members of the board are appointed from a list of individuals recommended by the presidents of the largest financial institutions in the state. The board supervises the investment policy which is carried out by the staff. The board handles the funding of the various large state funds in a common investment fund. The results of this investment approach have been gratifying.

The board has also been able to establish a separate fund for carrying out variable benefit payments under the adjustable fixed benefit fund. The fund is described in the report to the 1971 legislature as follows: "The principle is that the full yield of the total assets adequate to cover the retired persons' pensions is dedicated to the benefit of those persons; thus, all gains over minimum assumptions will benefit the retired persons, not the general pension fund as heretofore was the case."

The objective, of course, is to bring about increases in pensions if the fund earns more than an assumed rate of interest. There is, however, a minimum guarantee that the retirement benefit available on a fixed basis at retirement will not be impaired. Adjustments of benefits under this fund will take effect for the first time as of January 1, 1972.

Although there may be differences of opinion as to its desirability, the legislature set by law certain standards of valuation. They specified that the commission be furnished annually a valuation based upon the entry age normal cost method with $3\frac{1}{2}$ per cent interest. It has specified that a salary scale of $3\frac{1}{2}$ per cent be used where benefits are based on other than a career average. The individual funds sometimes request valuations with different basic assumptions, either for their own information or for use in dealing with the legislature. However, the commission insists upon its valuation being according to those standards in order to maintain consistency over a period of time.

Our firm's view has been one of conservatism in advising the commis-

sion. We feel that the commission has served a particularly useful purpose, in that the results of its surveys are incorporated in reports which are publicized through such organizations as the League of Municipalities as well as by the separate associations or funds to their own membership. It has been our feeling that the funds cannot rely upon taxing power of the government to meet its obligations if they fall short, and therefore, that adequate advance funding is desirable.

We feel that our role in relation to the commission is no different from our relationship to a client who has a private pension plan. Likewise, we feel that our role in relation to a public employee fund which engages us as actuary is to present actuarial data and plan design and not to enter into the field of lobbying for benefits. Our role in relation to taxpayers, I think, is fulfilled through our working with the commission, and we feel that the results obtained to date assure a more equitable distribution of the cost of funding of plans to various generations of population instead of the loading up of cost currently to make up past deficits or deferring a disproportionate cost to future generations.

MR. CONRAD M. SIEGEL: My primary professional experience in governmental employee pension plans is in the area of local government plans in the Commonwealth of Pennsylvania. This would include counties, cities, townships, and boroughs and would involve plans covering specific types of employees, such as policemen, firemen, and nonuniformed employees. The enabling state laws permitting the establishment of these funds have developed on a piecemeal basis over the last fifty years. Some legislation requires actuarial funding, some suggests it, and some is silent. Some employees are covered by social security, and others are not. On an optional basis, there are also available statewide plans which municipalities may join. Teachers are handled entirely on a separate basis and are covered in a statewide plan which permits portability.

The state retirement system covers virtually all state employees, including judges at the state and local level, elected members of the state house and senate, and so on. Initially the system provided that employees are to contribute a level percentage of pay determined on the basis of entry age and sex. The member contribution rate was sufficient to provide a pension of 1 per cent of the highest five-year average pay per year of service. The employer also provided an additional 1 per cent pension. The member contribution rates ranged from 4 per cent to 10 per cent and this was an example of what might be called the doctrine of "contributory pseudo-equity." Since the rate of actual salary progression substantially

exceeded the scale used in constructing the member contribution rates, it was soon found that the actual contribution accumulations were not sufficient to buy the 1 per cent final pay pension, whereupon the law was changed to require the state to make up the difference. Certain politically powerful groups of employees such as judges and legislators receive special treatment in terms of higher benefit rates and earlier retirement ages. For example, certain judges could accrue pension benefits at a 5 per cent rate per year of service, and this necessitated member contributions of, in some cases, 25 per cent of pay under the doctrine. The entry age was also a critical item, since, if it was determined that a person first elected to office at age 55 had once spent a couple of weeks with a pick and shovel in the highways department as a high school summer employee, the age 17 entry age rate would apply throughout his career.

Social security became available in 1956; the gross 2 per cent pension benefit was then offset by 40 per cent of primary social security, and member contributions were then reduced by 40 per cent of the member contribution to social security. This was an obviously logical move, since both employer and employee were now contributing to social security and receiving benefits therefrom. However, within a short time it was provided that the 40 per cent offset could be removed at the sole election of the employee, provided that the member contributions were raised to the original level. Consequently, a few hundred dollars paid into the fund at retirement brought a return of several thousand dollars in increased benefits. The lower-paid employee who was unable to put up the money would not receive the benefit increase. The concept of the "bargain option" is rather prevalent throughout legislation of this type.

Now, of course, the plan was no longer integrated. The total benefit was back to 2 per cent per year of service plus full social security; since all good plans are integrated, it was obviously bad not to be integrated. Presto chango! the plan became integrated once again.

The plan was amended to provide a benefit of 2 per cent of total final average pay per year of service plus an additional 2 per cent of current pay in excess of the social security wage base, and the extra 2 per cent was made retroactive in all respects except for member contributions. Member contributions were changed to a flat 5 per cent of the social security wage base plus 10 per cent of the excess.

This little legislative maneuver was described by the secretary of the retirement system as a "bonanza," although, as a taxpayer of a state that has been on the verge of bankruptcy for several years to the point of payless paydays, I felt that "bonanza" might be inappropriate and perhaps "grand larceny" might be more appropriate.

The basic pension is a modified cash refund pension. However, there are several options, all of which are available without election period and without evidence of good health. Perhaps the most interesting one is a full cash refund pension with an initial death benefit equal to the full actuarial reserve. The existence of this option then created a "death gamble." A member eligible for retirement who wished to keep working would risk the loss of a large death benefit. The principle of "marginal equity" was then invoked. Instead of eliminating the option which created the "death gamble," the legislation was changed to assume automatically that an active member who had reached retirement age or had completed 25 years of service and then died in active service was assumed to have retired on the day before his death, having elected the full cash refund pension option. A recent actual death benefit involved a judge over 70 years old who died in harness, leaving his heirs over $425,000 as a lump-sum payment. This exceeded ten years' salary and was a most satisfactory legacy, but it seems hardly justified as a measure of the employer's responsibility for the needs of the immediate family of a septuagenarian.

Currently members of the legislature may retire at age 50 after 6 years of service and accrue a 7½ per cent pension credit per year of service based on the highest five-year average base salary. Recently a bill amending these provisions has passed the senate that would (*a*) include basic salary ($7,200) plus nonaccountable expense allowance ($8,400) in the 7½ per cent pension calculation to provide a pension credit of $1,170 per year of service; (*b*) base benefits on the highest two-year average salary; and (*c*) permit accumulated credit to exceed 100 per cent of salary plus expense allowance. The governor indicated that he would veto the bill as passed, but would permit a reasonable increase in pensions.

Now to turn to my own city, the city of Harrisburg. The city pension funds were established in the 1930's, apparently without actuarial guidance. The three plans were established in accordance with state laws covering police, fire, and nonuniformed employee pension plans. Initially the member contribution rates were 3 per cent of pay, and the pension benefit was 50 per cent for twenty or more years of service.

Pennsylvania has a rather interesting method of partially funding policemen's and firemen's pensions. The 2 per cent premium tax on out-of-state domiciled fire insurance companies is allocated by means of a complicated formula to firemen's pension funds and volunteer firemen's relief organizations. Similarly, the premium tax on out-of-state casualty insurance companies is allocated to police pension funds. Since the method of allocation has nothing to do with the actuarial requirements for funding pensions, often we find small boroughs with average state

allocations of 30 to 40 per cent of police force payroll and large cities with very small allocations per fireman or policeman.

The state legislators are subjected to substantial lobbying pressure by statewide organizations of policemen and firemen. Since it is politically popular to raise pension benefits and since the state does not increase its own contribution, benefits have been liberalized substantially over the years. Frequently, the police legislation is first amended to provide for a new or improved form of benefit, and the cities may optionally adopt the new benefit. If the cities do not show enough speed in adopting the new benefit, the police representatives then petition the legislature to make the new benefit mandatory. When this is done, the cities are then forced to adopt it regardless of ability to pay. The next step involves representatives of the firemen attempting to "catch up" with the policemen, and they ask their state legislators to institute the benefits on an optional basis or even a mandatory basis initially. Frequently the firemen's benefit is somewhat different and often better. Soon the nonuniformed employees attempt to correct this marginal inequity, and the optional-mandatory whipsawing effect continues unabated. The city council members, being personally covered under the nonuniformed plan, are sitting on both sides of the bargaining table, often with disastrous results.

In past years no attempt was made to compute the actuarial requirements of liberalized benefits, and the city council frequently felt that this was a good way to increase benefits without apparently increasing costs. This continual leapfrogging can result in a rather interesting benefit structure. For example, the firemen's pension fund in Harrisburg provides for a basic contribution of 5 per cent of members' pay and a benefit of 50 per cent of the final day's rate of pay (or, if higher, the average of any five years). The normal retirement date is age 50 subject to 20 years of service. Since the benefit for 20 years of service was the same as the benefit for 35 years of service, a marginal equity problem existed. An incremental pension provision was instituted providing for an additional contribution of $1 per month and providing for an additional benefit of $1\frac{1}{4}$ per cent of final pay for each year of service in excess of 20 years. Somehow it was felt that the additional $1 per month member contribution would help pay for the additional $1\frac{1}{4}$ per cent benefit credit. A widow's pension equal to 100 per cent of the retiree's pension is provided for the widows of retired members and active members who die when eligible for retirement. When this was introduced, member contributions were raised by 1 per cent of pay.

The police pension provisions are rather similar, except that widow's pension is 50 per cent rather than 100 per cent. Many policemen retire

after 20 years of service and get jobs on the state capital police force, becoming covered under the state retirement system and social security.

The nonuniformed employees' fund involves a basic contribution of 4½ per cent of the social security wage base plus 6 per cent of the excess. Benefits are equal to 50 per cent of the final day's rate of pay reduced by 40 per cent of primary social security. However, if an extra 1½ per cent of the social security wage base is contributed in a lump sum at retirement (without interest), the 40 per cent offset can be eliminated (a bargain option).

The incremental pension for service in excess of 20 years is available on a bargain option basis. Here the employee begins to contribute an extra ½ per cent of pay only after he has reached his twentieth year of service, and he begins to accrue an additional benefit of 1¼ per cent of final pay for each additional year of service. Many employees receive total pension and social security benefits which exceed their final pay.

Our firm was engaged by the mayor of the city of Harrisburg to do an actuarial study in 1970 as a result of two events: (1) A new mayor of the opposite political party to the party that had been in power for fifty years had been elected several months earlier, and the outgoing council liberalized pension benefits between his election and inauguration. (2) The pension funds' receipts were insufficient to make benefit disbursements, and there was a reluctance to liquidate a part of the funds because their market value was considerably depressed at that time.

Our actuarial study produced some interesting results. The method used was the entry age normal method with a modest salary scale. After allowing for member contributions and the contribution by the state from premium taxes, we determined an unfunded prior service liability of $16 million. Since the assets of the three pension funds amounted to $1 million, it was interesting to note that the liability on account of existing pensioners at $7½ million was substantially unfunded, not to mention $900,000 of member contribution accounts on behalf of active employees. The actuarially computed contribution requirements of normal cost plus interest amounted to $1 million, exclusive of state and employee contributions. This was approximately 25 per cent of covered payroll and compares with the actual city contribution of $135,000 in the year previous to the actuarial study.

The city also had had a history of paying low salaries and providing employees with periodic improvements in noncash fringe benefits in lieu of salary increases, for example, 13 days of paid holidays, a 32-hour work week, and the like. When legislation was recently passed by the state allowing city employees to bargain collectively, several unions were recog-

nized, and the result of bargaining was a very substantial increase in salaries, somewhat on the order of 15–20 per cent over fifteen months.

Since benefits are based upon the final day's rate of pay, this salary increase had an even more drastic effect on the pension funds. A rough recalculation of the actuarial status of the funds one year after our initial valuation indicated that the unfunded liability had increased to $19 million, and the annual actuarial requirements have increased to $1,200,000. The $19 million unfunded liability is approximately $25,000 per member. The city has increased its contribution level substantially, but this is now only approximately 25 per cent of the $1,200,000 full actuarial requirement and still substantially less than normal costs.

Can the city continue funding on a low contribution level? I found it helpful to explain the situation to the astonished city officials by using the firemen's pension fund as an example. A fireman works for twenty years and then retires on a pension of 50 per cent of final salary payable as long as he or his wife is alive. Conceivably this might be as long as forty years, and once the pattern has repeated itself for a couple of generations, we find the city paying pensions at half-salary to members of two generations who are not working (the equivalent of one full salary) at the same time that it is paying one full salary to a fireman who is working. While this explanation avoids some of the actuarial niceties, it is quite effective.

As is increasingly common, the city itself is losing population, having dropped from 90,000 in 1950 to 69,000 in 1970. This drop does not reflect the change in racial balance in the city, since the twenty years witnessed a flight of whites to the suburbs and an influx of blacks into the city. The city has no effective way of taxing suburban residents who earn their living in the city and utilize many city services. In fact, the city's need for police and fire and other services has increased despite the reduction in population. Urban decay has brought a reduction in the property tax base, and the state, the largest landowner and employer, pays no property taxes.

The city does not have unlimited taxing power. Unfortunately, the current generation of taxpayers is paying for the pensions of retired employees whose services were rendered to a generation of taxpayers many of whom have left the city. Can this process continue in future as the system matures and the pension outgo becomes truly gigantic? What can be done? Not much. State law forbids the reduction in any aspect of pension benefits once an employee is hired by the city.

The engagement of our firm and our reports have resulted in a substantial amount of newspaper and radio and television coverage of the city's plight. Perhaps the actuarial attention has had some beneficial result, in that (1) no further benefit liberalizations have taken place, (2) the

city's contributions have nearly tripled in two years, and (3) the hidden cost of pension accruals has been used effectively in labor negotiations and budget allocations.

MR. KENNETH ALTMAN: The New York State Employees' Retirement System is the vehicle for funding most of the public pension plans in New York State. The exceptions are the several plans administered by the New York City Retirement Systems and the one administered by the New York State Teachers' Retirement System. The New York State Employees' Retirement System has about three thousand participating employers and offers a wide variety of plans from which employers may choose. In practice, what happens is that New York State (one of the participating employers) leads the way in providing a new benefit, and then other employers follow suit.

Our most popular current plan provides a retirement benefit of 2 per cent of final average salary per year of service at age 55 after 20 years of service. For employees with less than 20 years of service, the benefit fraction is $1\frac{2}{3}$ per cent. Age 55 is the least liberal retirement age for any of the sizable plans presently administered by this system. Many of the plans for uniformed employees provide for retirement after a 20- or 25-year service period without an age requirement. In the case of the 20-year plans for uniformed employees, the service fraction is $2\frac{1}{2}$ per cent of final average salary per year of service. Nonuniformed employees enjoy a three-year final average salary base. Uniformed employees have either a three-year or a one-year final average salary base.

Until this year the system permitted inclusion of vacation and termination pay in its definition of final average salary. Negotiated contract settlements between participating employers and their unions resulted in serious abuses in connection with vacation and termination pay in the last year of service, which inflated the final average salary base. This year legislation was enacted which eliminated that abuse.

Our plans are not integrated with social security. During retirement, beginning with age 62, the first $8,000 of retirement income is geared to the consumer price index. This had all the appearances of being automatic until this year, when, because of the state's fiscal crisis, the increase was not granted.

It is interesting to note that the New York State plans are almost all noncontributory. This may stem from the past, when most state employees were not covered by social security and hence did not have those required payroll deductions. It is still uncommon to find a public plan which does not require employee contributions.

Collective bargaining came to the public employees of New York State

at a time when the pension benefits which they enjoyed were already far more liberal than those for employees in the private sector. In some cases, particularly in the smaller systems, it has been difficult to distinguish between management and labor at the bargaining table.

An aggregate funding method is used, and employers who participate in similar plans are valued together. Since the early 1960's, when New York State and all of the counties completed payment of their past-service liability base, all subsequent benefit liberalizations have been included in the normal cost. We were in very good shape until several years ago, when benefits began to soar to present levels. Our retirement rates steadily increased and withdrawal rates steadily decreased as public employers in New York State became increasingly attractive to work for. To aggravate the situation still further, we now find that our pension in force is growing more rapidly than our active membership. Several years ago we also undertook the funding of our postretirement supplement, which is geared to the consumer price index. In addition to the customary assumptions, we also anticipate an annual rise of $2\frac{1}{2}$ per cent in the consumer price index.

The bill to New York State for nonuniformed employees this year amounted to 21.4 per cent of payroll. For uniformed employees the bills are higher, with the most generous plan (state troopers) costing 39.4 per cent of payroll.

Confining my remarks to the state and local levels of government, I do not feel that there should be any distinction between the funding of public and private plans. In New York State public employers have become very competitive with private employers salary-wise. If public employers are permitted to fund retirement benefits on a less conservative basis than private employers, it will not only lessen the likelihood that public employees will receive their benefits, but any resulting liberalizations of benefits or salary increases will make it even more difficult for private employers to compete with public employers. One more point. An old argument against funding a public plan is that public employers have the ability to tax. While this is true, it is also true that the ability to tax is not unlimited, as may be seen from the fiscal crisis in which many of the states and localities now find themselves.

Realistic assumptions in all areas should be used where possible. In New York State we have found that we simply cannot use our actual experience as the basis for salary scales, for the resultant cost would be so high as to threaten continued funding. Ultraconservative actuarial assumptions could lead a public employer, who has been extravagant in granting a pension program, to consider the adoption of pay-as-you-go

financing. During the next year we plan to revamp all of our actuarial assumptions. We expect that the effects of lower termination rates, higher retirement rates at early ages, and higher salary scales will be offset at least in part by the use of a higher interest assumption.

Adequate financing is made more difficult by an abnormally low retirement age, inflation, retroactive benefit liberalizations, postretirement benefits geared to the consumer price index, no employee contributions, and legislative procedures which do not drive home the point of cost. Formerly there was a two-year lag between benefit adoption and the invoice for those benefits. This had the effect of inducing employers to adopt new benefits which they might not have adopted had they been forced to pay the cost immediately. In an effort to slow down the rush toward more liberal benefits, legislation was enacted this year which now requires that all new benefits must be paid for during the current fiscal year. In addition, a new pension commission was established to review all public pension proposals and to make recommendations on those proposals. All pension proposals must now have a cost estimate before they can be voted upon. This was not always the case in the past.

An increasingly large proportion of our assets is being invested in common stocks. Six investment advisers now handle our common stock portfolio, which is approaching $1 billion. Our total assets amount to nearly $5 billion. Each quarter we calculate the investment results of each of the investment advisers. Results are then reported to the state comptroller, who is the sole trustee of the system.

The New York State Teachers' Retirement System has a slightly greater proportion of its assets invested in common stocks, and it is reasonable to expect that the long-term objectives of both systems will call for an even higher proportion of assets being invested in equities.

In New York State constitutional provisions prohibit the diminution of accrued and prospective benefits based upon the current benefit formula for present employees. This produces serious problems for localities with a growing work force which may at some future date experience a fiscal crisis.

There is a serious question whether government can rely on taxing power to meet its obligations, particularly if there is no funding. Government appears best able to operate with relatively level costs. The disaster of an unfunded plan is that costs in early years are not only fairly level but very low. In future years costs rise sharply, and it is questionable whether government can cope with such increases within the scope of its limited taxing power.

In general, the public in New York State has been kept very much

aware of pension liberalizations through newspaper accounts. Reporters have been doing extensive research and reporting on the pension benefit plan which the legislators approved for themselves.

The actuary's principal role in the public sector is to drive home the point of cost. The accrued cost of pensions should be recognized each year. Government is peculiarly susceptible to benefit liberalization in the spring immediately preceding fall elections. Pay-as-you-go financing can act as an inducement to benefit liberalizations in situations in which a public employer could not afford to provide such liberalizations on an accrual basis. Legislators serve for a limited number of years and are inclined to simply look at "costs" without being unduly concerned about whether such costs are being met via a funded program or via pay-as-you-go financing. It is essential that costs be properly reported to legislators.

Actuaries in public employment are generally responsible to a board, to a state comptroller, or to both. In this connection, we must pursue an educational role in encouraging public officials to take sound positions.

Actuaries in private employment should exercise their responsibility as knowledgeable, expert taxpayers. They should oppose vigorously any undue liberalization of benefits, particularly when adequate financing is not in evidence. They can also serve on committees that give actuarial advice to elected officials.

MR. CYRIL J. WOODS: In view of the fact that the moderator and the other three members of the panel appear to be firmly of the opinion that all public plans should be fully funded, it would seem essential, if we are to provoke discussion, that I should take the opposite view, whether or not I believe in it. However, I can salve my conscience by saying that, with reservations, I do not believe that all public pension plans need be fully funded.

The revelations of the previous speakers concerning a number of public service plans in the United States—although I believe that they are talking about the most flagrant cases—indicate that they consider full funding essential because they cannot trust either their politicians or their public servants. In that event, the impact of full funding on tax rates would bring any plan improvements so obviously to the attention of the public that they would be controlled by public opinion.

There are three obvious purposes of funding pension plans. The first is to establish security for plan members in the event of the merger, sale, or bankruptcy of the employer. The second is to stabilize employer costs. The third I have already indicated as forcing attention to the cost of plan improvements.

All three are essential where small groups are concerned, as would be the case in some municipalities which, even though they may be permanent, may later be merged. Where, however, we are faced with larger permanent bodies of employees, such as those of a state or a province, I believe that flexibility in funding is reasonable. If we consider even greater bodies, of a national nature, we really have the choice of the entire range from pure pay-as-you-go to full conventional funding.

I believe that we are sometimes too concerned with the results of the actual capitalization of liabilities and assets, such as we find in a valuation balance sheet. Where permanence is inferred, surely we should be mainly concerned with long-term projections of costs relative to tax revenue. However, it is essential to indicate the effect on cost of plan improvements even if the funding is done by projection. This is all the more important because public servants are now receiving pay much more consistent with that in industry, and the old reason that there should be a generous pension plan to compensate for poor earnings no longer applies. Moreover, it is in the public service plans that we are finding major pressure for improvements such as the lowering of retirement ages and escalation of pension benefits. It is essential, I believe, that there should be full disclosure, so that the plans of public servants can be reasonably compared with the plans of the employers of the taxpayers concerned.

Wherever actuarial calculations are made, it is essential to use the best estimate of future conditions. When one of the previous speakers said that he was forced to use a low salary scale in a particular case because the use of a more appropriate one would have produced alarming current costs, he was, in effect, using controlled funding, and he would have been better advised to face the problem squarely, use realistic assumptions, and deliberately indicate the extent to which funding was being controlled.

As a member of a three-man committee appointed by the Province of Quebec to make recommendations on the funding of the pension plans of Montreal and other municipalities, with full realization that some form of controlled funding had to be reviewed, I sent questionnaires to associates literally throughout the world to find out whether there were any precedents for the controlled funding of public plans. From the replies I received, it appears that public plans were instituted either on pure pay-as-you-go financing or on full funding, according to the views of their proposers, and there seemed never to have been any real discussion of how such plans should be funded. My committee was dealing with one large city, one medium city, and a number of relatively small municipalities in a province where there was definite political uncertainty (as to

separation from Canada). We did not feel that pay-as-you-go financing could be tolerated anywhere in these circumstances. We advocated the use of realistic actuarial assumptions, the payment of current service costs taking into account estimated future increases in earnings and the amortization of any unfunded liability over a period of years which would be determined by higher authorities according to the situation of the particular city or municipality.

We contemplated that this period could be in perpetuity, that is, payment of interest on the unfunded liability. We advocated that the additional unfunded liability and the actual current service cost of any plan improvement should be fully published. We advocated that the employer contributions concerned should nevertheless be checked by long-term projections of contributions against estimated tax revenues.

Where a fund was to be created, it should be managed by independent investors both to avoid indirect control of industry by government and to avoid the selection of investments for purely political reasons. In this connection, it might be pointed out that, if the contributions of which a city or a municipality was relieved though controlled funding were applied in public projects which would tend to increase tax revenue, this would indirectly achieve the same purpose as conventional funding, although, of course, the capital value of a road system, bridges, and the like, could scarcely be termed the assets of a particular public plan.

We concerned ourselves, I think somewhat unreasonably, with transfers of costs between generations. Why should a particular pension plan be singled out in this connection, when indirectly, at higher levels of governments, we were still paying for World War II, for instance, which certainly was not paid for completely during the time it lasted. What we really are concerned with is the potential pension outgo to the potential tax revenue, and in this regard we should possibly make high and low estimates to allow for obvious reasonable fluctuation.

Finally, I have to emphasize that my remarks do assume reasonable logic and sense of responsibility among politicians and public servants. The moderator mentioned the advantage of an independent pension commission to have some supervision over public service plans, and I would be a strong advocate of such a system. If, however, such commissions were appointed and provided full disclosure to the public, I think it would be found that controlled funding, bearing in mind other priorities, would in many cases be found to be the most logical course.

MR. JERRY L. BROCKETT: My discussion is limited to municipal retirement plans located in the southwestern United States.

It is erroneous to conclude that a majority of these plans are in trouble, although probably a significant percentage of them are. For example, I know of no plans that are obligated to pay large benefits and have no assets and little income to meet the obligations. On the other hand, I know of a few plans that are not paying the contribution to the fund equal to the normal cost plus interest on the unfunded prior-service liability. Some of these plans are contributing in the neighborhood of 25 per cent of covered payroll to their fund; however, the sum of the normal cost plus interest on the unfunded prior-service liability is in the neighborhood of 35 per cent of payroll and increasing, since the minimum contribution to the fund is not being made. These plans generally have sufficient assets to run on a present basis to 1990 or 1995. Generally, the administrators of these plans have full knowledge of their financial condition and look to increased taxes in later years to assist in the funding of the benefits. However, a majority of the municipal plans with which I work are meeting their funding obligations by paying at least the normal cost and the interest on the unfunded past-service liability so as to keep the unfunded liability from increasing. These plans are not in trouble, in my opinion.

How a plan should be funded may be related to the incidence of cost. I believe that today's taxpayers should pay for the cost of pension benefits being accrued by today's public employees. Relating this to a cost method would mean that a municipal retirement plan should contribute annually to its pension fund an amount at least equal to its normal cost plus interest on the unfunded past-service liability, where such cost factors are computed on realistic actuarial assumptions. If this minimum cost is not met, the cost as a percentage of payroll will increase to the extent that it could be 50 per cent or more by 1990 for some municipal plans. If municipal retirement plans are not prefunded, the next generation of taxpayers will be faced with a very large cost which would have to be paid for by increased taxes. While pay-as-you-go funding has been accepted as being the proper method for social security benefits, I do not believe that it is the proper method of funding municipal plans.

How safe are employees' expectations? To the extent that a municipal retirement plan retains the services of a competent actuary and relies upon his advice for administering the plan over many years, the employees' expectation of benefits is usually comparatively safe. This item is frequently discussed in the actuarial reports which we prepare, and we have found that for at least 75 per cent of the plans with which we are associated, the employees rightfully have a high degree of confidence of receiving their pension benefits.

The actuary can do a lot by explaining the funding of a retirement plan in layman's language, which will assist various groups in understanding the various alternatives which he is proposing. The cost of various alternative benefits, prepared by the actuary, should be based upon long-term cost of the retirement plan computed as a percentage of pay and based upon realistic actuarial assumptions. While this seems elementary, I have found in day-to-day work that it is a difficult objective to achieve; but it may be one of the most valuable services of the actuary.

In connection with each individual municipal retirement plan, there is at least one public official who is very knowledgeable concerning pension plans, various cost methods, and actuarial assumptions. Thus the actuary's work is usually not a mystery to him. In summary, in communication with government officials, employees, and taxpayers, a layman's explanation can be given to the implications of funding of a plan, the factors which affect pension costs, the cost method used, and the actuarial assumptions used. As another example of an actuary's work in this area, when we are preparing a report for a municipality whose pension plan is financially unsound, we will provide from eight to twelve practical alternative solutions as a means of achieving soundness of the plan. We feel that we are obligated to provide these alternatives.

Are the assets of public systems being invested properly? The reply to this question would depend, I expect, on each actuary's experience with municipal pension funds. In my experience, the pension fund assets are being judiciously handled. My criticism of some pension funds is that they are too reluctant to take investment risks in an effort to increase yield. Some of these funds are invested in savings and loan institutions and in bank certificates of deposit. However, these are in the minority, with the majority of the pension funds retaining the services of professional investment counselors to invest the pension assets. Most pension fund administrators realize the significant reduction in long-term costs of a plan which results from the increase in the yield of the pension assets, and thus they devote a considerable amount of time and effort to managing their pension portfolios.

MR. LAURENCE E. COWARD: I once met a situation in which a well-established bank had been paying 10 per cent of payroll to a retirement system, although the actuary had determined that the cost of the plan was 29 per cent of payroll. The actuary made regular reports over the years, but the bank, because of other financial considerations, refused to increase its contribution beyond the 10 per cent level. Should the actuary have refused to act for the bank? Did not this employer need actuarial

reports as much as if the pension plan had been solvent? I maintain that paying the full cost is not as significant as recognizing the liability and being aware of future obligations. Funding of all pension plans is a desirable goal, but priorities must be established, and not by the actuary. For example, a government may give higher priority to unemployment relief or to welfare or to its staff salaries than it gives to supporting its pension fund. As regards state plans, I question whether state bonds are more secure than the promise of the state to pay the pension outgo in the future.

If a plan is not being funded or is only partially funded, it is important for the employer to know the true cost of the plan and the implications of not meeting these costs. The actuary should advise on these matters and speak clearly on the risks that are incurred, but the actuary does not have the final decision as to whether a payment should be made.

CHAIRMAN BLEAKNEY: The projection method of estimating costs deals with mean expectations. I would think that the variation in costs might be just as important, particularly in the smaller plans. Should an actuary look at the range of expectations rather than at a single one?

MR. WOODS: I do not contend that the projection method should be used for small plans. These should be fully funded. Projections should be made only for sufficiently large plans, and it may be desirable to do a high estimate and a low estimate.

CHAIRMAN BLEAKNEY: In a public pension plan there may be an indirect cost, in that the fund holds state and municipal securities which have a lower yield than other securities available on the market. Are any plans still holding such low-yielding securities, and, if so, how is the indirect cost of holding them being communicated to the public?

MR. ALTMAN: The New York State Employees' Retirement System no longer purchases such securities and has not for many years, but we are still holding a small amount of municipal bonds.

MR. JONATHAN SCHWARTZ: The New York City retirement systems still hold many low-yielding securities. However, no new money is being invested in them.

MR. SIEGEL: I suppose that you could measure the cost by finding the rate of interest that might be earned on taxable securities such as cor-

porate bonds and comparing this with the rate of interest that is paid on the municipal bonds. Another factor to consider is the ability of the municipality to issue its securities if the pension fund were not purchasing a substantial proportion. This factor has become less important in recent years, since municipal bonds have become attractive to individual investors and insurance companies because of the tax situation. We find very little new municipal pension fund money going into municipal bonds.

MR. WOODS: In Canada there has been a tendency for public pension funds to be invested in low-yielding municipal and other securities, but the trend is now toward independent investment boards who hold no particular loyalty to such issues. This system of independent investment boards is common in England.

CHAIRMAN BLEAKNEY: Where there is a definite funding policy for a public plan, is there pressure to have it relaxed? For example, where there is a given period for amortization of the unfunded liability, is there pressure to extend it or to reinstate the period after each valuation?

MR. ALTMAN: Yes. There have been examples of this in New York State. In some of the public systems past-service liability periods have been set up to fund additional liabilities for new benefits. As long as the funding period is not too long and actuarial assumptions underlying the valuation are realistic, I see no objection. Average working lifetime of employees must be borne in mind, however, especially under public plans where normal retirement age is 55 or perhaps even lower. In some cases pressures have resulted in the setting up of past-service liability periods which are probably longer than can be justified by the actuarial experience of the plans.

MR. STENNES: In Minnesota the contribution to the policemen's and firemen's retirement funds is about one-half the normal cost plus interest on the unfunded liability. The larger funds are required by law to be fully funded by 1997. This date was chosen when the funds were initially put on an actuarially sound basis, and it has been maintained by the legislature whenever the plan was being amended. Although there has been no pressure to extend the period, there has been great pressure to increase the interest rate used to determine the annual amortization payment which was also set by law.

MR. SCHWARTZ: In several of the New York City plans, a portion of the unfunded liability is amortized over thirty-five years, the balance

being funded under the aggregate method. It has been our experience that relaxing the funding policy tends to cost more in the short run, since the resulting lower annual contribution makes it more difficult to resist employee pressures to increase benefits.

CHAIRMAN BLEAKNEY: How long has the New York State plan had a normal retirement age of 55? How was this justified when it was established?

MR. ALTMAN: A normal retirement age of 55 came about in an effort to increase retirement benefits at a time when salaries were very low. When the retirement age was reduced from 60 to 55, the benefit level was increased from $\frac{1}{140}$ to $\frac{1}{120}$. The reason for this appears to be that, previously, thirty-five years were required to provide a total benefit of $\frac{35}{140}$ from the employer plus $\frac{35}{140}$ from the employee, for a total of one-half pay at age 60. The benefit objective was then changed to $\frac{30}{120}$ from the employer plus $\frac{30}{120}$ from the employee, for a total of one-half pay after thirty years at age 55.

CHAIRMAN BLEAKNEY: Are there any provisions for auditing benefit calculations to avoid fraudulent benefit payments? Should there be?

MR. SIEGEL: We have found this practice to be particularly desirable in municipal pension plans where, in the past, administration was largely based upon the "buddy" system. It seemed that, because of the complexity of the legislation, the inadequacy of past employment records, and so on, there was considerable discretion as to whether a particular employee was eligible for a specific benefit and, if so, the amount of such benefit. The politics of the employee and even the high school he attended often were contributing factors. In some cases I attend all meetings of the retirement board and check the computation of all benefit payments.

MR. STENNES: I believe that such calculations are normally audited, and, if not, they certainly should be. I recall some problems involved in one of the public employee plans in Iowa, where it came to light that benefits had not been calculated according to the law. These were corrected and, subject to the attorney-general's opinion, some attempt was to be made to recover overpayments.

# MORTALITY AND UNDERWRITING OF INDIVIDUAL POLICIES FOR LARGE AMOUNTS

1. Has medical selection of large-amount risks been effective, and, if so, why?
2. Does the Large Amounts Study indicate a need for more careful underwriting of the accident, homicide, and suicide hazards on large applications? Are additional underwriting tools available?
3. What kinds of financial information are needed? In particular, what kinds of information are needed from the applicant? from the applicant's auditor or tax adviser? from the applicant's business?
4. Has the federal Fair Credit Reporting Act made it more difficult to obtain underwriting information from various sources? Has the act had an effect on the quality of such underwriting information?
5. What are the prospects for controlling antiselection during the 1970's?
6. What changes, if any, should be considered by the Committee on Mortality in planning the next quinquennial study of mortality on policies for large amounts?

CHAIRMAN CHARLES A. ORMSBY: Publication in July of this year of the Society's latest quinquennial report on large-amount mortality (*TSA*, 1970 ***Reports***, p. 118) is only one of the reasons for devoting a part of our 1971 annual meeting to the matter of underwriting large amounts of life insurance. Intense interest in the subject has also been generated by the remarkable growth over the last ten years in the volume of applications in excess of $50,000 and in the number of those exceeding $1 million, the largest in the 1960's probably being for $20 million on one life. The noteworthy increase in the volume of jumbo lives, coupled with changing economic conditions and additional uses for life insurance, has created new challenges and more than a few perplexing problems for the home office underwriter responsible for classifying such applicants.

The underwriting of large amounts of life insurance has always been a fascinating subject, not only to actuaries and home office underwriters but also, for obvious reasons, to top management in our industry and to field personnel. More than forty years ago this topic was on the agenda of the annual meeting of the Home Office Life Underwriters Association and the Society's predecessor organizations. Every few years, since the late 1920's, the question of how to underwrite large cases successfully has reappeared as a main attraction on the meeting programs of both organizations.

Unfortunately, it is a mistaken belief among too many within the ranks

of underwriters, actuaries, and others that highly unfavorable mortality on large policies really first made its appearance during the economic depression of the early 1930's. The *Supplement to the Medical Impairment Study*, published in 1932,[1] contained a section designated "Mortality on Policies for Large Amounts," covering issues from 1919 to 1929, carried to the anniversaries in 1930. In the amount range from $500,000 to $999,000 the mortality ratio was 119 per cent, and for amounts of $1 million or more the ratio was 169 per cent, a highly disturbing result to life insurance management. It should be noted that the period of observation for this Supplement to the Medical Impairment Study ended before we were well into the depression, which meant that on the basis of the underwriting of the 1920's the actual mortality on amounts of $1 million or more was 70 per cent in excess of what was considered normal at that time. If any more evidence on this point is required, you might recall that in the American-Canadian Mortality Investigation, with a period of observation from 1900 to 1915, the mortality on policies of $50,000 or over was 117 per cent, and on policies of $100,000 or more, 131 per cent.

Because of the increasing concern of life insurance companies in the late 1920's over the substantial losses on large risks, this problem was the subject of discussion at a joint meeting, on May 17, 1929, of the Association of Life Insurance Medical Directors and the Actuarial Society of America. The consensus reached at that meeting was that the larger policies were generating serious losses for the general body of policyholders and that it would be desirable for all companies to combat antiselection from this source by adopting more careful and intensive underwriting procedures. To accomplish this objective, a Joint Committee of Medical Directors and Actuaries was appointed to research the problem and suggest the necessary remedial measures. The deliberations and recommendations of this committee, known officially as the Joint Committee on the Underwriting of Large Risks, led to many significant underwriting improvements in the industry, some of which were the following:

1. The adoption of standards for using more advanced underwriting requirements, including double medical examinations, electrocardiograms, and X-rays, supplemented in some instances by other special medical studies or tests.
2. More careful selection of medical examiners.
3. Improved financial underwriting based on better inspection reports.
4. The formation (in 1932) of the Recording Bureau.

[1] New York: Actuarial Society of America and Association of Life Insurance Medical Directors.

The rest of this brief history is that the mortality on large amounts has now been lower for well over thirty years than that for all amounts, according to the quinquennial reports by the Committee on Mortality of the Society.

We propose today to make further progress in applying the Society's motto—which, as you know, is to substitute facts for appearances and demonstrations for impressions—for the purpose of extending and refining our body of knowledge for the proper pricing of large amounts of insurance on a single life. In doing so, we intend to draw heavily not only on the recently published report of the Society but also on the recent experience of a number of highly regarded actuaries and underwriting executives.

MR. JOSEPH C. SIBIGTROTH: The quinquennial study of mortality on policies for large amounts (the Large Amounts Study) is closely patterned after the annual mortality study and therefore does not present many special problems with respect to the compilation of data by the individual companies and the consolidation of these data for the report.

One of the very valuable aspects of the study, added in 1959, was that experience was classified as to the purpose of insurance and the estimated annual income of the insured at the time of issue. However, the fact that this information cannot always be accurately determined has given the contributing companies problems in the classification of cases.

Problems also arise in connection with the distribution of the data among the many cells in this study. As you might expect, female experience is scanty in many cells, so that the results for females are not always reliable. This imbalance of data is also characteristic of the distribution by classification amount. The largest classification amount bracket, $1 million and over, contributed about 5 per cent of the actual claims by amount and less than 1 per cent by number of lives. On the other hand, the smallest classification amount ($50,000–$99,999) contributed 25 per cent by amount and 40 per cent by number of lives. Hence, in comparing the results by amount group, care must be taken to recognize the limitations imposed by this scarcity of data in certain cells.

Going on now to the actual report, the main conclusion to be drawn from the 1963–68 study is that large-amount mortality is significantly lower than mortality for all amounts. The 88 per cent large-amount mortality ratio is approximately 8 percentage points lower than the comparable experience on medically examined issues for all amounts.

The report goes on to analyze this over-all result in a variety of ways. By issue age, the mortality ratios on large-amount policies decrease as

age increases—perhaps because of especially careful underwriting done at the older ages when the amount is large. With minor exceptions, the mortality ratios decrease for both permanent and term plans at the older issue ages. As in the past, the mortality ratio for term plans is higher than for permanent plans for all ages combined.

As the classification amount of insurance increases, the ratios generally show a downward trend. However, the downward trend reverses for the largest amount bracket, $1 million and over, where a less favorable ratio of over 100 per cent was experienced.

The over-all male and female large-amount mortality ratios were 91 per cent and 53 per cent, respectively. In interpreting the mortality ratio for female lives, it should be kept in mind that, throughout the study, expected deaths are based on a single mortality table prepared from the experience of both sexes but heavily weighted with male lives.

The death claims in the study were also classified by cause of death and were compared with expected deaths by cause on the basis of a theoretical, all-amounts distribution of deaths by cause. Although the basis for expected deaths in this study was the table developed from 1958–63 all-amounts experience, these expected deaths were distributed by cause of death on the basis of appropriate 1963–68 standard ordinary experience on policies for all amounts, making this distribution more current.

Of all the causes of death, diseases of the heart and circulatory system claimed the greatest number of lives and accounted for the greatest amount of claims, over 40 per cent of the total. However, the aggregate mortality ratio for this cause group is significantly lower than that for all causes combined.

Causes of death in the "suicide" and "accidents and homicide" categories were more frequent for large-amount business than for all amounts. The suicide ratio was 144 per cent, and the accidents and homicide ratio was 121 per cent. The category of suicide showed an increase of 14 percentage points as compared with the previous study. This increase is substantial but not statistically significant.

More specifically, the mortality ratio for suicide exceeded 100 per cent in every issue age and policy-year cell for which there were ten or more deaths. The ratios were particularly high at the younger issue ages (20–39) and in policy years 1–2 and 16–25. As can be expected, the mortality ratios for suicides were generally higher on term plans than on permanent plans, although they were quite high on both.

An independent study by a large company, of death-claim papers on large-amount cases, revealed that in a strikingly large number of cases

financial reverses were suffered shortly prior to death. The poorest mortality was found among insureds at the younger ages, with very large amounts of insurance and where the insurance was to cover business indebtedness.

Also, accidental deaths figure prominently in this picture. Some early accident claims are believed to have been concealed suicides which, for lack of proof of suicide, had to be paid in full.

The mortality ratios for the "accidents and homicide" category declined substantially from the previous period for permanent and term plans, but the ratios were still much higher than 100 per cent for both permanent and term plans. The aggregate ratio for accidents and homicide dropped 23 per cent from the 1958–63 period, in contrast to the corresponding increase for suicides. The mortality ratios for accidents and homicide were particularly high at the lower issue ages (20–29) and generally increased with duration. Motor vehicle and aviation mishaps accounted for 61 per cent of all fatalities included in the accidents and homicide group. As a point of interest, Public Health Service data indicate that fatalities due to motor vehicle accidents accounted for 57 per cent of all accidental deaths at ages 15–64 in the general population of the United States during 1963–68. Only 2 per cent of such accidental deaths were due to aviation. The unfavorable ratios for the cause-of-death categories "suicide" and "accidents and homicide" emphasize the importance of these problem areas for underwriters.

War deaths contributed only 0.2 per cent to the aggregate mortality ratio for large amounts. However, the impact on the lower issue ages was much greater, adding 26.3 percentage points to the ratio for issue age group 0–9 and 7.8 percentage points for issue age group 10–19.

The coding of large-amount mortality experience by purpose of insurance and estimated annual income was not begun until 1959, and thus the experience here is limited to the earlier policy years. Exposure of over $76 billion was coded in this way, representing about one-half the total exposure for the entire study. The mortality ratio for this coded data was 87 per cent, based on 2,240 lives terminated by death.

"Business insurance" and "key-man or deferred compensation insurance" experienced better-than-average mortality ratios of 79 and 82 per cent, respectively. "Personal insurance" and "creditor and other insurance" had worse-than-average mortality ratios of 90 per cent for the former and 116 per cent for the latter. Generally, the term-plan mortality ratio for each of these categories was slightly less favorable than that for permanent plans.

By annual income at issue, the mortality ratios generally decreased with increasing annual income. The annual income groups "under $20,000" and "$50,000 and over" showed substantial improvement compared with the previous studies. As in the earlier periods, the "not accurately determined" category experienced very high mortality ratios for both permanent and term plans. Thus it certainly appears that further investigation is warranted on applications where earned income is not accurately stated. Curiously, there is a higher concentration of females in this "not accurately determined" category than in the others, despite the fact that females generally have lower large-amount mortality than males.

In conclusion, a review of the current and earlier studies reveals uniformly favorable large-amount mortality ratios as compared with the corresponding ratios for standard medically examined lives. Furthermore, from one study to the next, the rate of decrease of the mortality ratios for large-amount experience is somewhat greater than that for standard medically examined issues.

For example, on the basis of the same table of expected deaths, the aggregate mortality ratio declined from 94 per cent in the 1958–63 period to 88 per cent in the 1963–68 period. It has been estimated that the mortality on standard medically examined lives individually underwritten improved about 4 per cent between the two periods. The balance of the decrease experienced can be regarded as improvement in large-amount mortality relative to all-amount mortality. This decrease was remarkably uniform over all the issue age and policy-year groups.

These results certainly point to the fact that our industry's large-amount underwriters deserve a pat on the back for the generally very fine job they have been doing in the face of undoubted antiselection by applicants.

MR. BARTON S. PAULEY: The Large Amounts Study seems to indicate that medical selection has been effective, for the following reasons:

1. Ratios tend to decrease with advancing age. Presumably medical selection is a relatively insignificant factor at ages under 30. Lowest ratios are for ages 50–59, where medical selection may have the greatest influence.
2. By classification amount, the highest ratios obtained were for the very lowest and very highest amount classes. As the amount increases, medical requirements become more elaborate, so it appears that medical selection has been effective. The higher ratios at $1 million and over are probably due to factors other than medical selection.
3. By cause of death, the high ratios were for suicide and for accidents and homicide, areas in which medical selection has very little influence.

4. The highest ratios are experienced on the categories "creditor and other insurance" and "income not accurately determined." These results are probably due to factors other than ineffective medical selection.

Various factors influence the effectiveness of medical selection when large amounts are involved:

1. Competitive pressures encourage quick and liberal action based on minimal requirements.
2. Preliminary medical checks may become more common, with any adverse findings corrected and then concealed when the official examination is completed.
3. There is an intensification of pressures on the examiner to minimize adverse findings—for example, by reporting only the blood-pressure readings taken after the applicant has rested.
4. Underwriters secure more intensive inspection reports.
5. The best-qualified examiners are used, and double examinations with electrocardiograms and X-rays are required.
6. Increasingly, for the largest amounts, additional special tests such as exercise electrocardiogram, blood studies, checks for thiazide or tolbutamide in the urine, and rectal or pelvic examination are being requested. Most of these have not been used with enough frequency to have any material effect on mortality ratios experienced to date, but their influence should increase at the higher amount levels. Routine checks for the presence of thiazides show 6–10 per cent positive. Many of these positives are explained by a recorded history, but a good number deny medication. Checking for tolbutamide in specimens which are positive for glucose yields a 3–5 per cent positive reaction. Some of these applicants have denied diabetes even on requestioning.

Medical selection may become increasingly effective as more elaborate tests are used with increasing frequency.

MR. GEORGE W. WILSON: As has been stated, the over-all experience on large applications has been favorable—88 per cent of expected, and this included a few war deaths. However, the ratio for accidents and homicide for all plans was 121 per cent of expected, and for suicide 144 per cent. For term insurance the suicide ratio was 198 per cent. The total expected deaths were calculated on the 1958–63 standard ordinary experience. The distribution of the expected deaths by cause was based on actual deaths during the period 1963–68 on standard ordinary issues.

A characteristic of large-amount experience from this and previous studies is that death rates from suicide and from accidents and homicide are much higher than the corresponding rates for all amounts. If more careful underwriting would improve the experience, it would certainly be well worthwhile. We should first seek evidence of careless or, to use a

nicer phrase, of overgenerous underwriting or perhaps overcompetitive underwriting. There is little, if any, such evidence in the report, but there are a few danger flags flying:

1. The suicide rate on term plans is about twice that expected—an indication of antiselection. Bear in mind also that some deaths classified as accidents have all the earmarks of suicide. Combining the results of the previous study with the current one provides strong evidence that for accidents and suicide combined the results are particularly bad for term plans. For the ten-year period the total deaths from these causes numbered 490, and the total claims over $36 million. The ratio of actual to expected is 153 per cent, as compared with a ratio of 132 per cent for large cases for all plans—"a very significant difference based on substantial data." The results indicate a need for particular care or perhaps for some numerical debit in underwriting term insurance for large amounts.
2. The purpose of the insurance is important. The experience is unfavorable where the protection is not for personal or normal business purposes. For this portion of the study, issues since 1959 are included, and the results therefore reflect recent underwriting results mostly during the select period. The ratio was 30–40 per cent higher than the ratio for all purposes in both this and the previous study and was higher for term than for permanent plans.
3. Where the income of the applicant was undetermined, the ratio was 175 per cent of expected. For term plans it was 247 per cent, and in the previous study it was 400 per cent.

I do not want to dwell too much on statistics, as I am reminded of what General Curtis Lemay was quoted as saying: "As soon as I decide what I'm going to do, I'll give you the statistics to justify it." Nevertheless, these results suggest the need for special care in large-amount underwriting where the cheapest possible plan is involved, and also the need for thorough investigations of the purpose of the insurance and of the income of the life to be insured.

There are a number of characteristics of large-amount buyers of insurance which subject them to high risks of accident, homicide, and perhaps suicide.

1. Consider the aviation hazard: such persons do more private flying for pleasure or for business than the average policyholder, both as pilots and as passengers. From the current report of the Committee on Aviation, the death rate for pilots per thousand aircraft hours for pleasure flying is double that for aerial crop-spraying. Passengers in pleasure flying are, in general, exposed to greater risks by amount of flying as well as by type—for example, by flying into remote areas for fishing or hunting. According to the report, almost 25 per cent of all accident and homicide deaths are aviation deaths, as compared with 2 per cent in the general population for ages 15–64. In my

own company the percentage for all amounts was 9 per cent, as compared with 20 per cent for large amounts. It is advisable to have a reasonably searching aviation question in the application and to pay special attention to any aviation references in the inspection report. The agent will, of course, also be expected to elicit and pass on any information he may develop. Where any information is obtained suggesting an aviation hazard, full information should be sought. If there is what appears to be a slightly substandard aviation hazard, there is likely to be great agency and/or competitive pressure to ignore the extra risk, and the larger the case, the greater the pressure.

2. The large-amount buyer has additional opportunities for exposing himself to recreational or leisure-time hazards either on land or in the water—for example, scuba diving, mountain climbing, or motor racing. A suitable question on the application regarding avocations is essential.
3. The homicide hazard has increased. Two of the most important items to check are the purpose of the insurance and the reputation of the person or persons involved. Even with the most careful underwriting, claims will occur. Last year in my company a $200,000 claim occurred almost before the ink was dry on the policy on a young executive—motive, apparently robbery. Another, for a similar amount and within a week or two, was of a different character: the wife hired two killers to do the job, with the rather unusual request "that they should accomplish this mission without hurting her husband." Then there was the $15 million case reported in the press some time ago, and more recently a press report that a subsequent murder in Toronto and a later one in Montreal were all somehow related. Only a few weeks ago a disgruntled and possibly deranged employee of a major Canadian company shot and killed three of his former superiors.

   This is a time when violence, some with political overtones, is on the increase, and the so-called jumbo risks should be examined as thoroughly before issue as such cases are generally investigated after the claim. The importance of the best possible inspection report cannot be overemphasized, and the source of the business should also be carefully considered—that is, who is the agent, who is paying the premium, and who is the ultimate beneficiary.

   The increasing homicide death rate might also raise the question of the advisability of the ever expanding limits of issue of accidental death benefits, which, in general, do not exclude homicide. Moreover, even if there were an exclusion, it would not altogether eliminate the hazard, since some cases reported as accidents have all the indications of being homicides.
4. The relatively high rate of suicide among large policyholders is worrisome, especially in conjunction with a high accident rate. The line between accident and suicide may be a rather fine one, and the presumption against suicide and the attitude of some courts make the matter more difficult and costly. The clean-cut suicide within two years does not create a problem; but few are

clean cut. A policyholder may write a suicide note and then start his car in a closed garage, but the subsequent disappearance of the note may well turn the suicide into an accident. Moreover, in some jurisdictions, for example, Missouri, even a suicide note may not enable the insurer to apply the suicide provision. After two years it cannot be presumed that suicide was premeditated at issue, but the claim represents a rather large cash surrender value nonetheless, even if obtained the hard way. The preventive underwriting means are mainly attention to medical history of nervous or mental disorders, careful financial underwriting, and what might be termed living style. One company has reported that, in a study of twenty suicide claims for amounts of $50,000 or more, almost all involved financial stress at the time of claim. By living style I refer to habits, morals, marital status, and so on.

I believe that I have indicated the considerations for these particular hazards. Commercial investigation reports of a high order are essential. Accident history, reputation, avocational pursuits, purpose of insurance, and finances, and, in the case of the suicide risk, medical history, are the important matters to be thoroughly investigated.

MR. JAMES W. PILGRIM: In addition to the claims included in the Large Amounts Study, there have been five superjumbo deaths in the last three years. These were for $5 million or more. None of these deaths is reflected in the recent Large Amounts Study, and only one was written by a company that contributes to the study, so presumably that is the only one that will ever be reflected in the study. I think that it is important to bear these claims in mind in looking at the mortality ratios in the Large Amounts Study, since, if they were included, along with the corresponding exposures, there would be a sharp increase in ratios by amount. The total expected claims as given in the recent report for the $1 million and over category amount to $28 million. The total face amount of these five claims is over $40 million; thus, however you estimate the exposure, the mortality ratio would be substantially increased by including them.

You might be interested in some statistics on these five claims. Of course, we are being especially careful to avoid identifying the writing companies or the particular cases involved. I mentioned that the total face amount of the claims is over $40 million. All but a small amount was within the contestable period, so that the ultimate settlement is still in doubt.

Four of the five cases were issued primarily permanent plans of insurance.
Three of the five cases were issued at ages under 40.
Three of the cases fell in the $5–$10 million range, and two were for amounts in excess of $10 million.

All were standard policies. Four of the deaths were violent, that is, accident or homicide.

There is nothing common about the occupations of the insured persons, except that none of them was an actuary or an underwriter. Obviously, with the amounts involved, all of these people had wide financial interests.

It is particularly interesting that almost all the coverage was issued in a single purchase rather than built up over a period of years. Only one case had any meaningful amount of coverage purchased prior to the most recent purchase.

The purposes of insurance were about what we would expect—to cover loans, for estate liquidity, and for stock redemption purposes, which again is related to liquidity.

This may go without saying, but in each case the amount of insurance was of concern and interest in the underwriting process.

What conclusions can we draw from this information? It is quite possible that these claims are the result of chance fluctuation. The most important lesson is that we should not be complacent about the results of the recent Large Amounts Study. Such studies are very valuable, and I think we would all agree that they should be continued, and in their present form. There are, however, some lessons to be learned from this recent extraordinary claim experience. The common elements in these claims that strike me are the fact that a majority of them were violent deaths, the fact that all occurred in the contestable period, and the very important fact that most of these large amounts were acquired in a single purchase.

On the other side of the coin, we are seeing applications for $1 million and over with increasing frequency, almost routinely, most of which can be soundly underwritten and which have an important estate preservation purpose.

MR. PAULEY: There is really only one answer to question 3 of the outline: full, accurate, and reliable data are needed on assets, liabilities, and earnings, and on how the insurance fits into the picture. It is not necessary to require such full detail in all cases, and especially not for modest lines of insurance as compared to the worth, income, and financial status secured by the inspection company from knowledgeable sources.

However, if the purpose of the insurance is not clear, if the financial information is indefinite or unreliable, if there is any question of possible overinsurance, if the timing of the purchase is out of balance with previous purchases, if the risk is substandard or presents unusual hazards, if large amounts of accidental death benefits are sought, or if a very large line of insurance is desired, then the underwriter had better be sure that he has

reliable financial data by which to judge the legitimacy of the purchase. Witness the high ratios on "creditor and other insurance" and on "income not accurately determined."

The following are some notes on sources of financial data:

1. Inspection reports have always been the prime source, but the inspection companies have experienced increasing difficulty in finding knowledgeable informants willing to talk. For tax or other reasons, financial information is often being kept under wraps. Information obtained from the applicant can usually be considered reliable if confirmed by outside informants. However, this requires more than the mere statement that outside informants did not disagree with the figures given.
2. When the agent has programmed the information about the applicant, he may have good financial data, but some confirmation of its accuracy is needed.
3. In some instances the insurance company investment department may have or be able to secure financial information. They can also be helpful in interpreting financial statements submitted.
4. Sometimes applicants are willing to submit copies of income tax returns.
5. The most reliable data are found in CPA-audited balance-sheet and profit-and-loss statements, including the footnotes. For publicly held companies, a prospectus as filed with the Securities and Exchange Commission is most revealing. Notices of stockholder meetings contain information on stock holdings and salaries of top executives. Stock guides and other investment publications show financial data and earnings records of companies.
6. Sometimes an applicant may be reluctant to reveal information locally but may be willing to mail it to an officer in the home office on a confidential basis.

MR. PILGRIM: Since the effective date of the Fair Credit Reporting Act, probably many people have been asking questions in regard to whether this act has made it more difficult to obtain underwriting information from various sources and whether the act has had an effect on the quality of such underwriting information, possibly with the preconceived notion that such federal legislation could impede the normal flow of information during the entire selection process. If we pause a minute, however, and think about the purpose of the act and the way we have been conducting our business for so many years, I think that we can observe, on the basis of our six months' experience under the act, that its enactment has not made it more difficult to obtain underwriting information and that the quality of such information is of the same high caliber as before.

The stated purpose of the act was to facilitate the free flow of information about the consumer while at the same time giving the consumer the opportunity to correct any errors causing him unwonted difficulties.

Since the act became effective, we have continued to obtain the same information that we have in the past regarding applicants for life insurance, using essentially the same channels. Inspection companies tell us that it is just as easy to obtain the necessary underwriting information as it was in the past. Surveys made by some companies of cases in which their modifying or adverse action required a postunderwriting notification to the applicant indicate that, in an overwhelming majority of these cases, the customer did not even bother to contact the inspection company. Most of those who did contact the inspection company did not challenge the accuracy of the report. For those who did challenge the accuracy of the report, reinvestigations confirmed the original information in all but a very few cases.

With regard to medical underwriting information, here again our brief experience has shown that it is hardly more difficult to obtain the necessary information, nor is the information of poorer quality than it was prior to the Fair Credit Reporting Act. The Medical Information Bureau has instituted certain procedural changes as a result of the act, but most of these changes merely emphasize some of the rules for confidential handling which already existed and which tend to protect the consumer. Aside from a slight additional inconvenience and expense of handling, the Fair Credit Reporting Act has not caused undue difficulty in obtaining Medical Information Bureau information, nor has the quality or completeness of this information suffered significantly.

Perhaps these observations are more impressions and ideas than facts and demonstrations, but I think that they indicate a few important points. First, as a matter of good business practice, when various investigative reports are required during the underwriting process, companies have not, do not, and will not act adversely on such information unless they are satisfied that the information is authentic and has a bearing on the risk. This is borne out by the fact that very few underwriting reports are challenged by the consumer, and even fewer upon reinvestigation fail to confirm the original information. Second, the act has formalized in law the same requirements for fairness, accuracy, and protection of the consumer's interests that have long been basic policies of the life insurance industry and the inspection companies. Third, this act is positive consumer legislation. It is consistent with what we have all been doing for many years. It should certainly reduce public and customer misunderstanding, help us to maintain high standards in our selection process, and provide the customer with high-quality products on the most favorable basis.

MR. WILSON: In my opinion the prospects for controlling antiselection in the 1970's depend on skillful and sound underwriting based on adequate information and on the integrity of the field marketing organization.

One of the greatest dangers for the future is that we may be lulled into a false sense of security by past favorable results. Unsound underwriting or antiselection of the most flagrant type will evidence itself fairly quickly, but overgenerous or overcompetitive underwriting or less flagrant antiselection will evidence itself over a period of years. The latter may, in the long run, be the more costly.

The previous Large Amounts Study showed favorable results on the whole, and the current study is even more favorable. Before concluding that our crystal ball is currently working extremely well, let me emphasize two important considerations. The study for the most part includes issues from *1939* to 1967; second, it involves only the experience of a group of old and large companies. Moreover, it involves only standard cases. Five years ago, in the corresponding discussion, Al Morton and others expressed the thought that, if the results also included cases written by a larger group of companies, including some of the newer and smaller ones, we might take much less comfort from the over-all results. There is also some indication in the report that the experience for the more recent issues at certain ages and amounts is not good, and this may be an early warning sign.

The problem of controlling antiselection is, I feel, more acute in the United States than in Canada at present, and it will probably remain so for the rest of the 1970's. This is partly due to the greater prevalence of brokerage selling in the United States with the pressures exerted by shopping borderline, substandard, or declinable risks. It may also be due to more intense selling procedures and to the great number and variety of companies with which to place business. Nevertheless, the problem exists in Canada and may be expected to develop as in the United States.

I will not comment on the need for skillful and sound underwriting, other than to say that it is a basic essential and that every company should have its underwriting objectives well established and be prepared to resist the pressures which lead to unsoundness.

Adequate information, and, I should add, complete and truthful information is essential. The following ideas are not new but will be helpful in controlling medical antiselection:

1. Employ skillful, well-qualified examiners known to the insurer.
2. Take precautions to prevent substitution for examinations or other tests—signatures could help to confirm identity.

3. Employ technical procedures more widely than at present to detect such things as blood-pressure depressants.
4. Make greater use of blood tests such as SMA-12 (sequential multiple auto-analyses). Such tests are now being used by some insurers as part of para-medical procedures, and some companies obtain such a test in place of a second medical examination. A wider use is urged to enable studies to be made of the statistical significance of the tests.
5. A screening blood test for cancer of various kinds, but especially for the digestive tract, is being developed which is expected to be extremely useful in the early detection of the disease. This will be relatively inexpensive and could become a routine requirement for large-amount cases.

Aside from medical antiselection, and, according to past experience, even more difficult to control, is antiselection arising from lack of a proper insurable interest, from inadequate finances, and from unsatisfactory living habits or life-style, including business ethics. The largest claim in recent years in my company was one which involved all these factors, but unfortunately the adverse information was not developed in advance. We should never have approved the case, but the early warning signals were very indistinct. When you are told that two competing companies have already issued, that your agent is beginning to question his company affiliation, and that the policy must be received before the weekend to be of any use, it is difficult to be fully objective.

My final comment is to express my concern, from an underwriting standpoint, with the increasing violence on this continent and in fact worldwide. On the larger cases I expect that it will pay us well to investigate such things as driving habits, business background and associates, and living conditions, including environment.

My conclusion is that antiselection can be controlled satisfactorily with sound underwriting, a high standard of ethics and proficiency among insurance salesmen, thorough independent inspections, and complete, high-quality medical evidence.

MR. SIBIGTROTH: The Large Amounts Study was originated over thirty-five years ago, and the results have been published quinquennially since 1948. Many of the original procedures used in conducting the study still seem appropriate today and have not been changed substantially since the first study.

Some of the changes that have been made over the years are as follows:

1. Since 1950 group insurance has been included as a part of the total "classification amount," where this could be done conveniently.
2. For issues of 1959 and subsequent years, information with respect to the

purpose of insurance and the estimated current annual income of the insured at the time of issue have been included.

3. For the past few studies, the sex of the insured and information with respect to any supplementary term insurance have been included.

Three areas in which thinking should be done with respect to possible future changes in the Large Amounts Study are (1) an increase in the minimum size of policy included in the study, (2) the sources of the data, and (3) the inclusion of other than standard business.

The minimum classification amount of $50,000 for the Large Amounts Study, chosen more than three decades ago, seems somewhat low by today's standards. However, if coverage in the lowest amount bracket of $50,000–$99,999 had been omitted from the current study, the total volume of claims would have been reduced by one-quarter and the number of claims would have been reduced by over 45 per cent.

The Society's most recent Large Amounts Study received contributions from only eighteen large companies, which raises the question of whether the study is representative of the total industry experience. Large-amount applications may at one time have been the problem of big companies, but today, with the help of reinsurance, these applications are readily handled by smaller companies too.

Thus it seems probable that small companies write a significant proportion of the total large-amount business. Studies made in connection with the development of the 1958 CSO Table showed that over-all mortality results for small companies were generally higher than for the large, intercompany contributors. It seems likely that large-amount mortality on business written by small companies would be substantially higher than similar business written by large companies because of the greater competitive climate, a higher proportion of brokerage business, and a less experienced agency force.

A third area of expansion might be the extension of the study to substandard policies for large amounts. It is well known that a relatively high proportion of large-amount business is written at substandard rates, chiefly because of the high issue ages involved. It would be interesting to see a comparison of mortality for some of the more common impairment groups between large-amount policies and similar smaller policies. Such impairments as overweight, high blood pressure, and ulcers might be studied. Also, it would be interesting to compare large-amount risk policies that are substandard because of aviation activities with similar smaller policies.

Further, it might be desirable to do special studies from time to time as suggested below:

1. Study mortality separately for cases with waiver of premium and/or double indemnity.
2. Study "borderline standard" cases separately. Many companies use 125 as the upper limit for standard, but some use 120, while still others go up to 150. Cases within 10 debits of the upper limit or those above 120 could be chosen for separate study.
3. Make a separate study of cases with "borderline standard" blood pressure or build.
4. Perhaps we should refine our studies to reflect the type of underwriting requirements secured. For example, mortality studies could be made of cases with two examinations or for those that have an electrocardiogram or X-ray or those with a Master's test.
5. Study separately the many large-amount buyers who actively engage in aviation but are classified as standard risks.
6. A detailed large-amount claim study might be very helpful in developing future underwriting guides. Perhaps a study of first- and second-year death claims would be most helpful.

MR. GORDON M. HALL: Have any members of this session had any success in setting down formal rules for their underwriters to follow, that would serve as guidelines for the maximum amount of insurance that should be allowed in all companies? I am particularly interested in such rules as they may apply to key-man insurance and any relationships in connection with the rules that may exist between the salary paid to the key man and the earnings of the corporation. It seems that some of the benchmarks that were used five or ten years ago, for example, the "five times" rule, are now obsolete.

MR. WILSON: In my company our instructions to underwriters still contain the "five times" rule for key-man insurance as a guideline, and we also have benchmarks for personal insurance depending on age, varying from thirteen or fourteen times income at the younger ages to two or three times income at the highest ages. As I say, these are treated as guidelines; if, however, the amounts exceed those indicated by the guidelines, consultation may take place with an underwriting official. In the case of personal insurance a great deal of judgment is required, depending on the nature of the applicant's occupation or profession and his future prospects. In the case of key-man insurance this is also true, but care should be exercised in granting insurance beyond an amount which ap-

pears reasonable, such as a "five times" rule, on the basis of the salary paid to the individual, which is usually a good indication of the value placed on the individual by the corporation. In the recent Institute of Home Office Underwriters meeting in Montreal, a reinsurance panel discussed large amounts, and this same question was mentioned. One of the panelists maintained that for sound underwriting he continued to place very considerable weight on what he termed the "five and ten times" rule: he was referring to key-man and personal insurance.

MR. ALTON P. MORTON: It is well to underscore the fact that our relatively favorable mortality for large amounts in the latest study period was obtained by a continuing vigilance and heads-up underwriting by most of the companies that contributed to the intercompany study. Let me make two observations to point out that these relatively favorable figures nevertheless do reflect some selection against the companies.

First, the more than ordinarily careful medical examination techniques should produce a wider differential than the 6 or 8 points which our mortality studies show for all large amounts. We note that selection by simple medical examination as used for ordinary amounts successfully rules out much of the early cardiovascular and other chronic diseases. It also misses much. When, in addition to the regular medical examination, cardiovascular and other chronic diseases are more carefully ruled out by sophisticated examination techniques such as the electrocardiogram, X-rays, and blood tests, we should expect to obtain a much more favorable mortality. It should be noted further that the results of successful medical selection at these middle and higher ages is very durable—much longer than the five-year "select" period usually used for insurance mortality tables or even than the fifteen years of the Basic Tables.

Second, the socioeconomic class reflected by purchasers of large-amount policies is considerably better than the average for purchasers of insurance generally. The studies of population data by the Bureau of the Census indicate that a socioeconomic differential of 10 per cent or more exists for better economic classes who are, in general, better educated and able to care for themselves more intelligently in sickness and in health. A differential of from 10 to 20 per cent or even more is confirmed by a number of other studies of the mortality of various highly educated professional and occupational groups; some of these studies have been published in the Metropolitan's *Statistical Bulletins* in recent years.

It follows, I think, that a mortality differential of only 6–8 per cent, as reflected in our intercompany large-amount statistics, is less than

should be shown if there were not considerable antiselection reflected in the actual experience.

The most effective way to offset antiselection, in addition to doing a thorough job of medical underwriting, is to be sure that the total amount of an individual's insurance program bears a common-sense relationship to his carefully established worth and income. When this is not done, we see such effects as the more than 170 per cent comparative mortality ratio reflected by the category "Annual income at issue not accurately determined"—obviously a reflection of inadequate underwriting caution.

CHAIRMAN ORMSBY: Is there any evidence that excess mortality due to suicides and accidents is a result of financial reverses?

MR. WILSON: Recently one large company reported that, in a review of twenty large cases in which the cause of death was suicide, it was found that financial stress was involved in almost every case at the time of claim. There was no particular trend by occupation and no real clues to financial stress at time of issue. I recall in my own company the case of a policyholder who crashed into a concrete abutment on a clear day on dry roads; an investigation revealed that he was then in financial difficulties. In another case, an "accident" to a wife in a home resulted in a large claim, and subsequent information disclosed the husband's finances to be poor and marital relations also to be poor, but such information was unfortunately not developed at the time of issue. It is most important in underwriting large cases to bear in mind that antiselection may occur long after the issue of the policy and that this is even more likely on term policies, where only pure protection is involved. Because of the knowledge that antiselection may occur at a later date, particular care is required in underwriting persons who are engaged in a new venture.

MR. KARL M. DAVIES: In his introduction to this concurrent session, Chairman Ormsby referred to the poor large-amount mortality experienced back in the twenties and thirties and to the steps taken at the time to improve mortality experience. One of the steps he cited was the creation of an organization known as the Recording Bureau. Since I am chairman of the Executive Committee of the Recording Bureau, I wish to present a brief report on its activities.

For the benefit of those who are not acquainted with the bureau, the following is a brief outline of the way it works. If my company receives an application for $100,000 or more, we submit to the bureau a report of this application and the amount of insurance indicated as being in force.

Our report triggers a reply from the bureau if other member companies have received or subsequently receive other large applications from the same applicant. In this way the insurance companies are protected from the individual who may be circumventing jumbo-amount requirements by submitting smaller applications to a number of companies.

The popularity of the Recording Bureau has declined in recent years as large-amount mortality has improved. The membership has dwindled to fewer than a hundred companies. Obviously its service becomes less effective as the membership decreases.

Companies have terminated their membership largely for reasons of cost, feeling that they have not received enough value from the Recording Bureau services to support the internal cost plus the fees charged by the bureau. In my own company these costs total around $25,000 a year, but we do feel that the bureau protected us from a million-dollar claim several years ago, so that the annual expenditure is adequately covered for quite a few years. It must also be recognized that inspection companies include in their reports an insurance history from their own records which may be a more or less adequate replacement for the Recording Bureau.

My purpose in commenting on the bureau this afternoon is to rekindle interest in membership. As a result of some operational changes that are being explored, it may be possible to reduce bureau expenses to such an extent that we can produce a rebirth of the organization. This would be achieved by a closer affiliation or a complete merger with the Medical Information Bureau. Thus the reporting and reply processes for the two bureaus could be co-ordinated in such a way that costs would be markedly reduced. The program is still in the developmental stage, and many questions remain open. However, it seemed appropriate at this session to comment on the likelihood of greatly improved effectiveness of the bureau.

## INVESTING DURING THE 1970'S

What investment policies and practices might be expected during the 1970's in the United States and Canada with respect to

*a*) Fixed-income investments
*b*) Equity investments
*c*) Subsidiaries
*d*) Other types of investments

having regard to the following?

(i) Economic outlook
(ii) Expected aftertax rates of return
(iii) New-product development and competition from other financial institutions
(iv) Environment for business (government relations, consumerism, social conscience, and so on)

DR. CHARLES MOELLER, JR.:* In my remarks today I will concentrate upon the long-term outlook for the United States economy and leave the discussion of the Canadian economy to the assigned speaker. However, it is interesting to note that both the United States and Canada now seem on the path toward improved economic performance. While much has been observed about the similarities of our two economies in terms of cyclical patterns in the past, during recent years this has not always been true. The Canadian economy did not go into recession last year, and, although unemployment has been a more severe problem here in Canada, price performance has been considerably better than in the United States. Moreover, looking at the longer term, potential growth of the Canadian economy is considerably higher than for the United States—5½ per cent versus 4½ per cent. As in the past, our economies remain interdependent, and it is in our mutual interest that in the decade ahead both perform as close to their potentials as possible.

So far during the 1970's, United States economic performance has been characterized by a slow rate of economic growth and a high rate of inflation. Available indicators of economic activity suggest that the recovery phase from the 1969-70 recession is one of the weakest in our history. Moreover, the prevailing inflationary psychology and the continual overhang of costs on profits had by 1971 affected the confidence of both consumers and businessmen to the point where the sustainability of the upswing was becoming questionable—as were the longer-term

* Dr. Moeller, not a member of the Society, is vice-president and economist, Metropolitan Life Insurance Company.

growth prospects. Clearly something had to be done to break inflation's stranglehold on the economy. After the August 15 announcement on the new economic policy and the immediate freeze on wages and prices, confidence was bolstered quickly and considerably. This was reflected in both stock and bond markets, although subsequent uncertainty about Phase II has just about eroded all the gains experienced in the stock market.

While this discussion is intended to take the long-run point of view, a few comments about the new economic policy and related events seem warranted at this point. Not only have these dramatic changes dominated the economic news scene since August 15, but the echo effects of these policies are likely to be felt well into the seventies, long after the formal programs have, hopefully, been discontinued.

The new wage-price program that replaces the 90-day freeze on November 14 is as yet still in developmental stages, the latest step being the 5½ per cent limitation on pay increases, announced this morning. It may be a considerable time before many of the essential details that will affect business decisions in the months ahead will be spelled out. What is certain, however, is the fact that a slowup in inflation will occur, although the administration's projection of an annual rate of 2–3 per cent by the end of 1972 may prove optimistic.

Businessmen have many reservations about Phase II because of the tripartite pay board composed of business, labor, and public members, but, because inflationary psychology seems to have been at least mitigated and consumer sentiment bolstered, and because of the fiscal stimuli that have been incorporated in the new economic policy package, most economic forecasters see considerable improvement for the United States economy in 1972. A gross national product of about $1,140 billion seems likely next year, with total gross national product up 8.5 per cent and real gross national product up 5 per cent. This compares with 8.0 per cent and 2.7 per cent, respectively, as the probable results for 1971.

The international aspects of the new economic policy continue to be controversial. Denmark recently imposed its own 10 per cent surcharge on imports, but no major industrial country has so far taken such action. Warnings of retaliation cannot be taken lightly, and it is imperative that some progress be made soon in resolving the international monetary impasse so that a freer flow of international trade and capital may be restored. In the international area, however, the results may be much slower in taking place than in the domestic area, and also the adjustments may be quite painful.

With regard to the longer-term outlook, the basic underlying factors include expectations on employment, hours of work, and output per man-hour, or productivity. Looking at the labor force first, the Bureau of Labor Statistics estimates that the labor force will reach 100 million by 1980. With a projected unemployment rate of 4½ per cent by 1980, total employment would run over 95 million. By way of comparison, the total United States labor force averaged 86 million people in 1970. Total employment was almost 82 million, with 4 million people unemployed and looking for jobs.

The average workweek has been declining for several years. The Bureau of Labor Statistics reports that, between 1957 and 1965, hours declined at a rate of 0.2 per cent a year for all private industry. The decline in hours, projected over the period to 1980, is expected to slow to 0.1 per cent per year. This assumes that labor and management will not negotiate major reductions in the nonfarm workweek by 1980 and that there will be a persistent increase in part-time employment as well as a small reduction of the average workweek on the farm.

Prospects for gains in output per man-hour are good, especially in the recovery phase of the cyclical expansion through 1972. For the decade as a whole, productivity is likely to rise only slightly less than its long-term trend of 3 per cent a year for the private economy. Productivity gains are vital if we are to restrict the rise in cost per unit of output. Even so, substantial rates of price inflation would remain if wage increases continued high and could not be brought back into closer alignment with achievable improvements in output per man-hour. This, essentially, is what the president's new economic policy is hopefully all about—trying to bring wage increases more into line with gains in over-all productivity in the economy.

Putting all these factors together, the United States economy in terms of total output of goods and services as measured in current dollars may rise at an average rate of 7½ per cent or so a year. Allowing for price increases of roughly 3½ per cent, I expect that the real growth rate will rise at a compound rate of about 4.3 per cent for the remainder of the decade. In terms of gross national product, these forces would mean a $1.4 trillion economy in 1975 and one of about $2.0 trillion in 1980.

From a financial point of view, the dominant factor for the decade of the 1970's will be an imbalance between the huge demands for funds to finance real investment and the most probable flow of saving generated in the economy. There are numerous indications that the demand for funds will be large. Some of the reasons for this expectation are discussed in the following paragraphs.

First, there is the need for a high level of business spending to meet normal expansionary and innovational demands, to modernize and replace outmoded facilities, and to eliminate air, water, and waste pollution. Two points are worth stressing in this area. Despite the high levels of capital spending during recent years, 12 per cent of the existing stock of plant and equipment is still considered to be technologically outmoded. In the case of manufacturing, the figure is 15 per cent. With its current balance-of-trade problem, United States industry cannot afford to be complacent and may find itself forced to spend a good part of the $150 billion needed to replace these outmoded facilities. Surveys have also indicated that industry must spend over $18 billion to bring all its existing facilities up to present air and water pollution control standards. This is just for air and water and for existing standards of control. All other quality-of-life factors that industry must be concerned about have been excluded. Moreover, the standards are constantly being made more stringent. The Senate, for example, is now considering a bill providing for the virtual elimination of industrial and municipal pollution of navigable waters by 1985.

A second factor in the strong demand for funds over the decade is the huge backlog of demands for housing. These demands stem from recent and expected increases in new marriages and the cumulative effects of inflation upon the availability of mortgage funds and upon the amounts that must be borrowed. While the ten-year goal of 24 million housing starts and 2 million rehabilitated units set by the Housing and Urban Development Act of 1968 may not be realized because of various limitations on the supply side, it does serve to highlight the tremendous needs for housing. Not to be overlooked is the fact that such housing needs eventually are translated into strong demands for durable goods, many of which are acquired by consumers with the aid of borrowing.

A third demand factor during the next decade will be the need on the part of the government and private sectors to mitigate the whole complex of problems now being experienced by urban communities.

The fourth factor is the expectation of continued high volumes of government spending and debt financing at the federal, state, and local levels. The gradual reduction of expenses of direct participation in the Vietnam war seems certain to be more than offset by higher outlays for pay increases, special allowances for moving toward a volunteer army, research, military assistance, new weapons systems, and modern military equipment. Federal nondefense expenditures seem likely to advance at a high rate. In addition to built-in spending increases under existing programs, the impact of rising prices, and raises in federal pay to maintain

comparability with the private sector, there are new or expanding programs for welfare, health, pollution, urban transit, housing law enforcement, and aid to state and local governments. State and local governments are expected to continue to be one of the fastest-growing segments of the economy. Many of the previously mentioned urban problems—housing, rapid transit, and police protection—and the broader problems of welfare, adequate water supplies, sewage and waste disposal, and adequate health facilities fall heavily in their areas of responsibility.

Fifth, there is a need to improve the liquidity positions of corporate businesses and many financial institutions. The deterioration in liquidity positions has occurred over an extended period of time, and, while a return to liquidity positions of the fifties is unlikely, the renewed emphasis placed upon internal rather than external liquidity should provide a strong demand for funds over the next several years.

Finally, the echo effects of inflation will add to cash needs over a good part of the decade, since any rapid rise in asset prices such as that experienced in recent years tends to increase the proportion of an asset's purchase price that must be raised externally.

On the other side of the equation, the supply of funds during much of the present decade is expected to be relatively tight. One reason for this expectation is a lowering in the rate of personal saving, due to a population mix with high proportions among older and younger people who tend to spend rather than save. The current abnormally high savings rate of about 8 per cent reflects uncertainty on the part of consumers because of inflation, unemployment, and slow economic recovery. In such circumstances consumers tend to reduce spending and to go into debt less readily. The latter activity, that is, borrowing, is considered a form of dissaving.

Second, pressures on corporate profit margins, and hence corporate saving, are expected to prevail during much of the period as a result of an economic structure that tends to favor labor in many wage negotiations, increased costs because of pollution and other life-quality factors, the movement toward consumerism, and intensified foreign competition.

A third factor on the supply side is the growing reluctance on the part of lenders to provide funds unless adequately compensated for inflationary trends directly in the interest rate structure or indirectly through equity participations included in debt-financing packages. Another factor adding to what might be considered frictional reductions in supply is some continuation of the tendency on the part of the nonfinancial sectors of the economy to invest funds directly rather than through financial intermediaries. In view of the experience of recent years, the possibilities

of disintermediation and/or what might be termed "cross-intermediation" may have a cautioning effect upon institutions with regard to their willingness to be fully committed and with regard to their concepts of adequate liquidity.

Finally, there is a limit upon the extent to which monetary policy can be eased, because of inherent inflationary biases within the domestic economy as well as the persistent knot of problems centered in the balance of payments and the balance of trade.

If the reasons outlined above prove valid and a saving-investment imbalance in the economy does occur, interest rates may be expected to remain relatively high by most historical standards. Moreover, from a competitive point of view, this means that the spread differential between common stocks and fixed-income securities may be much narrower during the remainder of the seventies than was the case during the fifties and a good part of the sixties. Over the seventies, the long-run rate of return of 9–10 per cent on equities still seems to be a valid rule of thumb. Some faster growth in stock prices early in the period is likely as these prices rebound from current depressed levels, but this potential extra boost in the rate of return on equities may be offset by a slower rate of earnings growth relative to over-all economic growth for reasons cited earlier—namely, labor's strong position in bargaining, pollution control costs, consumerism, and foreign competition. This narrower spread between stock and bond yields may mean more portfolio switching between these two investment vehicles in the future. The favorable experiences of real estate investment trusts and income-type mutual funds and the unfavorable net redemptions of mutual funds represent the types of switching between investment outlets that may become more prevalent in the future.

With regard to common stock investment, the use of input-output analysis in the framework of a long-term economic outlook suggests that among the faster-growing industries are expected to be office and computing equipment, optical and photographic equipment, electronic components, communications and communications equipment, plastics and synthetic materials, service industry machines, business services, drugs, chemicals, and rubber. However, not all these industries will prove to be equally rewarding, and, in fact, for some of these industries the results may prove quite disappointing. While product growth is important, careful screening will be required to find those companies with superior management and industry leadership that are market- and research-oriented, that are competitive internationally, and that have strong financial statements. High-labor-content industries, commodity-oriented

firms, and highly competitive groups may exhibit good real growth in output but may prove less rewarding from a profit point of view.

In summary, the decade or so ahead is likely to be one of relatively tight financial conditions because of strong investment demands relative to the saving expected to be generated. Competitive returns between the various investment outlets are expected to be narrower than in most periods since World War II, and the successful investment institutions will be those with the flexibility and the foresight to take advantage of the varying spreads between these investment alternatives.

MR. JAMES H. TORREY:* Our moderator has asked me to concentrate my remarks on "expected aftertax rates of return" as they might apply to each form of investment. He has also asked that I spend a little time discussing the expectations we might have in our plans for those investments in subsidiary operations, some of which have very thin connections to the insurance lines. I suppose the reason for this latter assignment is that the Connecticut General has moved to form new corporate entities to carry on certain businesses. Let me return to the rationale for those moves later.

To get back to expected rates of return, let me give you my expectations of what the seventies are going to hold in store for your overworked, underpaid, and highly productive associates in the investment departments. As we speak of aftertax returns, I am sure that you are all aware of the fact that tax considerations for life companies and casualty companies are quite different; but they also differ widely among life companies, depending upon the mix of their business. Therefore, we have to apply a different set of variables for each specific portfolio. For our purposes today, however, I will generalize on trends, with the understanding that all companies will not be affected in exactly the same way.

With respect to fixed-income investments, I see the following trends:

1. There is a continuing pressure on investment operations to deliver a competitive yield—one that is higher than the "industry average," or higher than that of principal competitors. Members of your Society, economists, and econometricians, with help from the computer, have come a long way during recent years in providing measurement tools which tell us how we are doing on a relative basis, in the short run as well as over a longer period. This generally means that standards of performance have become more useful than they have been historically, and investment managers are having to "worry more" about their

* Mr. Torrey, not a member of the Society, is senior vice-president, Connecticut General Life Insurance Company.

current decisions. To follow this a step further, more risk-taking for higher returns is likely to continue. There are occasional reversals of this, as after the Atlantic Acceptance failure or the Penn Central problem, but I think that the over-all trend is with us and that the aggressive risk-taker will dominate in the seventies. In many ways this should, and does, give us some real concern.

2. Another trend that flourished during the really tight money periods in recent years has been the move toward participation, or a "piece of the action." This practice will be more noticeable in the tighter money periods of the coming decade, but even during periods of relatively easy money we are likely to have more emphasis placed on these types of investments than in the last decade. This will be particularly true in the real estate mortgage area, where the lack of underlying equity on the part of developers is being more realistically understood. Another reason for the expectation is that investment managers have a strong yen to get more than their money back with interest. A third reason is the appeal to ultimate beneficiaries of having some hidden profits stored away in that mountain of assets in which they participate.

3. Another and very different type of trend is a move toward more liquidity, including a shift to reducing the maturities of fixed investments. This takes the form of buying more readily marketable investments and more securities that are less affected by inflationary expectations because of their short maturity. Despite the fact that these moves will sacrifice immediate returns, managers will consider them aggressive because their purpose is to allow more flexibility to move into areas of opportunity when these are presented—something most were unable to do during the 1967–68 period because they were locked in with illiquid long-term portfolios.

Overall, it is my expectation that aftertax return on fixed-income investments during the seventies will probably average higher than during the last decade. But I also would not be surprised to find these returns more volatile, because of more aggressive activities.

Turning to the equity side, where there is plenty of room for different points of view, I would make the following observations.

The sobering effects of the last five years in the stock and real estate markets, despite heavy inflation, will cause reluctance on the part of investment managers to rely on equities to improve their aftertax rates of return. How often will you now hear investment advisers say that any portfolio manager of common stocks who could not make from 10 to 15 per cent is not worth his salt? That was the common word in 1967 when the lowest-grade stocks were making the largest gains. Today the yield

on the Standard and Poor's 500 from dividends is about 3.25 per cent. Higher-grade corporate bonds are yielding $7\frac{1}{4}$ per cent—a difference of 4 per cent. This difference must be made up from appreciation if the equity investment is to be helpful. The long-term historical record makes a case for stocks yielding 9 per cent on a total-return basis, but one would have to use selective statistics to show that good a return in recent years. Add to this the fact that we value stocks at market in our portfolios, with all the risks that valuation has on a surplus position heavily leveraged by the very nature of our business. I conclude that the corporate portfolios of the industry will not appreciably increase their direct exposure to equities, either common stock or real estate.

However, this is quite apart from the over-all activity I would expect to see in equities outside the regular accounts. The common stock separate account for pension customers is going to grow, and at the expense of the general or fixed-income accounts. Our industry was slow to respond to the marketplace when it was asking for greater exposure to equities. After eight years (1962–70) these separate accounts total $4.9 billion, or 2.4 per cent of the assets of United States life companies. You will also see continuing growth in the portfolios representing the industry's interest in variable annuities and mutual funds, which would strongly suggest that investment operations of life companies will be more deeply involved in equity investing—whatever the aftertax return may be.

Now let us turn to subsidiaries and see whether we can answer some of the questions as to why some life companies have chosen to put capital (both money capital and people capital) into these new lines instead of using it to expand the business they are already engaged in. Because I am most familiar with our own subsidiary efforts, let me run down each of these and give you some reasons for their being undertaken.

Our first effort outside the insurance business was the formation of an investment management company in 1967, as a requirement for our entering the mutual fund field. We wanted our own mutual fund, and we elected to utilize our investment people as the fund's advisers and the company's marketing arms as the sales force. The principal motivation came from our salespeople, who felt a strong need to broaden our financial services to include what was then a very hot number. Aside from the economics of the direct return on the investment, we concluded that the fund would have a strong impact on the attracting and keeping of salespeople, which would have the end result of larger sales of insurance products. The return on investment, we knew, would depend upon the success of fund sales, but it probably would be several years before the

venture paid off by itself. The economics of starting our own fund, incidentally, looked substantially better than those resulting from the acquisition of an existing management company at the high prices such companies were then commanding. Other factors that influenced us were that we felt we had the investment capability to handle the fund and that it would add to our image as complete financial investors.

The investment management company has two subsidiaries—one an NASD-registered sales company and the other a securities corporation which controls a seat on the Philadelphia-Baltimore-Washington stock exchange. Among the three corporations, we managed a small profit, but not one that would be called a satisfactory return from the point of view of pure investment. Looking ahead, it would appear that even as a pure investment we will be able to consider it successful.

Our second subsidiary was a real estate development company formed to buy, develop, and own real estate, both urban and agricultural. Here the motivation was almost exclusively investment-oriented. The reasons for acting through a subsidiary rather than in the life company were principally (1) that the investments often showed low book return and reduced our competitive rate with group customers; (2) that in many states the assets were not classified as qualified for surplus purposes; and (3) that the life insurance tax law was not favorable for real estate investments.

This is an equity program. We leverage our positions with third-party mortgages. The program is high risk, and it is slow to deliver favorable book rate of return. Nevertheless, if one is patient and successful, the aftertax returns should exceed 10 per cent. Here again, we felt that we had the in-house capability to start our own company instead of having to face the less favorable economics of buying an existing one.

Our third subsidiary was a realty advisory company formed to be a qualified adviser for a real estate trust. This was conceived during a period of tight money when we saw an opportunity to acquire a large amount of funds for the huge demand then existing for mortgage and real estate projects. Our staff and our mortgage correspondents were not being fully utilized, and this would help to conserve them as well as give us a profit opportunity. A lesser reason, but an important point, was that our salespeople saw a chance for them to sell another new product—even though we had elected to sell the shares through a public offering managed by a Wall Street firm. Of the roughly $200 million of the trust sold to date, our salespeople have accounted for over 10 per cent of the initial offerings. So there is some synergy here, too. This, from the point of view of a pure rate of return—however measured—is highly

satisfactory. The money investment is practically nil, and the 1 per cent management fee, less expenses, leaves a nice profit for our owners.

We have formed several other smaller subsidiaries, either to capitalize on in-house capabilities or to enhance the sales opportunities of existing products or both. The decision as to whether they provide satisfactory returns is determined by their usefulness in developing new business, as well as by self-propelled profits. Line operations for which they were developed are charged for deficits they incur, so that is a discipline.

These are only some of the subsidiary operations that we at Connecticut General have embarked upon, and, while the program has been an active one, others have moved farther afield into businesses that are not quite so closely related to their capabilities or to our business. These would be the finance companies, the residential and commercial construction companies, the leasing business, and the chain motel business, to name a few.

My own view is that the seventies will find us as an industry, testing more and more new ways to earn a buck, but that the bulk of the efforts will be along lines that are closely related to traditional products and services. Closer and more sophisticated attention will be given to aftertax rates of return on all investments of people and money, with decision-making based upon (1) direct dollar rates of return within a reasonable time span, (2) benefits to other areas of the business, and (3) social desirability.

MR. JOHN T. BIRKENSHAW: I have been asked to comment first of all on the subject of new-product development and competition. As a relative newcomer in investments, I do not feel that I should attempt to compete with the other panelists on the economic outlook for the future or on just exactly what products we will have. However, I do feel that, as a result of my varied experience in different areas of a life insurance company, I can offer some significant comments on how these products should be developed.

In recent years most of the changes in insurance company products have resulted in a greater emphasis placed on the investment element of a product than was previously the case. New products have become more investment-oriented, and all the movement to mutual funds, variable insurance, variable annuities, equity-based insurance products, and the like, has focused the spotlight more on the investment department, and more particularly on investment results, than ever before.

The net result of this, of course, is that in the insurance companies themselves managements are looking for new investment advice, both

within and outside their companies. Automatically, the role of investment adviser falls on the shoulders of the in-house investment department, which in most cases has been there for years. In many cases, however, management is asking the investment department to do the impossible. One eminent American investment counsel who has been in the business for many years and has been very close to the recruiting of investment advisers was recently quoted as follows:

> The curious thing is that these recruiters tend to ask precisely the wrong questions. They assume that investing is an actuarial exercise and that the element of risk can be put on a slide rule. Their most common query is: "What is the average annual growth that can be expected from the management of our pension fund?"
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> They find it hard to comprehend that capital growth has to be related to the expansion in corporate earning power. They have somehow become convinced that the "right" investment manager can miraculously (and predictably) increase their portfolio's assets three or four times as fast as corporate earnings have ever grown over any reasonable period of time.
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> Yet if a few fundamental principles are observed, the problem of selecting a competent adviser is not half as complicated as it might seem. This is because investment management ability is not based—as some seem to think—on secret formulas or mystical powers. The essential ingredients, as with any other profession, are judgment, experience, knowledge and effort.

In many cases, also, the insurance company managements have assumed that investing "is an actuarial exercise." We are all looking for a panacea—investment skill that would give us precise figures from which we could establish competitive premium rates with a satisfactory cushion for contingencies, surplus growth, and so on. The most important point that I could make is that this is simply not possible. In capitalizing on the investment expertise within a company, it is essential that a mutual feeling of confidence and understanding arise among the investment area, the actuarial area, and the marketing area of a company, in order to have a successful operation in this day and age.

As my fellow panelist Jim Torrey has already said, there will be continuing pressure on investment operations to deliver a competitive yield, "one that is higher than the 'industry average.' " Jim went on to qualify this statement, however, and it certainly becomes obvious that every investment department of every insurance company cannot be higher than the industry average. This merely points up the fact that it is essential that insurance company managements, including their investment organizations, work in concert to determine what lines of endeavor they will specialize in and that within the framework of these particular

lines they become very proficient and provide results which are better than the industry average.

Let me give you a few examples of this co-operation, which I must take from the company with which I am most familiar, my own. First of all, we have now been selling for a period of approximately three or four years in the United Kingdom and Canada a plan which is basically an endowment policy that offers additional benefits based upon the results of an equity fund. This equity fund is derived from having the great bulk of the premium paid on these plans put directly into common stocks. In addition, we have a similar fund that is developed from using the cash dividends as directed by the policyowners to purchase units of a common stock fund. These two funds have developed a very steady cash flow over the three or four years they have been in operation. There has always been a clear understanding in all areas of the company on just exactly what are the long-term and the short-term objectives of these funds and the advantages which the marketing area organization can derive from these funds. The net result is that we have had an excellent performance throughout the recent rather trying economic period, and I think it is fair to say that the marketing organization is confident when they are promoting these funds, and, similarly, the investment area is confident, that they can outperform the market with these investments in accordance with the objectives outlined by the company.

A second example, on the other hand—not quite so successful—is the following. Because of problems in the last three years with tight money markets and an unforeseen rise in surrenders and policy loans in 1969, we have had some problems with cash flow in our general funds. With this history behind us, our marketing organization would like to embark on a single premium immediate annuity sales program. Obviously, to do this in the present marketplace, a very competitive interest rate is required on the premiums received. This, of course, necessitates an immediate investment of the dollars received, so that we will be in a position to start paying out the annuities shortly thereafter. In this area there must be great confidence that the additional premiums being received in the single premium area are going to have some reasonable degree of stability from month to month, and the investment area can, accordingly, make large commitments well in advance on major mortgages or real estate developments which will provide the required high-interest, fixed-income investments. Because of the recent economic history of significant disruptions in cash flow, the investment area has been very reluctant to assume that the very high interest rates required in this area can be achieved, since, in their opinion, it is necessary to maintain a certain

amount of liquidity in the form of short-term securities in order to take advantage of investments as they arise.

Obviously there are valid points on both sides of the discussion, but the fact remains that this, once again, is a product which, in today's marketplace, is very competitive and requires a very competitive investment philosophy. There is no reason why these investments cannot be made and the results achieved that are required. However, it is essential that all areas of the company recognize one another's problems and work constructively to solve these problems. There is no point in saying after the fact that the investment area did not achieve the investment results required in order to get the business in the first place, and, on the other hand, there is no point in the investment area's saying that the cash flow was not there to justify the investments. This is not unlike the old chestnut about whether the premium rates set by the actuaries in the first place were not the most important single factor in the success or failure of the marketing operation. Obviously the result depends on a combination of all the factors.

Unfortunately, investment departments in most companies still have the reputation of being somewhat conservative. Having spent the last two years in our own investment department and having talked with members of investment departments in many other companies, I find increasingly that this is simply not the case. Perhaps the problem to a certain extent is that, like everyone else, investment officers really only talk about their successes outside their own ranks. I am willing to wager, however, that virtually every company represented here has been involved in some speculative-by-hindsight catastrophe of one kind or another, such as Atlantic Acceptance, Penn Central, buying Lockheed aircraft at $60.00, investing in a real estate venture that just has not worked out, and the like. Just as probably, we will find some investment officers who were able to predict the downfall of these companies and did not invest in these loss leaders. The fact of the matter, as I have tried to point out, is that this is a very competitive business, with most investment departments staffed with very bright and hard-working individuals. Getting to know them is a worthwhile experience, and understanding their operations is essential to management.

However, given the variables and sometimes imponderables such as the European Common Market, the United States DISC Program, the surcharges, the collapse of the International Monetary System, the confidence or lack thereof of the consumer, or even the relative economic backgrounds of Edgar Benson in Canada and John Connally in the United States, second-guessing the money market is a fantastically complicated

and problematical business. You have no doubt seen lists of the characteristics which make up successful portfolio managers—emotionally stable, self-assured, high in computational ability, not impulsive, not suspicious, and so on. Obviously, men with all these qualities have to be immortal or supra-mortal. I suspect, however, that, if you look in your own investment areas, you will be surprised how many real pros, with many of the above qualifications, you will find. My best guide to you in the area of competition is to get to know more about what is going on in your own investment areas and to develop confidence in the professionals you already have in that part of your company.

I represent a mutual life insurance company with operations throughout the Caribbean, the United States, Canada, and the United Kingdom. We operate with approximately ten different currencies and in three different languages. Generally speaking, these areas are all operating quite successfully and, although from time to time we have a little skirmish with a government in one of the Caribbean countries, this is quite understandable and is taken in stride. On the other hand, because we are a life insurance company, we find it very difficult to move into product lines which are not directly associated with life insurance.

As I stated earlier, we have developed successful equity-based life insurance products, but, partly because of legislation and partly because of our own corporate structure, we have not moved into such fields as mutual funds, short-term loans, guaranteed certificates, or acting as trustees, even though it has been stated publicly that we would like to. One might wonder why it is not possible to form subsidiaries to do some of these things when you examine the structures of the Connecticut General or of some of the conglomerates involving life insurance companies, such as the Trans-America Corporation and International Telephone and Telegraph.

Unfortunately it is not that simple. In Canada all life companies have some problems with the restrictions of the Canadian and British Insurance Companies Act. To enter a new business, it is necessary to form a subsidiary company, and this business must be described as "reasonably ancillary" to the life insurance business. A clear definition has not as yet been made of what is reasonably ancillary to the life insurance business. In spite of these limitations, I feel that the major thrust of new products in the next decade is going to come through investment-oriented services such as guaranteed certificates, mutual funds, short-term loans, and the like. In addition to this, I suspect that more and more companies will be moving into such fields as real estate management, mortgage brokerage and mortgage management, computer company subsidiaries,

income tax return services, and others—fields that are somewhat unrelated to life insurance directly but are areas in which we have built up a field of expertise as a result of our life insurance involvement.

In order to do this and to compete in the real world of business, it is going to be necessary for us to become more and more a part of Alvin Toffler's description of our culture in his book *Future Shock*. It will be necessary for us to have management and staff able to set up interim organizations with experts drawn from all parts of the company, depending upon the makeup of the particular problem being explored; that is, the task force will obviously involve computer experts, group experts, and accounting, investment, actuarial, and economic experts. The time horizons of the objectives of these task forces will probably be substantially shorter than has been the case heretofore in the life insurance industry. Although it will continue to be necessary to construct long-term plans, I think that more and more of our products will have a shorter time horizon than has been the traditional policy in life insurance. This will necessitate an entirely different structure and type of thinking within the insurance companies and, in my opinion, will place a variety of new requirements on the investment policy of our life insurance companies.

DR. MOELLER: I expect a great deal of competition between life insurance and other financial institutions, as well as between different types of investment vehicles, over the next decade. While most financial institutions are unlikely to lose their identity per se, they will generally seek to acquire more and more flexibility with regard to the nature of the products they offer to the public and the investment outlets in which they will make commitments. This will require broadly based expertise not only in the investment area but in the sales area as well. Life company sales representatives will have to develop considerable detailed knowledge of competing products, institutions, and companies and know their advantages and disadvantages relative to their own life company products.

Years of inflation have already changed the public's attitude toward cash-value life insurance and other fixed-income investments. As incomes rise and discretionary saving tends to take a larger percentage of total saving, life companies will have to pay more attention to retaining savings and increasing assets on the payout side of the business rather than merely accumulating savings during the pay-in period. This will call for new alternatives and greater flexibility among supplementary contracts and the possible melding of individual life and group life benefits into a master financial plan for the recipients. This could involve a

combination of variable and fixed annuities, equity investment funds, savings-type funds, and other longer-term fixed-income funds, all geared to meet the specific needs of an individual family unit. It would also mean a further increase in the role of common stocks and real estate in the life company portfolio. Other likely outcomes would be the development of specialized subsidiaries and/or a greater segregation of life company assets to permit better integration between contractual liabilities and supporting assets.

Similarly, in the pension fund area I see a movement toward a total money management concept. With this type of climate, pension fund managers might be given sums of money to invest at their discretion in various alternative investment forms, including equities, real estate, direct placements, marketable bonds, and even short-term securities, with the over-all rate of return for a given level of risk being the primary criterion for deciding whether new increments to the fund will be granted by the corporate customers, and/or the rate of withdrawals. These comparative returns among alternative investment vehicles will put tremendous pressures upon portfolio managers and securities analysts. Those life companies with well-integrated computer research facilities should fare best under such circumstances.

A second significant shift in the pension fund area is the increasing use of profit-sharing and savings plans in conjunction with other retirement provisions. In some cases this might merely mean a substitution of one form of saving for another. However, on balance, this trend should be favorable toward life companies and permit them to compete for employee-originated savings that, in the past, may have been placed in deposit-type institutions and mutual funds or invested directly in bonds and equities.

Another form of competition in the future will be from government insurance and pension plans. These programs have grown rapidly and now have reached the point where we should no longer look upon them as supplements to private industry plans but should regard them as potential substitutes for our own services. In many instances they have the advantage of having their costs not clearly and fully recognized by the public. From a broad economic point of view, the big danger is that continued substitution of government for private insurance services would lead to the erosion of private saving and its related investment in productive facilities. It is this buildup in the huge base of private fixed investment that facilitates productivity gains and permits the economic growth process and rising living standards to occur.

In brief, the decade ahead will be one of considerable competition from both private financial institutions and government. Life companies, to compete successfully, will have to broaden their investment expertise in some areas, resharpen it in others, and maintain a climate conducive to flexibility and innovation.

MR. DUNCAN R. WINHOLD: Your moderator has asked me to comment specifically upon the probable "environment for business" that we will be experiencing during the years immediately ahead. This implies a prediction as to the likely social and political environment over that period, both as it affects the business community generally and as it affects financial intermediaries in particular. More to the point, the question is raised of how the business environment will affect the investment decision-making process of a financial intermediary and how the rates of return on various categories of investment may be affected by this business environment. At the outset, I should stress that it is really not possible to separate social and political forces from economic forces, so that some of the comments made this afternoon will touch upon the economic outlook which has already been discussed.

First, what type of business environment can we forecast? There seems little doubt that the environment for business and hence for investment will become less favorable during the 1970's. Demographic characteristics constitute one positive factor. However, increasing government control and regulations, continued growth of consumerism, and the whole area of corporate responsibility all appear to be strongly negative factors. Moreover, Canada faces additional problems with respect to its relationship with the United States. I would like to spend a few minutes looking at each of these factors in turn.

From a demographic standpoint, the most rapid increases in population will occur in the college group (ages 20–24), the young family group (ages 25–34), and the over-65 group. In Canada, for each of these groups, a growth rate of 15–20 per cent can be expected over the next five years, while a much lower rate of increase, perhaps 6–8 per cent, can be predicted for the 35–65 age group. This produces the much-discussed "hourglass" shape in the adult population growth rate. If we leave to one side the implications with respect to personal savings rates, which have already been alluded to, and look at the demand side, this forecast implies a strong demand for a broad range of consumer goods.

However, the 1970's will undoubtedly see increased government intervention in nearly all aspects of society—perhaps even in the nation's bedrooms. The public sector's direct share of goods and services may not

increase by a large percentage. Nevertheless, the government will play an increased part in the process of allocating economic resources. Let me cite a few examples. Larger governmental transfer programs (e.g., guaranteed annual income and increased unemployment insurance benefits) will involve a further redistribution of income. Governments will continue their attempt to influence business decisions—for example, the United States investment tax credit and DISC programs and the Canadian government regional development incentives and grants. In response to rising demands for consumer protection, legislation designed to regulate advertising and marketing practices will be put on the books and, more important, will be enforced. Governments certainly will be taking a more activist position in "protecting the environment." The government's massive buying power will more and more be used for needs which the government itself deems socially desirable. Antitrust legislation may impede the real need for rationalization in some industries.

One area which deserves particular mention is the recent American adoption of wage-price controls. The use of this type of mechanism is an admission that fiscal and monetary policies are ineffective tools for fighting inflation, given the high social and economic costs of unemployment and the muscle of big unions. This is another move away from the free market system, as direct measures rather than monetary and fiscal tools are used to control the levels of demand, prices, and so on. The unfortunate truth is that "temporary" controls have the tendency of becoming permanent straitjackets, with further controls frequently necessary to close resulting loopholes. It is a reasonable prediction that bureaucracy will be the fastest growth industry of the 1970's.

Consumerism is another surging force that cannot be overlooked. Essentially, it represents a desire on the part of the consumer to have some feeling of rational control over his decision-making. It is a call by the public for business to be honest, to give the consumer fair value for his money, and to disclose all that the consumer needs to know in order to make an intelligent buying decision. The threat is that, if consumer demands are not voluntarily answered by the business community, they will be enforced by government fiat. The moves being made by the commissioner of Pennsylvania, Herbert S. Denenberg, are watched with interest and concern by industry people even in Canada. Regardless of whether or not consumerism is a force which will make the market or price system a more effective allocating mechanism, it will undoubtedly make the lives of many corporation managers more difficult.

The issue of social responsibility raises numerous questions for the business community generally and for financial intermediaries in par-

ticular. Many people now seriously question whether the primary objective of business should be simply to maximize profits. There are increasing demands on business to make business decisions on moral and social grounds. General Motors, Polaroid, and the Chase Manhattan Bank are urged to stop doing business in South Africa. Dow was hectored into ceasing the manufacture of napalm. The shareholder challenge to General Motors on issues of corporate responsibility and pollution cannot be viewed as an isolated example. Increasing demands are being made upon corporations to help in dealing with the problems associated with urban decay and minority groups. Perhaps the greatest demand on corporations will be with respect to the environmental effects of both their manufacturing processes and their final products—external effects which are not fully costed by the pricing system. All such demands will affect the profitability of business, the degree depending upon the nature of the industry and the past behavior of the particular company.

These same demands are not being restricted to nonfinancial corporations but are flowing back to financial institutions. Institutional investors are increasingly being asked to consider the ultimate social—not economic, but social—consequences of their investments. The question is really this: To what extent does a corporation take on a moral responsibility when it puts up a plant to make profits, and to what extent does the financial institution share in that responsibility when it invests in the bonds or shares of that company? Concerning stock ownership alone, the question is the extent to which a financial institution should assume the responsibilities of ownership. The question becomes more important for several reasons. There is an increasing institutionalization of the ownership of large corporations—United States institutions are holders, at least of record, of perhaps 40 per cent of the outstanding shares of major companies. Moreover, because of the illiquidity of the marketplace, the money managers' traditional solution of dumping stock when in disagreement with corporate management very often proves to be a blocked escape hatch.

Another factor which has serious implications is the extent to which youth has adopted these areas of social unrest as its special concern. Again, let me cite an example. A week or so ago I discussed the investment operations of my company with a large number of young college graduates who had been added to our staff in recent months. I had expected that some social questions would come up. However, I was amazed at the response of this group of young people. On the one hand, there was little or no interest in the broader economic questions, such as unemployment and inflation. Nor was there any particular interest in how

we conducted our investment operations. On the other hand, I was kept overtime answering such questions as our attitude toward proxies, toward pollution, toward our part in providing housing for the country, toward our investment in American stocks and in the securities of Canadian subsidiaries, and so on. I regard this as a symptom of a disquieting trend.

The last of these overriding environmental factors is the problem which the Canadian government faces in its relationship with the United States. From my point of view as a Canadian, at the present time, economic realities call for one solution—that is, closer economic ties with the United States—yet political sociological sentiments in this country rule out this course of action. Canada is the only advanced industrial nation without free access to a mass market of at least 100 million people. At the same time, our labor force is the fastest growing in the world. There are disturbing indications that some important officials in the United States view our country only as a "hewer of wood and a drawer of water"—a source of energy materials to replace their own diminishing reserves. The United States wants a continental energy pact, but Canada needs more secondary industry to provide employment for its rapidly growing work force. These are conflicting goals. Many here in Canada feel that we have lost control of our economy because of the large amount of foreign ownership in Canada, particularly American ownership concentrated in a number of major industries. Although the Canadian federal government's policy on foreign ownership has not been released, there are signs indicating its direction. The government wants Canadian savings invested in Canadian assets, and the tax reform legislation currently in Parliament requires that approved pension plans keep 90 per cent of their assets invested in Canada. This legislation also restructures the corporate income tax in order to give some smaller Canadian-owned firms certain tax advantages over foreign-controlled competitors. This legislation will discourage foreign acquisition of these small firms. Moreover, the Canadian government has set up the Canada Development Corporation, in order to help Canadians make equity investments in Canadian enterprises. Thus it appears that further action on the part of the Canadian government, whether we like it or not, will be directed toward restricting equity participation in Canada by foreigners.

This afternoon I have sketched a number of the forces at work which lead to the conclusion that the business environment during the 1970's will be less favorable then it was during the 1960's. I would like to conclude with just a few comments on how the investment policy of a financial institution may be affected by the anticipated changes. First, with respect to fixed-income investments, the emphasis which has been placed

upon marketability of bonds in the past year or two will probably continue. The security analyst, in looking at a particular debt issue, will have to put much more emphasis upon the effects of pension fund requirements and anticipated pollution control expenditures. On the mortgage side, concerns about increased government intervention in the housing field, both through direct participation and, indirectly, through the rent controls or other legislation increasing tenants' rights, will probably mean a continuation in the dramatic shift from multifamily to commercial and industrial loans which has been witnessed in Canada during the past year. With respect to equity investments, the sort of business environment which we are forecasting makes it difficult to quarrel with the view of an earlier speaker that the corporate portfolios of our industry will not appreciably increase their direct exposure to equities. As far as individual selection is concerned, emphasis will increasingly be placed upon the strength of management, since the ability of any management to anticipate and deal with environmental forces will be of paramount importance. A working rule might be that "a corporation that is a bad citizen is eventually a bad investment."

Finally, the one thing that stands out in my mind is the need for continued flexibility and a quickened response to change on the part of senior investment officers. There is no question that the investment environment changes much more quickly today than it did in the past, and the successful money manager will be the one who is able to respond promptly and effectively to those changes.

## LONG-RANGE VIABILITY AND REGULATION OF CORPORATE PENSION PLANS

1. Report on the current legislative situation in Canada and the United States.
2. Comments on recent attacks on the private pension system
3. Long-range impact on private pension plans of
   *a*) Inflation
   *b*) Investment results
   *c*) Changes in social security benefits
   *d*) Practices in the public sector (level of benefits, retirement age, funding, and so on)
   *e*) Lower retirement age
   *f*) Demand for other benefits
   *g*) Changes in productivity
   *h*) Changing profit levels
   *i*) Individual allocations

MR. M. DAVID R. BROWN: As I am sure most of you in this audience will know, we in Canada have had legislation governing vesting, funding, and investment of private pension plans for some years now. I do not propose to spend very much time today discussing the details of this legislation or its history, but I think that certain aspects of our legislative developments may not have received the attention they deserve in the context of the debate on these matters in the United States. I also intend to comment on some possible future developments in Canadian regulation of corporate pension plans.

To my mind, one of the important reasons for the relatively successful experience we have had in living with our legislation is the fact that we have operated with relatively small and therefore relatively efficient bureaucracies. We have been able to do this, first, because we are a small country and, second, because the constitutional situation in Canada gives jurisdiction in this area primarily to the provinces, who have divided the bureaucratic task among them. The federal government gets into the act only to the extent that it has jurisdiction over certain areas of employment (chiefly banking, communications, and transportation). The five bureaucracies that administer the pension benefits legislation have reciprocally agreed with one another that any plan covering employees in more than one jurisdiction will be supervised by the bureaucracy of that jurisdiction where the plurality of plan members is located. Duplica-

tion of effort and possibly conflicting administration of the laws have thereby been avoided.

To give you some idea of the small scale of the whole operation in Canada as compared with the United States, consider the following comparative statistics. According to data for a survey compiled by Statistics Canada (a federal government agency), kindly made available to me by Mr. Harry Weitz, there were 16,137 plans in the whole of Canada as of January 1, 1970. Of these, about 13,700, or 85 per cent, were subject to legislative supervision in one of the five jurisdictions having supervisory legislation: 7,771 plans were registered in Ontario, 3,458 in Quebec, 1,480 in Alberta, and 536 in Saskatchewan, and 434 were registered with the federal government. Compare these numbers with the 230,262 plans qualified with the Internal Revenue Service in the United States in effect at the end of 1970 and potentially subject to supervision by a single central bureaucracy. My belief is that the small-scale bureaucracy has a much better chance of functioning effectively, flexibly, and efficiently, assuming that it can attract reasonably competent staff. As a generalization subject to some exceptions, I think it would be fair to say that the risks of bureaucratic rigidity and inefficiency increase exponentially with the size of the bureaucracy, regardless of staff competence. These comments are not meant to belittle the value of, or the need for, supervisory legislation in principle—I am only suggesting that the price you will pay in the United States in this area is likely to be much higher than it has been in Canada; but, if there is any possible way you can arrange to decentralize the machinery of supervision, it would be well worth pursuing. The reason for this is simply that it should minimize the loss of justifiable diversity in pension arrangements, which may otherwise be substantial and unnecessary.

Another aspect of the Canadian experience which is sometimes overlooked is the prevalence in Canada of contributory plans, resulting at least in part from the fact that employee contributions have for many years been deductible from taxable income. Before the coming of the Pension Benefits Act of Ontario, most Canadian plans provided for vesting subject to age and/or service requirements but also gave the terminating employee the option of accepting a refund of employee contributions in lieu of the vested benefit. Hence, despite fairly widespread availability of vested benefits on termination, not very much actual vesting occurred. The Pension Benefits Act requires that, with respect to contributions and service after the legislation became effective, vesting be mandatory and not contingent after age 45 and 10 years of

service, so that these employee contributions are effectively "locked in." While this was probably unavoidable, it has been a very unpopular feature of the laws with many plan members who tend to consider the legislation (if they even know it exists) as "locking-in laws" rather than as laws for the benefit and protection of the average employee. One result of this employee attitude is that the legislation lacks any great appeal to the politicians. The effect of the laws has been largely to defuse private pension plans as an area of political concern in Canada by removing or minimizing the worst actual or potential areas of public concern. This, together with the requirement for reasonable uniformity across the jurisdictions, has slowed down the extension of comparable laws to the six remaining "uncovered" provinces and also the raising of vesting standards in jurisdictions having legislation. This slowing down was originally anticipated after the laws had been in effect for a few years.

Despite these retarding factors, it now seems likely that we can expect the jurisdictions which already have legislation to move to strengthen it in several areas. One step will almost certainly be the improvement of the mandatory vesting standard from the present double requirement of age 45 and 10 years of service either to age 45 and 5 years of service or to a straight 10 years of service without any age requirement. My own preference would be for a straight service requirement. Under the existing laws, a good many plans provide no better vesting than the law requires, so that a terminating employee with 15 or 20 years of service who has not attained age 45 is left without a vested benefit. The cost burden of removing the age requirement for vesting (especially in contributory plans) should be slight.

A second area in which our laws need strengthening is disclosure. It is curious that we have regulated vesting, funding, and investments but that a pension plan member or a union leader seeking the barest minimum of financial or statistical information has no statutory basis for obtaining it. This is almost the exact reverse of the present situation in the United States. Since this kind of information is filed annually with the bureaucracies under the existing laws, it seems a short step to making it available to plan members who have a legitimate interest in it.

A third area of possible legislative action is the reinsurance of unfunded liabilities. Thanks to a favorable economic climate since 1965, we have not been faced with a major plan termination involving substantial unfunded liabilities. (The Studebaker fiasco in 1964 was the last one.) However, our economic climate is changing rapidly (especially since last August 15), and the collapse of a major employer could precipitate public

concern in this area at almost any time. The most likely political response is probably some form of reinsurance arrangement. This, in turn, may intensify one of the latent problems under the present laws, which is the dissatisfaction of the large, stable employer at being subjected to the same standards of solvency as the small, undercapitalized employer with an uncertain future. An imaginative solution both to the reinsurance problem and to the inequities in uniform solvency standards would be to consider the employer's corporate earnings record as a parameter in setting the applicable solvency standard and/or reinsurance premium.

A report on the current legislative situation in Canada would be incomplete without a reference to the federal taxation law as it affects corporate pension plans. The existing tax law is remarkably brief, leaving a great deal to ministerial discretion. A registered pension fund or plan under the Income Tax Act is defined as one which is accepted by the minister for registration. The Department of National Revenue, after several years of uncertainty, issued in February, 1971, *Information Circular No. 71-4*, defining the department's current requirements for registration. While the circular suffers, in my view, from an excess of zeal in its relentless pursuit of tax evasion at the expense of providing reasonable limitations or conventional plans, it has at least the virtue of giving us a clear and explicit statement of how the department interprets and administers the present tax legislation.

A major revision in federal tax legislation is currently under debate in the House of Commons, with a target effective date of January 1, 1972. However, the amending legislation deliberately omits the taxation of employee pension plan contributions and benefits, apart from providing a primitive tax on investment by pension funds in foreign property above 10 per cent of assets and increasing the tax-deductible limit on employee contributions and employer current service contributions from $1,500 per year (established in 1954) to $2,500. The minister of finance has let it be known that an interdepartmental committee of civil servants is developing proposed legislative changes regarding pension plans, but it seems likely to be at least a year before there will be any public consideration or debate.

Let me begin my discussion of the long-range impact on private pension plans of (*a*) inflation and (*b*) investment results by suggesting that we broaden our consideration of the first subtopic. Inflation, strictly defined, refers to an increase over time in the monetary price of a specific quantity of identical goods or services. Related to this phenomenon but not really a part of inflation has been the historic increase in labor produc-

tivity and the simultaneous increase in living standards and expectations of the average member of the labor force and his or her family. My point is that our concern, I think, is with the long-range impact of continuing increases in general levels of wages and salaries, whether these result only from price inflation or result from "real" increases in the value of labor.

One result of thirty years of unbroken upward movement in the general levels of salaries and wages has been that the benefit objectives of pension plans are now generally acknowledged to be defined in terms of terminal pay at the time of retirement. Hence most plans now define benefits in terms of final or final average pay or are flat-benefit arrangements with the benefit level subject to frequent renegotiation. Acceptance is growing but is not yet general for the idea that pension plan objectives also require consideration of postretirement adjustments in benefits.

Not so very long ago, the conventional wisdom was that equity investments were the long-run solution to the problems posed for pension plans by continuing general increases in pay levels. In its simplest terms, the theory was that the growth in corporate earnings would reflect in the growth in value of common stock investments, which would enable the pension plan to keep pace with the growth in its benefit obligations resulting from increasing pay levels.

This rationale of pension plan investment is coming increasingly under fire. The behavior of stock prices over the last three years is perhaps an obvious immediate source of disenchantment, but there have also been significant changes in the terms and returns of competing forms of investment. The level of bond yields now implicitly reflects a basic investment return plus an additional element to compensate for inflation. Bond issues with maturities extendible or retractable at the lender's option have appeared on the scene. Mortgages with options to participate are now becoming common. More pension funds are seeking direct investment in real estate as a superior alternative form of equity investment to the hazards of the stock market. Looking to the future, the suggestion is increasingly heard that our society may reject the values of growth and dynamism as absolute goods for their own sake or may compromise them with an increasing concern for the survival of humanity and the environment. If the maximization of profits should no longer be the overriding objective of the corporation, will its publicly traded shares be an attractive vehicle for pension fund investment? The impact on pension plans of such a change in fundamental values would doubtless first appear in the investment area, but because of probable changes in the whole nature of business enterprise, including the nature of the employer-employee

relationship, the eventual impact on pension plans would be much broader.

Returning to the impact of continuing general increases in pay levels, one significant long-term effect would be that a relatively smaller proportion of eventual benefits will be funded in advance of retirement over the employees' working lifetime. The theory of advance funding of pension benefits is that it provides an orderly accumulation over his working lifetime of the money required for an employee's ultimate pension benefits. What happens in the real world of continuously increasing pay levels is a continuing scramble to update benefits and financing to meet the requirements of those already retired and about to retire in the next few years. The ultimate collapse of the funding idea would arrive if we reached a point where the rate of continuous increase in pay levels exceeded the available return on investments. This has already happened over short periods of time, but if such periods become longer and increasingly prevalent, it will not be surprising if the practice of advance funding rapidly disappears. However, I think that there are a number of reasons why it is unlikely that this situation will come to pass.

First of all, the capital markets with the implicit approval of government have shown themselves capable of adjusting to this kind of situation in such a way as to keep the margin of the rate of investment return over the rate of pay increase positive. Second, I suggest that there is likely to be a trend away from the social objective of full employment, which has been a substantial contributing cause of inflation since World War II. Third, the funding operation itself tends to be anti-inflationary in classical economic theory, in diverting resources toward capital formation and away from consumption expenditures.

My own conclusion, then, is that advance funding will probably continue to be the normal practice but that the proportion of the benefits of a given generation of pension plan members which is funded more than a few years prior to their retirement will remain relatively low. This is a consideration worth remembering in discussing legislated funding requirements. Under the Ontario Pension Benefits Act, for example, a final average pay plan which suffers an "experience deficiency" because of higher-than-assumed wage and salary increases must fund the resulting deficiency over a period of not more than five years. The legislative intention is to ensure sufficient conservatism in the original actuarial assumptions, but the result, for final average plans experiencing rapid pay increases, is absurd. In order to escape the absurdity, final average plans are being disguised as career average with frequent updating of benefits

based on current pay levels or with supplementary pensions based on final average minimum formulas. The end result is that the law does not have the effect of increasing the pace of funding when pay levels move up rapidly, since the disguised career average plan can use the longer period permitted for "initial unfunded liabilities" rather than the five-year experience deficiency funding period.

Let me conclude this somewhat unrelated collection of thoughts about the impact of inflation and investment results on private pension plans by mentioning the effect of "inflation," or, more accurately, increasing general pay levels, on the growth of government social security arrangements. Six years ago the governments of Canada and Quebec introduced separate but identical earnings-related social security systems, patterned in many respects (too many, I think) on United States social security. One feature which differed was that maximum covered earnings were to be indexed, so that they would continue to reflect, automatically, current pay levels of the contributors generally. For the first ten years of the plan's operation, the indexed increases were to be subject to a limit of $100 of earnings per year. The result has been that the ceiling on earnings has lagged far behind the actual increase in earnings, and the Canadian government announced its intention a year ago of increasing the ceiling by almost 50 per cent by 1975. The point of this story is that continuing rapid increases in general pay levels are very likely to result in a relatively greater proportion of retirement income being provided through government schemes and relatively less through private plans. Almost regardless of their investment results and other experience, private plans simply cannot produce satisfactorily under prolonged conditions of rapid inflation. If such conditions persist, their role will almost certainly be preempted by unfunded or nominally funded government plans.

MR. RICHARD V. MINCK: The prospects for pension reform legislaion in the United States in 1972 are still far from clear. The size and diversity of the private pension business have led to the involvement of a fairly large group of players in the controversy. I will try to give you the current positions of each group.

The Treasury Department carries out most of the current regulation of pension plans. Their interests are primarily in setting and administering the guidelines under which pension plans qualify for "favorable" tax treatment. Their viewpoint is, at least to some extent, colored by their primary purpose of raising tax revenues.

The Labor Department has been administering the Disclosure Act for

more than ten years. Their attitudes toward compulsory vesting, compulsory funding, and establishment of a government program to guarantee pension benefits appear to have become relatively passive. Their counterparts in the Kennedy and Johnson administrations produced the 1965 Cabinet Committee Report and the 1968 administration omnibus pension reform bill.

The president's staff has been working on the subject, and, while final decisions have apparently not yet been made, it seems likely that an administration bill will be introduced which will increase disclosure requirements, impose fiduciary responsibility, and require vesting. There may also be some liberalizations of the tax law included in the package.

The omnibus pension reform bill introduced in 1968 for the Johnson administration was introduced in the House by Congressman Dent, chairman of the House Labor Subcommittee, and in the Senate by Senator Yarborough, then chairman of the Senate Labor Subcommittee. Similar bills were introduced for the Nixon administration in the Ninety-first Congress by Congressman Ayres and Senator Javits. Senator Williams, the current chairman of the Senate Labor Subcommittee, and Congressman Dent introduced fiduciary responsibility bills in the Ninety-first Congress which were somewhat modified from those introduced in the Ninetieth Congress for the Johnson administration.

Bills providing for minimum vesting and funding requirements and pension benefit guarantee programs, as well as for fiduciary responsibility and disclosure, were introduced by Congressman Dent in both the Ninetieth Congress and the Ninety-first. Senator Javits also had his own comprehensive bill introduced in the last two congresses.

Senator Javits has introduced an omnibus bill (S. 2) in the Ninety-second Congress. It differs to some extent from his previous bill in each major area. Vesting requirements are somewhat more stringent because of changes in definitions of service. Funding requirements would apply to all past-service liabilities, whether or not vested benefits were involved. The pension benefit guarantee programs would apply only to vested benefits. The fiduciary responsibility and disclosure sections have been tightened up along the lines of the administration bill introduced by Senator Javits in the last congress. Senator Javits has said that he was confident a bill along these lines would be enacted by the Ninety-second Congress.

Congressman Dent has introduced an omnibus bill (H.R. 1269). He has not introduced a bill dealing solely with fiduciary responsibility and disclosure as he did in previous congresses. The bill would require full

vesting after 10 years of service; set a scale of required funding ratios reaching 100 per cent after 25 years; and create a pension benefit insurance corporation within the Labor Department to insure vested liabilities.

The history this year of subcommittee activity has included, on the Senate side, a release on March 31 of preliminary results of the five-part questionnaire sent to 1,500 pension plans last year by the subcommittee and of two sets of hearings. The witnesses at the first hearings were mainly disgruntled former employees who were not getting pension benefits they thought they had earned. The witnesses at the second hearing were mostly employer representatives explaining why their pension plans were designed the way they were and the costs of some of the proposed reforms. Both sets of hearings were fact-finding in nature rather than legislative.

On the House side, the subcommittee has received an appropriation of $100,000 to study problems in the private pension area. The lines this study will take are still being formed. There have been some indications that the Ways and Means Committee may take up the question of pension regulation after it finishes working on some of its current problems. However, no hearings are currently scheduled before any House committee or subcommittee.

Two unions seem to have pension reform high on their agenda of pressing legislative matters. The steelworkers seem to be primarily concerned about vesting, and the auto workers are pushing for a government pension benefit guarantee program.

No very clear program has been advanced by employer groups, although there appears to be a general tendency not to oppose changes in the area of fiduciary responsibility and disclosure.

Individual employees—in contrast to labor unions—seem to be concerned more about vesting than about other matters. This has been particularly true of those professional and administrative people in the aerospace and related industries who have become unemployed in the past year or so, and their concern has resulted in a fair number of letters to Congress.

The positions taken by critics range from that of Nelson McClung, who would fold all private pensions into social security, to that of Dan McGill, who would have the private pension system expand to a point where nearly all retired employees would have pensions equivalent to 50–100 per cent of final pay, with some changes in laws to improve the private pension system. The most recent addition to the group of critics is Ralph Nader—an indication, perhaps, that the reform movement is close to

producing legislative action. In October, two general-circulation magazines carried cover stories on the prospects for pension reform legislation—perhaps another leading indicator.

It seems fairly likely that some legislation will be enacted in 1972. It probably will require additional disclosure and will impose fiduciary responsibility on pension plan trustees. There is a fair chance that some vesting requirements will also be enacted. Other reform legislation seems less likely for 1972 but could come about if there are any spectacular successors to Studebaker. For the long pull, unless the private pension system is able to provide fairly attractive pensions to the great majority of workers, there will be a continuing threat of government intervention.

MR. PRESTON C. BASSETT: At a recent seminar Peter Flanigan, assistant to President Nixon, spoke on the administration's position in regard to pension plan legislation.

The administration submitted a bill to Congress in 1970 but has not yet submitted one for this session. Mr. Flanigan indicated that the administration expects to submit a proposal to Congress early in 1972 and that the prior bill will be modified to some extent.

Mr. Flanigan stressed the fact that only half of the present working population in the private nonagricultural sector is covered by private pension plans. The administration is concerned about the half of the working population that is not covered by private pension plans and believes that this is an area which should be helped. None of the bills yet introduced in Congress does anything for this large group of the work force. However, Mr. Flanigan feels that pension plans should not be compulsory but that individuals and corporations should be encouraged and given further opportunities to provide retirement income.

The administration's approach to meeting this objective is twofold:

1. Proposals are being studied that would allow employees to make contributions of their own on a tax-deduction basis to provide for their own retirement income. The same tax advantages would accrue to the employees as accrue at present to employer contributions to qualified plans.
2. It is proposed that features that would incur additional employer costs not be legislated unless absolutely necessary.

In regard to this latter item of not increasing employer costs, Mr. Flanigan had additional comments:

a) *Funding requirements.*—Several of the current bills provide that the unfunded past-service costs should be funded more rapidly than is now required by the Internal Revenue Service. Mr. Flanigan felt that the additional contri-

butions that would be required would not add much protection to employees for plans that were discontinued. Whether you pay interest only or fund over thirty years or so is of small importance to the plan that is discontinued. On the other hand, there would be an additional cost to all employers which might discourage the adoption of new plans or extension of present plans.

b) *Termination insurance.*—This, too, would be an additional cost and would discourage the adoption of new plans. Mr. Flanigan pointed out that during the period 1955–65 a government study indicated that only 4,300 plans were terminated, which included only one-tenth of 1 per cent of all workers covered. Further, many of these terminations were the result of mergers or sales under which the employees were probably covered under a continuing plan. Thus perhaps as few as one-third of this group were affected financially. On this basis Mr. Flanigan thought that this was not a significant item and also that it would be very difficult to administer. Therefore, the present administration's position is not to propose any termination insurance.

c) *Portability.*—Mr. Flanigan does not see any particular reason for having a provision for portable pensions. Vested benefits can be granted and funded with the employer, with no need for any central agency. Such a central agency would create problems in developing standards for valuing the benefits which would all lead to additional costs.

Thus the administration is currently not inclined toward any legislation regarding funding, termination insurance, or portability. On the other hand, Mr. Flanigan does feel that some form of vesting would have merit. Pension benefits are looked upon as a form of deferred wages, and, accordingly, at some point the values should become vested with the employees. Keeping in mind that he does not want to increase employer costs any more than is necessary, he said that the administration is considering what is known as the "rule of 50." This is 50 per cent vesting, after age plus service equals 50, and 10 per cent vesting for each additional year, with a 3-year eligibility in any event.

In regard to vesting, Mr. Flanigan indicated that administration studies showed that a 10-year vesting requirement would increase pension costs to the employer by 14 per cent, whereas the "rule of 50" would increase pension costs by only 8 per cent. These increases, he stated, were 0.7 per cent of payroll and 0.4 per cent of payroll, respectively. Further, in regard to coverage, the studies indicated that the number of employees retired with vested benefits would increase from 34 to 56 per cent with 10-year vesting and from 34 to 54 per cent with the "rule of 50." More important, however, for those employees at age groups 45 and over, the "rule of 50" would increase the number going out with vested benefits from 63 to 95 per cent.

Mr. Flanigan said that the administration is working on the problem of

consistency between corporate plans and plans for self-employed. At the present time there are inconsistencies which it would like to eliminate. He feels, however, that the administration would be opposed to limiting contributions made by corporations. So far as disclosure and fiduciary standards are concerned, they would probably be similar to those in the previous administration bill in 1970. Mr. Flanigan said that he did not expect that there would be any action on pension legislation during 1971 and that the administration is opposed to expanding social security into the private pension area.

MR. WILLIAM A. HALVORSON: Like many of you, I have been reading about the problems facing the private pension plan movement. The headlines of our daily papers, however, have been more concerned with the problems of the United States private economy. Could there be a relationship between these problems that could help tell us where we are going in the pension field? If there were a clear-cut relationship, of course, our job would be easy—all we would need to do is to predict the future development of our economy! So, with my truce flag up, and a cautious awareness, I have entered the no-man's-land of the economist and have tried to find out what is going on by reading economic statistics.

First, an overview of the development of pension plan funding since 1950 is in order. During the early 1950's, advance funding of pension benefits was popular. Benefit payments were low. Pay-as-you-go funding would have been very inexpensive, but the choice of most employers was to prefund. For instance, in 1950 total employer and employee contributions to private pension plans and deferred profit-sharing plans were estimated to be $2.08 billion dollars. Benefit payments were only $0.37 billion, or only 18 per cent of the current contribution. By 1960 contributions were up to $5.53 billion, while benefit payments were $1.75 billion, a 163 per cent increase in contributions and a 373 per cent increase in benefit payments. By 1960 benefit payments were 32 per cent of the current contributions. By 1969 employer and employee contributions were $12.35 billion, and benefit payments were $5.86 billion, a 123 per cent increase in contributions in nine years and a 235 per cent increase in benefit payments since 1960. Benefits by 1969 were 47 per cent of current contributions, as compared with 32 per cent in 1960 and 18 per cent in 1950.

It is interesting, also, to express contributions and the excess of contributions over benefit payments as a percentage of private wages and salaries and as a percentage of that great common denominator, the gross national product (see Table 1). The 1970 figures are not yet complete,

but there are indications that contributions may have been approximately the same as in 1969.

The degree of prefunding, whether looked on as a percentage of wages or as a percentage of gross national product, has been relatively stable since the late 1950's, as illustrated in Table 1 (these figures are for all plans and not just for those employers who have plans). Contributions have increased modestly since 1960 as a percentage of gross national product and as a percentage of private wages and salaries. Interest earnings on pension assets pay an increasing percentage of total benefits. The increase in benefit payments has been especially impressive, while prefunding has remained constant, with some signs of decrease.

TABLE 1

| | As Percentage of Gross National Product | | As Percentage of Private Wages and Salaries and Proprietor Income | |
|---|---|---|---|---|
| | Employer and Employee Contributions | Contributions less Benefit Payments | Employer and Employee Contributions | Contributions less Benefit Payments |
| 1950... | 0.73% | 0.60% | 1.28% | 1.06% |
| 1955... | 0.96 | 0.75 | 1.77 | 1.38 |
| 1960... | 1.10 | 0.75 | 2.06 | 1.41 |
| 1965... | 1.18 | 0.69 | 2.33 | 1.35 |
| 1969... | 1.33 | 0.70 | 2.62 | 1.38 |

Source.—W. Kolodrubetz, "Trends in Employee-Benefit Plans in the Sixties," *Social Security Bulletin*, April, 1971, Table 7, p. 27.

To what extent has the rate of productivity gains influenced prefunding? Productivity gains, of course, are the plasma needed to keep alive gains in employee real wages, increased earnings per share, increased dividends to stockholders, and increased taxes to support state and federal governments. After all these urgent, current, and growing demands are met out of gains in productivity, then perhaps some portion of the productivity gain can be set aside for deferred compensation and for prefunding of such benefits. Thus, in addition to the struggle that goes on between labor, stockholders, and governments for the gains from productivity, there is a tug-of-war between current consumption and funding of deferred benefits. But how has productivity influenced prefunding of pension benefits?

Productivity is generally defined in terms of output per man-hour. Using data for private industry only, we can see that, although unit labor

costs increased, workers enjoyed gains in real compensation during the period 1950–69 (see Table 2). Relating Table 2 to our previous review of contributions to pension and profit-sharing plans, we would expect to see a large gain in pension contributions from 1960 to 1965, since productivity gains were very high for the five-year period and unit labor costs hardly increased at all. Contributions to pension and profit-sharing plans did not gain materially during this period, increasing only from 2.06 per cent of wages to 2.33 per cent, an increase of only 13 per cent. Prefunding, meanwhile, actually decreased from 1.41 to 1.35 per cent of actual wages during the period from 1960 to 1965.

TABLE 2*

| | Output per Man-Hour | Unit Labor Costs | Real Compensation per Man-Hour |
|---|---|---|---|
| 1950 | 80.3 | 80.6 | 77.2 |
| 1955 | 94.0 | 90.0 | 90.6 |
| Change from 1950 to 1955 | 17% | 12% | 17% |
| 1960 | 105.0 | 103.2 | 105.2 |
| Change from 1955 to 1960 | 12% | 15% | 16% |
| 1965 | 126.6 | 105.5 | 121.7 |
| Change from 1960 to 1965 | 21% | 2% | 16% |
| 1969 | 139.9 | 124.8 | 136.8 |
| Change from 1965 to 1969 | 11% | 18% | 12% |

SOURCE.—United States Department of Labor, 1969 *Handbook of Labor Statistics*; 1970 *Statistical Abstract of the United States.*

* Index base: 1957–59 = 100.

From 1955 to 1960, when unit labor costs increased more than output per man-hour, pension contributions actually increased more as a percentage of wages than in the period 1960–65. In the period 1965–70, output per man-hour increased only slightly, and unit labor costs increased more than productivity. But pension contributions increased modestly as a percentage of wages and as a percentage of gross national product. Thus there does not appear, at first glance, to be much relationship between private pension contributions and productivity gains.

Taking a look at profits during these periods, we see that profits after taxes took some unhappy turns, as a percentage of either gross national product or private wages and salaries (see Table 3). Again, is it not surprising that prefunding of corporate pension plans did not expand dramatically during the period from 1960 to 1965, in view of the rapid increase in aftertax profits? On the other hand, it is not surprising to see

a leveling-off in prefunding between 1965 and 1969, as profits decreased as a percentage of corporate compensation to employees and as a percentage of gross national product.

The surprising fact is that prefunding even remained constant during this period. Thus the numbers suggest that, in aggregate, contributions to pension plans are not as sensitive to changes in profits as might be expected, but prefunding has certainly not been expanding.

From an analysis of this twenty-year period, it looks as if prefunding of pension and profit-sharing plans has been just about holding its own

TABLE 3

| | Corporate Aftertax Profits* | Aftertax Profits as a Percentage of | |
|---|---|---|---|
| | | GNP | Compensation of Corporate Employees |
| 1950 | $24.9 | 8.7% | 25.3% |
| 1955 | 27.0 | 6.8 | 18.7 |
| Change from 1950 to 1955 | +8% | −23% | −26% |
| 1960 | 26.7 | 5.3 | 14.1 |
| Change from 1955 to 1960 | −1% | −22% | −25% |
| 1965 | 46.5 | 6.8 | 18.6 |
| Change from 1960 to 1965 | +74% | +28% | +32% |
| 1969 | 50.6 | 5.4 | 14.5 (Est.) |
| Change from 1965 to 1970 | +9%† | −19% | −22% |

Source.—1969 *Handbook of Labor Statistics;* 1970 *Statistical Abstract of the United States.*

* Amounts in billions.

† Profits in 1970 dropped to $41.2 billion from the $50.6 billion in 1969.

for the last fifteen years. Will productivity gains resume their former levels, or the levels of our world competitors? Will profits be able to recover to the levels of the early 1950's? Will such productivity gains permit both an increase in current consumption and renewed interest in prefunding of deferred benefits? A survey of the National Association of Business Economists in September indicated a consensus view that 1972 should show a productivity gain of 5.5 per cent, almost double the 2.9 per cent increase expected for 1971 and far above the −0.5 per cent gain in 1970. Let us hope that these economists are correct. Let us also hope that private pension plans are given a new lease on life.

These economic facts do not give us much of a hint as to future developments. Perhaps we need to consider some additional factors.

Confidence is one example. Let's face it—it takes confidence on the part of both employers and employees either to make or to accept a promise to pay benefits at some distant future date. Without confidence in the economy, confidence in the future viability of the employer, confidence of the employee in his own future with his employer, or confidence in the safety of the pension benefits in terms of immunity from the ravages of inflation, little growth in pension plan funding can be expected. And confidence in private pensions is being undermined by inflation (as reflected by the difficulty in keeping benefits up to date with rising costs of living), congressional reforms and attacks, and lower business profits and business survival rates.

Mr. Ralph Nader, who reflects the consumer's concern in many matters, recently asked, "Is there any justification for a pension system based primarily on defined benefits in a highly mobile economy in which there can be no assurance of the continued existence of any company or industry, however large or well-established?"[1] Is America losing faith in the future of its business enterprises? If so, then prefunding or private plans would not make much sense, and a turnover of responsibility for future pension payments to the federal government would. But without business to create jobs and provide the revenue for the federal government, there would seem to be no way to provide adequate future pension benefits by allowing private enterprise to die.

Let us therefore return to economic statistics again, to compare contributions to private pension plans with employer and employee contributions to the social security system. Perhaps the true story on the growth of private pension plans is to be found by looking at the growth of our social security old age and survivors insurance. Social security taxes have increased materially, as can be seen in Table 4. Social security net contributions from employers and employees far exceed the contributions to private pension and profit-sharing plans, by a ratio of 2.3 to 1. While contributions to private plans grew from 0.73 per cent of gross national product in 1950 to 1.33 per cent in 1969, social security net contributions (not counting disability or Medicare contributions) grew from 0.94 per cent to 3.00 per cent. So perhaps the growth of social security and its tax increases have actually had a greater depressant effect on private plan prefunding growth than either reduced productivity gains or depressed corporate profits.

Or perhaps the real cause of the problem is the growing lack of confi-

[1] Remarks by Ralph Nader before the Association of Private Pension and Welfare Plans, Inc., Washington, D.C., July 14, 1971.

dence in private pension plans or in the businesses that sponsor them. Whatever way you may want to look at the history of private pension plan prefunding, the inevitable conclusion must be that private plans are showing less of a growth pattern as the 1960's end and the 1970's begin than they exhibited in the early 1950's. Whether we like it or not, it appears that they are no longer in the beginning or takeoff stages of an S-shaped growth curve but have reached the upper stages of the curve, especially as compared with the growth pattern of social security contributions. And, unless the factors that are inhibiting their growth can be

TABLE 4

| | Net Contributions* to Social Security | As a Percentage of | |
|---|---|---|---|
| | | GNP | Private Wages, Salaries, and Proprietors' Income |
| 1950 | $ 2.67 | 0.94% | 1.65% |
| 1955 | 5.71 | 1.43 | 2.63 |
| Change from 1950 to 1955 | +114% | +52% | +59% |
| 1960 | 10.87 | 2.16 | 4.05 |
| Change from 1955 to 1960 | +90% | +51% | +54% |
| 1965 | 16.02 | 2.34 | 4.62 |
| Change from 1960 to 1965 | +47% | +8% | +14% |
| 1970 | 30.26 | 3.11 | 5.99 (Est.) |
| Change from 1965 to 1970 | +89% | +33% | +30% |

SOURCE.—*Social Security Bulletin*, April, 1971, Table M-5, p. 44.
* Amounts in billions.

identified and corrected, we can expect them to continue to approach full maturity and perhaps subsequently to decline.

Let me close by saying that private plan growth would zoom, of course, if minimum private plan coverage for all employees above a certain age or service were mandated. In that case, however, it would be a new ball game, and my tea leaves have already blown away, so I shall make no predictions.

MR. RUSSELL J. MUELLER: We should all be concerned about the problems of the cost of mandatory private pension plans and of liberal vesting requirements, especially to small employees. To what extent have there been proposals in the United States or elsewhere to allow (small) employer flexibility to substitute immediate or liberally vested profit-sharing plans for pension plans per se? Does this mean the demise of profit-sharing plans as a retirement savings vehicle?

MR. HALVORSON: Our moderator has suggested that we offer some solutions, in addition to discussing the problems. In defining objectives, one of the more prominent goals becomes obvious; that is, the thirty million workers who do not participate in a private pension plan should be brought under the umbrella of either basic or supplemental pension plans. In view of the fact that the growth rate of corporate pension plans has stabilized, some new initiatives are needed. Most of the employees in this thirty million work for small employers. To encourage these employers to set up corporate pension plans, we should do at least the following:

1. Make it easier to start a plan. Perhaps the Labor Department, if not the IRS, could provide more guidelines for starting such plans. Why not provide advice, at least to the extent of letting the employers know what they have to do? Individual actuaries, firms of actuaries, insurance companies, and attorneys could also use their imaginations to develop simplified prototypes, which are streamlined for quick decision while retaining flexibility to meet the needs of the specific employer. We need more efficient consulting and actuarial costing methods to serve these smaller employers.
2. The small employer should be given more flexibility in funding, that is, he should be permitted to contribute much more than the normal cost plus 10 per cent of the initial unfunded liability. Management should be given deductions for any such additional contributions during the first five years of his plan. Perhaps he should be permitted to take a deduction for 25 or 50 per cent of his unfunded liability if he contributes that much in the year in which the plan is adopted. Another alternative would be to allow him to contribute up to 50 per cent of the initial unfunded time during the first five years of his plan. Small corporations have highly variable profits and losses from year to year, and they need the additional flexibility in funding.
3. The small employer must have individual allocation of contributions to a pension plan while retaining maximum flexibility in funding. Therefore, the death benefits and vesting benefits should be directly related to the amounts contributed on behalf of each individual, and the funding variations should be prorated as a percentage of the individual unfunded liability amounts.

If current regulations, rulings or laws prohibit the three points listed above, then initiative should be taken to change the laws as they apply to the smaller employer.

# FORECASTING THE ENVIRONMENT FOR BUSINESS

Forecasting as a management function; building on demographic and economic projections; predicting the environment for business in qualitative terms—the Delphi technique; methods of forecasting social changes.

CHAIRMAN EDWARD A. LEW: The purpose of this session is to draw attention to some of the more sophisticated approaches to forecasting the environment for business. Forecasting the impact of various contingencies on the financial security of individuals and corporations and providing practical arrangements for meliorating the risks involved are the essence of our business and an essential part of the actuary's professional responsibility.

The title page of each volume of the *Transactions* suggests that the guiding precepts of our profession remain embodied in Ruskin's assertion, "The work of science is to substitute facts for appearances and demonstrations for impressions." It would be timely to replace this elegant truism with the more pertinent declaration that the aim of actuarial science is to develop quantitative predictions based on both facts and impressions, for use in making decisions relating to insurance, pensions, and related problems. Such quantitative predictions should be regarded as exercises in foresight and not as definitive estimates of the future. They can assist decision makers in exploring the range of possibilities likely to be open in the years to come. Those who refuse to weigh the implications of alternative futures may have to settle for an unwanted eventuality.

This approach is not new. In his presidential address delivered in 1959 before the Institute of Actuaries, Mr. Frank Redington said: "He [the actuary] cannot break the laws and see through the infinite clouds of probabilities that nature interposes between us and what is to come. What he can do and does is to sense the wide ranging possibilities that the future may have in store and make them a living part of the present where decisions are made." The present is in the process of very rapid change, so that it is no longer reasonable to project alternative futures in terms of extrapolations from recent trends. We must seek new techniques to detect pending discontinuities in long-established patterns, anticipate swift and abrupt turns, and discern the complex interactions among technological, political, and social developments.

There has been a great foreshortening in the range of predictability since the end of World War II. Eric Hoffer has observed that when religious beliefs were firmly held, prognostications reached into the here-

after. During the age of Enlightenment, the ideas of progress and growth came to occupy a central place in man's expectations, and this tended to produce sanguine predictions within two or three generations. The first World War shattered the certainties by which people had lived, and many men were thereafter content if they could see their way for two or three decades ahead. If this shrinking in predictability continues, we may have to settle for anticipations of very short range, such as ten years. It is ironical that, at a time when numerous portents of the future are about us, there is less certainty about the near outlook than ever before. That is probably why people so avidly follow forecasters and pollsters, not to mention astrologers, who, in the United States, now outnumber actuaries by more than two to one. This contraction in the length of time we feel confident to peer into the future has obvious implications for the duration of the contracts we should be committing ourselves to and on the terms of the investments we should be making.

Business forecasting has usually taken the form of short-range economic and financial projections, relatively little consideration being given to technological, political, and social changes. Today, however, sudden technological, political, and social shifts are so closely interwoven with economic prospects that predictions of the traditional kind can no longer be made without weighing the possibilities of dramatic discontinuities arising from technological, political, and social developments.

The first of our panelists, Mr. Ian Wilson, consultant on business environment research for the General Electric Company, will tell us how strategic planning is being modified in that corporation to take account of technological innovations and qualitative transformations in our society and what kinds of discontinuities in historical trends may be of special interest to a large enterprise.

We are also fortunate to have with us Dr. Denis Johnston, senior demographic statistician of the United States Bureau of Labor Statistics, who will review the basic forecasting concepts in demography and economics and indicate how these projections can be adapted to encompass new patterns of social and business behavior.

The usefulness and limitations of projecting demographic and economic trends have been pretty well tested over the years. Actuaries have found such forecasts of considerable value in life insurance and pensions but have learned that in health insurance they must be used with great caution, with an eye on technological changes and complex interactions. Demographic projections indicate the probable course of population growth and urbanization as well as likely variations in age patterns, educational attainments, occupational composition, and other structural

features of the population. They thus delineate the marked shifts from a rural to an urban society and from loosely knit communities to highly integrated and interacting ones and hence explain many of the reasons for the changes in attitudes in some segments of the population. Economic projections focusing on labor force, capital resources, productivity, income, working conditions, and leisure can be equally illuminating; they bring out the trend from an economy centered on production to one predominantly sustained by services as well as the effects of relative affluence on preferences for quality and collaboration over quantity and competition.

A more systematic approach to thinking about the future can of itself improve our ability to make better projections. It can also bring to light the lack of many kinds of information that would be helpful in anticipating possible developments and point up our reliance on accurate and meaningful statistics about the recent past. In the absence of such data, management has frequently preferred qualitative to quantitative approaches to forecasting. The third of our panelists, Mr. Selwyn Enzer of the Institute of the Future (formerly with the McDonnell-Douglas Astronautics Company and the North American Rockwell Corporation), will speak to us about forecasting in qualitative terms. He will describe how expert knowledge has been utilized more rigorously—as with the Delphi technique—and how some of the less tangible factors in business situations might be more effectively appraised.

Current opinion stresses the disturbing effects of radical social changes. It has been argued that in the past social changes were in large measure predictable because historically people have changed their ways of living gradually. The pace of recent developments, exemplified by the knowledge explosion, the revolution in communications, and the weakening of traditional constraints on behavior, has made it very much more difficult to foresee the effects of social transformations. Doubts have been expressed, notably by Professor Jay W. Forrester of the Massachusetts Institute of Technology, whether our understanding of social systems is adequate to permit their representation by models that do not provide for multiple feedbacks or for the many nonlinearities of the real world.

In the life insurance business and pensions, we are fundamentally concerned with changes in attitudes toward financial security, changes in degrees of dependency, and changes in expectations of support from government, employers, and the community. We must observe watchfully how social changes affect the public's perceptions of the needs occasioned by death, disability, illness, old age, and other contingencies that pose major financial problems.

There is evidence that some of the adverse events for which life insurance provided valuable emergency funds in the past are less critical today, whereas contingencies such as divorce or obsolescence of one's occupation frequently produce threats to an individual's financial security on a much wider scale than heretofore. I know of no one who has addressed himself to these altered circumstances more knowledgeably than our fourth panelist, Dr. John W. Riley, Jr., senior vice-president for corporate relations of the Equitable Life Assurance Society.

The presentations of our four panelists are intended to provide us with some new insights on how to deal with changes in noneconomic variables, such as attitudes and expectations, and how we might apprehend better the complex dynamics of the changing social scene. We need this understanding to evaluate the phenomena already in view for use in charting alternative futures.

One approach to forecasting is through more sophisticated simulation models that include approximate representations of the behavior of customers, employees, and management over a period of time. We have scarcely begun to exploit the power of computers to evolve such models for real-life situations—especially those in which we can identify the key variables and measure the important parameters so that the effect of changing relationships can be explored.

While exploratory simulation appears to be the most promising tool for visualizing the range of possibilities in the years to come, other techniques of forecasting should also receive studied attention. In situations where there are many variables and the relationships between them are not well understood, we may have to rely on limit or trend estimates, as we do in fixing interest rates and mortality rates for the calculation of participating premiums. When more concrete knowledge of the relationships between the variables is available, representation by deterministic models or by scenarios may be appropriate; these forecasting methods can be illustrated, respectively, by a model-office calculation and by the procedures followed in arranging a financial security program for an individual.

In situations in which we are in position to influence the outcome, normative statements can be used as a basis for forecasts; this has in effect been done by the actuaries in the Social Security Administration when they have shaped alternative strategies for reaching the objectives set by Congress in terms of tax rates, taxable income, and qualifying conditions.

Particularly significant for charting alternative futures are the techniques used to detect discontinuities in trends. These include testing for

nonrandom variations in trend, searching for latent factors, and weighing the impact of underlying changes in a system with devices such as probability diffusion matrices. Having been conditioned by the experience of living in an age of exponential growth, we must now learn to anticipate breakpoints in historical trends, as the world moves from an era of rapid growth toward a period in which many forces will be at work to produce an equilibrium.

This is just one of many reasons why we must not lean too heavily on mathematical techniques. While the Greeks and the Romans endeavored to foretell the future by examining the entrails of sacrificed animals, we should not similarly attempt to read the future primarily on the basis of tapes extracted from the entrails of computers.

The key to visualizing alternative futures does not lie in specific techniques, valuable as these may be, but rather in the maintenance of a broad viewpoint. We need to cultivate the art of reasoned conjecture, in order to replace casual intuitions based on past experience with a careful and calculated analysis of the opportunities which the future has to offer. We ought to concern ourselves especially with the new relationships between individuals, their employers, and the government and provide the expertise needed wherever an insurance mechanism can be used to counterpoise the financial and other risks arising from technological and social changes as well as from adverse economic circumstances. This can be our distinctive contribution to improving the quality of life.

MR. IAN H. WILSON* [Forecasting as a management tool]: I begin with the McLuhanesque premise that society—and business in particular—can no longer afford to drive into the future looking into a rear-view mirror. This practice is just about as dangerous as the analogy suggests, and perhaps one of the reasons that we continue to do it is that we do not fully realize the extent to which we are doing it. For instance, even many of our forecasts—the result, you might say, of attempting to look into the future—turn out, on close inspection, to be largely projections of the past.

I will certainly concede that looking ahead is more difficult than my analogy would suggest. The windshield is not as clear and shatterproof as automobile manufacturers would claim for their 1972 models. Rather, it

* Mr. Wilson, not a member of the Society, is consultant on business environment research and planning with the General Electric Company and prior to 1954 was similarly employed with Imperial Chemical Industries, Ltd., in London. He is coauthor with Earl B. Dunckel and William K. Reed of *The Business Environment of the Seventies* (New York: McGraw-Hill Book Co., Inc., 1970).

is opaque, or at best spattered and cracked. Those of us who have started to engage in true forecasting would all, I think, agree with the probably apocryphal Chinese proverb that Alvin Toffler cites in his book *Future Shock:* "To make predictions is very difficult, particularly with respect to the future."

Difficult or not, forecasting is needed now more than it ever was in an era of "nonchange." When trends and societies and institutions were changing slowly, if at all, it was relatively easy to make at least generalized predictions; but, precisely because things did remain pretty much the same, forecasting was less necessary. It may be that it is the inherent difficulty in forecasting, coupled with a very human desire for some stability in a fast-moving world, that has led to something of a backlash against talk about the "pace of change" and a new emphasis on "forces for stability." During recent months, for instance, we have heard a great deal about the relative quiet on campus (with the implied, or sometimes explicit, comment that "we always knew those kids would settle down sooner or later"), and there have been scholarly analyses to point out that there have been change and violence in other eras and that our age is not unique in this regard.

Without in any way denying that there are forces for stability, I want to state, as strongly as I can, my conviction that change is now more rapid, more complex, and more pervasive than ever before in human history. This is a fundamental premise of my talk, so I had better lay it out on the table for discussion in case any of you want to challenge it. My contention is that there are forces loose in the world—particularly in the "postindustrial society" of the United States—that go far beyond the youth movement in creating change. To make my points briefly, let us examine the reasoning as follows:

*Change is more rapid than ever before.*—Consider, for instance, the simple fact that more people are working at the job of creating change, especially technological change. With a large and growing population, even a small percentage can represent a substantial number and have a measurable impact on society. Then, too, we have witnessed in our lifetimes a radical compression of the development time for new products and new systems, from the original invention to its diffusion through society. Such a speeding up in the process of invention and development is, after all, what you would expect to result from our massive investments in research and development since World War II. Another phenomenon of our times is a shortening of the "doubling time" in so many fields. Whereas world population once doubled in fifteen hundred years, it now does so in a mere thirty-five years; most Western economies now double their capacity in something like twelve to eighteen years; and the store of technical knowledge supposedly doubles every ten years or so. Finally, as evidence for the rapid-

ity of change, we can cite the speedup in the transfer of ideas and information through mass electronic media, increasingly on a worldwide basis.

*Change is more complex than ever before.*—Here I would point to the rapid progression from what Kenneth Boulding terms "folk knowledge" (such as that which led Watt to invent the steam engine) to highly abstract, theoretical knowledge as the dynamic of new technologies (such as nuclear physics). This progression to a higher level of abstraction and complexity seems to be a hallmark of the postindustrial society. Second, complexity of change is increased by the growing interdependence of our world—a fact that is compounded by the related phenomena of population growth and urbanization. Nations, institutions, and individuals are now so inextricably interrelated by so many webs of communications, economics, cultures, and ideas that it is difficult to predict how a tug on one thread in the pattern will affect other parts of the design. It is partly this complexity that has now, almost belatedly, heightened our concern over the second- and third-order consequences of technology; but, as Jay Forrester has shown, this same complexity bedevils much of our social policy-making and very often makes the "intuitive solution" to a social problem wrong and counterproductive. Finally, we must consider the differential impacts and rates of change. Complexity is compounded by the fact that change has its impact in different ways on white- and blue-collar workers at home and on developed and underdeveloped nations in the world at large. It is further increased by the different rates at which change comes into a society: technological change may occur within ten to twenty years, social (institutional) change requires more like fifty to one hundred years, and biological change occurs only over millennia. It is these differential rates that account largely for the tensions that beset so many of our modern societies.

*Change is more pervasive than ever before.*—We are, manifestly, dealing with more powerful technologies than ever before. Nuclear power, cybernation, and the still-young biomedical revolution have had, and will continue to have, a more pervasive influence on human life, I believe, than any previous three technologies in human history. The increasing scale of so many of our projects—not only in these technologies but also in engineering projects like the Aswan Dam—also ensures that more people will be affected more deeply by changes that we set in motion. Above all, we must note, it is not just economic and technological change that affects (or afflicts) us but social, political, and cultural change as well. There is, in short, virtually no aspect of our society that is totally unchanging.

That, in brief, is the reasoning behind my premise. I have not labored over the details of the evidence, but you are welcome to challenge me on it during the discussion period. From this premise, as it concerns the forecasting and planning that business undertakes, I draw one major conclusion—namely, business planning must become correspondingly more farseeing, more complex, and more adaptive to match the change in the char-

acter of change itself. Or, more simply, you might say that business planning can no longer be based on the trends that developed in a less turbulent past and that we must realize that the caveat "other things being equal" is a pitifully inadequate substitute for forecasting. If there is one thing that we have learned from the sixties, it is surely that other things have an uncomfortable habit of turning out not to be equal.

It may help if I state, in brief, the reasoning behind this conclusion, as I have done for the basic premise from which it is derived:

*Business planning must be more farseeing.*—Our great need in business, in an era of radical change, is to use forecasting as a way of buying time to deal with problems before they become intractable or to seize opportunities before they are lost. Because, like most human institutions, business is slow to change, this means that it needs a longer lead time than conventional planning would normally give it. For most large companies the minimum time horizon must be ten years out. I appreciate that, even with the best forecasting, the unexpected will occur, and this demands greater flexibility on the part of the corporation. However, our intent must be to foresee as much as possible, as far ahead as possible. Business thus needs forecasting in order to maximize the initiatives it chooses to take and to minimize the reactions it is forced to take. In this sense you might view forecasting as "normative" or as "causative anticipation" (inventing futures, as Dennis Gabor would say, and then planning steps to their attainment).

*Business planning must be more complex.*—The typical business plan today is based on inputs from economic forecasting (predictions about gross national product, consumer spending, personal saving, and so on, and about specific competition and market developments) and technological forecasting (future "state of the art" developments, predicted outputs from your own or competitors' laboratories). For the future, forecasting for business most certainly must include the social and political arenas, for it is the unexpected development there that can upset the best-laid business plan more completely than, say, an unexpected move by a competitor. All this forecasting must be an iterative process: in a period of change such as I have described, you need continuous feedback and continuous monitoring of the environment—as, indeed, the insurance industry has with the Trend Analysis Program, started just one year ago. Finally, for many businesses, the planning process is likely to become more complex from being interlinked with the planning of other institutions, especially government. This is not to predict the inevitability of central economic planning by government, on the Russian or even on the French model, but merely to state the obvious fact that government will play an increasingly strong role in determining the parameters of economic growth and, in some cases, the extent and pace of market development (e.g., the "social markets" for urban renewal, mass transit, waste disposal, crime control, and the like).

*Business planning must be more adaptive.*—The central fact of business plan-

ning for the foreseeable future is that it will have to be prepared to deal with uncertainty, despite the best forecasting we are likely to develop. Uncertainty is something other than risk, with which business is familiar. With risk, you assign various probabilities to events you know may occur; with uncertainty, you know that you don't know! Stated another way, it is virtually certain that things will go wrong (against predictions) as often as they go right. This is an uncomfortable fact, perhaps, but one that we shall have to learn to live with. Specifically, it means, first, that we must develop more detailed contingency planning to deal with "alternative futures" and, second, that planning must be prepared to commit strongly to strong probabilities while maintaining flexibility to respond to the unexpected. Not an easy order to fill!

Again, I have made my points as briefly as possible in the interest of getting them all laid out on the table, open for discussion. As stated, some of them may strike you as puzzling or questionable, but I hope that we can clear up most of the confusions later in the session.

The major problems for management in forecasting possible futures are, as I see it, the greater incidence of qualitative change and the greater incidence of "discontinuities." (There can be no question that these will be the major external problems to the accuracy and relevance of forecasting.) Let me explain each of these terms in turn.

Despite the undeniable fact of quantitative change (more people, more money, more goods, more cities—and, need one add, more pollution), the more significant fact is likely to be a much greater emphasis, at least in the United States, on the qualitative aspects of life. The circumstances leading to this development were well described two years ago in an issue of the London *Economist* in the following words:

> The United States in this last third of the Twentieth Century is the place where man's long economic problem is ending, but where his social problems still gape. On any rational view, the enormous fact of that approach to economic consummation should rivet all attention. It is almost certainly the most momentous news story so far in the history of the world. But people in the United States are at present wracked by the stretching to snapping point of too many of their temporary social tensions, so that this society which represents man's greatest secular achievement sometimes seems to be on the verge of a national nervous breakdown. [The article, incidentally, was entitled "The Neurotic Trillionaire."]

We can view this progress from the quantitative to the qualitative aspects of life as a progression, on a national scale, up Maslow's "hierarchy of needs." Without going into a lot of psychological detail, let me just explain that the late Abraham Maslow of Brandeis University postulated that man's needs could be arranged in a hierarchy of five levels:

1. Physiological needs (for food, shelter, warmth, and the like)
2. Safety and security needs (to induce a measure of stability into one's environment, to secure the physiological gains already achieved)
3. Social needs (for giving and receiving love and friendship, for being part of something larger than one's family unit)
4. Ego needs (for self-respect, esteem, fame)
5. Self-actualization needs (to realize one's full human potential)

Maslow further argued that progression tended to be in one direction—upward—rather than random. It is interesting to note that, as one ascends the hierarchy, the needs become progressively less essential in terms of ensuring survival but more important in terms of attaining one's full potential.

Although Maslow developed his theory to explain individual development, I think that it is broadly applicable to national development. In other words, I would argue—and I shall certainly amplify this argument later, if you want me to—that over the next twenty years we shall see a major shift in the population profile to those who are operating at Levels 4 and 5 and away from those forced to subsist at Levels 1 and 2. A major consequence of this shift would be the increasing emphasis on the "quality of life" theme that I have already mentioned.

The major business implication of these rising expectations on quality is likely to be a challenge to, and a redefinition of, many basic business values—among them, growth, technology, profit maximization, and managerial authority. It is important for businessmen to realize that this challenge stems not so much from failure as from success. You could term it a "crisis of success." Precisely because business has largely succeeded in satisfying the lower-order needs (to use Maslow's terms), people now want more attention paid to the higher-order needs. It is not, of course, that things like material goods, prosperity, and economic security are wanted any the less (although for a small minority this may be true). It is, rather, that such things are increasingly being taken for granted and that their place in the focus of human needs is being taken by such quality themes as individualization, self-development, participation, diversity and pluralism, and environmental enhancement.

To move now to the second major problem in forecasting—and the real cause of future uncertainty—we can anticipate a much greater incidence of "discontinuities" or major breakpoints in well-established trends. Discontinuities are most likely to be caused by (*a*) major technological breakthroughs; (*b*) an old trend (e.g., affluence or education) "going critical," that is, reaching a point at which it becomes qualitatively as well as quantitatively different; and (*c*) value system changes. If anything is

certain about the future, it is that all three causes of discontinuity will be operating at high levels.

Setting aside the technological cause for the moment, one can see that sometimes numbers plus change of attitude, in other cases change of attitude alone, can lead to a discontinuity. Let me cite a few examples. It was the increase in numbers of college students plus the "lower frustration tolerance" for all forms of inequity that led to the discontinuity of campus riots. It was the increase in numbers of urban minorities plus this same lower frustration tolerance that led to the discontinuity of urban riots. It is the growing participation of women in the world of work plus a new social emphasis on equality that leads to the discontinuity sometimes disparagingly referred to as "women's lib." On the other hand, despite an increase in the number of young men and women of marriageable age, changing views about the dangers of a "population explosion" and about the "right" size for a family seem partly (at least) responsible for a lowering of the birth rate to a point not far above the replacement level. (This latter statistic is of such obvious interest to actuaries that I hope Dr. Johnston may comment on it.)

Both for qualitative change and for discontinuities, therefore, we need to develop a continuous monitoring system and more sophisticated forecasting techniques than are currently available to, or used by, management. Selwyn Enzer will, no doubt, have more to say on this point later, so I shall not deal with it further now.

Let me, instead, conclude by briefly reviewing with you General Electric's experience in applying futures research to planning and policymaking. Our experience dates back to 1967 and the establishment of our Business Environment component in Corporate Personnel and Industrial Relations staff organization. It was founded on two basic principles. First, what takes place outside the company inevitably affects the way you organize work, manage employees, deal with unions, and the like. The second principle is that there exists a limited, but real, possibility of influencing the course of change outside the corporation. One needs to try to shape constructively the course of external change as well as to act inside the corporation to respond to these changes.

It perhaps was only natural that this approach to forecasting and planning was first institutionalized in an industrial relations component, because such a component has to be people-oriented; and, while social and political changes have an impact on every function of the business, their effects on people are more self-evident than their effects, say, on technology or finance or manufacturing.

The focus for our activity was the broad sweep of social and political

trends in the business environment over the next ten years or so—say, to 1980. Our specific job was to identify these trends, to analyze them, and—above all—to spell out the implications of these trends for future planning and policies relating to people.

Even after only two years of experience, however, it was evident that the issues, questions, and policy implications raised by our initial studies and analyses ranged beyond the personnel and industrial relations field. They related to the scope, purpose, and societal relationships of the corporation as a whole and so properly found their place in over-all corporate planning.

In 1970, then, we reorganized both the structure and the process of strategic planning in General Electric. Of the many aspects of this reorganization, I want to focus on the one that is most relevant to this afternoon's panel discussion. The first step in this new planning process is the development of a long-term environmental forecast as the framework for evolving corporate strategies. Both the long-term outlook and the comprehensiveness of this forecast are, as we see it, now indispensable prerequisites for strategic planning in the seventies.

In essence, the forecast was developed in two stages:

1. First, we produced nine separate forecasts, each dealing with a particular aspect of the future business environment—international, defense, social, political, legal, economic, technological, manpower, and financial. You may view these as environmental "slices" or as "tunnel views of the future." Each segment identified and analyzed
   *a*) The most probable trends and developments.
   *b*) Potential discontinuities.
   *c*) Preliminary policy implications.
2. These nine "slices" were then integrated, through the "scenario writing" process that Herman Kahn has popularized, into coherent and internally consistent views of the future. At this stage I want to stress only the point that—because of the uncertainty of the future—it is essential to deal with alternative views of the future. (In fact, we developed four possible scenarios.) To limit your view to a single possibility (which, in effect, you would be calling a certainty) would be to doom your forecasting efforts to almost certain failure. This multiplicity of views does, of course, impose on you the corresponding need for much more detailed and explicit contingency planning than most of us have practiced in the past.

I shall end this brief outline of our experience at this point, with the hope that it has at least indicated enough to you so that you can decide on which aspects you might like to have more detailed information. I shall respond as fully as time and my knowledge permit.

DR. DENIS F. JOHNSTON* [Building on economic and demographic projections]: In order to build upon projections in any area of concern, it is necessary to consider the types of projections which may be prepared in that area, their purposes or functions, and their limitations. It may be useful at the outset to differentiate among projections and two other types of outlook statements with which they are often confused: predictions and forecasts. The act of prediction is commonly viewed as analogous to that of explanation. Something is "explained" when we have identified an initial set of conditions and the principle (or "law") governing their operation—that is, when we have identified the factors which jointly entail it. By the same token, something may be "predicted" when the initial conditions and governing principle which jointly entail it are found to exist.[1] It follows that our ability to predict economic and demographic phenomena presupposes our ability to explain these phenomena; given the highly contingent and partial nature of our explanations of these phenomena, it is hardly surprising that our "predictions" may be characterized in the same manner. One corollary of this circumstance is generally recognized by economists and demographers alike: the confidence associated with most "predictions" is inversely proportional to the length of the period over which it extends. What this means, of course, is that the technicians who make predictions are proceeding "as if" the postulated initial conditions and governing principle are both necessary and sufficient to account for the prediction, at least for the duration of the period over which it extends. In other words, most of our economic and demographic predictions should be regarded as projections.

A projection, like a prediction, involves the assumption of some governing principle (or covering law) from which future values of the phenomenon in question may be derived, together with a specified set of initial conditions. Unlike a prediction, however, a projection is typically

* Dr. Johnston, not a member of the Society, is senior demographic statistician in the Office of Manpower Structure and Trends, Bureau of Labor Statistics, United States Department of Labor, and professorial lecturer in sociology at Georgetown University, Washington, D.C. The views expressed in this paper are the author's and do not necessarily reflect those of the Bureau of Labor Statistics or the United States Department of Labor.

[1] The view that "prediction" and "explanation" are symmetrical processes is developed by Carl G. Hempel, "The Logic of Functional Analysis," in Llewellyn Gross (ed.), *Symposium on Sociological Theory* (Evanston, Ill.: Row, Peterson, 1959), pp. 271–307, and in Hempel, *Aspects of Scientific Explanation* (New York: Free Press, 1965), chap. 10. Also informative in this regard are Robert Brown, *Explanation in Social Science* (Chicago: Aldine, 1963); Eugene J. Meehan, *Explanation in Social Science: A System Paradigm* (Homewood, Ill.: Dorsey Press, 1968); and Herbert A. Simon, *Models of Man* (New York: John Wiley & Sons, 1957), chaps. 1–3.

expressed in the form of an "If . . . , then . . ." statement—a form which emphasizes its conditional nature. But a more significant distinction between a prediction and a projection is that the latter may be constructed to reflect the hypothetical operation of conditions and relationships for which there is little or no supportive evidence or which have a low probability of occurrence or which are even deliberately counterfactual.[2]

Finally, the basic distinction between a projection and a forecast reflects the purpose it is intended to serve rather than the method of its preparation or the degree of understanding which it reflects. A forecast may be defined as a projection which has been selected as representing the "most likely" outcome in situations whose determinants are insufficiently known or controlled to permit outright prediction. Its distinguishing characteristic is the element of judgment or decision which is necessary in making such a selection. If projections are racehorses, the forecast is the horse you decide to bet on. Whereas projections may have a number of functions, the basic function of a forecast is to delineate the most probable outcome in a specified area of concern over a specified period in the future. The need for a forecast does not arise until and unless the user must commit himself to a definite plan or action extending into the future. Given such a commitment, the preparation or adoption of some kind of forecast is inescapable.

Projections in general, and economic-demographic projections in particular, may be used to serve a number of purposes. First, they are most commonly designed to fulfill an anticipatory function, allowing the user to anticipate the probable magnitude or impact of some actual, probable, or postulated set of conditions or changes at some future time. In the manpower field, for example, projections of the expected number of new entrants to the labor force over the coming decade can assist manpower planners in preparing for possible fluctuations in these numbers from year to year.

Second, projections—or the forecast which is selected from among them—are an essential input for planning and program development. If our plans and programs are rational, they must be future-oriented, and they must therefore incorporate some systematic appraisal of the environment in which these plans are likely to operate in the future. Economic and demographic projections in particular are commonly used to

[2] Familiar instances abound in the field of demography—for example, projections of local area population size and characteristics without migration or projections of the age distribution of a population in the absence of fertility or mortality, and so on. See, in this regard, Nelson Goodman, *Fact, Fiction, and Forecast* (2d ed.; Indianapolis: Bobbs-Merrill, 1965).

provide an appropriate frame of reference for the formulation of long-range social and economic policies and related programs.

Third, projections are an essential—although sometimes implicit—ingredient in program evaluation. Attempts at program evaluation, especially in areas involving social behavior, commonly encounter the problem that program benefits cannot be estimated with nearly the confidence or accuracy that surrounds estimates of program costs. The social researcher recognizes in this difficulty the truism that the impact of any social program is entangled in a web of cross-impacts reflecting the totality of interactions occurring in the society. One way to avoid this difficulty is to project the course of developments which might be anticipated in the absence of the particular program, so that comparison of this projection with actual postprogram outcomes may yield an estimate, however crude, of program impact or "benefit."

Fourth, projections may be viewed as essential links in a chain of conjecture; each projection includes among its underlying assumptions certain conditions which are derived from a prior projection, and most projections are likely, in turn, to provide inputs to other projections. Referring again to the manpower field for an example, the projections of population constitute inputs to the projections of anticipated manpower supply. These, in turn, are linked with projections of the industrial and occupational distribution of employed workers, which, when combined with projections of worker productivity and hours worked per week, yield projections of gross national product.

Fifth, projections have a public information function. Our justifiable concern with the manipulative and propagandistic elements which may be found in projections prepared for public effect should not obscure the fact that projections, when freed of such influences, have a unique educational value. In the manpower field again, projections of the anticipated supply-and-demand situation in particular occupations, together with analyses of trends in the characteristics of particular occupations and of those employed in those occupations, are widely used in vocational guidance, curriculum revision, and the like.

Finally, projections have an exploratory or heuristic function, insofar as they may be developed in order to delineate the probable (or possible) consequences of alternative sets of initial conditions and determining factors. While their chief value may be educational, such exercises may be of considerable practical value to the decision maker as well. To the extent that they expand his awareness of the "degrees of freedom" which he enjoys in a given situation, they may prompt his consideration of alternative solutions which he might not otherwise have recognized.

Each of these six functions provides a perspective in which to suggest a course of action in "building upon" the available economic and demographic projections. However, it is the last of these functions which most clearly reflects the nature and potential value of projections in their purest sense, and it is the fulfillment of this function which most nearly implies a capacity to carry out the other functions as well. Therefore, the remarks which follow, relating both to alternative projection techniques and to the limitations in our economic and demographic data base, are primarily oriented toward the improvement of projections which serve as explorations of possible futures.[3]

The bulk of the projection techniques which are available in any field of interest may be loosely classified in four main categories: trend extrapolations, the deriving of projections (or "predictions") from equation systems, the obtaining of projections by means of simulation exercises, and the building of scenarios.[4] Trend extrapolations are at once the most common and the most criticized of projection techniques. Their alleged virtues of simplicity and flexibility are confounded by their explanatory impotence, their common failure to explicate their underlying assumptions, and their inability to anticipate fundamental changes in the trend being extrapolated. Their most important qualification is the *ceteris paribus* term—a caveat all too often ignored by the user. But even this common warning lacks precision; the accuracy of a trend projection requires that the net effect of relevant factors, plus any disturbances which may occur in the future, shall be the same as their net effect in the past.

The fact that a trend extrapolation requires no understanding of the factors which might account for its development explains both the simplicity of the technique and its inability to add to our understanding of the phenomenon with which we are concerned. Any time series may be

[3] An excellent critical study of various projective methods in the social sciences is Bertrand de Jouvenel, *The Art of Conjecture*, translated from the French by Nikita Lary (New York: Basic Books, 1967). Also stimulating is Fred L. Polak, *Prognostics* (New York: American Elsevier, 1971). Two outstanding analyses of technological forecasting which help to bridge the gap between the natural and the social sciences in the context of projection are Erich Jantsch, *Technological Forecasting in Perspective* (Washington, D.C.: OECD, 1967), esp. Part I, and Robert U. Ayres, *Technological Forecasting and Long-Range Planning* (New York: McGraw-Hill, 1969).

[4] Many alternative classifications have been made, of which one of the most useful is Jantsch's simple dichotomy of forecasts as either "exploratory" or "normative." Especially informative are Daniel Bell, "Twelve Modes of Prediction—a Preliminary Sorting of Approaches in the Social Sciences," *Daedalus*, summer, 1964, pp. 845–80, and Irving H. Siegel, "Productivity Measures and Forecasts for Employment and Stabilization Policy," in Sar A. Levitan and Irving H. Siegel (eds.), *Dimensions of Manpower Policy: Programs and Research* (Baltimore: Johns Hopkins Press, 1966), pp. 269–88.

regarded as "epiphenomenal" in the sense that it reflects the joint operation of a host of factors whose individual impact and even identity may be unknown. When such a series is extrapolated (whether by least-squares criteria or by means of other curve-fitting techniques), it is assumed only that the factors which influenced the observed trend in the past, together with any new factors (or "disturbances") which may influence its future development, will have the same net effect as before. Thus the resultant projection explains nothing, whether or not it turns out to be accurate.

The "accuracy" of trend projections and of the more elaborate econometric "predictions" has been the subject of considerable research.[5] Since most times series relating to economic or demographic phenomena display few "sudden" changes of direction (thanks largely to the frequency of our observations), it follows that an extrapolation, especially one extending over a brief period into the future, enjoys a substantial probability of reasonable accuracy. Social behavior, like most natural phenomena, seldom makes "leaps." However, because our observations of these phenomena are obtained for the most part from small samples, and because they are often characterized by cyclical variation, it is sometimes difficult to identify the underlying trend. Our continuing reliance upon this technique is sometimes viewed as an expression of indifference to the canons of scientific procedure. It is especially infuriating when, as often happens, a simple extrapolation turns out to be as accurate as, or more accurate than, the results of an elaborate analytical system. However, a more generous assessment of our need for simple extrapolations may be offered, quite apart from the question of their accuracy or lack of scientific rigor. In the first place, projections are frequently demanded on short notice. In such cases their purpose is not to add to our understanding of the given phenomena but to provide a timely estimate of a prospective future situation, assuming a continuation of current trends. Second, many forms of social behavior are deterministic only in a very loose, "stochastic" sense. When, as is generally the case, our understanding of these determining influences is highly limited or our measurement of their mutual impact is incomplete, a simple extrapolation of a single variable of interest, reflecting its observed trend in the past, may be more

[5] See, for example, Robert Goodell Brown, *Smoothing, Forecasting and Prediction of Discrete Time Series* (Englewood Cliffs, N.J.: Prentice-Hall, 1963); Jacob Mincer (ed.), *Economic Forecasts and Expectations* (New York: National Bureau of Economic Research, 1969); Herman O. Stekler, *Economic Forecasting* (New York: Praeger, 1970); Henri Theil, *Economic Forecasts and Policy* (2d rev. ed.; Amsterdam: North-Holland, 1965) and *Applied Economic Forecasting* (Amsterdam: North-Holland, 1966); and Victor Zarnowitz, *An Appraisal of Short-Term Economic Forecasts* (New York: National Bureau of Economic Research, 1967).

defensible than a more elaborate schema which carries the bulk of the determinants in an error term. Finally, the attempt to develop long-range projections of most economic and social phenomena by means of equation systems turns out, in practice, to entail some reliance upon simple extrapolation at some stage.[6]

The principal requirements for the development of projections from a system of equations are sufficiently familiar to be summarized briefly. First, we need to have a theoretical grasp of some specified set of relationships and processes which constitute a "system" within which changes in the variable of interest may be understood as a function of other variables in the system. Second, quantitative indicators of the "key" variables in the system must be available, so that the mutual influence of the variables may also be assessed in quantitative terms. Third, the equation system must be solvable, and for projection purposes (especially if a forecast is needed) some unique solution must be identifiable as having a greater probability of occurrence. A fourth requirement arises from the need to predict or project future values for the "dependent" variable in each equation of the system. Either the key "independent" variables must exert a measurable lagged effect upon the dependent variable, or their future values must themselves be projected or assigned in some other manner. Since the former circumstance is seldom found except in the preparation of short-term projections, the need to project or assign future values for the independent variables is unavoidable. In principle, we require a system of simultaneous equations such that each variable in the system may be entered as a dependent variable in one of the equations. In practice, this schema implies a series of equations which rapidly exhaust the available data or which violate the technical requirement that the independent variables in each equation be independent of one another. This means, as noted previously, that it becomes necessary to "fix" or to extrapolate future values of the ultimate independent variables in the system arbitrarily or judgmentally. Thus long-range projections on the basis of equation systems, particularly those concerned with economic, demographic, or social phenomena, are typically infused with judgmental extrapolations of their individual independent variables. This is not to gainsay the increased understanding which accrues from the search for a system of quantifiable determinants. The point to recognize, how-

[6] This insight is apparent in V. Lewis Bassie, "A Critique of Long-Range Forecasting," *Quarterly Review of Economics and Business*, I, No. 4 (November, 1961), 41–54, and in George Jaszi, Lawrence Grose, and Maurice Liebenberg, *Forecasting with Judgmental and Econometric Models: A Case Study* (U.S. Department of Commerce, Office of Business Economics, Staff Working Paper in Economics and Statistics, No. 10, May, 1965).

ever, is that this search does not exhaust the legitimate approaches to the task of projection.

The use of models of social behavior for the simulation of through-time social processes is the most obvious and promising direction to pursue in "building upon" economic and demographic constructs for purposes of projection. Equally obvious is the observation that the verisimilitude of such exercises can be no greater than that of the underlying construct or model. Granting the artificial simplicity of such models, however, the fact that their use in simulations can be effected with computers gives them an enormous advantage in speed, flexibility, and accuracy over conventional speculations in this area.[7] Perhaps the greatest benefit to be gained from simulations of particular systems is an improved appreciation of the "sensitivity" or "robustness" of the given system when specified changes are introduced among its endogenous variables or when exogenous shocks or disturbances are entered into the system. Such estimates are a useful supplement to the conventional measures of the deviations of the particular variables in the system, since they permit us to assess the probable impact of changes which fall outside the range of past experience.

It must be recognized that the "systems" approach, at least in theory, is an ideal conceptual framework for purposes of long-range projection. The principal architects of this approach have argued persuasively that the emerging conception of a "system" is better suited to the analysis of dynamic processes of social change than are the static constructs of social structure which they are designed to replace. The greater realism and flexibility of this approach, it is argued, stem from its recognition of change as normal in any living system. Furthermore, this approach allows the analyst to interpret ongoing changes not only as adaptive responses to exogenous factors, aimed at preserving or restoring homeostasis, but also as expressions of internal growth and development.[8] To

[7] A good summary is provided in Nathan Keyfitz, *Introduction to the Mathematics of Population* (Reading, Mass.: Addison-Wesley, 1968), pp. 397 ff. See also Mindel C. Sheps and J. C. Ridley, "Studying Determinants of Natality: Quantitative Estimation through a Simulation Mode," *Proceedings of the World Population Conference*, Vol. III (1965), and Hans Hyrenius and I. Adolfsson, *A Fertility Simulation Model* (University of Goteborg, Demographic Institute Reports, No. 2, 1964). For a broader perspective on the possibilities of simulation see Guy H. Orcutt, Martin Greenberger, John Korbel, and Alice Rivlin, *Microanalysis of Socioeconomic Systems* (New York: Harper & Bros., 1961), and Harold S. Guetzkow (ed.), *Simulation in Social Science: Readings* (Englewood Cliffs, N.J.: Prentice-Hall, 1962). Also helpful is James M. Beshers, *Populations Processes in Social Systems* (New York: Free Press, 1967).

[8] The literature relating to systems analysis grows exponentially. Consult Alfred Blumstein, Murray Kamrass, and Armand B. Weiss (eds.), *Systems Analysis for Social*

the extent that a "system" can be identified—that is, to the extent that the interrelations of its components with each other and with the environment can be specified—the resultant model enables the analyst to monitor social change by means of a stream of feedback information which traces the impact of particular inputs. Given such a model, the task of projection is reduced to prediction.

As an objective for the behavioral scientist, the development and application of ever more inclusive systems models are entirely in keeping with our conventional notions of the goals of science. But for purposes of projection, and to meet the needs for which projections are demanded, the systems approach suffers from two critical weaknesses. The first is at once theoretical and practical: our existing theoretical expositions of social systems are unable to specify causal relationships linking particular inputs with particular outputs, except in highly restrictive domains. Furthermore, even a cursory assessment of the available bodies of economic, demographic, and social data suggests a practical constraint on the construction of such models. When this approach is extended into areas of social behavior whose determinants are not adequately "captured" by available statistical indicators, the outcome is an elaborate framework largely devoid of empirical content—a framework whose chief value is to identify our data requirements.[9]

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*Problems* (Washington, D.C.: Operations Research Council, 1970); Walter Buckley, *Sociology and Modern Systems Theory* (Englewood Cliffs, N.J.: Prentice-Hall, 1967); Walter Buckley (ed.), *Modern Systems Research for the Behavioral Scientist* (Chicago: Aldine, 1968), especially the contributions of W. Ross Ashby, Garrett Hardin, and the editor; Francis F. Martin, *Computer Modeling and Simulation* (New York: John Wiley & Sons, 1968); and Martin Shubik (ed.), *Game Theory and Related Approaches to Social Behavior* (New York: John Wiley & Sons, 1964).

[9] In regard to the inadequacies of our existing social data base, see Eleanor B. Sheldon and Howard E. Freeman, "Notes on Social Indicators: Promises and Potential," *Policy Sciences*, I, No. 1 (spring, 1970), 97–111, and Kenneth C. Land, "Social Indicators," published as a chapter in Robert B. Smith (ed.), *Social Science Methods* (New York: Free Press, 1970), and also to be reprinted in a monograph on social indicators and mathematical models being prepared by Land at the Russell Sage Foundation. For interesting examples of the "state of the art" in regard to social indicators and their use in social forecasting see Eleanor B. Sheldon and Wilbert E. Moore (eds.), *Indicators of Social Change* (New York: Russell Sage Foundation, 1968); M. Harvey Brenner, *Time Series Analysis of Relationships between Selected Economic and Social Indicators* (Washington, D.C.: U.S. Department of Labor, Manpower Administration, 1971); U.S. Department of Health, Education, and Welfare, *Toward a Social Report* (Washington, D.C.: U.S. Government Printing Office, 1969); and the excellent critique of Otis Dudley Duncan, "Social Forecasting—the State of the Art," *The Public Interest*, No. 17, fall, 1969, pp. 88–118.

Second, and less obvious, is the conceptual inadequacy of this approach for purposes of projection. Dennis Gabor has expressed this limitation very neatly:

> We are still the masters of our fate. Rational thinking, even assisted by any conceivable electronic computers, cannot predict the future. All it can do is to map out the probability space as it appears at the present, and which will be different tomorrow when *one* of the infinity of possible states will have materialized. Technological and social inventions broaden this probability space all the time; it is now incomparably larger than it was before the Industrial Revolution, for good or for evil. The future cannot be predicted, but futures can be invented.[10]

This passage summarizes both the best that can be expected of the systems approach and the reason why its underlying paradigm of a value-free science is inadequate to the task of projection. What is lacking in the systems approach is a normative assessment of the system as a whole; what is essential in the development of projections is precisely such an assessment. The invention of alternative futures implies a willingness to consider the implications of alternative sets of goals and underlying values. The systems approach can provide, at best, only a framework within which these implications may be explored.[11]

These considerations bring us to the last of the four major approaches to projection: the building of scenarios of the future. To the economist or demographer, a scenario might at first glance suggest a primitive, loosely defined conceptualization of a system. But the weakness of its composite elements is a source of its imaginative power. A basic feature of a scenario is its attempt to move our thinking from its fixation on extrapolation of current trends or prediction from a system of postulated quantitative relationships toward an appreciation of "nascent causes." As Massenet observes, this shift of focus is not an attempt to introduce a new set of causal determinants but rather an effort to explore the possible consequences of our own goals and purposes by introducing them as operative elements in these scenarios.[12] To be sure, such exercises are likely to increase in value

[10] Dennis Gabor, *Inventing the Future* (Harmondsworth, Middlesex, England: Penguin-Pelican, 1964), p. 161.

[11] For further elaboration by Gabor see "Forecasting Methods in the Social Sciences," *Journal of Technological Forecasting and Social Change*, II (1970), 173–87, and "Social Indicators and Social Forecasting," *Cahiers du Centre de recherches science et vie*, No. 2, September, 1971, pp. 41–83.

[12] Michel Massenet, "Methods of Forecasting in the Social Sciences," a paper prepared for the members of the Commission on the Year 2000 of the American Academy of Sciences, chaired by Daniel Bell (n.d.). Compare the insights of Hasan Ozbekhan, "The Triumph of Technology: 'Can' Implies 'Ought,' " in Stanford Anderson (ed.), *Planning for Diversity and Choice* (Cambridge, Mass.: M.I.T. Press, 1968), pp. 204–33.

in proportion to the degree of quantitative precision that can be introduced, but their execution does not await the improvement of our data base or the increased sophistication of our theories of human behavior. Because a scenario is essentially judgmental and normative rather than systematic and predictive, it might better be viewed as a design rather than a plan. If such designs fail to foretell the future, they can at least tell us what we are in process of becoming.

To sum up: to build upon economic and demographic projections, it is necessary to recognize the different purposes for which projections are developed and the different strategies which are called for in pursuing these purposes. From the standpoint of the technician, the necessary strategy is straightforward: we need to integrate our economic and demographic models, incorporating additional indicators of relevant social processes, so as to develop more inclusive social systems models.[13] But for the decision maker and social critic alike, a different strategy must be employed—one which recognizes in the failures of past predictions not the need for improved analytical systems but rather the existence of opportunities for the expression of human values which alone give meaning to our decisions.

MR. SELWYN ENZER* [Forecasting the environment for business in qualitative terms]: Ironically, despite the fact that the state of the art in forecasting is improving in an analytical and methodological sense, our ability to forecast the future is actually diminishing. It is diminishing primarily in the sense of our not having been able to identify many of the major changes that have taken place in our society in recent years until such changes were virtually upon us. Our forebears had little difficulty in

[13] The structural framework developed a decade ago by Guy Orcutt *et al.* (*op. cit.*) is by no means the only schema available. Especially promising is the work of Richard Stone, *An Integrated System of Demographic, Manpower and Social Statistics and Its Links with the System of National Accounts* (United Nations, Statistical Commission of the Economic and Social Council, E/CN.3/394, May, 1970), and his recent summary of his proposed approach in the area of education, *Demographic Accounting and Model-building* (Washington, D.C.: OECD, 1971). For imaginative suggestions with regard to the kinds of data which might be called for in the construction of such integrated models see Angus Campbell, "Social Accounting in the 1970's," *Michigan Business Review*, XXIII, No. 1 (January, 1971), 2–7. Campbell mentions, inter alia, the need for psychological indicators of such phenomena as changes in the level of aspiration of the population, levels of group attachment and intergroup hostility, and levels of alienation.

* Mr. Enzer, not a member of the Society, is on the research staff of the Institute for the Future, Middletown, Connecticut, and has been involved in projects concerned with issues and opportunities likely to confront Connecticut in the years ahead, particularly as affected by social and technological developments. Mr. Enzer is an engineer by profession, formerly with the McDonnell-Douglas Astronautics Company and North American Rockwell Corporation, where he directed studies relating to future orbital experiment programs.

this regard; tomorrow and thousands of tomorrows were essentially the same as today, a situation which poses no difficult forecasting problems. Nowadays, however, the pace of change is quickening, and the resources at the command of society are so large that the direction of apparent changes can be markedly altered by the conscious decisions of the directors of social institutions—a situation which is replete with forecasting problems.

This situation poses a serious dichotomy for traditional extrapolative forecasting techniques. Since such techniques reflect trends and causal linkages by means of statistical data and empirical couplings, they are inherently bound to history. Yet, currently, we see abrupt changes, such as the development of computers, space systems, biogenetic manipulation, and the like, which were not pre-evidenced in statistics. Each of these changes has affected and continues to affect a multitudinous number of trends which may still attempt to forecast using 20-20 hindsight exclusively. To make this situation even more complex, many decision makers are often working at cross-purposes with one another in regard to forecasts and their use; hence they confound planners by taking actions deliberately intended to obviate the forecasts. Stated another way, one decision maker may be attempting to capitalize on a clearly defined trend and its dependent forecast, while another, recognizing the trend and possibly detecting its deleterious nature, is directing his resources toward changes in its future course.

Perhaps the clearest evidence of this situation appears in demographic forecasting, where the trend toward greater urbanization has been steadily growing. This trend is quite clear, and forecasters in this field generally regard the major difficulty at present as being more in forecasting what the quantitative definition of urbanization will be than in assessing changing future patterns. Yet this situation has not gone undetected by government planners, who recognize that the natural technological forces of transportation, communication, and geological features no longer constrain the size and spacing of urban centers and that megalopolises are becoming ungovernable meccas of chaos. They are busily developing means by which this trend can be reversed. New cities, linear cities, rural development, and industrial decentralization are but a few of their tools. These tools, by their very innovative nature, have as yet exhibited little, if any, statistical evidence which would indicate any significant impact. Does that make their presence or potential impact any less real? I think not: perhaps less certain in detail, but not less real.

How can traditional planning methods cope with these uncertain and as yet unrealized forces of change? Certainly not quantitatively, at least not in the same manner in which statistical data can be processed and

correlated. However, these forces can and should be included where they can be anticipated. "Anticipated" is, of course, inherently qualitative, not certain, to be sure; but remember that even qualitative considerations can be judgmentally quantified. Thus, if we can anticipate some possible future developments which may alter the future course of, say, a trend based on an otherwise sound regression analysis, we must admit that there is a chance that the forecast made by the analysis may be foreseeably incorrect.

To economists an "expected value" rather than a singular value in the future is nothing new, nor is it to a gambler who may have a dollar invested in a bet which has even odds. To him, that investment is worth one dollar. However, in the future, it will, in fact, be worth either two dollars or nothing at all. These facts are not incongruent; they indicate the reality of alternative possibilities and reinforce one of the basic axioms of futures research—namely, that the future is not singular and that man by use of his resources can often affect the outcome.

What does this mean to a long-range planner? To him it is a problem. It involves uncertainty not only in outcome but, because of his myopic position, perhaps more importantly in the meaning of data. After all, facts are facts and speculation is speculation, and no respectable statistician holds speculation in any regard.

What does it mean to a decision maker? To him it is really nothing new. He has been taking the forecasts presented to him by planners with a large grain of salt for many years. He long ago recognized the limitations that planners have imposed upon themselves by their hindsight-oriented techniques, and he has come to accept the fact that he must include his own anticipations in his decisions or he will have ceased to be a decision maker.

The need to look ahead has been recognized by many of society's leaders throughout history. Since I am not a futures historian, however, I will confine this aspect of my talk to relatively recent efforts in this area. Perhaps the "granddaddy" of modern subjective forecasting studies was the air force investigation conducted by Dr. Von Kármán in 1945—"Toward New Horizons." Clearly, this was an outstanding achievement in technological forecasting in which most important developments relevant to the air force in the coming twenty years were identified. These forecasts resulted in many positive development programs. However, the study did fail to identify the possibility of the development of the transistor and, as a result, missed in its assessment of the true potential of the guided missile, a major oversight. Nonetheless, the "Toward New Horizons" study is an outstanding example of how qualitative thinking

can be used to explore future prospects and how this insight can aid in the formulation of positive plans for action in rapidly changing situations.

The entire military/space program responded to the need for more careful systematic planning and gave birth to such techniques as systems analysis, morphological analysis, scenario writing, input-output models, and the like. This movement ultimately evolved into mandatory planning schemes of which PPB (Planning-Programming-Budgeting) and PERT (Program Evaluation and Review Technique) are but a few.

All of these analytic techniques, however, concentrated on essentially singular problems and depended upon goals, values, and benefits as inputs, and these were highly susceptible to sudden and unexpected changes. In an attempt to come to grips with these problems of abrupt change, a few researchers began to explore systematic techniques for eliciting, processing, and using judgmental data in systematic analyses. These early efforts led to the development of a wide variety of simulations in models and games, as well as such devices as the Delphi technique and cross-impact analyses. These two analytic techniques have been used in what is called a futures analysis, an analysis which attempts to develop a more complete understanding of the many alternative futures which may evolve and of how our resources may be used to greatest advantage in affecting the outcome.

The Delphi technique has been defined in many ways during its brief history. It has been called, for example, "a carefully designed program of sequential individual interrogations (best conducted by questionnaires) interspersed with information and opinion feedback,"[1] "a succession of iterative brainstorming rounds in which an attempt is made to avoid the interference of psychological factors,"[2] and "a controlled opinion feedback in which a panel of experts exchange reasoned opinion anonymously and through an intermediary."[3] In most applications the Delphi technique has been used to produce a group consensus on possible future developments.

The Delphi is, in essence, a controlled conference consisting of a sequenced program of interrogation interspersed with feedback. Hence it is a systematic group communication technique which can be used for almost any purpose but is generally applied to forecasting. The Delphi method is typically an open-ended process that follows a diverging-

[1] Norman Dalkey and Olaf Helmer, "An Experimental Application of the Delphi Method to the Use of Experts," *Management Science*, September, 1963.

[2] E. Jantsch, *Technological Forecasting in Perspective* (Washington, D.C.: OECD, 1967).

[3] Theodore J. Gordon, *A Study of Potential Changes in Employee Benefits*, Vol. I (Report R-1, Institute for the Future, April, 1969).

converging pattern. That is, starting with a given problem or issue, the amount of information generally expands as an attempt is made to identify all elements relevant to the subject. These elements are then reduced by evaluating them in terms of the desired output, eliminating those assessed as unimportant by the participating group. Also, items on which the evaluation by the participants reflects agreement, or consensus, are set aside (as resolved) as soon as such agreement can be identified. Areas of dissensus are explored further.

Because Delphi studies always involve concise communication, the participants must be highly familiar with the subject matter. In a brief response, one is clearly not able to offer thorough explanations as might be found in the literature on a given subject. As a result, a Delphi study is generally effective only when the participants are all experts—experts in the sense that they are knowledgeable and can communicate an entire body of thought with few words, often by reference to relevant literature.

The essential features of a Delphi inquiry are as follows:

Inputs are elicited in a series of steps (or rounds).

Inputs for each round must be received from all participants before providing any feedback of the results of that round.

Provision is made for feedback and re-estimation after consideration of the reasons for extreme positions.

In addition, although it is not essential,

Anonymity is preserved (at least with regard to the source of each input).

This latter feature, which is generally included in a Delphi study, makes an intermediary necessary.

Each of these features is designed for a specific purpose, and only anonymity may be eliminated if, in the analysis being conducted, its purposes are inconsequential. Anonymity can be considered in two ways: in terms of persons and in terms of data. Thus it is possible either to avoid revealing the identity of the participants at all or to identify the entire group but not identify the source of any contribution, even with a code name. The use of anonymity in a Delphi inquiry is intended to facilitate free and open communication by removing some of the psychological barriers that may be present in groups or that surround emotionally charged issues. In most cases anonymity of the data is generally sufficient to overcome problems of group psychology, whereas analysis of emotionally charged issues may benefit from complete anonymity. Should open communication present no problem, as may be the case in analysis employing groups whose members are familiar with each other or in analysis of some technological subjects, anonymity may be abandoned

entirely. In some cases the identification of the source of the contribution may even enhance the quality of the output.

The features that cannot be eliminated are independent contributions from each participant before any feedback is given, elaboration of reasons for extreme positions, and re-estimation for those items where agreement is not reached. These features distinguish a Delphi study from a poll or survey.

Contrary to common belief, a Delphi analysis need not produce group consensus to be successful. True, a Delphi study attempts to produce as sharp and precise a set of judgmental data as possible. However, these data may often indicate widely divergent poles of opinion, each based on different expectations and different convictions. Results of this type may be suggestive of possible branch points that are more amenable to societal intervention than those prospects which exhibit tight consensus.

Delphi studies are generally conducted using written questionnaires transmitted through the mails. However, Delphi studies have also been conducted with interviews,[4] using a computer,[5] and with co-located groups.[6]

Olaf Helmer and Theodore J. Gordon originally formulated the concept of the cross-impact method in designing the game "Future."[7] The technique was subsequently extended and tested experimentally, using a computer to aid in the synthesis of the event interactions.[8] The first operational analyses using the cross-impact method were made in studies designed to forecast issues and opportunities for the state of Connecticut and to identify developments of importance to the future of education.[9] Since then, other analyses using this technique have been reported.[10]

[4] Selwyn Enzer and Raul de Brigard, *Issues and Opportunities in the State of Connecticut: 1970–2000* (Report R-8, Institute for the Future, March, 1970).

[5] Murray Turoff, *Delphi Conferencing* (Office of Emergency Preparedness, TM-125, March, 1971).

[6] Selwyn Enzer, Wayne I. Boucher, and Frederick D. Lazar, *Futures Research as an Aid to Government Planning in Canada* (Report R-22, Institute for the Future, August, 1971).

[7] Olaf Helmer, "Simulating the Values of the Future," in Kurt Baier and Nicholas Rescher (eds.), *Values and the Future* (New York: Free Press, 1969).

[8] T. J. Gordon and H. Hayward, "Initial Experiments with the Cross-Impact Matrix Method of Forecasting," *Futures*, Vol. I, No. 2 (December, 1968).

[9] Selwyn Enzer, Theodore J. Gordon, Richard Rochberg, and Robert Buchele, *A Simulation Game for the Study of State Policies* (Report R-9, Institute for the Future, September, 1969), and Richard Rochberg, Theodore J. Gordon, and Olaf Helmer, *The Use of Cross-Impact Matrices for Forecasting and Planning* (Report R-10, Institute for the Future, April, 1970).

[10] Selwyn Enzer, Wayne I. Boucher, and Frederick D. Lazar, *op. cit.*, and Selwyn Enzer, *Federal/State Science Policy and Connecticut: A Futures Research Workshop* (Report R-24, Institute for the Future, October, 1971).

"Cross-impact analysis" is a generic term for a family of techniques that try to evaluate changes in likelihood of occurrence among an entire set of possible future events and trends in light of limited changes in probability for some of the items in that set. These limited changes may result from actions which are consciously pursued or from the occurrence of events which are thought to be possible but cannot be predicted with certainty. Each of these changes may affect more than one individual outcome; indeed, it may affect the probabilities of all of the items in the set.

It is this aspect of the cross-impact analysis that makes it particularly relevant to the problems faced in forecasting. A cross-impact analysis requires the development of a model in which the causal linkages among a set of important possibilities are described. It then uses this model to identify the more important chains of possible occurrences and the degree to which the occurrence of each event changes the probabilities of the others. With these insights it is generally easier to synthesize and assess actions which may have not only desirable first-order effects but also desirable second- and third-order effects.

In a way the problem is similar to that confronted in a chess game; at any moment many moves are possible and can be identified, but their longer-term outcomes are quite obscure. The player's moves can be likened to possible actions in the cross-impact analysis, and the opponent's later moves likened to the occurrence of foreseeable but unpredictable future events.

The cross-impact analysis tries to identify the few most important chains of occurrences from among the many possible chains. This is done by evaluating the effect of changes in the likelihoods of some events on the longer-term likelihoods of occurrence of other events. Perhaps two of the most useful aspects of the cross-impact analysis are (1) that the events which may be included in the set under analysis are not constrained by being confined to any one discipline or type (it is possible to use this method to assess the effect of changes in technology on technology, society on society, technology on society, and so on) and (2) that the results, which may appear counterintuitive at first, are always retraceable from the inputs used in the analysis. Thus, while this type of analysis may not help us in deciding which programs may be most desirable in pursuing a given goal per se, it does help to point up the impact such programs may have on other eventualities.

The Delphi and cross-impact techniques have been frequently used in combination in analyzing future possibilities. A futures analysis is concerned with forecasting rather than predicting the future, that is, with estimating what "may" happen rather than saying what "will" happen.

This is not to deny that some things may be regarded as inevitable, but if all aspects of an issue were inevitable and nothing could be done to alter the future, the analysis of the outcome would become a pointless intellectual exercise. What is important is to identify the alternatives that are possible and to determine how likely each is and what controls exist or may be developed to increase or decrease its likelihood of occurrence. The analysis can be likened to a "predictive display" which is used as a navigational aid on many ships. A predictive display shows the surrounding terrain, the present position of the vessel, and its future course (assuming that the controls and currents remain the same). A futures analysis also attempts to identify what our surroundings are, where we are and where we appear to be going, what the limits of our control system are, and which of the controls should be used.

The analytic sequence of futures analysis is generally applicable to many issues. The steps in this sequence attempt to develop the elements that go into the predictive display. These steps are the following:

Define the issues and current status.
Identify possible futures and their likelihoods of occurrence.
Identify possible actions and their likely impacts.
Evaluate alternatives and select possible desirable courses of action.

In light of the above, some of the basic assumptions of a futures analysis can be readily identified. Perhaps the most important of these are the following three:

The future is not singular.
Society, by use of its resources, can affect the future by causing certain events to occur and preventing others from occurring.
The exact nature of the future that will materialize is unknowable.

The underlying premise here, of course, is that the "coming into being" of the future is a highly complex, dynamic process which we do not fully understand and which we do not, even with the help of futures analyses, expect to understand fully. However, we do accept that it is possible to identify many alternatives and that, by appropriate action, society can exert a significant degree of control over these alternative futures.

To be useful, futures analyses must be coupled with the decision-making process. For this coupling to be effective, certain considerations must be recognized. Some of these are discussed below.

Since every decision affects consequent outcomes, every decision presumes a forecast. Regardless of whether the decision involves a purchase, a sale, a legislative act, a contractual commitment, or any other action, the decision maker is presuming some knowledge about future possibilities. The time period may be brief, as in the case of, say, purchasing clothing;

intermediate, as in the case of purchasing an automobile; long term, as in the case of buying a home; or even very long term, as in the case of urban renewal. In many of these situations we can anticipate future prospects with sufficient accuracy and confidence to make decisions comfortably. In others we may analyze the situation carefully before making our decisions yet even then make these decisions without feeling truly comfortable.

Clearly, the relation of futures analysis to the decision-making process is a personal one. Because there is no singular future and because there is no rigorous means of identifying or quantifying all future possibilities, the futures analysis must be accomplished in a way that maximizes the decision maker's confidence in the results. In a futures analysis this is done by adhering to the following criteria. The analysis should always be directed toward the user by generating the type of information he believes to be essential in his decision-making process. The analysis must be conducted in a sequence which is clearly describable to the decision maker and which is always related to the present, so that the long-term implications of current decisions are displayed. Finally, because many of the data in the analysis involve judgment, those people in whom the decision maker places the greatest confidence should be involved in the analysis; in our societal organizations, these generally are the decision maker's own staff members. This does not mean that organizational staff members should perform futures analyses in isolation or without the appropriate use of outside expertise. On the contrary, such inputs from outside the organization can enhance the thinking process and broaden the alternatives identified in the analysis. By and large, however, the people in the decision maker's organization are those most likely to influence him, and their participation is likely to increase his confidence in the analytic results.

An important caveat to bear in mind is that, because of the dynamic nature of the processes involved and the limitations of the insight and understanding considered possible, it is important that the currency of any futures analysis be frequently reappraised. It is easy to be lulled into a false sense of security by using the results of a futures analysis in guiding ongoing decisions, long after the shelf life of the analysis may have been exceeded. Thus part of any futures analysis must involve procedures for regularly updating the data and reanalyzing it appropriately in light of new developments.

As indicated earlier, although the current techniques of futures research are superior to those our forebears possessed, they do not enable us to forecast over longer time periods than our forebears did. We are able to see further into change than they did, but not into time. This distinction

between forecasting into change and forecasting into time deserves particular emphasis. Clearly any forecaster can predict tomorrow accurately if it is certain to be the same as today. It is the prospect of change which introduces uncertainty into forecasts, and it is the fact of change which reduces the accuracy of these forecasts as the time period increases.

This would be far less important if our decisions were not constrained by time in other ways. For example, decisions involving purchases typically presume some useful lifetime over which the purchase price is to be amortized. Changes which have the effect of reducing this useful lifetime can make otherwise sound decisions impractical. Even more difficult situations occur in such areas as urban planning or the development of new cities, where the time to implement a project is long and the desires and values of the intended users are uncertain and subject to change. Yet these situations are real and must be evaluated if forecasts are to be of any real value. Ironically enough, there is always the possibility that an increase in our forecasting capability might also increase our propensity for change, so that, even if realized, the progress sought after would be canceled.

Futures analyses are generally of two types: exploratory and normative. An exploratory analysis is concerned primarily with the identification of alternatives and provides only a broad assessment of the implications and desirability of these alternatives. Exploratory forecasts typically set the stage for more detailed (but still quite broad) tradeoffs among seemingly attractive options. Once goals have been selected and attractive alternatives identified, a normative forecasting analysis is appropriate. Normative forecasting analyses concentrate on identifying the optimum path to fulfilling a selected goal and identifying the pitfalls and early-warning signs likely to be encountered in actual program implementation. The normative analysis clearly uses much of the information generated in the exploratory analysis, but in its details and viewpoint it differs markedly.

As indicated at the outset, the need to cope with uncertain and as yet unrealized changes is highly important if forecasting is to be improved. It was suggested that by including informed judgment (which is inherently qualitative) in forecasting analyses, significant progress can be made toward satisfying this need. Toward this end many systematic procedures have been devised and incorporated into over-all analytic structures. One of these structures, which uses the Delphi and cross-impact methods, has been described.

In the analysis described, a model is created which relates a selected set of binary events in terms of their likelihoods of occurrence by some

future date. The events in the model are designed, by the users of the model, to include all the possibilities that the users believe they should plan for in seeking to fulfill their goals in the specified time period. In creating the model, the users (who may be individuals, groups, or sets of either) estimate the probability of occurrence of each of these events and describe the causal linkages among these events in terms of the degree to which the occurrence of any one event is expected to increase or decrease the probability of each of the others. The only demand the analytic technique imposes upon the users is that their input values be logically consistent.

The model is then used to identify the more important sets of possibilities systematically by explicitly addressing the issue two ways. First, the causal linkages between possible events described in the model are used to evaluate the sensitivities of each event, both as an "actor" and as a "reactor." Second, when an action is contemplated or a technological innovation studied, its direct impact on all the possible events is considered and assessed. Finally, both of these effects are accounted for in the analysis by interrelating the direct effects (produced by the new action or technological innovation) with the causal linkages described in the model.

The outcomes of such an analysis often appear counterintuitive. However, since the networks which produce these strange outcomes are always logically retraceable, the planners or decision makers who are concerned with the particular problem being analyzed can scrutinize these networks carefully, change the model if they think it was incorrect, and try again. However, as is also often the case, when they find it impossible to create a model which they find logically comfortable on an elemental basis and which yields the results they anticipated from their normal macroanalysis, they generally come to recognize the more subtle (but real) aspects of the issue confronting them, and their time horizons are broadened.

DR. JOHN W. RILEY, JR.* [Forecasting the environment for business]: Never in history have we been so active in trying to anticipate the future. In the United States and Canada there are literally dozens of impressive projects, ranging all the way from the Institute for the Future to great corporations like General Electric, the Bureau of Labor Statistics, the National Academy of Science, the Rand Corporation, and Harvard University. Countless other projects are under way and at various stages of

* Dr. Riley, not a member of the Society, is senior vice-president—corporate relations of the Equitable Life Assurance Society; prior to 1960 Dr. Riley was professor and chairman of the department of sociology, Rutgers University.

completion. The Future Outlook Project of the Institute of Life Insurance was directly stimulated by an earlier Canadian study. And a new study—Perspective for Tomorrow, under the direction of Jack Moorhead—is perhaps the most recent addition to a long and growing list.

In the next few minutes I shall try to do two things. First, since I am pinch-hitting for Eleanor Sheldon, I want to give you the briefest glimpse into some of her pioneering thoughts on the matter, especially her paradigm of the main methodologies of social forecasting. Second, I would like to play the role of an eclectic forecaster—to suggest some characteristics of the future and to discuss some of the implications which such characteristics might have for our common enterprise.

If Dr. Sheldon had been able to participate today, she would have called your attention to at least two major dimensions along which methods of forecasting, projections or predictions, might be classified.

The first of these refers to the technical base. Oversimplified, this includes a simple distinction between quantitative methods which utilize numerical measurements and qualitative methods in which the operations are expressed primarily in descriptive terms.

The second main dimension is theoretical rather than technical, and here the main distinction is between two curiously used terms: "exploratory" forecasting and "normative" forecasting. The so-called exploratory forecast typically starts with an existing empirical base and derives implications for the future, whereas normative forecasts tend to state future goals and then to work back to the empirical present. These two dimensions produce a four-celled property space or paradigm.

This enables a classification of such disparate methods of forecasting as the traditional extrapolation of economic or demographic trends, highly sophisticated mathematical models capable of handling a large number of indeterminate variables, the Delphi technique of forced consensus, extremely complex modes for cohort analysis, content analysis which can be used in tandem with historical analogy, scenario writing, and computer simulations.

I do not propose to go any further with this. I do believe, however, that such paradigms are often very useful in keeping methodological assumptions in tidy order and in stimulating new insights. And I did feel duty bound to give you some idea of what Eleanor Sheldon would have talked about had she been able to come. In any event, she would be among the first to agree that social forecasting is still more an art than a science—as Ed Lew put it, "the art of reasoned conjecture."

Ian Wilson has given us a fascinating account of how, in one company, forecasting is used as a management tool. Denis Johnston gave us an updated account of how economic and demographic data can be extrapolated

to open a door on the future. Whether it is a prediction or an explanation does not really matter. Selwyn Enzer has brought us full circle with his observation that every decision—public or private—presumes a forecast of some kind.

It is instructive, I believe, to take note of the obvious fact that the functioning of any social system, whether simple or complex, rests upon a set of implicit expectations or anticipations of future behaviors. This is simply to say that forecasting the future is a built-in aspect of everyday life. I emphasize the everyday-life dimension because it is so basic to what we are talking about. If we could not anticipate with some measure of success the responsive behaviors of others, there could be no interpersonal relationships. All human activity would become random, and any form of social organization, as we know it at present, would become a logical impossibility. (That is a pretty far-out statement!) Indeed, we are coming pretty close to a kind of social science fiction—but, in that connection, I am told that serious scientists are looking to science fiction as one way to penetrate the veil which separates present and future. Denis Johnston's comment on zero mortality reminds me of Karl Mannheim's mental experiment in which no deaths occur for an entire generation.

Let me, then, assume my self-appointed role as an eclectic forecaster—to set out, as Ed Lew suggested, the "range of possibilities." Of the very many studies of the future which focus on values underlying social change, I am impressed by a pretty general agreement on four points which seem to me to be central in getting a handle on what the future may be like. We raise these because, as Selwyn Enzer observed, we are part of the action. It is like a planned Heisenberg effect.

First, we can expect increasing emphasis upon pragmatic values of all kinds: practicality, convenience, health, and adjustment. The emphasis will be more on means than on ends. Less weight and attention will be given to questions of fixed principles and morality. For example, it is already the case that homes are bought more as a convenience than as a long-term investment. Goods and services of all kinds will increasingly be purchased on credit and paid for according to methods yet to be developed. All manner of arrangements will be formed because they work—not because they are in some sense right.

In the insurance business we would be logically led by this trend to anticipate a number of issues which are, at the moment, far from clear:

1. Changes in attitudes toward financial security, that is, the extent to which individuals assume personal responsibility or rely on collective mechanisms.
2. Changes in the awareness of financial need at different stages in the life course.

3. Changes in attitudes toward health services, continuing education, and flexible housing arrangements.

We see such ideas as agents of change, and we must ask ourselves what kinds of new configurations are the most probable. The Trend Analysis Project (TAP) of the Institute of Life Insurance is proceeding on this premise.

Second, we can expect increasing value to be placed upon family life and the idea of the family. This, incidentally, may come as something of a surprise in a highly individualistic society in which the family seems to be challenged. Yet the incidence of voluntary childlessness is more likely to decline than increase despite the baby bust, or as some have put it the "birth dearth." The new phase of joint survival of husbands and wives will persist and possibly be extended. As Dr. Anne Foner will point out tomorrow morning on the panel devoted to the changing family, there may well be a renaissance of the extended family, not based on the current fad of the communes, but rather because of the important functions performed. In any event, the family—be it based on a blurring of sex roles with greater equality across both sex and age lines or upon a type of family pluralism not yet apparent in Western society—as a social institution is extremely durable and adaptable and is likely to be around for a long time. One specific prediction is of great interest. With respect to that most personal anxiety, death, the concern will be increasingly for others and less for self. Since attitudes toward death are closely related to educational level and since future generations of older people will be far better educated than they are today, this change could have enormous implications for the maintenance of health in the later years—to say nothing of new patterns of retirement.

Third, we can expect increasing belief in the value of change qua change. More particularly, we will come to expect and to take for granted the rapid shifting of functions from one social institution to another—educational functions to business, business functions to government and vice versa, family functions to education, and religious functions to family. Perhaps of special interest is the institution of work. Despite some changes in the work ethic, North Americans will have no difficulty in reconciling the high valuation on hard work, on the one hand, with the high valuation which will most certainly be placed on leisure, on the other. This will be the case in spite of the rather dramatic shifts in work-life expectancy of men in comparison with women. As man's work-life expectancy slowly begins to shorten, it is precisely the other way around for women. Furthermore, it seems very likely that a complex of social changes

will make work units easier, more enjoyable, and probably of shorter duration. Dr. Juanita Kreps will have some fascinating things to say about such changes tomorrow morning in the session on changes in family life.

Finally, we can expect even stronger emphasis on the values of equality and democracy. The principle of equality will find new legal guarantees; increasing freedoms for the individual will be specified, and the call for a broader base of participation by all people will not go unheard. In this connection we are likely to see an entirely new phenomenon. With increasing educational levels in all sectors, the evidence suggests that, after rising expectations have stopped rising, or at least have leveled off, we shall begin to experience a widening of expectations. The explanation for this lies in the curious fact that many highly educated people feel that their acquisition of social credentials has really narrowed their options, because they are expected to follow socially prescribed courses. Hence the notion that widening expectations may sometime replace rising expectations.

Obviously many of these forecasts or predictions are both speculative and debatable. My purpose in setting them out is simply to suggest some of the implications which might be found for our business. I would conclude, therefore, with some questions which must necessarily be raised if, indeed, the shape of the future comes even remotely close to which we have suggested.

I list these questions in no order of importance or complexity. Many of them, of course, have long been discussed. Some of them are already under intensive study:

Can more convenient methods of paying life insurance and annuity premiums be devised, especially where many policies and contracts are involved?

Would it be possible to construct a single, highly flexible family policy (or an integrated group of policies) which would cover all members and be capable of spanning the entire life cycle of the family?

What new types of mass-coverage techniques can be devised in the interest of more efficient selling and wider coverage?

How can our accumulating knowledge of human behavior be put to work effectively and appropriately in order to improve the distribution and administration of life, health, and annuity contracts? I refer to new knowledge of (1) rising and widening levels of expectation, (2) changing roles of husbands and wives, (3) new patterns of leisure, and (4) relaxation of the taboo on death.

Is variable life insurance—whatever form it may ultimately take—the only way of maintaining the integrity of the life insurance contract and, at the same time, building into the contract cash values which vary with economic con-

ditions? Would there be any way of issuing immediate insurance at the local level on the basis of a computerized underwriting program?

What new mechanisms for facilitating the upward social mobility of minority group members—and women—can be devised?

What types of health maintenance organizations are most likely to work, and under what conditions?

What actuarially sound mechanisms can be invented for income maintenance over the life course? (Already it is clear that our pension plans must be revised to meet the new realities imposed by occupational mobility and the two-income family.)

What steps can be taken to prevent that "locked-in" feeling that people frequently report immediately after signing an insurance contract?

What new business hierarchies are needed to permit the development of venture management (as it has recently been called)?

Obviously these are only a few of the questions which must be answered if we are to do business in an increasingly pragmatic society characterized by egalitarian values and rapidly changing patterns of work life and family arrangements. Perhaps the most basic message which the future holds for us, however, has to do with the demand for our products and services. In such a society as I have described, the demand for security will, in economic terms, continue to be essentially elastic. As the rate of social change accelerates, as man's life becomes more complex and affluent, his security needs become greater, simply because he has more to lose.

At this point my crystal ball is very cloudy indeed.

CHAIRMAN LEW: In response to Mr. Moorhead's request for a selected bibliography on the subject of forecasting, the panel has come up with the following list.

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## LIABILITIES AND SURPLUS IN THE 1970'S

1. What implications do interest, expense, and mortality rates expected in the 1970's and beyond have for
   *a*) Liabilities and surplus?
   *b*) Standard valuation and nonforfeiture laws?
   *c*) State capital and surplus requirements for initial and continued licensing?
2. How are these questions affected by
   *a*) Proposals, such as those of the AICPA, for balance sheets other than statutory?
   *b*) New work on the theoretical basis for capital and surplus?

MR. D. H. SAMUEL BATEMAN: My discussion deals mainly with the implications that interest, expense, and mortality expected in the 1970's have for liabilities and surplus of mutual companies, with brief reference to the somewhat related proposals of the American Institute of Certified Public Accountants.

In considering the operations of a mutual company, first and foremost one must consider liabilities and surplus combined in terms of the total funds the company should accumulate for the successful operation of the mutual insurance principle. That is, for each block of policies or contracts, funds should be accumulated which will be sufficient to meet the cost of the benefits under reasonably conceivable adverse contingencies.

For the most part I will be talking about individual annuities and individual life insurance. However, because a company as an entity stands behind all its policies in its various lines of business, we cannot think solely about the liabilities and surplus funds related to one line of business. Consequently, if we were taking a comprehensive look at liabilities and surplus in the 1970's, account would have to be taken of the outlook for each of the other major lines of business, namely, personal health, group life and health, and group annuities. However, these other lines of business are faced with many special problems, often complex, which demand consideration but which cannot be discussed here in the time available. It must suffice to note merely that there do exist many special problems peculiar to each line of business. As examples of these problems, there might be noted the effect of the rapid escalation of doctors' and hospital charges on health insurance and the highly competitive aspects of group business.

Let us consider primarily individual life insurance and the effect of the trends of mortality, interest, and expense, noting those special differences

which relate to individual annuities. First, consider the trend of our experience over the last ten years or so.

According to the report of the Subcommittee on Statutory Interest Rates, ordinary mortality as measured by intercompany experience has improved about 7 or 8 per cent as compared with the mortality experience underlying the 1958 CSO Table. While this represents a modest improvement, it does not appear nearly as significant as the recent trends in interest and expense rates. Furthermore, there is some doubt as to whether even this modest rate of improvement in intercompany mortality will continue into the 1970's and later. Accordingly, it is reasonable, for the purposes of this analysis, to make the practical assumption that mortality rates for the 1970's will remain at about their present level. Of course, we know that mortality experience can vary widely by company and that this assumption that present mortality levels will continue may not be appropriate for each individual company.

On the other hand, there have been significant increases in incurred expenses and earned interest rates over the last ten years, these increases having been particularly sharp over the last two years. For example, aggregate expenses for individual life (i.e., line 21, "Commissions"; line 23, "General Insurance Expenses"; and line 24, "Insurance Taxes Excluding Federal Income Tax of the Analysis of Operations") for the ten largest mutual companies (domiciled in the United States) combined over the ten-year period from 1960 to 1970 increased at an average annual rate of 4.3 per cent. For the two-year period from 1968 to 1970, however, this annual increase averaged 7.5 per cent. This pattern of increasing expenses seems to be generally typical of each of the ten companies.

A similar trend holds for the earned interest rate. Since federal income tax for mutual companies is generally determined on the Phase I basis (i.e., on the basis of taxable investment income), it is appropriate to express the impact of the federal income tax of mutual companies in terms of an interest rate applicable after federal income tax. For these ten companies combined, the estimated earned interest rate, after federal income tax, applicable to individual life insurance increased from 3.64 per cent for 1960 to 4.33 per cent in 1968 to 4.68 per cent in 1970, representing an average annual increase of 10 points of interest over the last ten years and 17 points over the last two years (see Table 1, A and B).

The type of action taken for 1971 dividends by these ten mutual companies may reflect increasing concern over the effect of the mounting increase in expenses. For the previous five years (1966–70) a pattern of frequent increases in dividend scales was common. In all likelihood this was due primarily to the progressive improvement in investment earnings.

On the average, for each year during this five-year period, half of the ten companies increased their dividend scale. Even though there was a continuation of the significant increase in the rate of interest earnings for the calendar year 1970, only one company increased its 1971 scale; another company decreased its scale, and a third company decreased its scale for term insurance.

Rather than attempt the almost impossible task of making reliable estimates of interest and expense rates for the 1970's, I will try to indicate the effect on surplus of continuing present dividend scales, assuming average annual increases in interest, expense, premium income, and insurance in force generally applicable over the last ten years. These increases would

TABLE 1

TEN LARGEST MUTUAL COMPANIES*

A. INDIVIDUAL LIFE INSURANCE

| Year | Aggregate Expenses (Millions) | Premium Income (Millions) | Insurance in Force (Millions) | Estimated Investment Rate Earned (after Federal Income Tax) |
|---|---|---|---|---|
| 1960 | $1,414 | $5,050 | $199,659 | 3.64% |
| 1968 | 1,863 | 6,680 | 302,082 | 4.33 |
| 1970 | 2,149 | 7,173 | 346,338 | 4.68 |

B. ANNUAL RATE OF INCREASE FOR PERIOD

| Period | Aggregate Expenses | Premium Income | Insurance in Force | Interest (after Federal Income Tax) Average Annual Increase in Points |
|---|---|---|---|---|
| 1960–70 | 4.3% | 3.6% | 5.7% | 10 |
| 1968–70 | 7.5 | 3.6 | 7.0 | 17 |

C. ASSUMED ANNUAL RATES OF INCREASE IN MODEL OFFICES

| Assumption | Aggregate Expenses | Premium Income | Insurance in Force | Interest Points† |
|---|---|---|---|---|
| 10-year trend (modified) | 5.0% | 3.5% | 5.5% | 10 |
| 2-year trend | 7.5 | 3.5 | 7.0 | 17 |

* Domiciled in the United States.

† Until interest rate equals 5.75 per cent—level thereafter.

be more modest than those more extreme increases experienced over the last two years. My assumptions are an annual increase of 5.0 per cent in aggregate expenses and of 10 points of interest in the estimated earned interest rate after federal income tax. We established 5.75 per cent as the ultimate earned interest rate (after federal tax) resulting from a continuation of present interest rates for new investments. This model office also assumes annual increases in premium income and insurance in force of 3.5 per cent and 5.5 per cent, respectively, and my company's distribution of business (see Table 1, C).

We first determined, year by year for the 1970's, the excess of the assumed aggregate expenses (i.e., the 1970 expenses increased by 5.0 per cent annually) of the ten companies with those generated by the expense component of an adjusted dividend formula (see Table 2). The expense component of this dividend formula was derived by adjusting the expense factors in a dividend formula now in use, so that, when it is applied to this ten-company model office, it generates approximately the $2.1 billion of aggregate expenses incurred by these companies during 1970. Next we applied year by year to the estimated reserves and surplus the assumed excess of interest earned (after federal income tax) over and above current levels in order to indicate the relationship of the increased rate of interest earnings to the increased expenses.

These model-office calculations show that during the 1970's there will develop substantial increases in the investment return over the 1970 level. Also, the expenses generated by the dividend formula will continue to cover actual expenses by relatively small amounts. This would suggest that periodic increases in dividend scales could be made because of the increased investment return, as in our experience in the 1960's, with surplus remaining at reasonable levels.

On the other hand, if the model office were based on the more extreme trends typical of the last two years, the aggregate expenses would exceed those generated by the dividend formula by larger and larger amounts. However, this excess of aggregate expenses would be more than offset by the substantial increases in investment income over the 1970 level. Even if the level of divisible surplus were to remain at current levels, this continuing pattern of increases in expenses and investment income would before too many years require changes in the factors in the dividend formula to reflect the higher interest and expense rates. Furthermore, the trend shown by this model office at the end of the 1970's indicates quite clearly that it would not be too long before the level of divisible surplus would have to be reduced.

Considerations such as the general outlook for the level of interest

earnings, federal income tax implications, and the incidence of dividends and cost comparisons could lead to higher interest assumptions for new policy series which might become effective during the 1970's. However, because of the additional margins needed for participating policies, it is not likely that mutual companies would wish to use an interest assumption greater than 3½ per cent, even if there were no legal barrier to adopt-

TABLE 2

EFFECT ON INDIVIDUAL LIFE BUSINESS OF MUTUAL COMPANIES OF CERTAIN INCREASES IN INTEREST AND EXPENSE DURING THE 1970'S

(In Millions)

| Year | Expenses Collected by Dividend/Premium Formula (1) | Assumed Aggregate Expenses (2) | Excess of Collected over Aggregate Expenses for Year [(1) − (2)] (3) | Excess Investment Earnings (4) |
|---|---|---|---|---|
| | Model Office No. 1* | | | |
| 1971 | $2,287 | $2,257 | $ 30 | $ 70 |
| 1972 | 2,454 | 2,369 | 85 | 147 |
| 1973 | 2,623 | 2,488 | 135 | 230 |
| 1974 | 2,795 | 2,612 | 183 | 321 |
| 1975 | 2,970 | 2,743 | 227 | 421 |
| 1976 | 3,149 | 2,880 | 269 | 528 |
| 1977 | 3,331 | 3,024 | 307 | 646 |
| 1978 | 3,517 | 3,175 | 342 | 772 |
| 1979 | 3,708 | 3,334 | 374 | 910 |
| 1980 | 3,902 | 3,501 | 401 | 1,058 |
| | Model Office No. 2† | | | |
| 1971 | $2,279 | $2,310 | −$ 31 | $ 119 |
| 1972 | 2,438 | 2,484 | − 46 | 247 |
| 1973 | 2,601 | 2,670 | − 69 | 385 |
| 1974 | 2,769 | 2,870 | − 101 | 534 |
| 1975 | 2,941 | 3,085 | − 144 | 693 |
| 1976 | 3,118 | 3,317 | − 199 | 865 |
| 1977 | 3,299 | 3,566 | − 267 | 942 |
| 1978 | 3,487 | 3,833 | − 346 | 979 |
| 1979 | 3,681 | 4,120 | − 439 | 1,017 |
| 1980 | 3,880 | 4,429 | − 549 | 1,057 |

* Model-office assumptions: premium income increases 3.5 per cent per annum; insurance in force increases 5.5 per cent per annum; aggregate expenses increase 5 per cent per annum; earned interest rate for individual life (after federal income tax)—increase 10 points annually to maximum of 5.75 per cent.

† Model-office assumptions: premium income increases 3.5 per cent per annum; insurance in force increases 7.0 per cent per annum; aggregate expenses increase 7.5 per cent per annum; earned interest rate for individual life (after federal income tax)—increase 17 points annually to maximum of 5.75 per cent.

ing a higher interest assumption. At any rate, it is unlikely that different interest assumptions for new policy series would have any significant effect on the general level of liabilities and surplus during the 1970's.

In summary, a continuation of the trends in expense and interest earnings experienced during the last two years is likely to lead to significant changes in the factors in the dividend formulas, even if divisible surplus in the aggregate were to remain at about the current level during the 1970's. A substantial reduction in the rate of annual increase in expense to levels generally prevailing in the 1960's can lead to a significant improvement in a company's financial and net cost positions.

A similar picture can be painted for individual deferred annuities issued by mutual companies. However, the expense component arising from commission rates is much lower for annuities, and much of the deferred annuity business is on a tax-qualified basis. Some companies use a higher interest assumption for qualified business because of the very low levels of federal income tax involved.

Individual immediate annuities are generally nonparticipating. Because the entire consideration is received at the time of issue and the issue ages are such (generally age 60 and older) that the average duration of the contract is for a limited period of years, the considerations charged for these contracts are based on interest assumptions related to yields obtainable on new investments; currently these assumed rates of interest run as high as 7 or 8 per cent. This causes a high degree of surplus strain on these contracts. For example, for a nonrefund immediate annuity the initial reserve on the $a$-1949 Table, Ultimate, at $3\frac{1}{2}$ per cent is greater than the consideration charged by one company at age 65 by 7.3 per cent for males and 10.5 per cent for females. The surplus strain would be considerably greater if a more up-to-date mortality table were used and if expenses at issue were taken into account. While this surplus strain does not seem to be a serious problem for most mutual companies because of the relatively small volume of immediate annuities, it is highly desirable that more realistic minimum valuation standards be applicable to these contracts.

The effect of AICPA proposals can hardly be judged at this time because the AICPA Committee on Insurance Accounting and Auditing is apparently still considering its position on how generally accepted accounting principles apply to mutual companies. The December, 1970, exposure draft of the audit guide was prepared principally from the standpoint of nonparticipating insurance.

The AICPA committee should understand the fact that mutual companies must provide insurance at cost and maintain equity among the

various classes of policyholders and that this requires the accumulation of sufficient funds for each block of business to render it very unlikely that any particular block will fall into a deficit position. It makes no sense for either stock or mutual companies to have to publish two statements. Certainly, if a mutual company were to publish a separate statement which would show adjusted earnings and surplus to be much higher than on the statutory basis, it would be most unfortunate. It would be naïve to think that such a separate financial statement would not bring strong pressures, perhaps irresistible, for paying excessive and unjustified dividends to policyholders.

DR. E. J. LEVERETT, JR.:* Between 1950 and the middle of 1968, 2,084 life insurance companies were organized in the United States, and 934 companies were merged, reinsured, or otherwise retired from business. Many reasons for the retirement of these companies can be stated, and the dominant reason is unknown. It is reasonable to conclude, however, that low capital and surplus requirements, which made it easy to organize a stock life insurance company, attracted people who were more interested in making a quick profit on a stock promotion than in building a life insurance company. The ease of entry also attracted people who were unable to cope with the complexities of managing a life insurance company, and companies with this type of management have low probabilities of survival. It is arguable that the reasons for failure can all be subsumed under poor management, and inadequate capital and surplus are simply results of poor management. The thrust of these remarks, however, deals with inadequate capital and surplus as the prime reasons for failure.

As indicated by Table 1,[1] the initial capital and surplus requirements for the licensing of a life insurance company vary from $70,000 to $3,000,000. It would appear that most jurisdictions have established these capital and surplus requirements with little evidence of the amount of initial funds needed in order for the companies to survive without repeated infusions of funds. As a group the life insurance industry has done very little toward the strengthening of these laws. Many individuals have recognized the inadequacy of the state's financial requirements, but little has been done beyond this recognition.

The purpose of this study is to determine the amount of funds that a

* Dr. Leverett, not a member of the Society, is head of the Department of Risk Management and Insurance, University of Georgia.

[1] It should be noted that a new code in New Jersey, which will be effective in January, 1972, will raise the capital requirements for a life-only company to $1,000,000. If the company writes both life and health, the requirement will be $1,500,000 capital and $2,850,000 surplus. This will be the highest requirement in the country.

## TABLE 1

MINIMUM CAPITAL AND SURPLUS REQUIREMENTS OF EACH STATE FOR DOMESTIC LIFE INSURANCE COMPANIES, 1970

| STATE | REQUIREMENT | | STATUTE |
|---|---|---|---|
| | Capital | Surplus | |
| Alabama | $ 200,000 | $ 300,000 | Ala. Stat. Title 28 § 1 (1967) |
| Alaska | 200,000 | 100,000 | Alaska Stat. 21.09.070 (1966) |
| Arizona | 20,000 | 50,000 | Ariz. Rev. Stat. 20-210, 20-211 (1966) |
| Arkansas | 100,000 | 100,000 | Ark. Stat. §§ 66-2207, 66-2208 (1967) |
| California | 450,000 | 550,000 | Calif. Ins. Code 700.05 & 10510 (1965) |
| Colorado | 200,000 | 100,000 | Colo. Rev. Stat. § 72-1-36 (1963) |
| Connecticut | Created by legislature | | ........ |
| Delaware | 300,000 | 150,000 | 18 Del. Code § 511 (1968) |
| District of Columbia | 200,000 | 100,000 | D.C. Code §§ 35-508, 35-601 (1964) |
| Florida | 500,000 | 750,000 | Fla. Stat. §§ 624.0206, 624.0207 (1968) |
| Georgia | 200,000 | 200,000 | Ga. Code §§ 56-306, 56-307 (1963) |
| Hawaii | 200,000 | 100,000 | Hawaii Ins. Law 431-88, 431-89 (1963) |
| Idaho | 400,000 | 400,000 | Idaho Ins. Code § 41-313 (1969) |
| Illinois | 400,000 | 200,000 | Ill. Stat. § 73:625 (1965) |
| Indiana | 400,000 | 600,000 | Ind. Stat. Ann. § 39-3614 (1967) |
| Iowa | 350,000 | 400,000 | Iowa Code § 508.5 (1965) |
| Kansas | 200,000 | 100,000 | Kan. Gen. Stat. § 40-401 (1965) |
| Kentucky | 500,000 | 750,000 | Ky. Rev. Stat. § 304.072 (1966) |
| Louisiana | 100,000 | 200,000 | La. Ins. Code § 22:71 (1966) |
| Maine | 500,000 | 1,000,000 | Me. Ins. Code 24-A, § 410 (1970) |
| Maryland | 500,000 | 750,000 | Md. Stat. Code Art. 48A, §§ 48, 49 (1965) |
| Massachusetts | 400,000 | 800,000 | Mass. Gen. Laws c. 175, §§ 48, 51 (1968) |
| Michigan | 1,000,000 | 500,000 | Mich. Stat. Code 500.410 (1965) |
| Minnesota | 200,000 | ........ | Minn. Stat. § 60.29 (1963) |
| Mississippi | 200,000 | 300,000 | Miss. Code § 5660 (1962) |
| Missouri | 200,000 | 200,000 | Mo. Stat. Ann. § 376.280 (1964) |
| Montana | 100,000 | 100,000 | Mont. Rev. Code § 40-2808 (1965) |
| Nebraska | 500,000 | 500,000 | Neb. Stat. 44-214 (1967) |
| Nevada | 200,000 | 100,000 | Nev Rev. Stat. § 682.160 (1963) |
| New Hampshire | $600,000 | | N.H. Stat. § 411:1 (1969) |
| New Jersey | 800,000 | 1,700,000 | N.J. Stat. § 17:17-6 (1968) |
| New Mexico | 100,000 | 200,000 | N.M. Stat. Ann. § 58-18-24 (1965) |
| New York | 1,000,000 | 2,000,000 | N.Y. Ins. Law § 191 (1967) |
| North Carolina | 300,000 | 300,000 | N.C. Ins. Laws § 58-777 (1963) |
| North Dakota | 150,000 | 75,000 | N.D. Rev. Code § 26.08-04 (1963) |
| Ohio | 400,000 | 600,000 | Ohio Rev. Code 3907.05 (1965) |
| Oklahoma | 250,000 | 125,000 | Okla. Ins. Code 36, §§ 610, 611 (1967) |
| Oregon | 500,000 | | Ore. Rev. Stat. § 731:554 (1967) |
| Pennsylvania | 300,000 | 150,000 | 40 Pa. Stat. Ann. § 383 (1967) |
| Rhode Island | Created by legislature | | R.I. Gen. Laws § 7-1-5 (1956) |
| South Carolina | 100,000 | 100,000 | S.C. Code § 37-181 (1963) |
| South Dakota | 200,000 | 200,000 | S.D. Code § 31.1510 (1959) |
| Tennessee | 150,000 | 150,000 | Tenn. Code Ann. §§ 56-303, 56-305 (1961) |
| Texas | 100,000 | 100,000 | Tex. Ins. Code Art. 3.02 (1963) |
| Utah | 200,000 | 500,000 | Utah Ins. Laws § 31-11-1 (1967) |
| Vermont | 250,000 | 150,000 | 8 Vt. Stat. Ann. § 3304 (1968) |
| Virginia | 500,000 | 300,000 | Va. Ins. Laws § 38.1-88 (1966) |
| Washington | 400,000 | 400,000 | Wash. Rev. Code § 48.05.340 (1967) |
| West Virginia | 750,000 | 375,000 | W.Va. Code 33-3-5 (1968) |
| Wisconsin | 400,000 | 100,000 | Wis. Ins. Code 201.04 (1966) |
| Wyoming | 200,000 | 100,000 | Wyo. Ins. Laws 26.1-57 (1965) |

new life insurance company would need in order to remain solvent, under current regulatory conditions and under various operating assumptions, and be reasonably certain that it would not have to seek additional funds during its formative years. Special emphasis will be given to the impact of expenses, mortality, and interest on the solvency position of the hypothetical company.

The test model[2] is designed to simulate the financial operations of a life insurance company. The model generates the data necessary to construct the balance sheet and income statement as well as a statutory test of solvency of a hypothetical life insurance company. Most of the variables used in this study are widely used in actuarial literature and are given in summary form in Table 2.

The expenses assumed in the study are the expenses that are achieved by the company once it is in operation, but the assumption does not consider the excess expenses that are necessary prior to the time the company is in actual operation. It is difficult to determine an exact division between the start-up expenses and the operating expenses, but a look at three recently formed companies gives a pattern to follow. The general expenses and the insurance in force of the three companies at the end of the first year of operation were as shown in the accompanying tabulation. It is assumed in this study that all general expenses through the first partial calendar year of operations are start-up expenses, and $400,000 is used in the solvency calculation.

| Company | General Expenses | Insurance in Force |
|---|---|---|
| X | $397,321 | $6,660,655 |
| Y | 434,566 | 2,506,687 |
| Z | 410,951 | 2,017,037 |

The regulatory officials of most states would declare a life insurance company insolvent if its admitted assets were less than the total values of its present liabilities and capital required to do business. The laws of a few states permit the impairment of capital for a limited period of time, but the regulatory officials of these states indicated that they would

[2] Edgar J. Leverett, Jr., "A Simulation of the Financial Operations of a Life Insurance Company under Various Operating Assumptions with Special Emphasis on Solvency and Paid-In Surplus and Capital" (doctoral dissertation, Graduate School of Business, Indiana University, 1967).

TABLE 2

SUMMARY OF BASIC ASSUMPTIONS USED FOR HYPOTHETICAL COMPANY

1. The period of analysis is twenty years.
2. Policies are issued to standard males aged ten, thirty, and fifty.
3. The plans of insurance are ten-year level term, whole life, and endowment at age 65. These plans are written on a nonparticipating basis. In addition, a preferred whole life is written on a participating basis.
4. The expenses incurred with each death claim are $20 per policy, plus $1 per thousand.
5. The face amount of insurance for each plan is $12,000.
6. The paid-in surplus and capital will be started at $1,500,000, of which $400,000 is considered to be the minimum capital permitted by regulatory officials. The paid-in surplus and capital will be varied to achieve an optimum amount.
7. The assumed sales in the first year are 500 policies of $12,000 each. The number of policies sold in subsequent years is assumed to increase by 40 per cent of the number sold in the previous year for the first five years, 12 per cent for the next five years, and 10 per cent for the remaining years.
8. Sales are divided among the ages and plans of insurance according to Table 3.
9. The expense pattern will consist of expenses that vary with the premium and expenses per policy. Expenses in the first policy year are assumed to be 103 per cent of the first year's premium plus $87 per policy. In addition, a higher expense pattern is used to illustrate the impact of expenses. The higher pattern calls for 150 per cent of the first year's premium to be used for expenses. The remaining years are the same as the basic expense pattern.
10. The mortality rates are those found in the $X_{18}$ mortality table with Buck's select data for the first five years at ages ten, thirty, and fifty. To illustrate the impact of increased mortality, the mortality rates are increased by 50 per cent.
11. The lapse rates vary by age and plan of insurance. Table 4 gives the lapse patterns used for each category.
12. The cash values are determined on the basis of the 1958 CSO Mortality Table and $3\frac{1}{2}$ per cent interest.
13. Policy reserves are calculated by the Commissioners Reserve Valuation Method, based upon the 1958 CSO Mortality Table and $3\frac{1}{2}$ per cent interest.
14. The net annual interest rate is 5.0. To illustrate the impact of interest, the rate is lowered to 4.5 per cent.
15. All premiums are assumed to be paid annually, and the gross annual premiums are given in Table 5.
16. The start-up or organizational expenses are $400,000, which is expended in the first year of operation.

TABLE 3

PERCENTAGE OF SALES BY AGE AND PLAN OF INSURANCE FOR A HYPOTHETICAL COMPANY

| Age | Ten-Year Term | Whole Life—Participating | Whole Life—Nonparticipating | Endowment at 65 | Total |
|---|---|---|---|---|---|
| 10 | 0 | 10 | 5 | 15 | 30 |
| 30 | 15 | 5 | 15 | 5 | 40 |
| 50 | 10 | 5 | 10 | 5 | 30 |
| Total | 25 | 20 | 30 | 25 | 100 |

exercise their administrative powers and would not permit impairment of capital even for a limited period of time. For purposes of this study, the minimum amount of capital required by the state is considered to be the amount of net assets below which the company would not be permitted to fall, and this is assumed to be $400,000.

A test of solvency is used to determine whether or not the initial paid-in surplus and capital were adequate to finance the investment in new

TABLE 4

LAPSE RATES BY AGE AND PLAN OF INSURANCE FOR A HYPOTHETICAL COMPANY, BASED ON LINTON'S TABLES OF LAPSATION

| Age | Ten-Year Term | Whole Life—Participating | Whole Life—Nonparticipating | Endowment at 65 |
|---|---|---|---|---|
| 10....... | ................. | B | B | A |
| 30....... | B+50% | B | B | B |
| 50....... | B+50% | A | A | A |

TABLE 5

PREMIUM BY AGE AND PLAN OF INSURANCE FOR HYPOTHETICAL COMPANY

| Age | Ten-Year Term | Whole Life—Participating | Whole Life—Nonparticipating | Endowment at 65 |
|---|---|---|---|---|
| 10....... | .............. | $ 9.81 | $ 7.91 | $ 9.95 |
| 30....... | $ 5.75 | 18.48 | 14.70 | 20.85 |
| 50....... | 17.00 | 38.86 | 32.44 | 65.01 |

business and to satisfy the regulatory officials during the assumed period of operation. If the reserve liabilities plus the minimum required capital are greater than the assets generated by the business written plus the paid-in surplus and capital account with compound interest, then the company is considered to be insolvent. Assume, for example, a company with $1,000,000 paid-in surplus and capital, of which $400,000 is considered to be the minimum amount of capital. The business it has written has generated $1,000,000 in assets and $850,000 in liabilities. The follow-

ing test of solvency indicates that the company is solvent by a margin of $750,000:

| Paid-in surplus and capital | | Generated assets | | Reserve liabilities | | Minimum capital | | Margin of solvency |
|---|---|---|---|---|---|---|---|---|
| ($1,000,000 | + | $1,000,000) | − | ($850,000 | + | $400,000) | = | $750,000. |

COMPANY A

It is assumed that Company A is operating under the basic assumptions given in Table 2 and in states that require paid-in surplus and capital totaling $1,500,000, of which $400,000 is the minimum amount of capital. The results of the test of solvency in selected years, shown in the accompanying tabulation, indicate that Company A has been solvent during the first seven years of its operations, but the margin of solvency is diminishing rapidly. The figures indicate that Company A's initial capital

| Year | Total Assets | Total Liabilities | Margin of Solvency |
|---|---|---|---|
| 6 | $1,909,632 | $1,709,051 | $200,581 |
| 7 | 2,511,333 | 2,416,080 | 95,253 |
| 8 | 3,308,037 | 3,315,745 | − 7,708 |
| 9 | 4,214,960 | 4,424,085 | − 209,125 |

and surplus are insufficient to cover the statutory minimum requirements and investments in new insurance sales and that the company would be declared insolvent in the eighth year. The margin of insolvency widens after the eighth year of operation; therefore, it is not a temporary situation. If Company A is to continue to operate, some significant changes must be made in its operation. The most realistic course for the company would have been to start with adequate capital. As indicated by the following figures, if Company A had started with $1,900,000 paid-in surplus

| Year | Total Assets | Total Liabilities | Margin of Solvency |
|---|---|---|---|
| 16 | $19,603,530 | $19,262,575 | $340,955 |
| 17 | 22,821,328 | 22,481,255 | 340,073 |
| 18 | 26,350,736 | 25,996,849 | 353,887 |
| 19 | 30,183,389 | 29,801,953 | 381,436 |
| 20 | 34,414,315 | 34,031,589 | 382,726 |

and capital, of which $400,000 is the amount of capital it must maintain, it would have remained solvent throughout the period of analysis.

COMPANY B

It is felt by some authorities that a new life insurance company will have a higher acquisition cost than that reflected in the basic expense assumption used in this study. To illustrate the impact of higher expenses, the expenses that vary with the premium are increased from 103 per cent of the first year's premium to 150 per cent of the first year's premium. Operating under the same conditions set forth for Company A, with the exception of the increased expense pattern, Company B would be declared insolvent in the fifth year of operation. Assuming that Company B started business with paid-in surplus and capital of $7 million, of which $400,000 is the amount of capital it must maintain, it would remain solvent throughout the period of analysis. The figures shown in the accompanying tabulation indicate that, although Company B has been technically solvent throughout the period of analysis, the margin of solvency is decreasing rapidly. The figures indicate that the investment in the company's

| Year | Total Assets | Total Liabilities | Margin of Solvency |
|---|---|---|---|
| 5 | $ 7,988,537 | $ 1,181,838 | $6,806,699 |
| 10 | 11,907,254 | 5,759,275 | 6,210,979 |
| 15 | 20,748,740 | 16,345,700 | 4,403,040 |
| 20 | 34,799,159 | 34,031,589 | 767,570 |

new insurance is increasing faster than the earnings generated by the paid-in surplus and capital and the business in force. If Company B is to reach the point at which its earnings are increasing faster than its investment in new business, it will be necessary to increase its paid-in surplus and capital substantially, decrease its expense factors, or decrease its sales performance. A decrease in the expense pattern would be highly desirable, but this may not be a completely controllable item.

Another way to improve Company B's surplus position would be to decrease its sales, but this could have a disheartening effect on the sales force and cause a long-term deterioration of the company's profit picture. It could be argued that part of the regulatory job would be to control the sales pattern of a company. A control similar to this is provided in the New York Insurance Code, Section 212.

The other solution to Company B's solvency problem is to increase the paid-in surplus and capital to a point at which earnings would increase to

a sufficient level to maintain solvency. Company B, with its high acquisition costs, would need $10,000,000 of paid-in surplus and capital to reach the point at which earnings were increasing faster than the investment in new insurance was being written.

### COMPANY C

Company C is assumed to operate under the same conditions as Company A, with the exception that it earns 10 per cent less on its assets. The net earned interest rate for Company C is 4.5 per cent rather than 5 per cent. The impact of interest on the solvency of a company is much less than that of expenses, but the proportionate deterioration is not so great. It is unlikely that even a poorly managed company would experience a 50 per cent decrease in its interest earnings, since the yield on government securities would be greater than 2.5 per cent. If Company C is to remain solvent throughout the period of analysis, it must have $2,200,000 of initial paid-in surplus and capital.

### COMPANY D

There is always the possibility that a new life insurance company will be overly lenient in its underwriting. The frequent result of liberal underwriting is increased mortality costs. It is assumed that Company D, for whatever reason, experiences 50 per cent greater mortality costs than Company A. In order to remain solvent throughout the period of analysis, it would be necessary for Company D to start with paid-in surplus and capital of $3,000,000.

### COMPANY E

An examination of companies that fail in the life insurance business indicates that it is seldom the deterioration of any one item, such as expenses, mortality, or interest, that brings about the failure. You are very likely to find that the failing company may be experiencing difficulty in all three of these areas. Consequently, it is assumed that Company E is operating with the higher expense pattern (150 per cent of first year's premium), higher mortality costs ($X_{18}$ mortality table plus 50 per cent), and lower net interest earnings (4.5 per cent). Under these conditions, Company E would need $8,500,000 of paid-in capital and surplus to remain solvent throughout the period of analysis.

### CONCLUSIONS

The wide variation in initial capital and surplus requirements for the licensing of a life insurance company indicates that most jurisdictions have established these limits without any or with very little evidence of

the amount of funds necessary for the companies to survive without repeated infusions of new funds. The testing done in this study indicates that the financial requirements are inadequate in most jurisdictions. Table 6 indicates the results for five hypothetical life insurance companies.

It would appear on the basis of these findings that the regulatory authorities have been unduly optimistic in setting the financial requirements for a new life insurance company. The assumptions used in arriving at these findings have been carefully chosen to reflect as realistic a situation as possible. If the basic assumptions used in this study are realistic, then the minimum financial requirements are indeed too low in 48 of the 50 states. The question next arises as to what assumptions were actually

TABLE 6

SUMMARY OF THE TEST OF SOLVENCY APPLIED TO VARIOUS NEW LIFE INSURANCE COMPANIES USING DIFFERENT EXPENSE, INTEREST, MORTALITY, AND PAID-IN SURPLUS AND CAPITAL ASSUMPTIONS

| Company | Assumptions | Amount of Paid-in Surplus and Capital Necessary for Solvency |
|---|---|---|
| A. . . . . . . . . . . . | Basic | $1,900,000 |
| B. . . . . . . . . . . . | Increased expenses | 7,400,000 |
| C. . . . . . . . . . . . | Lower interest | 2,200,000 |
| D. . . . . . . . . . . . | Increased mortality | 3,000,000 |
| E. . . . . . . . . . . . | Assumptions for Companies B, C, and D combined | 8,500,000 |

being made when these low requirements were formulated. In Arizona, for example, some heroic assumptions must be made to justify only $70,000 of paid-in surplus and capital. Perhaps it was contemplated that there would be no start-up expenses, that insurers would earn 30 per cent on their investments, or that the rate of acquisition of new business would be very low, or some other unrealistic assumption was made.

There is current interest in establishing solvency (or insolvency) funds to "bail out" companies that are in financial difficulties. The bulk of this type of financing inevitably must come from the successful and financially sound insurance companies. From the viewpoint of the consumer there is a good rationale for such legislation, but the same effects could be achieved by other types of regulation—specifically, first, the increase of initial financial requirements to a meaningful level, and, second, the requirement of an actuarial projection or a "game plan" involving the use of the initial paid-in surplus and capital.

A comparison of the financial requirements shown in Table 1 and the test of solvency shown in Table 6 indicates that only two states, New Jersey and New York, have financial requirements that are high enough to maintain solvency under the basic assumptions. With lower interest rate assumptions and higher mortality assumptions, only New York has adequate requirements. If the expenses are increased to the higher level, none of the states has adequate financial requirements.

It is recognized that a "specialty" company can be started with smaller financial resources than are recommended in this paper. For example, a captive company designed to write only credit life for one organization is not likely to need the financial base that is being recommended. These recommendations deal with a life insurance company, with an agency force and a varied product line.

The second step that could be taken by regulatory officials in reducing the risk of a new company's becoming insolvent is the requirement of a "game plan," certified by a professional actuary. This requirement would force the management of the new company to give careful thought to its goals and how they would be reached. The new company would be required to file this game plan with the regulatory agency for an acceptable period, such as ten years. Australia requires a fifteen-year game plan to be filed. The plan should be centered in pages 2, 3, and 4 of the Annual Report. The game plan would project for the ten-year period the assets and liabilities generated by the business being written by the company, as well as the operating statement for the same period of time. Management would be required to explain the emerging differences between the game plan and the actual results. After an acceptable explanation, the game plan would be updated for the regulatory agency. A model similar to the one used in this study could be used to generate the necessary game-plan projections.

These requirements should significantly increase the probability of a new company's survival, because management would be forced to think through its plans and the various assumptions associated with the planning tool. In addition, it would have started operations with adequate financing, and the planning model would keep it on the track to successful operation. It is believed that the adoption of these practices would greatly reduce the number of companies merged, reinsured, or otherwise retired, and the industry image of financial soundness would be enhanced without the enactment of solvency (or insolvency) funds.

MR. DALE R. GUSTAFSON: Several times in recent years I have taken advantage of opportunities to invoke the name of Elizur Wright. This is

another such occasion. The basic structure of our regulatory system for insurance in the United States, especially as it is now expressed in the standard valuation and nonforfeiture laws, is to a large extent traceable to this man's genius. This may appear to some to be an oblique way of getting into the subjects at hand, but it is not; it is directly germane. In possibly oversimplified terms, it can be said that the financial aspects of our insurance regulatory system depend upon simple, conservative standards established by law. The characteristics of this kind of a system lend themselves to the diverse society in which we exist, with at least fifty regulatory agencies and something in the neighborhood of two thousand companies. No lengthy explanations and justifications are called for; the record is clear. Few other industries in this country or elsewhere in the world can match the record of stability of the life insurance business in the United States.

Increasingly in recent years, the simple concepts of Elizur Wright have been called into question on the grounds that society and the life insurance business have grown too complex and sophisticated to be well served by this simple concept. Generally accepted accounting principles, insolvency fund legislation, and the Wisconsin Insurance Code Revision need only be named to indicate the depth to which these underlying principles are being questioned.

When I first began to be intimately involved with these questions several years ago, I initially responded to the arguments that our regulatory concepts were too simplistic for the modern age; after such initial thoughts, however, I have come more and more strongly to the conclusion that the basic concepts of our regulatory system are sound and that, when proper balance is given to the practical and the theoretical, the best job for the public will be done by preserving and strengthening the present system rather than by junking it and replacing it with a presumably more theoretical approach.

What does this mean in specific terms? It means that the standard valuation and standard nonforfeiture laws are basically sound but that modification and supplementation are needed to meet some of the new experience and greater complexity. I will describe an example of each.

We are all familiar with the high level of investment returns that has been available for many years and the strains and awkwardness resulting from the relatively low maximum permissible valuation interest rate of 3½ per cent. This, of course, has been especially burdensome for single premium annuities. Several years ago a proposed change in the valuation interest rate for annuities was brought before the National Association of Insurance Commissioners, but it became clear that the mortality bases

needed to be thoroughly studied before a serious proposal would be considered by the NAIC. The two annuity mortality tables presented at this meeting are a direct result of the in-depth study that was undertaken. At the same time, analysis showed that, while there has been some improvement in ordinary insurance mortality, it has not been significant enough to justify the development of new insurance valuation mortality tables at this time. The specific proposal that is to be placed before the NAIC encompasses the new annuity mortality basis, a 6 per cent interest rate for single premium immediate annuities and all group annuities and a $4\frac{1}{4}$ per cent interest rate for all other annuities, life insurance, and accident and health insurance.

It should be noted that, while the present law in most states includes more than one mortality standard for each of the two types of annuities, it is intended that the proposed revised law will include only a single mortality table for each of the two types of annuities and that these standards will apply to all annuities purchased after the effective date prescribed or elected under the law.

There are probably other aspects of our business that call for extension or revision in the valuation and nonforfeiture laws, and, as specific areas become known, appropriate revisions must be made. A possible example may be showing up in the analyses that are going on regarding the natural reserve technique as it is contemplated in the adjusted-earnings arena. There have been some comments that best-estimate natural reserves for certain forms of term insurance may be substantially higher than reserves required under the standard valuation law. If this is a fact, it is inconsistent with the basic concept of the standard valuation law and indicates a need for considering some change in the required valuation basis. This would be an example of change needed to meet increased complexity. There are other changes that have been or will be suggested. We expect that this will be a continuing process for a number of years.

Again, in oversimplified terms, the basic concept that has developed out of Elizur Wright's thinking states that, with appropriately conservative minimum valuation standards, you do not need to worry about levels of surplus. Insolvency only occurs when surplus becomes zero. The world has changed, however. It is much more expensive to initiate and operate a life insurance company than it used to be. The kinds of business we write are more varied, and some of them involve a substantially longer period of deferral before profits emerge than used to be the case. While the record of solvency in the life insurance business has always been and is still excellent, dramatically increasing interest in insolvency fund legislation has accelerated our concern in this area. To put the argument very

bluntly, it is stated that it is a backward approach to impose a cumbersome insolvency protection mechanism on the industry before making sure that the initial capital and surplus requirements and continuing supervision of new companies are strengthened and made uniform enough to be truly effective. An industry committee has started looking specifically at this concern and will quite likely develop some specific, practical (and, it is hoped, politically feasible) suggestions sometime during the next year.

CHAIRMAN JOHN M. BRAGG: I would like to speak for a moment in my role as chairman of the ALC-LIAA Joint Actuarial Committee. The following are some reasons that have been suggested for making the proposed changes in the standard valuation and the standard nonforfeiture laws:

1. This is a needed reaction to the new higher plateau of interest rates.
2. Statutory earnings would be moved closer to adjusted earnings.
3. A more realistic definition of statutory insolvency would be provided for purposes of the proposed insolvency fund legislation.
4. Persisting policyholders would be given a better break, especially in the case of nonparticipating insurance.
5. Some relief would be given to the surplus strain problem resulting from annuity business; this strain currently approximates 40 per cent of gross premiums.
6. Some relief would be given to the deficiency reserve problem encountered by some companies.

The proposed changes concern themselves with interest rates and mortality tables only. It is recommended that these changes be made at a reasonably early date. It should be pointed out, however, that many other changes in the standard laws have been suggested, both to the Joint Actuarial Committee and elsewhere. These include the following:

1. Any revisions which are necessary to permit the issuance of special plans, including variable life insurance and index-linked life insurance.
2. Breaking the lock between reserves and cash values, so that the former can be treated from the viewpoint of solvency and the latter from the viewpoint of benefit design.
3. Proposed changes in expense allowance formulas.
4. Possible changes in deficiency reserve requirements.

Some or all of these questions could become matters of future study and could lead to additional changes in the standard laws.

The proposed $4\frac{1}{4}$ per cent and 6 per cent interest rates are maximum rates and are designed to give leeway for the actuarial profession to use

whatever rates, up to these levels, are actually appropriate at the time of issue of business. In this connection it is worth pointing out that the existing $3\frac{1}{2}$ per cent limit, when it became operative during the nineteen forties, was in excess of the rates then normally earned by companies.

MR. BATEMAN: Occasionally the statutory interest rate used to define the minimum valuation standard in the NAIC Standard Valuation Law is for convenience referred to by such phrases as the "maximum legal valuation interest rate" or the "maximum statutory interest rate." It should be noted that this statutory interest rate merely serves to define the minimum valuation standard (which is a combination of the statutory table, interest rate, and valuation method) and does not necessarily represent the maximum valuation interest rate that may be used. This law provides that the minimum valuation standard is satisfied for a given category of policies or contracts by any valuation basis which produces greater aggregate reserves, provided, of course, that, where nonforfeiture values are involved, the valuation interest rate is not greater than the interest rate used to calculate the nonforfeiture values.

MR. JAMES P. LARKIN: My comments are devoted to the proposal that the minimum valuation and nonforfeiture standard for ordinary life insurance be the 1958 CSO Table at $4\frac{1}{4}$ per cent. I must confess my astonishment at the seeming paucity of any detailed discussion on this point. My hope is that my comments, admittedly influenced by my position as actuary for a small mutual ordinary life company, may cause others to contemplate the consequences of this proposal in greater detail.

A comparison with typical nonparticipating gross premium rates is used to establish the suitability of the level of participating rates. The differences between the two sets of rates are due to the need to accumulate sufficient funds for each block of business and are reflected in dividends to policyholders and the usually higher cash values available under the participating contract.

Establishing a "break-even" premium structure for a mutual company is not a simple operation. Various theories of expense assessment (direct and indirect expenses, attention to expense incidence, complete amortization of initial expenses, recoupment of all moneys borrowed from surplus, and so on) must be explored in order to arrive at a premium level that can be recommended by an actuary. The illustrative dividend scale is included in the pricing structure by my company during these calculations. Also, of course, the cash values are priced, as surrender benefits to those terminating. For many durations out from issue, the developing

asset shares do not equal, let alone exceed, these cash values. The "break-even" point, when all the disbursements have a value less than the plan's premiums (which rate is still the unknown), becomes critical. The lower the premium, the later this "break-even" point is reached. The assessment of expenses during this exercise in implicit algebra is obviously critical.

Setting the assumptions for such an undertaking is one of the tasks for an actuary. In the smaller mutual companies this can become a momentous problem. The mortality level is fairly easy to establish (perhaps an experienced multiple of the 1955–60 Select and Ultimate Table). The interest assumption is also quickly determined (perhaps the Exhibit 2 rate, less some points if there is a Phase I tax situation, or a new money rate after taxes and declining to a projected Exhibit 2 rate). Lapses have to be simple, if realistic. (Linton A or B or AB is usually employed.) But the expense rates are truly exquisite to derive. Their determination makes or breaks the resulting premium structure because the resulting premium must be competitive. With all expenses included, if some recognition were to be given to projected inflation on these expenses, I believe that the resulting premiums would be unmarketable.

One way to resolve the expense problem is to charge off some expenses (noncontractual expense reimbursements or field development allowances, for example) to surplus. The logic for this, however unsubstantial or short-sighted or specious or sanguine, is that some portion of each premium dollar must be allocated to the future growth of the company, and some portion of surplus, if that aggregate dollar amount could ever be allocated to its sources, would be attributable to policyholders no longer with the parent company. The point I am leading up to is that the resulting participating premium, however derived, will, I believe, bear some reasonable relationship to the corresponding nonparticipating premium.

Some mutual companies regard their current premium levels as non-supportive, in the sense that many, many years will have to elapse before the amounts borrowed from surplus to write this business are returned. Also, some mutual companies have been hoping that the laws of economics would begin to affect the gains of the stock companies to a degree sufficient to cause them to begin to raise their nonparticipating rates. If this happened to any substantial degree, the mutual companies would have room to go with their own rates, since the floor on the mutual rates would, as it were, have been raised.

Permitting ordinary insurance cash values to drop to a $4\frac{1}{4}$ per cent level from the current $3\frac{1}{2}$ per cent level will offer a substantial cushion to the nonparticipating companies in their future rate-making processes. It

is possible to imagine that the actuary of such a company will go through the following line of reasoning:

1. Because of rising expenses, not offset by rising yields, I must recommend that my male 35 whole life premium rate be raised $x$ per cent.
2. Because of the newly reduced minimum values, other things remaining the same, I can recommend that my male 35 whole life rates be decreased $y$ per cent.
3. Since $y$ is greater than $x$, I will drop the values all the way but only drop the premium $(y - x)$ per cent.

Is this equitable? It is a practical solution. Is it available to the mutual companies, most of which still offer $2\frac{1}{2}$ per cent cash values?

Where are the studies, reports, and papers that show us the magnitude of the new cash values and reserves? How will the gains from operations of a $3\frac{1}{2}$ per cent stock company look ten years after a change to $4\frac{1}{4}$ per cent? How do the premiums compare?

Is there any expectation that the new standards will discourage minimum deposit business? Should companies now specializing in this market prepare for an onrushing trauma of major proportions? How acute this problem may look would be revealed by a column of "maximum" New York $2\frac{1}{2}$ per cent cash values (duration 1, terminal reserve less $10.00; duration 2, reserve less $7.50; duration 3, reserve less $5.00; duration 4, reserve less $2.50; duration 5 and later, reserve) and a similar column of $4\frac{1}{4}$ per cent minimum cash values, side by side, for a male 35 whole life policy. If some of us are building a field force on this minimum pay scale, will the ball game change?

If a $2\frac{1}{2}$ per cent high cash value mutual company were to change to a $4\frac{1}{4}$ per cent minimum value mutual company, how would its gains from operations be affected? How would its cash flow be altered?

I suggest that actuaries of the larger companies ought to commence an exploration of this proposal of the Joint Actuarial Committee. It is one thing to say that it will restore death values in life contracts, aid the equities of persisting policyholders, eliminate deficiency reserves for nonparticipating policies, and generate reserve increases more in line with the accountants' adjusted earnings. It is another thing to look to the complex shifts possible in our business. If our Society can devote paper after paper to variable life insurance (still unsalable) and to different, diverse, and more and more meaningless ways of defining net cost, why do we avoid a basic and revolutionary concept of this magnitude? To respond that no one has to utilize the $4\frac{1}{4}$ per cent interest rate is to be myopic and insensitive to a real problem.

MR. W. HAROLD BITTEL: The statutory capital and surplus requirements in New Jersey for organizing a domestic life insurer have been increased this year by the complete revision of our laws relating to life and health insurers (Laws of 1971, chap. 144), most of which become effective January 1, 1972. These requirements are a fully paid-in capital of at least $1,500,000 and a surplus, in addition, of at least $2,850,000 for the writing of life and health insurance, including annuities. The corresponding requirements for health insurance only are $500,000 and $750,000, respectively, or $1,000,000 and $2,100,000 for life insurance only, including annuities. An out-of-state insurer, on admission, must have corresponding amounts for the kinds of business it transacts elsewhere, although the specific capital requirement would be based upon the kinds of business to be specified in its certificate of authority. These new requirements are not applied retroactively but would be applicable if an authorized insurer wanted to have additional powers included in its certificate of authority. The studies by Professor Leverett are most interesting, although it is unfortunate that reinsurance ceded, especially the modified coinsurance variety, was not considered. These arrangements, under which substantial amounts are advanced to the ceding insurer by the reinsurer to be repaid at later dates, effectively conceal the actual strain of writing new business and make it virtually impossible for anyone to determine from the usual analysis of operations just how the ceding insurer is making out.

Those of us in the regulatory agencies have been very much concerned about the way these amounts are being reflected in the annual statements of these companies and are considering the promulgation of instructions for reporting such items. Unfortunately, there seem to be many different arrangements of this kind, and it has been difficult for us to obtain sufficient information on these to use as a basis for such instructions. It is my intention to have something along these lines for presentation to the NAIC Blanks Committee at its regular meeting next year, so that some uniformity can be obtained in reporting these items and there will be reference to the obligation to repay these amounts advanced by the reinsurer at some future date.

MR. ABRAHAM HAZELCORN: One item that ties together Professor Leverett's remarks about a game plan and Mr. Gustafson's comments about the investigation of methods for dealing with insolvencies of life insurance companies is a statute similar to Section 212 of the New York State Insurance Law. In that statute, insurance sales are limited according to the characteristics of the life insurance company, if there is a substantial growth in the current calendar year. While this statute is keyed

to production, it could be expanded to contain the other points of concern which can make a recent game plan academic or can cause a company to head in the direction of insolvency.

Professor Leverett's idea of updating an electronic data-processing package representing the game plan for changed conditions may not be as timely as a well-conceived regulation like Section 212 which will send up early red flags and bring about a quick response to conditions which warrant immediate review.

MR. RALPH H. GOEBEL: I applaud the recommendation to increase the maximum valuation interest rate on life insurance and annual premium deferred annuities to $4\frac{1}{4}$ per cent. This will help reduce the life insurance premium so that a whole life policy is more nearly pure insurance protection for the whole of life and less a combination of reducing term insurance and increasing savings. However, I think that the insurance premium could be reduced even more if the maximum interest rate for policy loans were increased to 8 per cent or more.

MR. GUSTAFSON: It is expected that at the NAIC meeting in Miami in early December a model policy loan interest bill will be presented for consideration. It is known that this bill will encompass a variable loan interest rate (with limits), but the details have not yet been finally decided upon.

MR. A. HENRY KUNKEMUELLER: American Life Insurance Company operates exclusively overseas, so that in many of our territories we encounter investment yields higher than those found in the United States. We have found that a 6 per cent policy loan rate places a limit on the interest assumption we can reasonably use and that borrowings at 6 per cent lower our net investment yield. Both effects hamper our efforts to do the best job possible for all our policyholders.

To counteract this, we have applied for a variable loan interest rate provision in those jurisdictions where this is permitted, and for higher fixed rates, such as 10 per cent or 8 per cent, where this is permitted. We believe that American Life's experience overseas has applicability to the United States market. Life insurance competes with investment intermediaries, and if artificially low policy loan rates prevent life insurance from doing the best possible job for the policyholder, the entire industry will suffer.

MR. E. BRIAN STAUB: So far in this discussion I have not heard any mention of the mandatory security valuation reserve (MSVR). This re-

serve, it seems to me, is more properly earmarked as surplus than as a liability. The NAIC could have designated this item as a negative asset (in the manner of a depreciation reserve) or could have placed it in surplus. Instead, they chose to place it above the line as a liability. Nevertheless, for purposes of solvency and projections of surplus, this item should be moved from its statutory "above the line" position to a "below the line" position.

Consider the following points:

1. If a new company—or any company for that matter—has a technical insolvency and has an MSVR large enough to wipe out this balance-sheet deficiency, it is hard to imagine an insurance commissioner putting this company into receivership when these MSVR funds—which are owed to no one—are available.
2. For federal income tax purposes the MSVR is considered part of surplus (i.e., below the line).
3. This is another area where statutory life insurance accounting is not in accordance with "generally accepted accounting principles."

If the NAIC continues to require this item to be kept above the line, then I would suggest that the MSVR might in some way be tied in with a company's federal income tax liabilities. These liabilities might be for prior years of audit or might be for future Phase III taxes. If we add to the MSVR an additional requirement in its definition such as "but not less than any federal tax liability," this reserve could more properly be classified as a liability. For any projections of "surplus," the MSVR must be given careful consideration, because, as it is now constituted, it is in the wrong place.

MR. HAZELCORN: In partial response to the question just raised with regard to the MSVR, I would say that, of all the changes suggested by the investment analysts, accountants, insurance executives, and other professionals and executives interested in this matter, the one item on which there is something approaching unanimity is the opinion that the MSVR should be part of surplus.

MR. BITTEL: The comments which have been made regarding the MSVR, to the effect that it is nothing more than an allocation of surplus, indicate a lack of comprehension of the nature and purpose of this reserve. While it is true that, for practical reasons, the changes in this calculated liability are reflected in the items affecting the surplus account on page 4 of the prescribed Annual Statement forms, this does not alter the composition of this reserve or its true nature.

Historically, it was not possible for the NAIC and the affected industry to agree upon a valuation and reserve basis for all types of securities that would permit consideration and treatment of this entire MSVR as a true liability from an accounting standpoint. Consequently, it must be considered in two parts: the portion relating to bonds and preferred stocks and that held for common stocks. The former types of securities are carried in the assets at cost or adjusted cost, unless they are in default, whereas the latter are carried at market values. Thus it must be conceded that the common stock component of this MSVR, which often disappears completely when the market is down or when an insurer owns no common stocks at the year end, is, in effect, an allocation of surplus which nonetheless is a liability calculated by a formula and is, in effect, a special surplus fund, not unassigned surplus. However, the bond and preferred stock component of the MSVR, which is established and carried to provide for the losses from defaults that are inevitable in such portfolios, is a true liability and should be recognized as such by the accounting profession.

It may be that the prescribed method of reflecting the changes in this calculated liability in the surplus account of the Annual Statement will have to be altered, at least for the reserve held on bonds and preferred stocks, before the accountants will recognize this reserve as a liability, but this would unduly complicate the handling of an already complicated calculation. In any event, it is not correct for anyone to characterize this reserve, as it is presently constituted, as an allocation of surplus that is unrelated to the asset values to which it applies and is not a true liability in any sense.

# CHANGING MODES OF FAMILY LIFE

## WORK AND INCOME OVER THE LIFE CYCLE

JUANITA M. KREPS:*

The public is now obsessed with conflict: conflict between affluent and poor, black and white, male and female, conservative right and radical left—perhaps most of all, between young and old. Never mind the logic that such conflict ignores the existence, in some instances, of a vital center: the median-income recipient, the moderate-liberal voter, the middle-aged family head. Leave aside, too, the empirical evidence that the middle constitutes the majority, the extreme positions being taken by relatively small proportions of the nation's population. Conflict is not necessarily generated by majorities, nor is it necessarily directed against majorities. Conflict can arise instead from real or supposed differences between two extremes, the center's allegiance being very frequently courted and its interests almost inevitably jeopardized.

The war between generations is curious for at least two reasons. First, there would seem to be more grounds for consonance than for dissonance of interests between generations; the individuals are members of the same families—grandparents, parents, teen-age sons and daughters—and they therefore share a common need for family stability and economic security, at the very minimum. Moreover, there is, of course, the commonality that each of us hopes to move through each stage of life, the alternative of premature death being far worse. So, in contrast to other areas of dissent, such as racial issues, in which once black, always black, there is no such permanence in one's age. Boulding has emphasized this point:

> One of the things we know for sure about any age group is that it has no future. The young become middle-aged, the middle-aged become old and the old die. Consequently, the support which the middle-aged give to the young can be regarded as the first part of a deferred exchange, which will be consummated when those who are now young become middle-aged and support those who are middle-aged who will then be old. Similarly, the support which the middle-aged give to the old can be regarded as the consummation of a bargain entered into a generation ago.[1]

* Dr. Kreps, not a member of the Society, is professor of economics and dean, The Woman's College, Duke University.

[1] Kenneth E. Boulding, "Reflections on Poverty," in *Social Welfare Forum: 1961*

Second, the conflict seems to be not between the extremes of the age groups but between generation 2 (parents) and generation 1 (youth), with some evidence that if we could skip the generation in the middle, the other two would get on splendidly. Grandparents and small children seem particularly fond of each other. One small boy explained to his young friend that a grandmother was "an old lady who sat in a rocking chair and kept your mother from hitting you."

The notion of a struggle between these two extremes of the age continuum is of course not intended. Rather, one quickly recognizes that the strong emotional and ideological conflicts so clearly evidenced in today's society are between the old and the middle aged in some arenas (the relinquishing of jobs and authority at retirement, for example) and between the young and the middle aged in others (as in the case of age-related differences in attitudes toward work, the acquisition of material things, acceptance of certain religious beliefs, and so on). The middle generation thus has both the best and the worst of it—the key positions, authority, earning capacity, control of its own destiny and to a large degree the destinies of teen-agers and retirees, but also the responsibility for supporting all three generations and for somehow resolving the intergenerational conflicts in such a way as to hold the society together.

The important problem area is then that of the middle aged, one may argue. Indeed so. But it is the problems confronting the middle generation that are most often examined in economic analysis, since it is this generation that provides most of the human effort for production. In the allocation of the output, too, rewards are based on the quantity and quality of work rendered; therefore, our theoretical tools relate primarily to the incomes of generation 2. For the incomes of generations 1 and 3, who are supported either by public or private transfers or directly by the family head, we have no distribution theory.

Analysis of intergenerational differences in income may take the form of individual (or family) comparisons, or it may deal with divisions of the aggregate income. Median incomes of families headed by the young and the old are low when compared with the median for families headed by middle-aged workers. From this observation one is inclined to observe with Ida Merriam that "income has a poor fit with consumption needs

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(New York: Columbia University Press, 1961), pp. 45–58; reprinted in Herman P. Miller, *Poverty, American Style* (Belmont, Calif.: Wadsworth Publishing Co., 1968), pp. 42–51.

over the life cycle" and that we need some better smoothing of the "humps and valleys" of income. Looking at this cross-sectional view, however, we are of course comparing the incomes of those who are now old or now young with the incomes of those now middle aged; the comparison is not between the incomes of the aged and the incomes the aged themselves had in their middle years, nor are youth's incomes being compared with their own future earnings. Social policy which evens out intergenerational income differences thus transfers income from the middle (working) generation to the other two at a point in time, not from one life stage to another for a particular family. In subsequent years, the "young who have become middle-aged, will support the middle-aged who have become old," nevertheless. Hence the aggregate output comes to be more evenly apportioned between the middle group and the young and the old when social policy increases the volume of transfers by educational subsidies, social security benefits, and other means.

When we consider the distribution of an individual's lifetime income over the life cycle, we may also want to suggest some temporal reallocation of that total income that would increase its total utility. In the case of either the intergenerational or the intrafamily differences, a retiming of paid work would help to accomplish the smoothing process, since most income is made up of earnings from work and since low incomes in youth and old age are due to the fact that these groups work part time or not at all. As with the utility of total income, the utility of free time might also be increased if it were spread more evenly through the life-span. What is suggested, conceptually, is a lifetime approach, in which one has drawing accounts for time and money, to be used as he chooses, subject only to the constraint of life expectancy and anticipated lifetime earnings.

Suppose, for purposes of illustration, that we are here concerned with the handling of a man's own income through his work life, and with arranging for this income to be apportioned in some optimal fashion, given the timing of his family's consumption needs. To make it simple (and to spread a bit of cheer), let us suppose that we are all young—so young, in fact, that we are just now entering the labor force. Suppose, further, that we are all male (which is a less cheerful assumption, at least to those of us who are not male; I trust it would be an equally unsatisfactory arrangement for those of you who are). This eliminates the sex difference in length of work life and allows us to speak of, say, a forty- to forty-five-year working period, from age 20 or 25 to age 65.

The problem is one of accommodating the necessary variations in con-

sumption that go with changes in family size and composition, eventually, with retirement, subject of course to the over-all constraint imposed by total earnings.

You will see behind me, if you look carefully, a large (imaginary) blackboard. Here you will further observe a two-dimensional diagram in which the vertical axis measures income, or consumption, in current dollars. Horizontally, you can see that we are indicating age, from the point of entry into the labor force to death. By assumption, all of us are age 20 and have just taken our first jobs. You will see also that we all die promptly at age 80, thereby lending a certain order to things which the actuaries may find reassuring.

What is the usual relationship between age and income level? We know by inspection of the cross-sectional data that the average income of the 30- to 40-year-old male in almost any occupation or profession is higher than the average income of the 20- to 30-year-old and that in most cases, the income of the 40- to 50-year-old is higher still. But, alas, the average money income of males who are in the last decade of work life, 55–65, is lower than that for the age group just younger. Thus it is often pointed out that our incomes rise until we are in our fifties and then decline gradually until retirement, at which point they fall to perhaps one-half or a third.

This conclusion is incorrect, however, for most people. It is true that at any point in time a picture of average money income in an occupational group is an inverted U that slopes upward more gently than it declines, then drops sharply, and levels out for retirees. But this does not describe the usual behavior of a particular man's income through his lifetime. His income is likely to rise throughout his work life, reflecting the impact both of experience and of economic growth. According to some studies, the rise in income due to experience on the job is much more influential in the early decades of work. In fact, the experience factor is often negative in the later working years, but the gain due to over-all economic growth more than counterbalances the decline in productivity, so that income continues to rise.

How, then, can we expect our money incomes to behave—those of us who are now a mere 20—as we move through our work lives? Not, surely, as the cross-sectional data indicate. Rather, we can reasonably expect that our highest incomes will accrue to us near the end of the work life. True, when we are receiving our highest incomes (in our sixties), those incomes will be lower than the incomes of our colleagues in their fifties, if things continue as they are. Their incomes, however,

are higher than ours, on the average, not because ours have declined but because they entered the labor force in a later, more productive era than we and thus they will have higher incomes at any age than we had at that age.

If our incomes do, in fact, continue to increase up to the point of retirement, what will happen to our consumption expenditures? Will we raise our living standards to absorb the rise in incomes as these increases occur? Turning to the blackboard illustration, will the consumption line follow along with the income line, rising gradually up to age 65, when both drop to some fraction—say, half—of their previous levels? Or is it more likely that a significant portion of the income in later work life will be saved for consumption during the nonworking years?

The latter would seem reasonable, at first glance. In most families the last child has finished school and left home by the time the father is in his early fifties, leaving a 10–15-year period of high earnings and somewhat reduced living costs. It would be possible to spread these earnings into the retirement period, thereby reducing the extent of the drop in consumption which now marks the withdrawal from the work force.

In model terms, we might suppose that the couple who have reached age 50 and sent their last child off to seek his fortune might choose to hold their consumption level fixed at the level reached at that age, in order to spread their next fifteen years of earnings through the remainder of their lives. If one saved all increments in income after age 50 (in addition to whatever he was able to save during the earlier periods of heavier expenses), he would have approximately fifteen years of saving and fifteen years in which his income was supplemented by his savings, plus interest.

Depending on his time preference for consumption goods, an individual might elect to take an even more stringent position. He could say, for example: My wife and I want to suffer no drop in our level of living at retirement; we want to expend our income in such a way as to allow the same standard during each of the last thirty years of our lives, even if we must reduce our expenditures at present. The question is, then, what annual outlay is appropriate, given our projected earnings during the remaining fifteen years of work life, the expected level of social security benefits and private pensions, and the value of any equities, such as a home, on which we might draw?

If you will take one last look at the blackboard, you will see that such long-range budgeting is indicated by a new consumption curve which

rises along with income (although lying slightly below income) up to age 50. Then, whereas income continues to rise for another fifteen years and then drops to one-half or one-third, where it is stable for the remainder of life, consumption levels off at age 50 (or even drops somewhat at that age), remaining constant through the reminder of the life-span.

Needless to say, such an attempt would be impeded by many uncertainties: At what rate will earnings rise? What is a reasonable guess on the level of social security benefits? What of the differences in expenses as between working and nonworking years? How much must one allot to each successive year in order to offset price change and thus allow real income to be stabilized? Perhaps most serious of all is the implied assumption that such a reallocation of consumption expenditures would solve the income problems of the low-income elderly, whose earnings late in the work life are meager, as during their earlier years. No amount of retiming of consumption is effective in these cases; transfers of income or improved job skills and job opportunities are the only alternatives.

Instead of concentrating work in the middle years and trying to save for that old age in which we increasingly concentrate our leisure, we might try shifting some of the work (and earnings) into later life and some of the leisure into the middle years. If man viewed his income and time in lifetime perspective, the merits of a shorter work life with a longer work year, or a longer work life with a shorter work year, could be weighed against the income tradeoffs. Would the utility of either leisure (and unpaid work) or income be affected by a move from the first to the second option? Can it be shown that the utility of man's total leisure is increased by shifting some of it in time—say, from late in life to the middle years? Would the utility of lifetime income expended in the longer work life be greater than that of the same income spent in a shorter work life and a longer retirement? In marginal terms, would the marginal utility of any day of leisure be higher if the leisure could be taken during the work life, and would a dollar of expenditure be greater if spent in what is now a lower-income period of life?

We reason from experience that the value of free time is very much dependent on when the time is available, and that the worth to the consumer of each additional dollar of expenditure declines. Uneven distributions of free time and money through the life-span would thus seem to reduce the total utility of both. A student who spends many adult, low-income years in advanced education, and who will during his lifetime earn a very high total income, would be able to follow a more ra-

tional consumption pattern if he could draw on future earnings. In fact, youth's investment in education would surely be increased if such "drawing accounts" (at reasonable interest rates) could be established. Deferred tuition schemes, gestures in this direction, are limited to a portion of educational costs and to small numbers of students.

In the student's case, both income and years free of (paid) work need to be added at one stage of life, if additional education is to be encouraged. The heavy expense in time and money is more apparent than real, however, viewed in lifetime terms. Not only will the lifetime income generated by higher education exceed the costs involved (including the necessary costs of borrowing); the work life of professional persons is lengthened when they work past the retirement age usually observed by workers of lower educational achievement.

A drawing account for free time is more difficult to envison, although time has some of the same properties as income—it, too, can be invested for a return or consumed for pleasure. But, since the income received at any stage in life is largely dependent on current rather than on lifetime earnings, work for pay is often sought when an alternative use of time would be more productive (as in the case of education), or is foregone when an alternative use would be more satisfying (as in early or forced retirement). A drawing account for time or money would obviate the need to shorten education, and it would help to postpone retirement, since working time must be "paid back." The greatest gain, however, would probably be enjoyed by the harried middle-aged group, who could then take additional vacation time or sabbaticals for re-education without giving up their current incomes altogether, by drawing on their time accounts. These withdrawals could be offset by deposits in later years, which would otherwise have been devoted entirely to retirement.

## CHANGES IN FAMILY LIFE-STYLES

ANNE FONER:*

Talk about changing family life is quite fashionable these days, almost a staple item in the mass media. Often, however, the highlights of these discussions center on the exotica and erotica of family living—say, mate-swapping or group marriage. It is true that serious studies of such phenomena are beginning to appear, and I shall mention a few. However, the major changes in family life-style about which we know more are probably much less dramatic. Two types of alterations in the family

* Dr. Foner, not a member of the Society, is a professor at Rutgers University.

might be in the making: (1) changes in patterns of behavior within the family as we now know it, as, for example, in the division of labor or in lines of authority; and (2) changes in size and composition of the family and the related behavioral and attitudinal modifications. I shall direct most of my remarks to the first of these.

What is this "normal" American family that is supposed to be changing? We call it the nuclear family, typically consisting of father, mother, and children who live together as an independent unit. The family is independent in two senses. First, it is self-supporting economically and has no major financial ties either of dependence on or of obligation to outside kin. Second, it is spatially separated from other relatives, ordinarily living as a small unit in its own household. The principal functions of the modern nuclear family are to provide early socialization for the children and emotional stability to all family members.

In general, within this small group there is much sharing—of tasks, of decisions, and of recreation. However, the sharing occurs within a fairly well-defined sexual division of labor: the husband-father is the main breadwinner, and the wife-mother has major responsibility for child-rearing and for the household and tends to be the primary source of emotional support. When tasks are shared, this is often defined as helping the other partner out, as in "He sometimes helps me with the dishes." As for power relations within the family, these tend to be fairly equal, with the edge of authority in the husband's favor.

The family just described is of course merely a model which is most clearly approximated within the urban middle class. There are important variations by class and ethnicity. In a worldwide and historical perspective, this family type is quite extreme—although it is claimed that all over the world today quite similar family styles are emerging. It is just that the middle-class family in the United States tends to be more independent, has more togetherness and less role segregation, and is more informal than most other family systems.[1]

What types of internal changes, then, could such a unit realistically undergo? As you undoubtedly know, there is much discussion about shifts in the roles of husband and wife toward less role specialization and more egalitarian authority patterns. But, since the modern family is already quite egalitarian, is there much room for change? How much "more equal" can it get?

Quite substantial changes appear to be possible in the direction indicated above. Just to give you an idea—in a realm for which relatively

[1] William N. Stephens, *The Family in Cross-cultural Perspective* (New York: Holt, Rinehart & Winston, 1963).

few data are available—consider a fairly new phenomenon, mate-swapping. There is a good deal of evidence that norms of equality do operate to regulate the sex lives of married couples today. These norms incorporate, at least as an ideal, mutual gratification as a goal—clearly, a more egalitarian norm than that of the Victorian era. Yet these norms do not apply to all aspects of the sexual experiences of married partners. One recent study of mate-swapping, for example, suggests that the spread of this practice among middle-class, well-educated, conservative couples—the authors estimate that about two and one-half million couples in the United States exchange partners on a somewhat regular basis three or more times a year—serves to equalize the chances of both partners for sexual variety. For, while men's extramarital ventures have been at least tacitly condoned and sometimes legally overlooked, this is not true for women. According to the authors of this study, mate-swapping functions to give both partners the opportunities formerly reserved for men only, and all open and aboveboard at that.[2] One doubts whether this type of practice will become part of the norms of family living, but it does begin to suggest the range of changes that can occur within the family.

Our knowledge of other aspects of family life is less speculative and suggests that there is much room for other kinds of change quite short of drastic innovations in sexual practices, or of complete role reversal or moving over to a matriarchal model, as some fear.

Let us return to the power relations in the family, to explore this further. It is true that many studies of family decision-making show that women have a good deal to say about important family matters. Interestingly, though, one source of women's power these days is their expertise in particular areas of family life. That is, women tend to have greater decision-making power in family matters that are typically within the female domain—food shopping, child-rearing decisions, or choosing a doctor, for example. Husbands, in contrast, tend to have major decision-making power in financial questions. Further, when decisions about the husband's job or the wife's work are compared, the edge of husbands' power becomes more evident. Thus, in one study, almost all the husbands always had the final say about their jobs; the reverse was not true for wives. Only a minority always had final say about their working.[3]

[2] Duane Denfield and Michael Gordon, "Mate Swapping: The Family That Swings Together Clings Together," in Arlene S. Skolnick and Jerome H. Skolnick (eds.), *Family in Transition* (Boston: Little, Brown & Co., 1971), pp. 463–75.

[3] Robert O. Blood, Jr., and Donald M. Wolfe, *Husbands and Wives* (New York: Free Press, 1960).

It would seem, then, that the degree of egalitarianism found in studies of the family must be viewed within the framework of a rather traditional division of labor where the wife does not work outside the home or, if she does, her job is considered supplementary. If these assumptions are discarded, a whole Pandora's box of questions begins to emerge and suggests new family norms of equality that might develop.

Suppose that the division of labor in the family were based on individual interests or capacities without regard to sex. Then family decisions might be about which partner, if either, is to be full-time homemaker. In a less drastic version, where both husband and wife have careers and the family's life-style depends upon both incomes, the issues might be whose job has priority in deciding where to live or who stays home if the children are sick.

Such choices do not, however, seem to be on most family agenda today. Might they be in the near future? There do appear to be several societal trends that are likely to promote changes in this direction, at least toward a higher level of equality in increasing numbers of families now being formed.

There is, first, the trend toward greater proportions of women, including married women with children, in the labor force, a trend that is likely to continue.[4] For women are having, on the average, fewer children, and these are being spaced quite closely.[5] This makes possible for the young women starting married life today long years of continuous employment, even if six or seven years are reserved for full-time child-rearing. The average work life of women can be extended still further if preschool child care centers proliferate.

These trends are relevant because the wife's employment does have an effect on the family patterns we have been discussing. Studies of the impact of the wife's employment are quite varied in method and focus, and intervening variables such as ideology and reason for working do operate.[6] Still, on balance, it appears that working wives have more familial power than nonworking wives and that there is more husband-

[4] Elizabeth Waldman, "Marital and Family Characteristics of the U.S. Labor Force," in *Discrimination against Women* (Hearings before the Special Subcommittee on Education of the Committee on Education and Labor, House of Representatives, 91st Cong., 2d sess., June, 1970 [Washington, D.C.: U.S. Government Printing Office, 1970]), pp. 977–88.

[5] Paul C. Glick and Robert Parke, Jr., "New Approaches in Studying the Life Cycle of the Family," *Demography,* II (Chicago: Population Association of America, 1965), 187–202.

[6] See, for example, Blood and Wolfe, *op. cit.*; Lois Wladis Hoffman, "Parental

wife sharing of household tasks when wives are working outside the home. Further, this sharing of tasks seems to have other consequences. As each partner participates in tasks formerly the province of the other, he or she gains greater power in these new areas. Thus husbands may have more to say about strictly household concerns, while wives will have more to say about financial matters. The net effect of the wife's employment, then, seems to be greater mutuality in key aspects of husband-wife relations.

Several other trends also favor the further breakdown of traditional family ways. One is the increasing proportion of women attending college.[7] Education enhances the wife's position indirectly, because, the more educated a woman is, the more likely she is to be in the labor market.[8] It operates directly because education itself is an important individual resource on which power in the family is based.

Another relevant trend is the closing of the age gap between husband and wife.[9] In 1960, in the United States, husbands 55 and over were on the average 3.6 years older than their wives; husbands under 35 were only 1.9 years older than their wives. Further, 42 per cent of the older husbands as compared to 17 per cent among the younger ones were at least five years older than their spouses. One consequence of this decreasing age differential between married partners is that the male partner is now less likely to have the advantage of greater experience that accompanies age.

In general, all these trends appear to encourage increased egalitarianism within the family because they provide women with greater resources vis-à-vis men than they had previously: money, knowledge, and experience. Moreover, the greater acceptability of working wives and of divorce[10] offers women realistic alternatives to marriage or to a particular marriage. If power relationships within the family are affected by the relative stake each partner has in the marriage, then the broad-

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Power Relations and the Division of Household Tasks," in F. Ivan Nye and L. W. Hoffman (eds.), *The Employed Mother in America* (Chicago: Rand McNally & Co., 1963), pp. 215–30.

[7] Fabian Linden, "Women in the Labor Force," in *Discrimination against Women, op. cit.*, p. 180.

[8] *Ibid.*, p. 181.

[9] Robert Parke, Jr., and Paul C. Glick, "Prospective Changes in Marriage and the Family," in Bert N. Adams and Thomas Weirath (eds.), *Readings on the Sociology of the Family* (Chicago: Markham Publishing Co., 1971), pp. 445–59.

[10] Hugh Carter and Paul C. Glick, *Marriage and Divorce: A Social and Economic Study* (Cambridge, Mass.: Harvard University Press, 1970), pp. 56–57.

ening of choices for women should set the stage for even more extensive changes than those currently observed.

This is not the whole story, however. There are countervailing forces. It is not only that many men may resist, but apparently many women as well. As to the first point, open resistance among men and some men's fears about who "wears the pants in the family" are still quite common. More subtle forms of opposition may be noted, however, even in more "liberated" families. For example, women graduate students whose husbands are quite successful may be heard to quote their husbands' offers to stay home and take care of the household, if only the wives can support the family in the style to which it is accustomed. But that is the rub. Few women are able to match the income levels of men, even when their educational attainment is as high. Thus one condition for greater equality in the home is greater sex equality everywhere, especially in the occupational sphere. For, while women's outside jobs may provide them with experiences and with income as important inputs to and a basis of authority in the family, as long as income and job opportunity differentials continue, men's jobs will undoubtedly take priority in the family. The financial returns from the jobs of most women are not sufficient to enable the women to "bargain" from positions of strength.

As for women themselves, many are still influenced by an ideology of male dominance. As just one example, in 1970 a colleague and I headed a study of undergraduate male and female attitudes about various aspects of sex equality.[11] On the average, the girls in this university were more nontraditional than the boys. It can hardly be said, however, that a feminist ideology prevailed among the girls. Some of the summary data will make this clear. Only 17 per cent of the girls, for example, would expect their husbands to do half of the household and child-rearing tasks. Thirty-seven per cent believe that both spouses should contribute equal financial support to the family. Forty-nine per cent think that a wife's career is of equal importance to the husband's. Fifty-seven per cent would marry a man who thinks a man should be the dominant partner in a marriage.

Thus, even among college-educated women in an eastern urban university who have been exposed to feminist appeals, a sample probably more nontraditional than most girls of similar age, traditional ideas about marriage and woman's place have not been completely extirpated.

What do such findings presage for the future? A lot depends on how

[11] Anne Foner and Ann Parelius, "Changing Sex Roles" (project under way on college students' attitudes toward new norms of sex equality in marriage and at work, Rutgers University).

much such attitudes determine actual behavior. The Kinsey data of a generation ago suggest that there was much more premarital and extramarital sexual activity than prevailing attitudes of the time would have led us to expect. In terms of the division of labor and authority in the family, it is also undoubtedly true that many families are either more egalitarian or less so in actual behavior than their stated beliefs would indicate. Thus it may well be that the exigencies of the situation will be the most important determinant of marital role behavior in the future. The attitudes that we found in our survey do suggest, however, that many women will not be active agents in the establishment of new norms.

On weighing the forces that either promote or hinder changes in the family toward a new "togetherness," a balanced view suggests that these changes are in the making but they may not proceed apace. Thus the earlier caveat—that the most likely changes within the family may appear something less than revolutionary.

A second type of change in the family system that might occur is an alteration in the size or composition of the typical family. One such change is the possible re-emergence of the extended family, which in an earlier version meant three or more generations of a family living together in one household and fulfilling most family functions as a unit. I should like to consider a new version of this type of family: the collectives or communes which have sprung up in many places. These may be thought of as a form of the extended family in that the relevant unit for socialization and emotional and economic support is not the nuclear family but a larger group of adults and children who treat each other as if they were kin. Our knowledge about these groups is limited; yet we do have some idea how they are organized and the problems they face.

Certain inherent difficulties seem to confront these groups. On the one hand, they are dominated by an ideology of independence and of "doing your own thing." On the other hand, this ideology interferes with the efficient organization of the enterprise and limits the possibility of its becoming self-supporting. One serious study of a number of these communes finds that they have varied sources of income: welfare, gifts from parents, unexpected windfalls, some bartering with other communes, and to some extent jobs or income from sales of handcrafted objects.[12] Apparently though, the barter and the jobs represent a minor portion of their financial support. One reason for this is that their philosophy precludes a rigorous work discipline and a clearly defined system of leadership.

[12] Bennett Berger *et al.*, "Child-rearing Practices of the Communal Family," in Skolnick and Skolnick, *op. cit.*, pp. 509–22.

Another problem concerns the child-rearing goals of these groups. Should they train the children to be the next generation of communards, or should they train them to be free and to follow their own inclinations? The first calls for a program of calculated "indoctrination," which is contrary to their ideology, while the second could very well bring about a rebellion against the rebels.

The durability of these experiments has yet to be tested. Whether they will be able to cope with the inherent strains and whether a new generation will be motivated to continue seem questionable. Moreover, in contrast to the collectives of Israel, which have persisted over several generations, not only are these new experiments not self-sufficient, but they do not play a role in the larger society, such as defense or working virgin territory. Thus, if they are to succeed, it seems that they will have to make some concessions to the realities of the situation. In any event, in the general population, which still seems largely achievement-oriented and unwilling to give up the conveniences of modern life, one would doubt whether even a modified version of these collectives will spread.

If larger family units are not the main order of the day, are there possibilities for smaller units—units smaller than the nuclear family? In fact, one type of small family unit does exist in fairly large numbers, and that is the female-headed household. The prevalence of such father-absent families is strongly associated with the marginal economic position of the men in the poorest sectors of the society.

Some female-headed households are also to be found, however, among the more affluent. It would appear that the greater economic opportunities for women that already are emerging should make it possible for even more women to rear children without benefit of a father in the home. In this regard, it is of interest to note that one recent study of the effect of fatherless families was focused on the problem of single-parent adoption.[13] The findings of this and other studies, by the way, indicate that there is no conclusive evidence that father absence leads to personality defects or to poor school performance. Many of the disadvantages of being raised in a female-headed family appear to be the result of the comparative poverty of such families. Thus, as the status and independence of women are generally enhanced, it seems reasonable to expect more female-headed households to emerge, often as a matter of choice.

[13] Alfred Kadushin, "Single Parent Adoptions: An Overview and Some Relevant Research," reported in E. E. LeMasters, *Parents in Modern America* (Homewood, Ill.: Dorsey Press, 1970), p. 168.

In general, then, there seems to be a growing acceptance of different forms of the family—among them, the single-parent unit and a twentieth-century type of extended family. However, the nuclear family both as an ideal and as the statistical norm does have a future, but it will be a nuclear family characterized by a new kind of equality.

In sum, I see two processes affecting the family: greater differentiation, a kind of family pluralism in the forms of family life that come to be accepted, and, within the typical nuclear family, a dedifferentiation, a depolarization of sex roles—shall we say a kind of unisex family?

## FULL PARTICIPATION OF THE WOMAN WORKER: OBSTACLES AND IMPLICATIONS

VIRGINIA ELLEN SCHEIN:*

Over the last seventy years an increasing number of women have entered the labor force. While in 1900 women comprised only 18 per cent[1] of the work force, today they make up 38 per cent[2] of the labor force. According to the *Wall Street Journal* (October 25, 1971), the number of women jobholders is up 71 per cent since 1950, in contrast to a 16 per cent increase for men. Yet, despite their growing numbers, there is still a dearth of women in top-level positions in most occupations. It is now acceptable for a woman to work, but there are severe restrictions on the extent to which she can fully participate in the world of work.

Full participation means the opportunity to advance in accordance with one's abilities and efforts; to gain real decision-making power; to pursue tasks which utilize all of one's talents; and to exert responsibility and authority. At present such opportunities are not readily available to women in the work force. An examination of the status of working women illustrates their circumscribed role as labor force participants. Of the 3,854 policy-level jobs in government (jobs in top civil service grades and major appointive jobs), only 63, or 1.6 per cent, are cur-

* Dr. Schein, not a member of the Society, is manager of personnel research, Personnel Administration and Research Division, Life Office Management Association.

[1] V. K. Oppenheimer, *The Female Labor Force in the United States: Demographic and Economic Factors Governing Its Growth and Changing Composition* (Berkeley: Institute of International Studies, University of California, 1970), p. 69.

[2] E. D. Koontz, "The Progress of the Woman Worker: An Unfinished Story," *Issues in Industrial Society*, II (1971), 29.

rently held by women.[3] In the professions the percentage of women receiving degrees in the following areas in 1967–68 was as follows: medicine, 7.9 per cent; dentistry, 1.5 per cent; architecture, 4.4 per cent; chemistry, 17.2 per cent; and engineering, 0.6 per cent.[4] In my own profession, industrial psychology, the percentage of women is only 4.2.[5] In business as well, there is a paucity of women in upper-level positions. One extensive survey[6] of industrial organizations revealed that, in nearly half (45 per cent) of the surveyed companies, 71 per cent or more of the female employees were engaged in general office work, while in 73 per cent of the companies less than 5 per cent of the professional employees were women. The survey further indicated that management above the first-line supervisor was even more male-dominated. Approximately 87 per cent of the companies had 5 per cent or fewer women in middle management and above; 39 per cent of these had no women at all in management positions. Furthermore, a recent study of women in executive positions disclosed that only one hundred women occupy the offices of president and senior vice-president of corporations in the United States.[7] An examination of the composition of the boards of directors of the top eighteen companies within the insurance industry indicated that, of the 365 directors, only four were women.[8]

These data indicate that women are not, as yet, full participants in the labor force. They work—but their opportunities for upward mobility, recognition, and achievement are severely curtailed. Why is this so? Title VII of the Civil Rights Act of 1964 prohibits discrimination in employment on the basis of sex. Yet, seven years after the passage of the act, there has not been a noticeable increase in the number of women in executive and top-level positions. A review of the introduction and acceptance of the "sex" provision in the antidiscrimination act points up the underlying reasons for this stagnation. According to author

[3] "Nixon Has No Room at the Top for Women," *The Spokeswoman,* II, No. 1 (July, 1971), 5.

[4] J. D. Parrish, "College Women and Jobs: Another Look at the 1970's," *Journal of College Placement,* April-May, 1971, p. 37.

[5] V. E. Schein, "The Woman Industrial Psychologist: Illusion or Reality?" *American Psychologist,* XXVI, No. 8 (August, 1971), 708–12.

[6] "Women in the Work Force: Where They Stand, What They Want," *Modern Manufacturing,* August, 1970 (condensed in *Management Review,* LIX [1970], 20–23).

[7] "Small Cold Room at the Top," *The Spokeswoman,* I, No. 11 (1971), 5.

[8] "A Study of the Business and Professional Backgrounds of the 365 Directors of the Top 18 American Life Insurance Companies Which Have over 10 Billion in Force" (unpublished report, Institute of Life Insurance, 1971).

Caroline Bird, Congressman Smith of Virginia proposed the addition of "sex" to the bill on employment prohibiting discrimination on the basis of "race, color, religion or national origin" as a means of defeating it. Discrimination against Negroes aroused indignation, but discrimination against women seemed humorous. If the bill could not be beaten, perhaps it could be laughed off the floor. And laugh they did. Even though Title VII with the addition of the sex provision was passed, the sex amendment continued to be seen as a joke. Immediate reactions from the public and press were comments such as, "Must we have male bunnies?" or "Can *she* pitch for the Mets?"[9] These reactions imply that there are deep-rooted attitudes which have prevented women from receiving serious consideration for top-level positions in business and the professions.

Thus the elimination of overt discrimination is not the panacea. The introduction of women into upper-level positions is by no means a simple task. There are psychological and sociological barriers confronting both men and women which make this endeavor difficult. In order for women to be effective, successful, and satisfied participants in the world of work, it is necessary to understand some of the psychological obstacles which have thwarted women in their attempts at achieving full participation in the labor force.

One of the major barriers to the full utilization of women in the work force has been the perpetuation of fallacious suppositions regarding the working woman. For example, descriptive statistics do not support the commonly held belief that child-rearing prevents women from working or that women have much higher absenteeism and turnover records than do men. Of the female 38 per cent of the work force, four out of ten women are mothers. Of these working mothers (11.6 million), 36 per cent (4.2 million) have children under the age of six years.[10] A Public Health Service survey of work time lost because of injury or illness revealed that during 1967 women lost on the average 5.6 days, compared with 5.3 for men.[11] The available statistics on labor turnover indicate that differences between men and women are also generally small—and even that gap is narrowing.[12]

Another commonly held assumption is that the needs and factors related to job satisfaction are quite different for men and women. Women, unlike men, are usually perceived as being more interested in working

[9] C. Bird, *Born Female* (New York: Pocket Books, Inc., May, 1969).

[10] U.S. Department of Labor, Women's Bureau, untitled pamphlet, June, 1971.

[11] Koontz, *op. cit.*, p. 30. [12] *Ibid.*

conditions and social relationships with co-workers than with intrinsic motivational factors, such as achievement. Several recent research studies,[13] however, have found no empirical support for this notion. The results of investigations in a variety of organizations reveal that the factors contributing to job satisfaction and motivation are more similar for men and women than was heretofore believed. Both sexes have needs for advancement, recognition, responsibility, and achievement which they seek to satisfy by working.

Although some of these myths are gradually being dispelled, there are still psychological obstacles produced by the differential socialization process of the sexes which foil the accomplishments of women in the work force. The socialization of the child is the process through which he or she gradually "finds himself" at home in the society in which he lives. The child is instilled with culturally approved standards of social conduct. The difference in the socialization process that men and women experience throughout their lives has produced a difference between the sexes in terms of attitudes, acquired characteristics, and temperament. According to Professor Florence Howe, the differential training starts early, probably before the age of 18 months. For example, we "throw baby boys up in the air and roughhouse them," she asserts, whereas "we coo over baby girls and handle them delicately."[14] Elementary school readers reinforce preschool learning by depicting boys as active and independent and girls as passive and dependent. Thus, by parents and teachers, young women are taught to be feminine and young men to be masculine, and by adulthood each sex has acquired different sex role images with accompanying characteristics and attitudes.

It would seem that being perceived by others and perceiving oneself in terms of a sex role image inhibits women from advancing in the work force. One way in which sex role stereotypes impede the progress of women is through occupational sex typing. According to Merton, a leading sociologist, "[o]ccupations can be described as sex-typed when a large majority of those in them are of one sex and when there is an associated normative expectation that this is how it should be."[15] Characteristics

[13] S. D. Saleh and M. Lalljee, "Sex and Job Orientation," *Personnel Psychology*, XXII (1969), 465–71; R. Wild, "Job Needs, Job Satisfaction and Job Behavior of Women Manual Workers," *Journal of Applied Psychology*, LIV, No. 2 (1969), 157–62.

[14] F. Howe, "Sexual Stereotypes Start Early," *Saturday Review*, LIV, No. 42 (October 16, 1971), 76.

[15] C. F. Epstein, *Woman's Place* (Berkeley: University of California Press, 1970), p. 152.

necessary for success in a sex-typed occupation are usually those associated with either the male or the female sex role stereotype. For example, a female-type occupation tends to require characteristics associated with femininity, such as helping, nurturing, and empathizing, whereas a male occupation tends to require characteristics associated with masculinity, such as coolness, detachment, and analytic objectivity. Judging from the high ratio of men to women in, for example, managerial positions, and the informal belief that this is "how it should be," the managerial job can be classified as a male-type occupation. If so, then this position would seem to require personal characteristics often thought to be more commonly held by men than by women. Indeed, the results of a research study which I recently completed involving three hundred male managers in nine organizations revealed a strong relationship between sex role stereotypes and requisite management characteristics. My findings confirmed the hypothesis that successful middle managers are perceived to possess characteristics, attributes, and temperaments more commonly ascribed to men in general than to women in general.[16] Thus sex role stereotypes may effectuate the perception of women as being less qualified than men for high-level positions, regardless of their actual qualifications.

Second, sex role images may deter women from striving to succeed in certain positions. If a woman's self-image incorporates the feminine role aspects, she may be less likely to acquire those job characteristics or engage in those job behaviors associated with a "masculine" position, since such characteristics are inconsistent with her self-image. A recent laboratory study[17] illustrates the way in which a sex role image can prevent a woman from exhibiting certain "masculine" characteristics. The researcher first measured the extent to which male and female students possessed the personality characteristic of dominance. Using only individuals who were either very high or very low on dominance, he paired these individuals in the following manner: a high-dominance male with a low-dominance male; a high-dominance female with a low-dominance female; a high-dominance male with a low-dominance female; a high-dominance female with a low-dominance male. Each pair of subjects was given a task which required that one individual be the leader and the other the follower. The results revealed that, in the first three

[16] V. E. Schein, *Women in Management: Sex Role Stereotypes and Requisite Management Characteristics* (Personnel Administration and Research Division report, Life Office Management Association, 1972 [in preparation]).

[17] E. I. Megargee, "Influence of Sex Roles on the Manifestation of Leadership," *Journal of Applied Psychology*, LIII (1969), 377–82.

types of pairing, the high-dominance individual, regardless of sex, assumed the leadership role. However, in the case where the high-dominance female was paired with the low-dominance male, the high-dominance female did not assume the leadership role. Further analysis indicated that the low incidence of high-dominance females assuming the leadership role was not the result of greater assertiveness by the low-dominance males. Rather, it was the result of the female's appointing the male as leader. In this particular pairing, the function of a leadership role was inconsistent with the female's self-image of being "feminine" and, therefore, she preferred to maintain her cognitive consistency by not being a leader. Thus it may not be only covert prejudicial attitudes held by others which keep the woman from entering certain high-level positions; the woman herself may be reluctant to enter a field, since she may view the requisites for successful performance as being inconsistent with her feminine self-image.

On the other hand, if a woman does enter, for example, the managerial work force, despite pressures for congruence of her feminine self-image and the masculine image of the job, she may do so at the price of personal conflict. One recent in-depth study[18] of twenty-five women who hold top management positions today in businesses traditionally considered male-dominated disclosed the conflicts these women experienced in terms of opposing self-images of "being a woman" and "being a manager" and analyzed the ways in which they dealt with these conflicts during their rise to the top. In beginning their careers, they avoided the conflict which arose from being a woman in a man's world by setting their femininity aside. They assumed that it was their job to act as little as possible like women and to emulate the masculine behavioral style. This process of conflict avoidance and evasion sustained them in their rise to middle management positions.

Their entry into top-level positions, however, depended upon their being able to bring their self-concept conflicts to the surface and resolve them. All the women in this study experienced an identity crisis in their mid-thirties which caused them to re-evaluate themselves as women and as managers and to integrate the two self-images. This process was directly related to their advancement into top-level positions. These successful women, now in their mid-fifties, perceive recognition of their conflict resolution when others say of them, "She is one hell of an executive and one hell of a woman."[19]

[18] M. Hennig, "What Happens on the Way Up," *MBA—Masters in Business Administration,* March, 1971, p. 8–10.

[19] *Ibid.*, p. 9.

From these studies, it seems apparent that the achievement of the goal of increasing the number of women in upper-level positions in the work force requires more than simply reducing the obvious barriers. It requires an understanding of the different values and ideas to which men and women have been exposed, a consideration of the ways in which necessary job characteristics and attitudes can be taught to women, an understanding of the conflicts experienced by women operating in a male-dominated field, and a consideration of methods by which an organization or a profession can alter aspects of its culture so that skilled women can perform effectively within it.

Within the last year or so, the business community, universities, women's groups, and the government have, at long last, begun to view the psychological obstacles as serious hindrances to the achievement of women and are dealing with them accordingly. Numerous programs and seminars are being sponsored by business organizations and universities, designed to enlighten those in positions of authority as to the myths and stereotypes regarding women. Some major organizations, such as IBM, have implemented in-company training programs to raise the level of awareness of their managers in this area. AT & T is employing the assessment-center approach to seek and encourage talented women to pursue managerial careers. Such action programs are reducing the barriers imposed by stereotypical perceptions of women and men and eliminating the "sex typing" of many jobs, thereby facilitating the introduction and acceptance of qualified women into top-level positions. With the continuation and expansion of these endeavors, the feminine sex role stereotype will no longer impede the advancement and achievement of the working woman.

Concurrently, women are becoming increasingly aware that the ostensible conflict of "femininity" versus "career" has been imposed upon them by society. According to Dr. Jennifer Macleod, director of the Center for the American Woman and Politics at Rutgers University, "[w]omen have been blaming themselves too long for the positions they're in. . . . We have been taught and trained by the system to act the way we do."[20] To facilitate retraining, colleges and universities, such as Cornell University, New York University, and San Diego State College, have introduced courses pertaining to the psychology of women, the history of women, the evolution of the female personality, and so on. Also, a profusion of women's groups in professions such as law, psychology, and sociology have formed within the last two years, whose

[20] *News Tribune* (Woodbridge, N.J.), August 2, 1971, p. 12.

members are decrying their lack of female peers and are seeking to enhance the status of women in their respective professions. The aim of these activities is to counteract the effects of the differential socialization process so as to allow women to freely enter into professions and occupations without suppression of their talents or feelings of personal conflict.

Finally, many women, no longer content to accept second-class employment status, are now utilizing legal mechanisms to secure equality of job opportunity. Thus far, more than forty-three colleges and universities have been charged with discrimination in violation of Executive Order 11246, which prohibits discrimination by federal contractors.[21] A class action suit was filed on behalf of all women on the University of Pittsburgh faculty charging discrimination in hiring, promotions, salary, and grievance procedures and charging also that women are excluded from the decision-making bodies of the university.[22] In July of this year, women law students from Columbia and New York University accused ten of New York's largest and most prestigious law firms of discrimination against them in recruiting and hiring procedures.[23] These actions are beginning to literally pay off. Between January and June of 1971, under the Equal Pay Act, the courts have awarded more than thirty million dollars in back pay to women.[24]

Thus the awareness of the psychological obstacles impeding the progress of the working woman, the major educational programs in the business and university communities designed to remove these psychological barriers, and the increasing activity on the part of women's groups and the government to eliminate inequality of employment opportunities portend a changing role for women in the work force. The current advancements for equal opportunity for women in upper-level positions make it reasonable to assume that in the near future women will be full participants in the labor force. This new form of participation—full participation—will find more women holding positions of responsibility and leadership in all occupations and professions.

As more and more women have full-time careers in which they can fully utilize their talents and expertise and receive ample financial rewards in return, what will be the impact of this working woman on the

[21] *Alert* (New York: Research Institute of America), July, 1971.

[22] "Class Action in Federal Court against University of Pittsburgh," *The Spokeswoman,* II, No. 2 (August 1, 1971), 5.

[23] *New York Times,* July 1, 1971, p. 59.

[24] *Alert,* July, 1971, Item 292.

family? As I see it, the major effect of women's new form of participation in the work force will be on the husband-wife relationship. Married couples will be far less dependent on each other, yet their expanded roles will permit a greater sharing of activities and interests. Far from bringing about the dissolution of marriage, women's increased work opportunities will foster a marital relationship that is meaningful and rewarding to both parties.

The coexistence of two individuals with full-time occupations will, however, mean that there will have to be changes in the husband and wife roles as we know them today. The traditionally separate spheres of influence for husband and wife will overlap. No longer will the home and its duties be the sole responsibility of the wife, nor will family financial support be the sole responsibility of the husband.

Can such a marital arrangement really work, and what specific changes in attitudes and decision-making are required? An examination of some of the couples who are already pursuing this route sheds some light on the activity and attitude patterns in the two-career family. A recent *New York Times* article, "Executive Couples," pointed up the increasing number of husband-and-wife teams seeking employment—"a young husband and wife clutching fresh diplomas and similar to identical qualifications simultaneously confronting the same job market."[25] This "package deal," as companies are calling it, calls for a change in attitudes on the part of the marital pair. Transfers, for example, play a role in routes to success. For these couples it is no longer assumed that the wife will follow the husband. According to the wife in an attorney-professor husband-and-wife pair, the decision as to who transfers "would depend on how happy in our jobs we each are relatively. We have no feelings that either his job or my job is more important."[26]

Perhaps these attitudes sound idealistic, and many are thinking that after one or two years these "package deal" marriages will dissolve or revert to the usual deference to the husband's position on the part of the wife. It seems appropriate here to comment on my own marital situation, since both my husband and I are pursuing full-time careers. Our first career partnership decision came prior to our marriage. As college seniors, we both wanted to pursue advanced degrees and could not justify one of us waiting out the other's term of advanced studies. We decided that marriage did not preclude full-time professional commit-

[25] "Executive Couples," *New York Times,* October 24, 1971.

[26] *Ibid.*

ment on the part of both spouses; thus we married and enrolled in graduate school at the same time. We shared, then, the anxieties of dissertations, bar exams, and first job-seeking just as we share each other's successes and failures in our respective careers at present.

We each have, of course, a great deal of independence. Many of our satisfactions come from achieving in our own areas of expertise. Yes, there is competition, but of a sort which is a soft spur; overriding that is the pride that we take in each other's accomplishments. For us the exhibition of typical husband-wife roles is at a minimum. The day-to-day routine chores must be carried out, but the decisions as to who does them are based on available time and personal choice.

For us, and for other two-career families, a major benefit is the financial independence of both husband and wife. If the two are earning similar high salaries, then each has the option, if desired, to change professions or to start independent business ventures without worrying about supporting the other. Usually the woman does have this option; the man rarely does. As soon as more women are capable of earning high salaries, then the husbands, too, no longer have to remain in positions they dislike for fear that the bills will not be paid should they be temporarily unemployed.

Thus far, working women have not altered our notions about the husband as provider and protector, but, as more women fully participate in the work force, serious re-evaluation of our current views on family protection will have to be made. Even now, this trend in the equalizing of earning power is observable. According to the *Wall Street Journal* (October 25, 1971), a noticeable trend is "toward multiple jobs, multiple paychecks within the same family. The man of the house may still be the main bread winner but proportionately, he is bringing home less of the bread than he used to." As women's paychecks begin to reflect their entry into higher-level positions, the notion of the man as the unaided breadwinner may become obsolete.

Of course, the husband has been viewed as the provider and protector because the family encompasses not just husband and wife but children as well. What will be the impact of this new pattern of labor force participation on the total family? As with the husband-wife relationship, the two-career family will effectuate a change in the role relationships between parents and children. This family will usually need daily child care by individuals outside the nuclear family. Studies are beginning to show that there are no major differences between children of working mothers and those of nonworking mothers when all other conditions are

constant, thereby diminishing the resistance individuals formerly had toward child care outside the home.[27]

In the two-career family, the husband and wife will share the responsibilities of child-rearing. The burden on the working wife of full care of the children is onerous and unreasonable. Each spouse must be concerned with the children's welfare, and decisions as to who leaves work to nurse an ill child or attend a school play will depend, again, on which spouse has more available time or a more flexible schedule.

Individuals who are already fulfilling these new styles of parent roles find that children seem to benefit from this arrangement. The children are exposed to two adults functioning both in the home and in the working community as well as to more individuals outside the family, thereby increasing the number and variety of role models they can identify with. Fathers in two-career families are closer to their children, and children are often more independent, mature, and capable of dealing with environmental difficulties.

Two-career families can operate to the benefit rather than to the detriment of all involved. Too often we are so constrained by our traditional roles for or images of wife-husband-mother-father that we assume that no other arrangement is appropriate. It is only when changing circumstances provide individuals with new options for interrelationships that we discover that these restrictions are usually ephemeral.

There seems little doubt that the role of women in the work force will be changing. Women cannot and will not be denied the opportunity to participate fully in the work force. Such participation may alter the family life style; however, the full utilization of the human resources of 51 per cent of our population can only benefit society in general.

## DEMOGRAPHIC TRENDS AND INTERGENERATIONAL RELATIONSHIPS

DORRIAN APPLE SWEETSER :*

My topics are family structure and its stability over time, long-run trends in demographic aspects of family life, and recent information on interaction with close kin outside the nuclear family.

The structure of the American family—and, I believe I may say, of

[27] Bird, *op. cit.*, p. 216.

* Dr. Sweetser, not a member of the Society, is professor of sociology, Boston University.

the North American family—has not changed historically, as far back as the evidence goes, and current information gives no indication of a structural change. The units of structure are positions, each composed of one or more roles, with rights and obligations attached to the roles. The structures formed by these positions consist of the nuclear family group, surrounded by a loose aggregation of the bilateral kindred, or kinfolk, of individuals in the nuclear family roles.

Both the nuclear family and the kindred appear to be universal entities in family structure. Differences between societies in family structure include variations in residence rules, variations in rules about whom one may marry, and variations in whether or not there are also kin groups organized on the basis of descent (real groups, with common interests and a division of tasks), in addition to the nuclear family and the kindred.

The nuclear family as a structure contains the parent-spouse positions and the preadult child positions. Actual groups of this kind may not, of course, have all the roles filled.

The kindred is a different type of structure, with far less in the way of normative regulation. By contrast, the nuclear family (and other kin groups in other societies) have strong and multiple bonds uniting the same individuals in a set of positions. Not only are there more roles than positions, but also the roles are important to one another. This attachment of important, multiple, interlocking roles to a set of positions is marked by what the writer has called "path consistency" among the positions.[1] It appears, for example, highly unusual for a kin structure, or any other structure for that matter, to display an inconsistent hierarchy—that is, if A is responsible for, or in any other way superior to, B, and if B is similarly placed in regard to C, for C to be anything but subordinate to A. The "path-consistent" structures in triads are three: B superior to C, A superior to both; B superior to C with A neutrally (nonhierarchically) related to both; and B superior to A and C, with a neutral relation between A and C.

But the kindred, in contrast to the nuclear family, consists of positions defined entirely with reference to an individual, and its composition is not the same for any individuals, except that siblings have the same kindred. This peculiarity of kin positions, together with the usual lack of shared practical concerns among kinsmen in our type of society, doubtless account for the insubstantial nature of ties with most of one's

[1] Dorrian Apple Sweetser, "Path Consistency in Directed Graphs and Social Structure," *American Journal of Sociology,* LXXIII (November, 1967), 287–93.

kin, except for those closest to the kin-creating nuclear family. In general, it is very hard for ties of sentiment to persist unsupported by actual group structure and practical interests. The important kin of most individuals, other than those in the nuclear family created by one's marriage, are members of the nuclear family of origin, members of the spouse's nuclear family of origin, and members of the nuclear families of married children.

This structure consisting of the nuclear family group and the kindred has been unchanged in this society as far back as the evidence goes and is not changing in the present. Historical evidence is limited, but what is available points to this conclusion.

A comparison of data from the Massachusetts state census of 1885 with 1960 population information revealed that the common way for individuals to live, then as now, was as members of nuclear families. In 1885 only 6.3 per cent of men were living as "relative of head other than children." In 1960 the figure was 4.4 per cent. Of females, 9.4 per cent in 1885 were living in households as relatives of the head other than wife or child, and 6.7 per cent in 1960. The base of these percentages is the number of individuals living in households of relatives or with their own household; individuals living in the households of nonrelatives were excluded.[2]

A similar lack of evidence of any trend over time in the importance of the nuclear family was observed in Rhode Island state census data for 1875. Compared to 1960, "there was a slight decline (3 percent) in the proportion of extended families, multigenerational families, and families containing subfamilies. Of greater significance is the finding that *even in 1875* multigenerational or extended family arrangements were not pervasive forms of family life. Even in 1875 only eight per cent of all families were multigenerational and only 5 per cent contained subfamilies."[3]

While household composition is only a part of the relevant information concerning family structure, it is notable that neither of these studies supports the idea that the family was once more of an extended

[2] John C. Beresford and Alice B. Rivlin, "The Multigeneration Family" (paper prepared for the University of Michigan Conference on Aging, June 29–July 1, 1964, Ann Arbor, Michigan); see also, by the same authors, "Privacy, Poverty, and Old Age," *Demography,* III (1966), 247–58.

[3] Edward T. Pryor, Jr., "Rhode Island Family Structure: 1875 and 1960" (paper presented at the annual meeting of the Population Association of America, April, 1967).

family than it is today. Two other lines of evidence of stability over time of today's family structure may be noted. First, early American immigration was largely from areas of Europe where single-family households were the rule.[4] Second, the English language terminology of kinship is, and has been, of the simple "Eskimo" type. The sex of parental siblings and of children of own siblings is recognized (aunt, uncle; niece, nephew), but we do not distinguish father's line from mother's line, while the term for cousins does not even distinguish by sex. Kinship terminology tends to reflect kinship structure, and Eskimo kinship terminology is associated with bilateral descent and independent nuclear families.[5]

In the present, family structure shows no sign of changing. Marriage remains popular, despite fluctuations in rates and despite a trend upward in divorce rates since the turn of the century.[6] Experiments with alternative forms of family living, or with quasi-family living, are not new phenomena in our society and represent a very small part of the current family scene.

Although family structure may be unchanged, what can be observed to change are the family situations of persons of various ages. That we can study the question of change in these essentially demographic facts indicates the importance of demography in family sociology. Indeed, the most comprehensive body of data, covering the longest period of time, about the family situations of persons consists of demographic information on marriage and family statistics and on migration. It might be interesting if we had, for example, data on interaction rates of kin which had the comprehensiveness of, say, fertility data, but then again it might not. In these days of the knowledge explosion one occasionally feels grateful that there are some things that we do not know, since we already have more information than we can master. Be that as it may, much of what can be said about living in families, in the present and over time, is of the nature of demographic data.

I will refer briefly to some of the trends in these data and will then speak about an area of study of family and kin relations which is rela-

[4] John M. Mogey, "Family and Community in Urban-Industrial Societies," in H. T. Christensen (ed.), *Handbook of Marriage and the Family* (Chicago: Rand McNally & Co., 1964), p. 509.

[5] George P. Murdock, *Social Structure* (New York: Macmillan Co., 1949), pp. 223–28.

[6] Hugh Carter and Paul C. Glick, *Marriage and Divorce: A Social and Economic Study* (Cambridge, Mass.: Harvard University Press, 1970), pp. 54–55.

tively new but from which some general conclusions can be drawn. I refer to characteristics of, and influences on, interaction with close kin.

With this informed audience, I will refer only briefly to the important long-run trends in family life revealed by demography. First, people today spend a longer time as members of the nuclear family which they create by their marriage than they did formerly. This is a consequence of the long-run decline in age at first marriage, the increase over time in the proportion ever married, and the increase in the average length of life.[7]

Second, from the 1880's to the early 1950's there was a clear secular trend for the proportion of women ever married who were childless to rise, from less than one-tenth to one-fifth. Since then the trend appears to have been in the other direction, but it is not possible to say with confidence at this time that the trend has truly reversed.[8]

A third important long-run trend in demographic aspects of family life is the longer duration of what has been called, rather morbidly, the stage of the empty nest—the period between the marriage of the last child and the death of one of the spouses.[9] This trend is due to earlier age of marriage, smaller family size, and longer life. This trend is undoubtedly an important reason for the increasing tendency for married women to enter the labor force, although few who do so wait until the empty-nest stage to become employed.[10]

For various practical reasons, family data in the past have been gathered mostly about persons in households, and in this perspective kin next door might as well not exist. Recent large-scale studies of interaction with kin outside the household, studies in which the sample is nationwide or covers a substantial part of a nation, allow some generalizations to be made with confidence. The studies I will refer to are based on samples not only from the United States but from several other modern industrial societies as well, all of which have about the same family structure. Curiously, if one wishes not merely to describe something about family life in a particular society but in addition to test an explanatory hypothesis about some aspect of family life in a particular society, the conclusions one reaches about the hypothesis are

[7] *Ibid.*, pp. 387–89.

[8] William Petersen, *Population* (2d ed.; New York: Macmillan Co., 1969), p. 508.

[9] Carter and Glick, *op. cit.*, pp. 146–47.

[10] James A. Sweet, "Family Composition and the Labor Force Activity of American Wives," *Demography*, VII (May, 1970), 195–209. See especially p. 197, Table 1.

more trustworthy if the same hypothesis can be tested in another society with the same family conditions. This is true because explanations based on data from one society are at the risk of error due to unrecognized peculiarities of the society.

On the basis of extensive studies conducted not only in the United States but also in Denmark, England, Finland, and Norway, it appears, first, that old people as a rule are not as isolated from contacts with grown children as one might think and, second, that the principal bond among close kin is maintained through contacts between women. This latter point about family relations in modern societies will illustrate the value of comparative or cross-national studies in establishing dependable conclusions about family ties in any one society. If it had been observed only in the United States or in Canada that females are more active in kin relations than are males, it might be argued that this was because of some aspect of the female role or character in that society. If, however, the same tendency has been observed in societies which differ in the inequality of the sexes, the explanation must lie elsewhere.

To return to the subject of contacts between elderly parents and grown children, a survey of persons aged 65 and over, in the United States, Denmark, and England revealed that something like three-fourths of older people had a child living within a half-hour journey.[11] Studies in Finland and in Norway, although based on samples of adults rather than of older people only, indicated that many adults live near parents. In a sample of residents of metropolitan Helsinki (which contains about 10 per cent of the population of Finland), of those with living parents, in over half the cases the parent or parents were also residents of metropolitan Helsinki.[12] In a sample of the urban population of Norway, among respondents with living parents, half were living within an hour's travel of a parent.[13]

Paralleling these findings about proximity of parents and grown children, in the three-nation study, over three-fourths of the sample of

[11] Ethel Shanas *et al.*, *Old People in Three Industrial Societies* (New York: Atherton Press, 1968), p. 193, Table VII-7. For other survey findings on family relations of older people see Matilda White Riley and Anne Foner, *Aging and Society*, Vol. I: *An Inventory of Research Findings* (New York: Russell Sage Foundation, 1968), especially chaps. 7 and 23.

[12] Dorrian Apple Sweetser, "Intergenerational Ties in Finnish Urban Families," *American Sociological Review*, XXXIII (April, 1968), 236–46.

[13] Dorrian Apple Sweetser, *Kinship Networks in Urban Norway: A Preliminary Report* (Working Report No. 1, Institute of Applied Social Research, Blindern, Oslo, Norway, May, 1971), p. 10, Table 2, and p. 11, Table 3.

older people, in each society, had seen a child within the previous week, and this statement is made with parents excluded who were sharing a household with a child.[14] In Helsinki, omitting parents who lived with respondents, the mean number of face-to-face contacts per week between respondents and parents was well over one.[15] Similarly, in the urban Norwegian sample, omitting parents who lived with respondents, half the parents had seen and talked with respondents four or more times in the previous month.[16]

These frequent contacts necessarily are dependent on the extent to which children move far away from home when they grow up. How valuable it would be if we had lifetime migration data on groups of close kin as well as on individuals!

In regard to interaction of close kin, a modest but notably consistent tendency has been observed from numerous studies for females in our type of society to be more active than males.[17] This statement, by the way, is made with proximity taken into consideration. Otherwise, one would not be able to say whether there was a difference by sex or a difference due to a correlation of proximity with sex. There is some evidence that female activity in kin relations in our type of society is due to the fact that men's work takes place outside the family and that consequently there are not the practical interests pertaining to work to reinforce ties of sentiment between male kin that there are between female kin.[18]

The strongest bond between close kin, as far as interaction studies can indicate this, is the intergenerational bond. Parents and children interact more frequently than do siblings.[19]

To complete this scan of what we know fairly definitely about ties between close kin, it only remains to say that the most common point of in-law friction is between a woman and her daughter-in-law.[20] This is doubtless due at least in part to psychological dynamics, augmented by the greater involvement of women in kin ties.

[14] Shanas *et al.*, *op. cit.*, p. 197, Table VII-10.

[15] Sweetser, "Intergenerational Ties," p. 242, Table 1.

[16] Sweetser, *Kinship Networks*, p. 14, Table 6.

[17] See references cited in nn. 12, 18, and 19.

[18] Dorrian Apple Sweetser, "The Effect of Industrialization on Intergenerational Solidarity," *Rural Sociology*, XXXI (June, 1966), 156–70.

[19] Dorrian Apple Sweetser, "The Structure of Sibling Relationships," *American Journal of Sociology*, LXXVI (July, 1970), 47–58, especially p. 49.

[20] Sweetser, "The Effect of Industrialization," pp. 167–68.

MR. EDWARD A. LEW: I should like to raise two controversial issues, playing the devil's advocate, in order to elicit some spirited discussion.

First, I would suggest that our very able panelists have been rather silent about the influence of biological factors in women's lives. We know that general sex differences in bodily makeup and chemical functioning have endowed women with greater capacity to resist or overcome the major diseases but at the same time have rendered them more susceptible to conditions such as diabetes and goiter and probably also to higher sickness rates. The extent to which greater activity and muscular development and more manifest aggressiveness of the male should be regarded as genetic traits or as in the main culturally induced characteristics is still an open question, despite the insistence of many feminists that the psychological differences between the sexes are predominantly the result of learned behavior and of social training. I would cite the observations on the behavior of male and female infant monkeys (H. F. Harlow, 1962) as evidence on the point that many secondary sex characteristics are primarily biological. Likewise, the production of aggressive behavior by injecting male hormones into female animals argues that physiological differences do have potent influence. It is, of course, very difficult to draw a line between biological and cultural elements in the behavior of men and women, but I would surmise that playing down the effect of genetic factors in masculinity and femininity represents a great deal of wishful thinking. The most one can assert confidently on the basis of our limited understanding is that there are wide ranges of masculinity and femininity in each sex.

In forecasting the outlook for the family, I would make a plea for a much longer historical perspective. The fascinating studies of the French social historian Phillippe Ariès suggest that middle-class family life of today is of relatively recent origin. It did not assume its current form until the eighteenth century, when the house ceased to be a place of work and was gradually transformed into a home—a sanctuary for family living and leisure. During the Middle Ages large houses were important centers of economic activity, and a significant proportion of middle-class women functioned as managers. With the advent of factories, specialization in industry, and development of rapid means of transportation, domestic production dwindled and the economic role of women was downgraded. Industrialization and urbanization changed the working lives of both men and women radically, but women were placed at a particularly great disadvantage when the industrial labor market came to demand physical strength or skills which had been historically male

preoccupations. Recent shifts in the nature of our economy are reversing this trend, inasmuch as increasing concentration of employment in more sophisticated services and technological jobs is opening new opportunities for the great majority of women.

MR. DONALD G. BARBER: The presentations of the four panelists have provided much food for thought. While they have substituted some demonstrations for impressions, in some instances they have only substituted some appearances for other appearances.

Dr. Sweetser stated that the structure of the North American family has been relatively unchanged over a long period. She mentioned that in the family structure there was observable a path consistency, a logical hierarchy, an established "pecking order." I question whether this "unchanged" structure is consistent with Dr. Foner's statement that the wife is the primary source of emotional support in the nuclear family. For the family of fifty to a hundred years ago I picture the husband as being physically present in the home more frequently than now, taking a more active leadership role in the home than now, being the emotional fortress of the home. With the change in occupational demands over the years, men have traveled farther to work for longer periods of time, leading to a decrease in the father's influence at home. Men have also slowly retreated from a former position of providing home leadership from religious principles (I believe that few churches provide doctrinal study sessions for men in their programs). I believe that men are abdicating their former role of providing family leadership and that, of necessity, women are filling the void.

Dr. Schein's remarks reflected a basic assumption that men and women have equal capabilities in the business world. She was of the opinion that women did not develop their ability to achieve equality with men because of a differential training which begins as early as 18 months of age—for example, parents playing more boisterously with young sons than with young daughters, in her opinion. She spoke, however, of characteristics ascribed to men and characteristics ascribed to women. This supports the assumption that men and women are created with different (I believe, complementary) characteristics and that the differential training is simply an attempt to develop the masculine characteristics of men to their fullest and the feminine characteristics of women to their fullest. While this assumption may not be popular in today's "educated" circles, I believe that it has greater support in observable behavior (note also the philosophy expounded in *Conjugial Love* by Emanuel Swedenborg)

than the assumption of an equality of capabilities. I therefore do not believe that the myths and stereotypes regarding women which Dr. Schein says have been imposed upon women by society are such but believe that they are feminine characteristics which women have by creation and which are developed naturally by life and by education. There are social groups in North America and many societies outside North America which provide evidence for this thesis.

Whatever assumptions we support, I think it is safe to say that society is going to change and is changing because of a change of the role that women are playing in society. This is one of a multitude of factors which the life insurance industry must take into account in assessing the future insurance needs of North American society.

MR. E. ALLEN ARNOLD: There are three additional important implications of the greater participation of women in the work force and of their enhanced career opportunities: (1) While both men and women are changing their attitudes toward women occupying "men's jobs," it follows that men, in particular, must change their attitude toward men holding "women's jobs." (2) The emphasis on careers other than motherhood should depress fertility rates significantly; lower fertility rates mean not only greater economic security because of the smaller size of families but also a reduction in population growth rates. (3) The increase in the proportion of women who work means more leisure per capita, as long as productivity does not decline. More leisure means the continuation of trends of deferral of entrance into the work force, of more holidays and longer vacations, of shorter work weeks, and of earlier retirement.

## THE ROLE OF THE ACTUARY IN COLLECTIVE BARGAINING

I. The role actuaries play in collective bargaining, in relation to bargaining objectives, benefit design, actuarial methods and assumptions for cost calculations, and financial arrangements.
   A. How can disagreements on the cents-per-hour value of a benefit package be resolved?
   B. Are there special problems with respect to multiemployer pension plans?
   C. In what areas of collective bargaining can the actuary's advice be of value?
   D. Has the actuary a role beyond giving technical advice on pension and group insurance plans?

II. Identity of interest and conflict of interest between the roles as actuary for the plan and as adviser for either side. Is it necessary or desirable to have different actuaries advise the employer, the union, and the fund administrator?

MR. PAUL H. JACKSON: Our attention this morning in this concurrent session is directed to a most important matter relating to ethics and professionalism. The role that actuaries play in collective bargaining will, of course, vary considerably with the personal qualifications and interests of each individual actuary. Generally, it is my belief that the actuary's professionalism will preclude his providing advice regarding bargaining objectives, because the guides to professional conduct state that the actuary, as an expert, "will give actuarial advice only when he is qualified to do so." Bargaining objectives include, on the management side, an assessment of how much in the way of total expenditures a corporation can reasonably commit itself to and, on the union side, what type of benefits will meet the members' needs and desires to such an extent that an agreed-upon settlement will not be overturned by strike vote. The actuary in public practice does not usually have close enough contact either with management objectives and details or with the opinion of individual union members to contribute very much to the basic decision. It has been my experience that the consulting actuary, because of this lack of close contact in either direction, is never asked about bargaining objectives in this fundamental sense.

An actuary does, however, have certain responsibilities here. The actuary should comment and advise in collective bargaining and other situations on matters such as benefit design, actuarial methods and assumptions for cost calculations, and financial arrangements. In the area of benefit design, the actuary's professional responsibility requires

that he step up and say his piece whenever proposed benefit changes could result in serious abuse of a plan, in overinsurance, in antiselection, or in general administrative difficulties. Further, it is my belief that, if the actuary is a continuing adviser to a program that is changed frequently, it is his fundamental responsibility to try to see that the changes that are made will simplify the program. Finally, there are a good many actuaries who have developed certain operating principles as to sound benefit design, and I believe it is the responsibility of such actuaries to present such comments from the actuarial standpoint whenever it is their judgment that it may be helpful in a situation.

On the matter of actuarial assumptions, I believe that certain of the assumptions are solely within the province of the actuary. The mortality table and the disability rates are actuarial assumptions which are the sole concern of the actuary. The selection of certain other assumptions, such as withdrawal rates, retirement rates, the percentage married, and so on, is still primarily the responsibility of the actuary, but there may be special factors relating to the specific case that some other party associated with the plan might well be able to contribute. The employer, for example, might suggest that past withdrawal rates are not typical of those expected in the future, or a union might suggest that a canvass of its members has indicated a different pattern of early retirement elections. The actuary should take into account any such information, but the responsibility for the selection of appropriate rates is still the actuary's.

In the matter of the asset valuation method, the actuary is responsible for the selection of an appropriate method, but there will usually be several asset valuation methods that would be appropriate for a given plan. Some of these methods have a considerable effect on the year-by-year pattern of required contributions, so that those responsible for the financing of the program must be consulted. In my judgment, the actuary's responsibilities do not extend so far in the usual case that he must decide upon the single specific method to be used if, in fact, several would be appropriate.

As to the rate of interest, an actuary does not have an exclusive claim on expertise in the assessment of the likely course of future interest yields. The actuary will generally have a range of actuarial interest assumptions which he believes appropriate at the current time, and, if he were asked to adopt a rate outside that range, he would be forced to argue strongly for a different rate. If successful, the actuary would presumably have no recourse but to qualify his report or, if he has reason to doubt the plan sponsors' good intentions, to even resign as actuary for

the plan on the grounds that he could not lend his good name to an unsound program and thereby jeopardize his professional reputation.

When it comes to actuarial cost methods, these too are generally within the province of the actuary's responsibility. The selection of a conservative actuarial cost method may permit the selection of a set of completely realistic actuarial assumptions, whereas the selection of a minimum-funding cost method might require the actuary to use actuarial assumptions that are more conservative than the completely realistic set. Here again, however, as with asset valuation methods, there may be several sound cost methods that the actuary believes to be appropriate, and the selection of a specific method may depend on financial considerations.

On the financial arrangements, consulting actuaries have been engaged more and more frequently in recent years to study and appraise investment performance and to review studies completed by others. In some cases, the investment data are given to the consulting actuary, so that he can compute the particular yields as well as comment on the performance. In any case, the actuary can be of assistance in the rating of the value of investment advisory services, in the selection of the investment adviser or trustee, and in the appraisal of his subsequent investment performance. While the actuary may be called upon to assist in this matter, it is clear that responsibility rests primarily on the party who must pay the cost of the program, generally the employer. The actuary, accordingly, will be called in in connection with the appraisal of investment performance only to the extent that the employer has confidence in the soundness of his judgment, and, here again, the actuary will give advice only when he is qualified to do so.

A second subtopic this morning relates to the possibility of conflict of interest arising between the roles as actuary for the plan and as adviser for the employer or the union in collective bargaining.

To begin with, let me relate my experience in this matter in connection with a large multiemployer pension plan in the electrical contracting industry. For a number of years the Wyatt Company has provided actuarial advice to the IBEW in connection with their Members' Pension Plan, which is paid for entirely out of members' contributions, as well as the pension plans covering their Washington office staff and their officers and representatives. At the same time, we serve as actuary for the pension plan covering the Washington office staff of the National Electrical Contractors Association. The IBEW negotiates with the NECA in connection with a multiemployer pension plan covering some 200,000 workers in the electrical contracting industry. In this case, we serve as

actuary for the plan, and both management and union have sufficient confidence in the plan's actuary that in collective bargaining situations both parties obtain their cost information and benefit design advice from one and the same actuary. In my judgment this arrangement is ideal because the parties are not arguing over technical matters which neither side is fully equipped to understand. Perhaps from some standpoints this arrangement is unique, but it is completely in line with my concept of the actuary as a professional.

As to whether it is necessary or desirable to have different actuaries advising the employer, the union, and the fund administrator, in my judgment the answer is usually no. First of all, I believe that having separate actuaries for the employer, the union, and the fund administrator would lead to a settling of the actuarial assumptions as a part of the renegotiation of labor contracts. This is neither the time nor place to settle so important a financial decision. The atmosphere is frenzied and sometimes recriminatory and is ill-suited to long-range financial planning. Second, the final result of the collective bargaining over actuarial methods and assumptions is that the actuary for the plan who is working for the fund administrator is reduced to the status of a mere computer.

A consulting actuary most often finds himself employed by a fund where there is no suggested conflict of interest—for example, where he is hired by a single employer whose plan covers a nonunion salaried group. Even in such a case, the actuary for the plan must take into account the interests of the potential beneficiaries of the fund if, in fact, he is to live up to all the responsibilities of professionalism. Even in these cases, the actuary does not have the authority to set forth the facts and tell everybody what they must do. Like independent accountants, the only club the actuary holds over the sponsoring employer is the threat of a qualified report or of withdrawing his services, and this is generally a pretty weak threat. In any case, if the employer is responsible for the financing, then it is proper that he should enter into the basic decision-making. Most trade unionists, on the other hand, have followed the philosophy that they should zealously pursue the functions of representing the employees to the best of their ability; if they become involved in the management of pension funds, deciding on the investments, or the actuarial cost methods, assumptions, and other technical details, then they lessen their ability to represent their members' interests.

In my judgment the suggestion that the actuary should not serve as adviser for either side is completely impractical. First of all, the employer, during the period of time between collective bargaining sessions, may have to consult the actuary of the plan frequently in connection with matters

raised by accountants, the Securities and Exchange Commission, the Internal Revenue Service, and others. Recent developments, such as *Accounting Principles Board Opinion No. 8*, the possibility of further federal legislation in the area of disclosure or regulation of pension plans, evidence of greater interest on the part of the SEC, technical problems that might arise under Phase II controls, and so on, all suggest that the actuary will have to develop an even closer relationship with the party who is saddled with most of these problems, that is, the employer.

I do not believe that an actuary who has worked closely with an employer on pension matters should be forced to stop communications at the time the collective bargaining process commences. It is most important that the plan actuary be informed about the union's demands and the corporation's proposals. If the plan actuary is not consulted until after changes have been finalized, serious problems can arise.

The official actuary for a pension plan is the only actuary who can develop reliable cost estimates for various benefit changes. Another actuary, even with the same data and the same tables, might use a different method for estimating the cost of some new benefit which could result in widely different contribution requirements from the results that the plan actuary would develop. However, the employer's cost will be that which is developed by the plan's official actuary. This is particularly important when collective bargaining centers on certain benefit changes such as increased early retirement benefits, where the cost may depend largely on the actuary's assessment of the most probable utilization of the benefit.

To sum up my attitude toward this entire question, I believe that the truly professional actuary will be one whose judgment is respected by both parties, and, if it is, there will be no need to have different actuaries for each of the various parties involved. The truly professional actuary will not willingly accept the role of an extreme advocate, and he will always be prepared to justify the assumptions and methods he has used, whether to a union or to an employer, to independent auditors, to stockholders, to potential beneficiaries, to the IRS, to a federal judge, or to any other party having a valid interest in the well-being of the pension plan. The truly professional actuary is certainly not independent in the sense that he can do anything he wants to do; rather, he must act as if he were completely dependent on all parties having an interest in the plan, and he must so conduct his affairs as to inspire the complete confidence of everyone.

MR. SAMUEL ECKLER: Can an actuary act for both the employer and the union?

MR. JACKSON: Attitudes are changing. In the past employers have objected. There is a potential problem due to the confidential nature of the work. However, if both sides agree, the actuary can serve as an impartial expert.

MR. PAUL D. HALLIWELL: Can an actuary fill the role of mediator?

MR. HOWARD D. YOUNG: The ideal situation is the case in which the actuary advises the employer and the union and acts as actuary to the plan. However, in a typical case, the company actuary and the company are more concerned with the finances of the plan than is the union. The UAW position is that the actuary to the plan should be independent of either the company or the union.

Since I was until recently staff actuary for the UAW, I have been asked to discuss the union's view of this question. Obviously those results which involve only matters of actuarial technique and calculation will be the same whether done by a "union" or an "employer" actuary. There are, nevertheless, at least four reasons why a union might want to employ the services of an actuary.

First, in formulating and evaluating alternative programs—both during bargaining and in prior preparation—the union should obtain actuarial advice, just as it obtains legal or other advice.

Second, as the plan agreed upon in bargaining is being implemented, the union must be able to analyze technical aspects of the implementation to satisfy itself that the actions being taken are appropriate.

Third, interwoven in actuarial determinations are various interpretations—for example, in deciding what the permissible actions are under various government rulings affecting pensions or insurance, and questions of similar nature. Neither principal in bargaining should be willing to rely upon interpretations of a professional who is obliged to represent primarily the interests of the other principal.

Fourth, every actuary undoubtedly recognizes the high probability that his cost estimates will turn out to be incorrect. "Actuarial conservatism" is his attempt to protect his principal against this risk; the actuary advising an employer considers it "conservative" to err in the direction of providing reasonable probability that the cost will not be higher than his estimate, and the actuary advising a union considers it "conservative" to err in the direction of providing reasonable probability that the cost will not be lower than his estimate.

Thus the principals in collective bargaining frequently face a minor dilemma. They employ actuaries to give them "scientific" advice but end up with conflicting advice; how can that be resolved? I have only a

partial answer. They should be sure that they are in fact faced with conflicting advice and not merely a breakdown in communication; I have been involved in many such situations, unfortunately, in which there was no significant disagreement between the actuaries. The problem was that, having received essentially the same conclusions—but in different terms—from their actuaries, the principals were unable to resolve the apparent discrepancy (e.g., pension cost estimates which are compatible, but differ because one is entry age normal and the other is on an attained age basis). Also communication between the actuaries is frequently through the principals, and this introduces distortions and misunderstandings. The Society's Guides to Professional Conduct emphasize the need for a member to transmit his actuarial findings directly to those whose actions may be influenced by the report or to clearly indicate his availability to provide supplemental advice and explanation. An actuary engaged in collective bargaining should make every effort to make his principal understand the importance of this direct communication.

However, better communication does not resolve all conflicts. When the actuaries do, in fact, disagree, it is important for them to determine the precise basis for this conflict—which assumptions are in question, and so forth. As part of doing that, together or individually, the actuaries should clearly identify for the principals which matters are assumptions, implicit as well as explicit, and which are necessary consequences of other factors. We then must recognize that our special expertise as actuaries is related to our ability to evaluate the implications of assumptions but does not necessarily make us better equipped than others to determine whether those assumptions are really most appropriate for the particular situation. I believe that we must work with the employer or the union—both of whom should be quite knowledgeable about the specific nature of the group for which the program is being bargained—in encouraging and enabling them to evaluate and eventually decide the merits of alternative assumptions.

In summary, then, because actuaries usually provide their clients with "opinions" rather than simple mathematical deductions, and because an opinion should reflect the effect on the client—as opposed to others involved—if it proves to be incorrect, it is reasonable for an actuary to provide different opinions when he is advising a company and when he is advising a union. The interesting question, then, relates to the plan's actuary: whose interests should be represented when he makes "conservative" estimates, and whose views and goals should he give weight to in arriving at his own opinion?

It is important for the plan actuary, and everyone who receives his

conclusions, to recognize that there are many competing interests at work—the employer, the union, the plan participants. Even among the plan participants there are competing classes: for example, under a pension plan, those retired are interested in high current income and short-term security, while younger participants are interested in future benefit levels and long-term security.

While it is somewhat simpler to suggest than to implement, I feel that the plan actuary should view the plan participants as his principals and arrive at conclusions based on their best interests; with respect to bargained plans he would probably consult with both the employer and the union for background information in formulating his cost estimates and other opinions. Consistent with this, I believe that a single individual or firm should not be plan actuary and also adviser to either the company or the union (but he could provide opinion to both if they wish).

MRS. ELSBETH T. ERBE: Have unions shown any interest in the method of valuing the assets of the pension plan?

MR. YOUNG: Sophisticated unions are interested.

MR. JACKSON: I disagree with Mr. Young's statements regarding the conservatism of the actuary. A union actuary must consider the participants of the plan. He should not overstate the benefits which can be derived from the contributions going into the plan.

MR. YOUNG: An actuary tries to make a realistic assessment, but he realizes that he is likely to be wrong. He tends to protect his principals. A company actuary tends to overstate the costs of benefits; a union actuary would prefer to err by understating the costs of benefits.

MR. DANIEL F. McGINN: Can a union and an employer get advice from the same actuary with credibility?

MR. JACKSON: Yes, if he gives both of them the same answer.

MR. McGINN: An actuary who works for management is not acceptable to a union. An actuary who works for unions is not acceptable to management. A jointly administered plan should have only one actuary, who is responsible to the plan participants.

MR. YOUNG: An actuary should be able to work both sides. He is an independent professional. He considers the interests of his principals but may not always press the causes of the principals.

MR. RICHARD DASKAIS: I will discuss the role of an actuary whose client is a single company and who is working on a pension plan being collectively bargained with one union. In particular, I will be most concerned with circumstances where some sort of benefit pattern has been set.

In these situations I view the actuary for the company and the actuary for the union as advocates, not as impartial experts. This assumes that the bargaining is within a defined benefit framework. The situation changes substantially if we are bargaining in a defined contribution framework.

Typically an actuary may have work for his client company at several stages in the bargaining process.

First, it is important to help the client understand exactly what the pattern is. Published accounts are often misleading because they are necessarily not complete. Also, it is important for the client to understand why any unusual features of the pattern were bargained.

Next, we try to identify those elements of the pattern plan that have little or no applicability to our client. Conversely, we also want to identify any elements of the pattern that will have a greater effect upon our client than upon other companies affected by the pattern.

Identifying these differences is very important. The pattern may be quite complex. Its language may not be fully understood by the union representatives taking an active part in the bargaining with our client. This leads the union to make a "safe" demand of the pattern language without any changes. Similarly, company representatives may assume that it is safe to accept any language that has been reviewed by the attorneys for a giant company like General Motors or United States Steel. However, many provisions, particularly those relating to benefit security and plant closing, have entirely different meanings for a one-plant or a two-plant company and for a large multiple-plant company.

We often must probe to find differences between our client's operations and those of the company or companies that have set the pattern. There are many areas in which there may be important differences. Seasonal employment might make the pattern-plan requirement of hours worked for a year of service credit totally inappropriate. Benefits related to base pay may be inappropriate if there is a substantial element of incentive pay. There may be different desires for early retirement among workers on paced assembly lines and among workers who operate more independently. Early retirement benefits may be much more important, and more costly, in an older and declining segment of an industry than in an expanding area. Differences in the role of seniority in promotion in higher-paid or less strenuous jobs may affect needs for early retirement benefits. Different effects on salaried employees may result from adopting the same benefits for hourly employees of different companies.

Then we may get to do some actuarial work. We will determine the client's costs of the pattern plan, and various modifications of the pattern plan. We may also estimate what we believe might be the costs for other companies who have adopted or may adopt the pattern.

We often estimate for our client the cost associated with any benefit security provisions other than meeting a particular contribution schedule. Although a plant may be young and thriving, the company should know the possible costs of various types of benefit guarantees which might become operative in the distant future or which might set a precedent for other operations of the company (whose employees might be represented by different unions).

Cost estimates are usually based upon the same actuarial methods and assumptions that are used in funding the plan. If for some reason we believe that these do not present a reasonably accurate picture of long-range level costs, we may do another valuation based on other sets of assumptions. However, if costs are discussed, we do not believe that an employer should ever try to take credit for the cost of a plan on any assumptions other than those that are being used to fund the plan, unless this is fully discussed with the union.

At this point the client should have sufficient data to determine a tentative negotiating strategy. Usually we will help the client in formulating this strategy.

If a new plan is being considered or if changes other than increases in numbers are being considered, it is often very helpful to prepare proposed language for the plan and any pension agreement. Some people consider this premature. However, presenting detailed language to the union may avoid future misunderstandings. Trying to work out detailed language very near to a contract deadline is often difficult.

Most frequently participation by the actuary in the actual bargaining is not required. This depends upon the sophistication of the company representatives and the sophistication of the union representatives at the bargaining. It is often desirable for the company actuary to participate when a pension specialist is one of the union representatives.

In the actual bargaining process an important function of the actuary is in communications. The actuary can help avoid misunderstandings and identify and clarify real issues. This is particularly true when a rather unsophisticated committee consisting of employees is taking an active part in the negotiations from the union side. Of course, by participating, the actuary gains a better feel of the progress of the negotiations. If the company and the union have agreed in principle, but not in language, on various points, it may be helpful for the company actuary and the union

actuary or other pension specialist to work out technical details. This may bring to the surface some issues that require further bargaining.

The actuary may be helpful in the design of the reports that the company may be required to submit to the union during the course of the contract. The actuary often knows what is readily available or can be easily produced.

I believe that the company should not rely upon its actuary to take charge of pension negotiations. As experts we can identify technical issues and suggest various alternatives of resolution. However, when we participate too actively, we are greatly handicapped by inferior knowledge of the general framework of negotiations, the details of the past and present relationships between the company and the union, and the positions that each has taken on other issues. The company's position on various issues should be consistent.

A company is frequently faced with the choice between a company plan and a multiple-employer plan to provide pensions for small groups of employees who are organized on a craft basis. The actuary may determine the incremental cost of including these employees in the company plan. The benefits of the company plan must be compared with the benefits of the multiple-employer plan, perhaps with some predictions of future changes in benefits and costs for both types of plans.

In bargaining health and life insurance benefits, companies are primarily concerned with one-year term costs. Differences in group insurance benefits do not appear to be justified by different age, service, and pay characteristics of different work forces. Similarly, group insurance benefits will, unlike some retirement benefits, have little effect on the characteristics of the work force (except as more liberal fringe benefits generally may attract different types of employees). The company usually relies upon the group insurance carrier's rates as an indication of relative costs of various benefits. This is satisfactory for most term insurance benefits. Benefits whose cost is deferred (such as benefits for retired employees) may require some evaluation by the company's actuary. The actuary may be asked to determine the ranges of cost effects of various provisions regarding continuation of insurance for employees who are laid off.

The company's consulting actuary may also be helpful in translating welfare patterns negotiated in a Blue Cross–Blue Shield framework to an indemnity framework, and vice versa.

If suitable data are available, the actuary may help the company to identify areas of abuse in the past, so that controls can be negotiated by the company. In some cases we have projected group insurance costs over the anticipated period of the next collective bargaining contract. If

the company expects some changes in work-force characteristics due to retirement, layoff resulting from reduced operations, expansion of operations, and so on, a significant change in the cents-per-hour cost of group insurance may be anticipated. This may result from changes in the expected age distribution of the employees or a change in the relationship between the number of active employees and the total number of employees covered by the insurance plan, as well as from utilization and cost trends for medical coverages. Obviously, plan provisions regarding continuation of coverage after retirement and on layoff are important.

The consulting actuary may be helpful to the company in connection with supplemental unemployment benefit plans. Although the time span is much shorter, many of the techniques used to project pension benefits and costs are useful in projecting supplemental unemployment benefits, costs, and fund levels. The projection is fairly complex, since the benefit levels and contribution levels usually depend upon fund levels.

It may be quite difficult to get good estimates of employment in the future. In order to project most plans, it is necessary to estimate, at least on a month-to-month basis, the number of employees who will be actively at work and on layoff and to know the general criteria that will be used to determine who is laid off. Operating managers tend to provide estimates of changes in the work force which are smoother than are actually realized.

We have found it most satisfactory to produce several projections. First, we may take the employment estimate provided by the company. Second, we may project with higher and with lower future levels of employment. Finally, we may make projections with significant fluctuations from month to month in employment levels but without any significant change in average annual employment levels. This last projection is quite important. If gradual changes of employment are assumed, benefits tend to be underestimated because short-service employees are projected to be laid off, exhaust their benefit rights, and cease to be covered by the plan. Employment fluctuations result in employees being laid off, receiving benefits, and being recalled without exhausting benefits.

It appears that the actuary who plays the role that I have described can have little conflict of interest as a representative of different interested parties, since he is clearly a representative solely of the employer. One possible danger is that the employees may be led to believe that the actuary is an impartial technician, not a representative of the employer. In some cases it may appear to be to the company's advantage to foster this impression. The actuary's duty is to make certain that all parties know he is a representative of the company.

MR. ALEXANDER J. C. SMITH: I am going to talk about the negotiating of fringe benefits, particularly pensions, between major Canadian companies and their unions where the negotiations are pattern-setting. In industries like the packinghouse industry and the pulp-and-paper industry, United States influence is small and pattern-setting is done in Canada.

I think that the actuary's role has two aspects: first, the problems of principle that are involved in combining the responsibilities of being an actuary by profession and being a consultant to either management or union and, second, the practical problems encountered by the actuary in the course of bargaining.

## I. PROFESSIONAL RESPONSIBILITY OF THE ACTUARY DURING BARGAINING

I am not unduly disturbed about conflicts of interest, because finding the practical resolutions for conflicts or near-conflicts is part of the daily practice of our profession. If an actuary thinks of himself as having two functions—first, that of a professional who has some obligation to seek soundness in financing and design in the benefit plans with which he is connected and, second, that of a management or union consultant whose obligation is to advise his principal as he seeks to gain advantage during the bargaining process—and if the actuary is quite certain which function he is fulfilling at any time and makes it clear which role he is playing, conflicts can generally be avoided.

As an actuary who is admittedly a consultant to management, I have had many occasions to meet with union leaders and members. When I have undertaken an assignment of this kind, I have done so only on the condition that at the outset I made my allegiance clear. I have then found, at meetings both with union leaders and union members, that if I made a distinction between speaking to them as a representative of management, which I avowedly was, and speaking as a professional having certain information and expert in some techniques, this distinction was readily accepted and my position rarely, if ever, misunderstood. To deny a close association with management would, in my case, be ill advised and would diminish my credibility.

Maintaining a stand in favor of good benefit plan design in the atmosphere of union negotiations is not easy. If the actuary is not careful, he will lose the confidence of his client because the client will feel that the actuary is losing sight of the real commercial purpose of the exercise, which is to get a settlement, and is, instead, pursuing some rather academic objective in benefit design. However, it is surely the actuary's

obligation to endeavor to design a plan which distributes the money available for benefits equitably and yet retains simplicity and clarity. The industrial relations manager will generally favor simplicity and clarity for reasons which are related to those which affect the actuary. A plan that is simple and clear can readily be used as a basis for negotiations and can be sold to union membership at the time of ratification.

The other quality that the industrial relations manager will seek might be called "negotiability." This is usually a feature that need cause no offense to the actuary as a professional. For example, it seems to me that the use of a flat benefit or career average plan for a bargaining unit group is generally more acceptable to both sides and in the long run produces better pensions for the employees. The alternative of a final average earnings plan creates a situation in which, when wages are increased, pension benefits are automatically increased, but in a way over which the union has no control. The union gets no adequate recognition for its efforts from its members, and the employer has difficulty in getting credit from the union for the automatic increase in pension costs. Under a flat benefit or career average plan, a specific cost can be associated with a specific increase.

### II. RESPONSIBILITY OF THE ACTUARY AS A MANAGEMENT CONSULTANT

While functioning as a consultant to management during negotiations, I think that the actuary has two principal obligations:

1. The actuary obviously has an obligation not to be party to misrepresentation produced by the use of information taken out of context or costings based on unrealistic assumptions during the bargaining process.
2. The actuary must satisfy the usual professional obligations to the client, providing reliable information and thoughtful, objective advice based on specified and mutually understood assumptions.

Perhaps all that need be said about the first point is that in ten years of consulting actuarial practice, during most of which I have been intensively involved in bargaining with unions, I have never been asked to provide results which would misrepresent a position, and on any occasion when I have suggested that the results being used might somewhat misrepresent, alternative results were obtained to correct any misapprehension. On the second point, it seems to me that the successful fulfillment of the actuary's consulting role during union negotiations is based on two things: first, preparation; second, care.

In Canada the actuary must be well informed about the major settlements both in Canada and the United States. Although he may be satisfied with sketchy information about some agreements, he should have

a very thorough knowledge both of those in the industry in which he is working and of those negotiated by the union with which his client is bargaining. In Canada it is particularly important to assess trends by being aware of recent developments in the United States. I find that the many useful published summaries of the details of bargaining agreements are helpful for those situations in which I do not need to have complete information. If, however, I want to have a thorough understanding of any settlement, I try to beg, borrow, or steal a copy of the labor and pension agreements and, after reading them, make every effort also to discover what costing methods and actuarial assumptions have been adopted.

When the negotiations that are in prospect are going to be pattern-setting, the company's negotiating committee will undoubtedly start meeting many months before the commencement of negotiations. I like to be included in the discussions with the committee as soon as possible, and, of course, the information I have obtained from the reading I have been describing is the basis of my contribution to the discussion.

The committee will try to anticipate the proposals to be made by the union, basing its predictions on the information that it has obtained from its research and on the material published by the union as it prepares its members for negotiation. It is usually worthwhile even before the initial union proposals are received to be prepared to proceed with costing.

At this point, there are three principal considerations:

1. The completion of a comprehensive list of the pension plan proposals that might be made.
2. The discussion of the actuarial assumptions on which cost estimates will be based.
3. The writing or modification of programming material to get the actuarial arithmetic done expeditiously.

Perhaps the most important thing in the making out of a list of possible pension plan amendments is to make it as complete as possible, whether or not the employer regards some of the items as extravagant or against his principles.

I, of course, do not advocate the elaborate costing of proposals providing pensions of 110 per cent of final earnings, but I find that, even in the case of the most extravagant demands, mediators are more sympathetic when the company has at least quantified roughly the union's extravagance. Where it is remotely within the bounds of possibility that a proposal will be accepted, I think it should be studied, in relation to its effect both on plan design and on the course of bargaining. Arrangements should be made so that costs of the proposal and any variations of it can readily be obtained.

Actuarial assumptions and costing methods must be discussed with the client prior to negotiations. While I might be prepared to take my chance with mortality and even interest, if I have some knowledge of the probable investment management of the funds, before I base extensive calculations on assumptions about employee terminations and retirements, I am determined to make the company's personnel department accessories before the fact by having them understand the effect of my assumptions and contribute their opinions as they are being set. As you know, a tremendous difference in cost estimates can be attained by varying slightly the assumptions about retirement. This makes it vital that the whole costing process be understood by the company's negotiators.

There are two principal approaches to the calculation of costs: either a vast amount of preliminary work can be done and complete costs for all combinations of possibilities obtained, or costs can be obtained for the most likely proposals and programming material prepared from which the costs of any variations being considered in the course of bargaining can readily be obtained. I favor the second approach, with the proviso that I like to have precosted a fairly large number of so-called most likely items.

There is little to be said about preprogramming, except that I think a modular approach is essential. Comprehensive systems for actuarial valuations and costs are excellent, but I seem singularly unable to predict the path union negotiations will follow and feel much more secure if modular programming has left me in a position to adapt readily. The fact that assumptions to be made are often contingent on the benefits granted is another reason for maintaining flexibility. The obvious example of this situation is retirement rates which increase as benefit rates increase. At $5.75 per month for each year of service, employees may not be able to afford retirement, but at $8.50 the position may change.

MR. YOUNG: Actuarial science is not exact. In most situations there is a range of assumptions acceptable to the actuary. He looks to his client's interests to settle on a particular level.

MR. SMITH: The actuary must be partial to his client's interests.

MR. JACKSON: I seem to be the only advocate for actuaries as independent professionals. Perhaps we should look more closely at British actuaries, who are regarded as technically competent scientists. The concept of an actuary as an advocate suggests that he can juggle numbers to suit his client.

# HEALTH INSURANCE IN THE UNITED STATES

1. What effect is more widespread and more comprehensive health insurance likely to have on
   a) Cost of providing medical care?
   b) Distribution and supply of medical care and its availability to different segments of the population?
   c) State of health of different groups in the population?
2. How can Canadian experience be useful in answering these questions?
3. How can actuaries influence future developments in health insurance?

CHAIRMAN FREDRICK E. RATHGEBER: This is a most topical subject, and the inclusion of this item on the program when it was prepared several months ago has proved to be excellent timing. Thirteen different proposals for widespread and comprehensive health insurance have been introduced in Congress in the form of specific bills, and hearings on these proposals are about to commence.

MR. WILLIAM H. BURLING: The Office of the Actuary was asked by the secretary of health, education, and welfare to provide a numerical estimate of the effect of each of these thirteen proposals on the cost of providing medical care, and the results have been published in a document entitled *Analysis of Health Insurance Proposals Introduced in the 92nd Congress*. This document is available for $1.25 from the Superintendent of Documents.

This work has involved the costing of a large number of ill-defined plans, each with different terminology and scope, under severe time pressures and without time for adequate preliminary planning, by a unit which has not been staffed to do large-scale research, and with underlying data that were often scanty. Thus it is not surprising that this analysis has prompted a number of questions which fall roughly into three classes:

1. Why did we do the job in the way we did?
2. How and why did we choose the assumptions we did, and how did we retain a consistent approach to all the bills?
3. Will we provide more details on the work so that others can use it in their own studies?

We started with the total national health care expenditures, including nursing homes, eyeglasses, and so on. We took the series of expenditures published in the *Social Security Bulletin* and, for each bill, looked at the effect on each item. We believe that the emphasis on total national health

care expenditures puts the word "costs" in proper perspective and that this document is the first to show with respect to any proposal all the different numbers associated in the past with the word "cost" and the relationship of these numbers to all of the health expenses excluded from the so-called costs. This method also gave us a valuable control on our analysis of each proposal, since we had to judge its effect on all the categories which comprise total national health expenditures.

Obviously, the payment of medical bills (over $50 billion under some proposals) by people through taxation rather than through current means would affect the whole economy. However, we believe that estimates of costs other than those directly connected with health services are best left to economists.

The contentious "induced cost" element was kept separate; in this way persons who believe that the number should be higher or lower on any specific proposal are able to make their own adjustments. This problem is the most important one to be faced in considering proposed legislation, and at the same time it is the most difficult one to handle. It seems to be a fact that the cost of health care will always be able to absorb at least 100 per cent of the amount budgeted for it. The care can become better and better as well as more and more luxurious as long as money is forthcoming. Our induced cost factors were strictly "1974" and did not allow for differences in induced costs under the various proposals as time rolled on. Neither did they attempt to allow for a possible difference in attitude of patients who are insured by the government as compared with those insured in other ways. While we admitted that induced costs, in the long run, could differ markedly from our estimate, we are still convinced that our number is as good as can be produced for 1974.

We assumed a specific national price level and a specific population distribution by age, sex, family status, income, size and type of employer, and so on, and assumed that the full benefits under each proposal (ignoring any phasing-in provisions) were provided. We did not attempt to forecast how costs might develop from year to year. We believe that the costs on this basis are valid for comparisons over the long view and that any departure from this admittedly simplified approach would lead into a quagmire of confusion and debate.

We hope that we have also made a nonnumeric contribution to the debate by using the concept of "paid for by the people by taxing themselves" rather than "paid for by the government."

Deciding on what assumptions to make was our most difficult problem. The solution was in essence purely pragmatic—we chose our most ex-

perienced man, the deputy chief actuary, who had been in charge of health insurance projects in the past, and assigned him two tasks:

1. To project the national health expenditures from 1970 to 1974 and to provide numbers for those areas common to all proposals, for example, percentages for induced costs and for "tax" transfers, and the cost of annual medical examinations.
2. To review the additional assumptions made as each of us worked on the proposals assigned to him. Where we were in similar or related areas and differed too much in his judgment, all three of us met and came to agreement.

None of us accepted unthinkingly any of the assumptions that came out of this process. In the last analysis, the numbers chosen probably all met one criterion: we fully expected to be simultaneously criticized for making any one number too high and too low.

This same person also compared the numbers we produced, bill by bill, and if the difference between specific results for two proposals was not reasonable in the light of the language in the proposals, there was another meeting to correct the situation.

More details on the assumptions made and on our calculations will be available soon. Although the publication of numbers to the nearest $100 million, and only in broad categories, complicates a detailed analysis of our report by others, this degree of accuracy is probably all that can be supported by the underlying data, and we believe that it is adequate to enable Congress to debate the proposals before it. When the debate narrows down to two or three proposals, additional estimates and greater accuracy will be warranted.

MR. DANIEL W. PETTENGILL: The mere existence of health insurance coverage does not create either manpower or facilities, but no service will long be provided unless it is adequately financed. Since health care insurance is the primary means of financing health care in the United States, more widespread and more comprehensive health care insurance seems inevitable as a result of the current national concern about the quality and quantity of health care available to Americans. The only questions are whether such insurance will be private or governmental and whether it will be voluntary or mandatory.

The development of the Surgi-center in Phoenix, Arizona, illustrates very well the effect that insurance can have on the delivery of health care. Most doctors will admit that much of the minor surgery now performed in hospitals on an inpatient basis could be performed on a walk in–walk out basis if adequate facilities and manpower were available. These conditions

could be met if a hospital would schedule the use of one or more of its operating and recovery rooms for this purpose. In Phoenix, as elsewhere, the surgeons did not want to change their scheduling habits, and the hospitals did not want to lose the revenue from the room-and-board charge, so it became necessary to build a special independent facility where tonsillectomies and other "minor" surgical procedures could be performed safely on an "outpatient" basis. This facility, named the Surgicenter, is now estimated to be saving the citizens of Phoenix over $400,000 a year. Furthermore, it has freed many hospital beds that can be used either for more seriously ill patients or to avoid building additional beds in the future as the population expands. However, financing for this project became available only after a major insurance company agreed to amend its existing hospital insurance policies to recognize the Surgicenter as a hospital outpatient department for benefit purposes. Other insurers followed suit. Thanks to the broadened insurance coverage, a more economical method of delivering this portion of health care came into being.

If hospital care is replaced by ambulatory care, the entire cost is not saved, since the fixed overhead still exists. However, there are immediate savings in food, linen, and the like, and future savings in overhead can be expected. A question which insurers must face is whether hotel and travel expenses should be covered when ambulatory care is utilized rather than in-hospital care.

Another method by which insurance can affect the distribution of health care is the combination of prepayment with the group practice of medicine, assuring the availability of care and offering a more economical means of providing insurance for high-frequency, low-unit-cost services such as office visits and prescription drugs. This method also offers a possible means of educating the insured population in better health habits and in when to seek health care. These desirable goals are not reached by insurance today.

A major problem is whether custodial care is regarded as a medical expense. There is usually little expectation of recovery, and, in my opinion, the cost of this care should more properly be regarded as income maintenance. None of the current proposals addresses this problem.

In summary, the more services that are available and financed, the more services that will be used; nature abhors a vacuum. One danger in most of the proposals is that coverage would be broadened more quickly than the available facilities. The Health Insurance Association of America proposal has phases or priorities with the effective dates tied to the availability of manpower, but even these may be imperfect. Both the Kennedy

bill and the administration bill allocate some funds for education and the like, but the former is quite vague and the benefits in the latter are modest in relation to the expectation created.

DR. RALPH C. TEALL:* The state of "health" involves a human value judgment; it is not measurable in objective terms but is assessable only by examining the burden of disease, injury, and ill health as reflected in mortality, morbidity, and other statistics. By those measurements, the national health has never been better. However, there has been a significant change in the trends of the indicators used to assess the health of Americans. After a long period of decline, the over-all mortality rate has been essentially level for twenty years. The infant mortality rate is also leveling off, and morbidity rates show little change from year to year. Future changes will be modest until knowledge is developed to prevent birth defects, heart disease, and other major health problems on a large scale.

The proportion of the gross national product spent on health care has increased 25 per cent between 1950 and 1970, while the indicators mentioned have remained stationary or have improved only modestly. One wonders whether our efforts and expenditures are mainly to support and ease the burdens of chronic disease and other noninfectious maladies, with little improvement in the health of Americans.

Most of the serious threats to man's health and survival are not subject to control or correction by personal medical care. Many have their determinants in cultural, economic, and social factors far outside modern biological research. For example, eliminating obesity would increase the average life expectancy by seven years or more, while eliminating cancer would add only two to three years to the life span. Other such threats are accidents, particularly automobile accidents related to alcohol abuse; excessive population; alcoholism and other drug abuse; smoking; physical indolence; and suicides. A major educational effort, rather than an increase in the traditional provision of health services, is necessary to deal with these "health" problems.

Medical care is only one, and perhaps not the most important, factor in improving health levels. Differences among the developed countries are due more to radical differences in socioeconomic standards than to the number of health care providers or health care systems. Thus the elimination of the rich-poor gap as far as health is concerned is an impossible goal

* Dr. Teall, not a member of the Society, is medical director of California-Western States Life Insurance Company and Pacific Standard Life Insurance Company and is a vice-president of the American Medical Association.

for a national health insurance system. The lack of improvement in the mortality of the total aged population since the advent of Medicare is significant in this respect.

We are trapped by semantic confusion. There is a very significant difference between "health" care (including nutrition, emotional satisfaction, health habits, exercise, health environment, family contentment, and many similar factors) and "medical" care; yet the two terms are often used interchangeably. When we talk about "health insurance," we are really talking about insurance for the costs of medical care rather than for "health" itself, however it be defined. An important example of this confusion is the term "health maintenance organization" for an organization concerned primarily with the provision of medical care. The maintenance of personal health is always the personal responsibility of the individual and cannot be delegated to any organization. Health maintenance organizations may prove to be efficient and effective in cost containment although this is a highly experimental and potentially costly field; in any event, the term is misleading.

The objective of medical care is to put "life in our years, rather than to extend the years in our lives," to improve the quality of life rather than the maximum duration of life. It is not primarily the improvement of mortality or morbidity statistics of any kind. The vast majority of persons seeing doctors want help with the discomforts of a short, self-limited illness, assistance in learning to deal with a chronic illness, or assurance and relief from certain anxieties. For most of these problems the personal compassion of a trained physician remains the best medical care, rather than the great new advances in care and knowledge or the full facilities of our magnificent modern hospitals.

In the public discussions of the various proposals, there has been frequent reference to the value of preventive care in reducing costs and improving health, and all bills give lip service to this item. In reality, there is a long list of common conditions which knowledge is not available to prevent. Even where knowledge is available to prevent disease and disability, success depends on the extent to which the patient seeks, and follows, the physician's advice.

The demonstrable benefits of medical care are not directly relatable to preservation or increase of the "human capital" of our society. It is probable that the benefits from most personal medical care are largely to the patient or his immediate family rather than to the larger society.

In my honest, but somewhat unhappy, opinion the increased availability and comprehensiveness of insurance for the costs of medical care

will have only a modest effect on "health" as usually understood or as assessed by experience for large population groups. There will be significantly increased access to physicians, hospitals, and other aspects of medical care, especially for such population groups as children, the disabled, and the poor; there will be a marked relief from worry about possible personal economic disaster and about lack of availability of medical care in the event of serious illness; there will be a subsequent increase in satisfaction in living, and in productivity, and a sense of well-being for individuals to whom these services will be made available. But it is a serious error (which could cost hundreds of billions of dollars in pursuit of the wrong goal, or in pursuit of the right goal by the wrong path) to equate increased health insurance with increased national "health." Death is a matter of fact; sickness is a matter of opinion.

In the foregoing, I have drawn from the remarks and studies of many experts. While I have no strong reason to doubt the validity of these opinions and conclusions, I have been unable to develop statistical confirmation regarding the relation of medical care and "health" statistics. Because of the great importance of this matter in guiding the priorities of the federal government in massive expenditures, I urge you to do this kind of study.

MR. BURLING: I doubt that Canadian experience is as useful as we might expect. In many important ways Canada is a foreign country—different from the United States in its constitution, its laws, its traditions, and its attitude toward social legislation (perhaps because of heavy immigration from Europe after World War II). One important difference is that doctors are less independent than in the United States and, except in Quebec, are accustomed to the concept of a fee schedule on a provincial basis. The prior acceptance of fee schedules by doctors and patients in nine of the provinces undoubtedly eased the introduction of government-operated medical care insurance programs.

The hospital care program has been operative in all provinces since 1961, and the care provided in Canada has remained quite good in comparison with that in other nations, including the United States. The programs for physicians' services are more recent, and it is too early to judge whether the quality of care has been affected, although there is no evidence to date that it has deteriorated. The loss of the ability to adapt quickly to changed conditions, which inevitably is predicted as a feature of government-run plans, has not yet been a factor in Canadian health care, although it might be too soon to judge, even for the hospital care programs which have been in effect for ten years or more.

Even when Canadian experience is mature, however, great care must be exercised in using it to predict what might happen under the greatly different conditions which apply in the United States.

Efforts by the insurance industry to forestall government action in Alberta by making coverage for medical care available to the poor and "uninsurable" failed. In Ontario a number of insurers are assisting the government in administering the program insuring physicians' services. This effort has enabled the companies to maintain contact with employers and individuals and to spread a small portion of general overhead costs over this administrative function.

MR. PETTENGILL: All actuaries can influence the development of national health care insurance indirectly by reviewing the proposals, forming their own judgment, and communicating their thoughts to their representatives, senators, and members of the House Committee on Ways and Means and those of the Senate Finance Committee. I hope that you will urge support of the insurance industry's Burleson-McIntyre Bill, H.R. 4349 in the House and S. 1490 in the Senate.

In my judgment, any national health care insurance bill that is enacted in the next few years will provide a major role for private health insurers. Thus I believe that it is essential for actuaries to play an even greater role in the future development of health care insurance than they have in the past.

Better statistics on both costs and utilization are urgently needed for all types of health care services. Facts are essential to control costs as well as to set rates and reserves. If you work for a company that writes health care insurance, persuade your company to adopt, if it has not already done so, a statistical system that will permit it to contribute to the morbidity studies of the Society of Actuaries. Then be sure that your company contributes the bulk of its data, not just a modest sample. Perhaps an independent research foundation is needed.

A second area in which actuaries can assist is the design and development of broad ambulatory care benefits that should shift the emphasis away from today's costly inpatient hospital benefits. Benefits for outpatient diagnostic tests are not enough. Coverage is needed for all types of noninstitutional physicians' services, including immunizations and other preventive care. Coverage is also needed for prescription drugs, dental and vision care, and the like.

A third area is comprehensive health planning. The task of estimating a community's health needs five, ten, or twenty years hence is difficult enough, but assigning priorities to these needs so that limited resources

can be effectively and equitably allocated to meet them is even more so. Yet, unless we plan wisely, we will suffer higher health care costs, through both gaps and duplications in health care services.

A fourth area is the design of economical yet effective computer systems for screening claims for overutilization, underutilization, and appropriateness of treatment. These systems must not only be based on criteria established by the health care professionals but must also be acceptable to them.

Finally, some people believe that, in the not-too-distant future, the insurance of health care will be merged with the provision of health care. They say that, if insurers want to preserve a role, they will have to establish health care delivery systems. It makes no difference whether you call them health maintenance organizations, health care corporations, or something else. Small systems are going to need insurance or reinsurance with respect to epidemics and esoteric procedures such as open-heart surgery. Virtually all systems will need coverage for emergency services rendered outside the geographical area they serve. They will also need help in setting realistic budgets and schedules of charges or per capita charges. Even if the present fee-for-service, solo practitioner continues on the scene, other types of delivery systems will be competing with him, and the actuary will have to know how to deal with them all.

There is no question in my mind but that actuaries can and should have a great influence on the health care insurance of tomorrow. The key question is, "Will they?" The answer is up to each one of us.

MR. CHARLES L. TROWBRIDGE: With respect to most kinds of health insurance, a good statistical base is sadly lacking. Insurance data have the problem of nonhomogeneity, because of the wide variety of benefits sold. Medicare data do not have this particular problem, since the benefits are uniform and the number of persons covered is very large, but they do have the basic limitation that Medicare applies only to those over 65.

One dark area on which Medicare data should soon throw some light is that of the variation of over-65 health insurance experience by geographical area. The Social Security Administration should soon be in a position to publish the ratios of county experience to the over-all experience on a per capita basis, with the two parts of Medicare treated separately and with standardization of those ratios by age and sex.

MR. ROBERT J. MYERS: After thoroughly reviewing the report described by Mr. Burling, I am certain that the cost estimates were prepared

with complete impartiality and objectivity. However, I question whether the assumptions as to the extent of participation under the proposals that involve voluntary action on the part of individuals or employers—such as the HIAA plan or the Medicredit proposal—are sufficiently high. Certainly the experience under the Supplementary Medical Insurance program, where 95 per cent of the eligible persons have actually enrolled, would seem to indicate that, with sufficient encouragement, there will be very high voluntary participation in any plan in the health care area. Because of these low-participation assumptions made by the SSA, its cost estimates are significantly lower than those of the organizations sponsoring the foregoing proposals. This is indeed an unusual twist. The reason, of course, is that the sponsors believe that their plans will do a very considerable and extensive job, which necessitates recognizing the higher costs involved.

Finally, as to the financing of the Kennedy plan, the SSA cost estimates assume that reimbursements would be made at the customary levels, even though they would substantially exceed the financing provided. As I understand the Kennedy bill, however, the proposal would be "actuarially sound" in the same sense that variable annuities are—namely, that the system would have no greater liability than its assets, which are provided by the proposed financing provisions. Actually, in this case, it might be better to say that the proposed plan is financed on a self-contained or self-supporting basis rather than to call it actuarially sound. Specifically, the Kennedy bill states that whatever money is collected through the payroll taxes and matching government subsidy will be divided up among the various providers of service in a prescribed manner and that no more funds will be available. The order of payment is first to institutional and group-practice prepayment plans, then to other physicians who function on a salaried or capitation basis, and last of all to fee-for-service physicians. The actual result of this procedure would almost certainly be that nothing would be left over for the last category. Quite obviously, this would create utter chaos in the medical care field, because one could hardly expect fee-for-service physicians to practice without remuneration.

MR. PHILIP BRIGGS: As a resident of Ottawa, I have observed that one of the by-products of the Ontario hospital care plan is that Ottawa hospitals are jammed and that persons who must be admitted to hospital for emergency care often have to be accommodated in halls or make-shift wards until more suitable accommodation is available. People who

need elective surgery often have to wait for months before their doctor can get them a hospital bed.

With regard to medical care, even though Ottawa is unusually well endowed with doctors, the doctors appear overworked and appointments are difficult to obtain. It has gotten to the point where a person needs to "know someone" to get a reasonably early appointment with a reputable doctor. Even then, it is likely that the patient will wait for hours in the doctor's anteroom before he is finally examined.

While I cannot state that the conditions in Ottawa exist throughout Canada, I expect that they are typical. Medical care is now available to a greater number of Canadians, but there is no doubt in my mind that the quality of medical care has suffered.

Mr. Burling also mentioned the participation of some insurers in the administration of Ontario's program insuring physicians' services. This co-operative effort began late in 1969, but the government has recently announced its intention to take over the complete administration of the plan. By July 1, 1972, insurance companies will have given up all such responsibility. It appears that the Ontario government only needed the insurance companies for a brief period to facilitate the transition from private to public administration.

# ADJUSTED EARNINGS

Discussion of recent developments in the United States and Canada.

MR. J. G. FERNAND BONNARD: As I understand my function here today, it is to tell you how we are adjusting earnings to a generally accepted accounting principles (GAAP) basis and to outline the various practical considerations involved in doing so. In order to lay the proper groundwork for an account of what we have done so far, I should first tell you a little about my company.

Provident Life and Accident Insurance Company is a stock company with some $700 million in assets and no participating business. We have approximately $11 billion of life insurance in force, of which $4 billion is ordinary and $7 billion is group life. We have some $250 million of annual accident and health premium income, of which some $220 million is group and $30 million is individual. The only other feature which I need to tell you anything about is our annuity business. We really do not have a great deal, since our annuity reserves in total are some $20 million, of which $5 million is individual and $15 million group.

I should also tell you that we have yet to adjust our earnings to a GAAP basis, having used the American Institute of Financial Accounting method for our stockholders' annual reports in 1969 and 1970. We are well along with GAAP calculations, however, having started to work toward this end almost immediately after the Des Moines meeting of the Society in June of this year. On the basis of what we heard at that meeting, both privately and in the meeting sessions, it was our conclusion that the die had been cast and that whatever changes might be made in the exposure draft of the audit guide would not affect our situation materially. Since we felt this way and since there was pressure from our management for realistic financial statements, we decided to go ahead and make a start on calculating GAAP earnings, using the exposure draft of the audit guide as our starting point.

Before we did any calculations whatever, we put together an over-all proposal as to what we would do. We then called in our external auditors and the actuarial consultants, who were to work with the external auditors, in order to discuss this over-all proposal. Out of this meeting developed various requests for changes in our proposal. These changes were made and the proposal resubmitted. We are now making calculations on the basis of this revised proposal.

In outlining the features of this proposal for you, I will begin by talking in fairly great detail about the adjustment to our basic individual life insurance coverages. First of all, I should say that we did decide to make a calculation of the deferred acquisition expense asset separate and apart from the calculation of the natural benefit reserves. The major reason for doing so is the proposed requirement of the American Institute of Certified Public Accountants that the deferred acquisition expense asset will have to be reported separately from the natural benefit reserves. Even if this major reason were not present, however, there are practical considerations which make it very desirable that the deferred acquisition expense asset be calculated directly from figures which appear in the annual statement, or from figures subsidiary thereto, and therefore separately from the natural benefit reserves. These reasons are the following:

1. It was necessary to meet the requirement that the acquisition expenses to be capitalized be measured against those assumed as a test of the reasonableness of the amount to be capitalized.
2. On the theory that the relationship between acquisition costs and the volume of production should be essentially linear, we decided to capitalize only a portion of the first-year expenses assumed in our asset shares. This meant that the asset share expense assumptions were not directly usable, and we quickly came to the conclusion that it would be extremely difficult to modify these first-year expense assumptions accurately for past years.

As to the question of what acquisition costs we are capitalizing with respect to our individual life business, we are capitalizing those costs where the relationship between acquisition costs and volume of production is essentially linear, namely, medical examination fees, inspection report fees, direct expenses of underwriting division, direct expenses of issue division, agents' prizes and awards, agency development allowances, convention expenses, and commissions in excess of levelized commissions over the premium-paying period. In determining what acquisition expense to amortize, consideration was given to the fact that capitalization reduces future earnings for business already issued, since the acquisition expenses have already been charged off for such business. Therefore, it appeared desirable to use a certain amount of conservatism in defining acquisition expenses so as to soften the blow on future earnings. Also, there is always the problem of coming up with a deferred acquisition expense asset which is too large in relation to capital and surplus. Wherever possible, we obtained the amounts of these expenses directly from Exhibit 5 of the annual statement. Those costs which are

not shown in Exhibit 5 are available either in the company's books or in the company's budget reports.

To amortize these acquisition costs, we are using the "sum-of-the-years'-premiums" method. We are using this method because it is a good, practical one and because we feel that the accountants will find it more acceptable than a method which would involve the use of an interest rate.

In order to determine the necessary premium ratios which are needed with respect to the issues of a particular calendar year, we created a model by choosing a representative plan and issue age for four plan groupings: (1) whole life plans (including limited pay plans where premiums are payable to an age greater than 65), (2) limited pay whole life plans (except those included above), (3) level term plans, and (4) decreasing term plans. The plan chosen to represent each plan group was the plan with the most sales within the plan group. The representative issue age for each plan was chosen so that the premium per thousand for that age and plan, when multiplied by the amount of new paid insurance for all plans within the plan group, would reproduce closely the total annual first-year premiums for the group.

The premiums for all plan groups, using premiums per thousand, mortality, and persistency assumptions appropriate to each plan group, were summed for all years over the premium-paying period, and amortization factors were calculated by dividing the premiums for a particular policy year by the total premiums anticipated to be received from the year's production over all policy years. The factors were then smoothed so as to completely amortize the expenses over twenty-five years, on the assumption that there was relatively little left to be amortized after twenty-five years.

We produced separate amortization schedules for each year's production for the period 1966–70. The five schedules showed that there were two basic underlying schedules, one for 1966, 1967, and 1968 and another for 1969 and 1970. We are therefore using two schedules of amortization factors to cover the period 1966–70 and are using the 1966–68 factors for years prior to 1966. With regard to 1971 and future years, we will determine a new amortization schedule for each year's production, but we will adjust to the new schedule only if the adjustment from the 1969–70 schedule appears to be material.

Separate amortization schedules were required for commissions because of the fact that these acquisition expenses are incurred over a period of years, instead of entirely at the point of issue as is the case

with the other acquisition expenses. Using the same plan groupings, representative plans, and representative issue ages for which premiums had already been summed for all years over the premium-paying period, we applied the appropriate commission rates for each duration to these premiums and summed the commissions expected to be paid. By dividing the total commissions expected to be paid by the total premiums expected to be earned for each year's issues, we developed a levelized commission rate. A determination was then made of the commissions which would have to be removed from or added to those expected to be paid in a particular year so that the resulting commissions would be what would be expected to be paid under the levelized commission rate. The amount of the adjustment for each year was then expressed as a ratio to the amount of first-year commissions, to obtain an appropriate amortization factor which could be applied directly to the amount of first-year commissions.

Now that we have covered the calculation of the deferred acquisition expense asset for our basic individual life coverages, let us talk about the natural benefit reserve calculation. For purposes of this calculation, we have separated our business into two main groupings: business issued prior to 1953 and business issued from 1953 on. The reason for the 1953 break is that our documentation with respect to asset share assumptions became very good beginning in that year.

For business issued from 1953 on, which represents approximately 85 per cent of our total business by reserve, we are doing an exact natural benefit reserve calculation by quinquennial age groupings, with age 65 covering all ages from 63 on and with the reserves to be calculated to the end of the mortality table. There are, however, minor exceptions where, because of complicated premium or benefit structures and also because of the insignificance of the figures involved, we will use statutory reserves. We did test the effect on our statutory reserves of using quinquennial ages in lieu of individual ages and concluded that the use of quinquennial age groups produced a very close approximation to individual age results.

For business issued prior to 1953, which represents approximately 15 per cent of our total business by reserve, we are doing an approximate natural benefit reserve calculation using a very simple model. Because of the lack of documentation of asset share assumptions with respect to business issued prior to 1953, we began the natural benefit reserve calculation process on this business by deciding on suitable assumptions. On the basis of these assumptions, we made some natural benefit

reserve calculations at key plans and ages and compared these reserves to statutory reserves. Having made these comparisons, we came to the conclusion that the adjustment which should be made did not justify anything beyond a very simple model based directly on the natural benefit reserve calculations we had already made for key plans and ages.

As to deferred and uncollected premiums, this asset is being calculated on the basis of natural benefit reserve premiums. The amount of this asset is being determined by multiplying the total gross deferred and uncollected premiums on all of our business by the ratio of annual natural benefit premiums to annual gross premiums on those policies for which we are doing an exact natural benefit reserve calculation.

The only other major calculation which we are doing involves our noncancelable and guaranteed renewable accident and health business, which is developing about $15 million of annual premium at the present time, and applies to major medical and all disability income other than step rate. Since our noncancelable line consists entirely of disability income and our guaranteed renewable consists for the most part of disability income and major medical, there being a relatively small amount of guaranteed renewable basic hospital-surgical coverage, we are adjusting these two lines almost in their entirety. On noncancelable and guaranteed renewable step-rate disability income policies, we will hold net level statutory reserves. I might just add that, even if guaranteed renewable basic hospital-surgical were not only a small part of the whole, I am not too sure what we would do to adjust these coverages to a GAAP basis.

As in the case of individual life insurance, we are calculating the deferred acquisition expense asset separately for these individual accident and health coverages, following the general principles already laid down for individual life insurance. Whereas the natural benefit reserve calculation for individual life insurance depended very little on the use of models, individual accident and health natural benefit reserves are being calculated entirely by using models. However, because our documentation of asset share assumptions is not nearly as good for individual accident and health as it is for individual life, we are using our latest morbidity and persistency assumptions all the way through, with the interest assumptions corresponding exactly to those used for individual life insurance.

We will be making natural benefit reserve calculations for 1970 and 1971 year ends only. The ratio of 1970 natural benefit reserves to 1970

net level statutory reserves will then be used to develop natural benefit reserves for the other year ends which we need. Admittedly this is not the most desirable method of calculation, but, given the records we have to work with for year ends prior to 1970, it is the most practical method.

Our model for disability income plans consists of nineteen plans, with no differentiation between noncancelable and guaranteed renewable and with the model representing 83.3 per cent of the total monthly disability income for sickness benefits and over 95 per cent for accident benefits. Once our detail valuation file was grouped into decennial issue age groups within each of these nineteen plans, we then determined statutory reserves for the model as a means of validating the model. For individual and family major medical we are determining the percentage relationship of natural benefit reserves to gross premiums for our $500 deductible individual and family plans separately and using these relationships to calculate the natural benefit reserves for other deductible plans.

The only group business which we will be adjusting is our group permanent life coverage. What we intend to do here is to calculate natural benefit reserves but not a separate deferred acquisition expense asset, on the basis that the investment in this business is small because of the way we sell it and because of the commissions we pay on it.

In the case of all other segments of our business, we do not intend to make GAAP adjustments, because of either lack of materiality or lack of a need to adjust. For lack of materiality, we do not intend to make adjustments for excess mortality under term conversions, disability, accidental death benefit, guaranteed insurability, and term riders attached to our individual insurance policies and individual annuities. For lack of a need to adjust, we do not intend to make adjustments for supplementary contracts, group annuities, group life, and group accident and health business. On these lines of business our feeling is that each year's results must stand on their own feet.

With respect to deferred federal income tax, we realize that this is a very controversial item, so that our thinking is very tentative at this point. What we are very tentatively proposing is that the deferred tax adjustment to each year's earnings be determined by taking 24 per cent of the amount of each year's net adjustment for deferred acquisition expenses and each year's change in the difference between statutory and natural benefit reserves, the 24 per cent factor being one-half of the current tax rate which is the basis of the Phase II tax.

Let me justify this approach, which, by the way, has yet to be ap-

proved by our auditors. One thing which immediately comes to mind is that a recalculation of Phase I tax should perhaps be done wherein natural benefit reserves would be substituted for statutory reserves. The data necessary for making such a computation are not easily available, nor do we intend to go to the trouble of obtaining them. However, assuming that gain from operations is in excess of taxable investment income, and assuming that natural benefit reserve interest is greater than statutory reserve interest, then any tax savings which result from lowering taxable investment income will be at the 24 per cent rate. In ignoring the possible savings which would result if taxable investment income were reduced, the 24 per cent rate applied to the adjustments is conservative. On the other hand, again assuming that gain from operations is in excess of taxable investment income, but this time assuming that natural benefit reserve interest is smaller than statutory reserve interest, taxable investment income will be increased and the 24 per cent adjustment we are proposing will be entirely correct.

One question which normally arises is, "Should the amount of any unused special deductions in a year in which a company is in a Phase I tax situation be exempt from a deferred tax charge?" Here we think that the most important thing to keep in mind is that the sum of the adjusted earnings over an extended period of time should equal the sum of the statutory earnings. If we ignore any unused special deductions, the sum of the deferred tax adjustments over an extended period of time will be zero, since the sum of the adjustments for deferred acquisition expenses and natural benefit reserves over an extended period of time will also be zero. Another justification for ignoring any unused special deductions is that the amount of such deductions in any particular year really has no relationship to the amount of tax which will result when the timing differences reverse.

As things now stand, it does not look as if the Accounting Principles Board of the AICPA will publish an opinion with respect to accounting for equity securities prior to the end of the year. As a result, GAAP requirements for 1971 earnings would call for common and preferred stocks to be valued at cost for balance-sheet purposes, with only those capital gains which are realized to be put through the income statement.

Assuming that the APB rules sometime in 1972 that equity securities must henceforth be valued at market value and that both realized and unrealized capital gains must be put through the income statement on some basis, it follows that GAAP requirements with respect to 1972 earnings will be different from those in effect for 1971.

The AICPA now has a rule in effect which says that, when a change in accounting is made within the GAAP system, the financial effect of that accounting change must be put through in its entirety in the income statement of the year in which the change occurred. If we should publish a GAAP stockholders' statement for both 1971 and 1972, the difference between cost and market value on our stocks would represent such an accounting change. In the absence of any additional AICPA ruling to the contrary, present rules would therefore require that the total difference between cost and market value for stocks be reported through our income statement in 1972. Since we have an old block of preferred stocks on which market value is considerably less than cost, an artificially poor 1972 GAAP income statement would result.

It is always possible that, if and when the APB changes GAAP accounting with respect to equity securities from cost to market, they will also say that the total difference between cost and market can be spread back by year of occurrence. Since an artificially poor 1972 GAAP income statement would result if the APB did not say exactly that, we do not feel that we can take this risk.

Up until very recently, before we came up with this information, we were working toward GAAP certification for our 1971 stockholders' report. We are now tending to back away from this position and are aiming toward statutory certification. We are, however, continuing with our GAAP calculations, letting the external auditors and consulting actuaries audit both our figures and our procedures. Our objective is to present, in the chairman of the board's letter to be included in the 1971 report to stockholders, adjusted earnings reflecting adjustments for natural benefit reserves, deferred acquisition expenses, and deferred federal income taxes.

So there you have it. As you think about what we have done and are doing, do remember that finely honed theory does sometimes have to give way to practical considerations and that what may be fine for us may not be at all good for you.

MR. DANIEL F. CASE: At the moment we are awaiting a second exposure draft of the audit guide for life companies. We anticipate that it will cover some areas which were not covered by the December, 1970, exposure draft. We also anticipate that the Joint Actuarial Committee on Financial Reporting, the Joint ALC-LIAA Committee on Financial Reporting Principles, and the NAIC subcommittee on the AICPA audit guide will be given an advance look at the next draft and an opportunity to submit comments before the draft is given general distribution.

Perhaps the most significant area of potential disagreement between the industry and the accountants is the treatment of mutual companies. In exposing the December, 1970, draft, the AICPA Committee on Insurance Accounting and Auditing reserved its conclusion as to the applicability of the two crucial chapters to mutual companies. Since that time the trade association committee and the Joint Actuarial Committee have submitted statements on the mutual company question, and those two committees are in quite close agreement with each other. The trade association committee has emphasized that some of its comments on other matters covered by the first exposure draft are conditioned upon satisfactory resolution of the mutual company question. By the way, mutual and stock companies are about equally represented on the trade association committee, and that committee is unanimous in its support of the mutual company position.

The industry committees point out that a mutual company's obligation is to furnish insurance at cost. A mutual company must hold a reserve on each block of business which is large enough to ensure that there is little likelihood that the block will have to be subsidized by other blocks of business. Accordingly, reserves should be based on "reasonable floor" assumptions and not on assumptions close to "most likely." The accountants may accept this argument but may ask for a breakdown of the total reserve into two portions, one corresponding to the reserve for a similar nonparticipating policy. The trade association committee feels that such a figure would have no place in a mutual company's statement.

Since a mutual company has no owners in the sense that a stock company has, the trade association committee feels that a mutual company's GAAP statement should not contain a net income figure or a surplus figure representing owners' equity. The committee has suggested that a mutual company's GAAP statement be in a format which shows income and the application of that income. Any excess of income over the amount allocated to specific accounts would go into a policyholders' contingency reserve. Some companies might wish to designate portions of this contingency reserve as relating to specified groups of policies, and other companies might not wish to make such a breakdown.

Another area of potential disagreement (and in this case it appears highly probable that there will be disagreement) is in deferred tax accounting. We have here at this table at least one tax expert and at most five—the one I know we have being Bob Lindsay—so I will not try to get very far into this question. Essentially, the exposure draft said that

a company must recompute (or approximate) its federal income tax liability using the various items in its GAAP statement in place of the items in its statutory statement. Any excess of the recomputed tax liability over the actual tax liability would appear in the balance sheet as a deferred credit. The basic idea seems to be that the excess represents a "timing difference" in the tax liability and that the company will eventually have to pay tax on the portion of its GAAP income for the present year on which it is not required to pay tax at the present time.

The trade association committee (which, on this issue as well, is in close agreement with the Joint Actuarial Committee) has several basic disagreements with the accountants' position. First, because of the complex nature of the tax law, life insurance companies may never have to pay the extra tax that may appear in the course of the recomputation. The company may be in a different tax situation when the timing difference reverses. The committee has provided examples of such cases. Second, the exposure draft states that the tax recomputation may create a Phase III liability if, say, the recomputed policyholders' surplus account exceeds the limit set forth in the tax law. The committee feels that accounts like the policyholders' surplus are legal tax memorandum accounts only and that adjustments by recomputation have no meaning. Third, the committee feels that, even if the tax is likely to be paid when the timing difference reverses, the liability shown in the present year's statement should be discounted for interest and, perhaps, probability of payment. The accountants view the deferred tax credit as a present tax benefit arising from the difference between GAAP income and taxable income. Since everything else in a life company's statement is discounted, however, it would seem to be misleading not to discount the deferred tax credit.

A third possible area of disagreement is the way in which costs should be matched with revenues by GAAP reserves and the degree of conservatism which should be inherent in the reserve assumptions. The trade association committee feels that natural reserves, with some degree of conservatism in the assumptions, represent the liberal end of a range of reserve methods and degrees of conservatism which might be appropriate for determining GAAP reserves. The committee will give further consideration to the problem of defining this range.

Another point of possible contention pertains to the disclosure of statutory statement information in a GAAP statement. The trade association committee is concerned lest the publication of GAAP statements

lead to a weakening of the states' power to regulate life companies and of the companies' ability to maintain their solvency. The committee feels that, if a company is doing fairly well on a GAAP basis but is nearly insolvent on a statutory basis, then the latter fact as well as the former should be evident from the GAAP statement. At a minimum, the portion of GAAP surplus which represents excess over statutory surplus should be disclosed. This matter will also be given further consideration.

Another point of possible difference concerns the showing of the unamortized acquisition expenses. The accountants may want to require that these expenses appear as an asset in the balance sheet. The industry committees feel that a company should have the option of including these expenses in the policy reserve item instead of showing them separately. After all, the policy reserve consists of a number of elements, such as the present value of future benefits and the present value of future premiums, which are netted against each other. There seems no reason to single out the unamortized acquisition expenses for separate showing. There are even some situations in which such a separate showing might confuse the reader.

As for the role of the actuary in the auditing of life company statements, the exposure draft assigned very little significance to an actuary's review. The trade association committee expressed concern over that fact and deferred to the Joint Actuarial Committee. The latest draft which I have seen from the accountants makes clear that the auditor will need to sit down with an actuary—an in-house actuary, perhaps, or possibly an outside consultant—and go over the actuarial items in the statement. It does not, however, indicate that it is necessary or even desirable to include an actuary's report in the auditor's opinion or even to state in the opinion that an actuary's report has been obtained. More work is being done on this problem.

There are, of course, interested parties other than the industry and the accountants. The NAIC has a committee studying the audit guide, and present indications are that the NAIC may urge the adoption by the states of laws that require life companies to report primarily on the statutory basis, with GAAP figures to be presented only as supplementary information. This might not be too bad, except that the auditor's opinion might differ in some way from the so-called "unqualified" or "clean" opinion that the statement is in accordance with GAAP. This, in turn, might not be too bad if organizations like the Securities and Exchange Commission and the New York Stock Exchange would accept qualified or adverse opinions.

The SEC is a great unknown quantity at this point. Trade association representatives have held a preliminary discussion with SEC representatives and have agreed with them to resume the discussion at a later date, after further efforts to resolve our various differences with the accountants have been made.

I would now like to summarize the developments on the question of accounting for marketable equity securities. This question is being handled by the Accounting Principles Board of the AICPA rather than by the committee which is developing the audit guide, and it applies to all industries. The APB would like to change the present GAAP treatment of marketable equity securities. These are stocks which are not required to be accounted for by the equity method or by consolidation. One of the latter two methods must be used for common stock if the reporting company holds more than 20 per cent of the issuer's common stock. The two methods involve taking into reported net income the dividends on the stock plus the issuer's reported earnings per share which are not distributed as dividends.

The present GAAP treatment of marketable equity securities calls for them to be carried at cost (or, in some cases, at market value if lower) and for realized capital gains or losses on them, but not unrealized capital gains or losses, to be included in income. The APB dislikes this treatment because it gives management a chance to manage, or manipulate, its company's reported net income to some extent by appropriately timing the realization of capital gains and losses. The APB has considered three possible alternatives. All of them would involve carrying marketable common stocks at market value. One would include neither realized nor unrealized capital gains or losses in income but would carry them directly to surplus. This is the present statutory treatment for life companies, of course (modified by the workings of the mandatory securities valuation reserve), and this is the method which has been recommended for GAAP by the trade association committee. Another treatment would include realized and unrealized capital gains and losses in income as they occur. This method has been vigorously opposed by the trade associations and by other industries. It would cause wide swings in the reported income of life companies from year to year. It would convert a portion of the statement to the so-called "fair value" basis of accounting, which would seem to make little sense when the rest of the statement is based on historical cost accounting. The third possible treatment would include realized and unrealized capital gains and losses in income on a long-term investment yield basis.

That is, it would apply a formula to them in an effort to match revenues with long-term costs. This method has attracted some interest in life and casualty insurance circles, but mostly as a fallback position. The present GAAP method (which includes realized gains and losses only) has also been advocated by some companies in the industry.

A month or two ago the APB seemed on the point of issuing an exposure draft opinion calling for the inclusion of capital gains and losses in income as they occur. There was such great opposition, however, that the APB deferred the question. The matter is receiving attention at the highest levels in a number of companies.

MR. DEREK ECKERSLEY: In the United States the adjustment of life insurance company statutory earnings by GAAP is to all intents and purposes an established fact. Only the details of adjusting are in any doubt. In Canada GAAP do not yet exist for life insurance—statutory accounting is the accepted practice. Considerations of adjusted earnings are very much in the preliminary stages. In these circumstances my role on this panel is somewhat different from that of the other two members. My intention is merely to discuss the major influences at work. Hopefully this will encourage more people in the industry to think about and to discuss the implications. I am not naïve enough to make any definite predictions as to how things will develop.

It will be obvious to all here that one of the strongest influences on insurance accounting in Canada is the situation in the United States. If adjusted earnings were not a topic in the United States, I am sure they would not, at this time, be one in Canada. The whole development of life insurance in Canada must inevitably be influenced by developments in the United States. Canadian companies export considerable amounts of insurance to the United States, and United States companies have a sizable share of the Canadian market. Furthermore, affiliations between Canadian and United States companies force some Canadian companies to be involved with "adjusted earnings" whether they like it or not. In spite of this influence, however, it should not be assumed that the United States GAAP will be adopted in Canada. If I were to make any prediction at all, it would be that Canadian GAAP will be different from those in the United States. There are fundamental differences of background in the two countries, and I would like now to discuss what I consider to be the major ones, not necessarily in order of importance.

The first is supervision. We have in Canada ten provincial insurance

departments and one federal department, with the latter supervising the federally licensed companies which are the majority and which include most of the large companies. Even the provincial departments have a close association, and all except the Quebec department operate under uniform legislation. Under these circumstances it is not impractical to consider the possibility that all the supervisory authorities might accept some changes in statutory statements in order to bring about desirable consistency between statutory and other forms of financial statements. At least we are having participation by employees of the regulatory authorities in the early deliberations. Obviously the departments of insurance will continue to look primarily at solvency considerations and the balance sheet, but possibly there could be acceptable adjustments to reflect more realistic incidence of true earnings, if there is any such thing.

The second consideration worthy of mention is the role of the actuary in the preparation of Canadian statements. This is reflected in the Actuary's Statement, which includes the words "in my opinion makes good and sufficient provision for all unmatured obligations of the Company guaranteed under the terms of its policies." Within the framework of the provisions of the Canadian and British Insurance Companies Act and the valuation bases approved for use by the superintendent, the actuary has considerably more choice than his United States counterpart in valuing the liabilities. This is an important consideration in the change in emphasis in financial statements from solvency to earnings, particularly when it is recognized that the superintendent has approved a wide range of mortality bases for valuation and has permitted the use of quite high interest rates.

A third significant feature is the relative importance of mutual and stock companies and the relationship of participating and nonparticipating insurance in both types of company. A much greater share of the total Canadian business in force is in mutual companies than is the case in the United States. The share may become even larger because of legislation permitting and even encouraging mutualization of stock companies. At the same time, both types of company have substantial amounts of business written on both participating and nonparticipating bases. This relationship of participating to nonparticipating business is even more significant because of statutory requirements for separation of funds for the two classes of business and restrictions on the amount of participating funds available for dividends to shareholders in a stock company. This situation must result in more attention being focused on the financial affairs of the mutual companies and on the earnings from

participating business than is the case in the United States. I am sure that in Canada participating business earnings will be given almost as much consideration as nonparticipating earnings, and I feel that mutual companies will receive as much attention as stock companies.

A fourth significant feature is income tax. It is only since 1969 that Canadian life companies have been subject to a corporate income tax. It seems to me that in the consideration of adjusting earnings serious consideration must be given to the tax implications. In the United States there has been much discussion about deferred taxes. As a senior officer of my company, my concern is not so much the deferred tax liability arising from upward adjustment of earnings as the immediate tax liability.

There are other considerations which I will refer to only briefly. In the United States the SEC requirements and the New York Stock Exchange requirements for unqualified audit statements have been a significant force—the same pressures are not yet with us in Canada. At the moment there does not seem to be any strong reason why a company could not elect to stay with statutory accounting for its published statements even if accountants adopt different GAAP. The company would merely have to live with a qualified audit statement.

We do, however, have pressures from the investment dealers for a meaningful basis for adjusting earnings of stock companies for the benefit of potential investors. This is reflected by the recent publication by the Investment Research Division of Wood Gundy, Ltd., of a report entitled *The Canadian Life Insurance Industry*. We also have the growth of "consumerism" and all that that implies in the way of disclosure. Consumerism will undoubtedly affect both stock and mutual companies.

The final factor is the Canadian Institute of Chartered Accountants, the counterpart of the American Institute of Certified Public Accountants—a counterpart, but an organization with a significantly different approach to accepted accounting principles. The CICA, in developing acceptance of principles, has traditionally followed the philosophy of using research studies. These studies obtain a broad cross-section of opinion on the matter under consideration and then try to select logically the best of all alternative procedures which may be used. The study group then sets down its proposed procedures. These are then published for review by the membership of the institute and other interested parties. If a large degree of unanimity of opinion is obtained, there will probably be publication of a bulletin recommending that the procedures be used. This constitutes general acceptance. Failing issue of a bulletin,

the research groups' proposals do not result in any general change. There is a significant difference from the approach in the United States, where the AICPA committee itself determines the generally accepted principles.

Life insurance company accounts have traditionally been audited by members of the CICA, but recently there has been increasing emphasis on life insurance auditing. The 1969 amendment to the Canadian and British Insurance Companies Act, for example, included a new section (78A) on audit requirements, among which is the filing of an audit statement with the superintendent of insurance. In Ontario the recently amended Ontario Companies' Act now requires provincial life companies to set up an audit committee of the board of directors. In accordance with this trend, and undoubtedly influenced by events south of the border, the CICA set up a research study group on "Financial Reporting of Life Insurance Companies" in 1970. Formation of such a study group was considered back in 1967 but was postponed. I believe that this was largely because of the new taxation of life companies. With the increasing interest in adjusted earnings, the Canadian Institute of Actuaries appointed a Committee on Financial Reporting early this year.

So much for the background; we come now to the present time. Neither the CICA nor the CIA committee has as yet made any formal reports. I have, however, had the opportunity to talk with the chairman of the CICA committee, and I am a member of the CIA committee. I will therefore give you my impressions of their work so far. I emphasize that my remarks represent my own impressions, not the views of either committee.

The composition of the CICA study group is quite significant. It is under the chairmanship of Mr. Gordon H. Johnson, F.C.A., controller of the Imperial Life Assurance Company of Canada. The other members include three C.A.'s employed by prominent accounting and auditing firms, a C.A. on a university faculty, and an F.S.A., Mr. J. F. F. Vachon, associate actuary of the Sun Life. An ex officio member is an assistant superintendent of the Federal Department of Insurance, Mr. C. R. Brereton. I feel that the membership of the committee, reflecting as it does the views of (1) the insurance company executive, the auditor, and the insurance department, (2) the accountant and the actuary, (3) the mutual company and the stock company, and (4) French- and English-speaking actuaries, will certainly provide a great cross-section of opinion. The study groups' terms of reference, as they have been given to me, are as follows:

*a*) To study the accounting requirements of the life insurance industry.
*b*) To study the accounting practices now being used and to determine whether or not they are most appropriate and suitable.
*c*) To study the reporting practices to policyholders and shareholders and other users of financial statements and, if appropriate, to suggest improvements.
*d*) To study the forms of auditors' reports and consider how they should differ from the reports for other industry in general.

I believe that so far the committee has gone little further than to have its members submit position papers, and each of these is to be fully considered by the committee as a whole. In the meantime, the chairman of the committee has extended an invitation to the members of the CIA committee for a joint meeting later this month. At this meeting it is intended that views on all aspects will be freely exchanged. Subsequent to the joint meeting, the CICA group will proceed to determine its stand on the various issues.

The issues are, of course, much the same as those considered by the AICPA committee. Exactly how national differences in the legal, economic, and environmental conditions will influence the recommendations we can only wait to find out. I am inclined to think, however, that the committee will be looking at the problem from a viewpoint somewhat different from that of the AICPA, which looked at the matter largely from the standpoint of disclosure to shareholders. I would anticipate, and certainly hope for, a much broader viewpoint on the part of the C.A.'s in including disclosure to policyholders, both old and prospective, as well as to shareholders, and in considering other uses of statements, such as for management purposes.

To turn now to the CIA committee, the chairmanship is held by Mr. W. J. D. Lewis, who was considerably involved with developments in the United States—for example, being one of three Canadian members of the Joint Actuarial Committee on Financial Reporting. The remaining eight members of the CIA committee are all actuaries, drawn from stock companies and mutual companies, from the actuarial consulting field, from the management consulting field, and from the Federal Department of Insurance.

The committee's terms of reference involve looking at the question of adjusted earnings only in those aspects which fall within the actuary's professional area of competence. The committee is therefore looking only at the actuarial implications. It is almost the counterpart to the Joint

Actuarial Committee in the United States. However, it is taking a Canadian viewpoint.

The committee has divided its work into six categories, with subcommittees established to study each in depth. The categories are (1) reserve systems, (2) the role of the actuary, (3) tax implications, (4) participating business, (5) investment considerations, and (6) other than life lines of business. Work to date has been involved largely with reviewing the underlying considerations, and so far, as with the CICA group, no decisions have been made. I need hardly say that it is hoped and expected that the forthcoming meeting with the CICA group will be lively and will prove most helpful to both committees. I can say that I find it most encouraging that there is such a strong desire for co-operation and opportunity for interchange of ideas.

As I stated at the outset, I am not going to try to predict the developments which may occur in insurance accounting practices in Canada. I do predict, however, that there will be developments.. I feel sure that in 1972 the CICA group will submit a report proposing changes in practices. As I understand the situation, the report will be subject to review by the CICA's standing research committee before submission to the executive committee. This committee will probably expose the proposals to the members at large and to all other interested parties. Changes could then be made in the proposals, or there could be no further action, or there could ultimately be a bulletin which would set down recommendations. These would then become generally accepted for audit purposes. I understand that this would take a minimum of two to three years. Hopefully, any CICA recommendations will have been influenced by and not in opposition to the expressed views of the CIA committee on the actuarial considerations involved.

Developments in the United States since publication of the AICPA exposure draft have shown that there are very many far-reaching implications in adjusting life insurance company earnings. I did not think that it was my duty to delve into these implications, or to give my personal views; my duty was to report on developments in Canada. I do have views, as I am sure many others do. Some have very strong views. I think that, unfortunately, not enough of us have publicly expressed our views. In the United States it is my impression that to most insurance people, and to actuaries in particular, GAAP means "Go Away And Play." The problem won't go away, and it isn't play. It involves serious thought by highly qualified accountants. I am convinced that the CICA will listen to sound views expressed by people outside their own pro-

fession. One of the most respected men in life insurance in Canada, a member of our profession, Mr. K. R. MacGregor, has already expressed strong views before the 1971 LOMA Annual Conference. Some may not agree with Mr. MacGregor's views, but it will be agreed that, by speaking out on a controversial topic, he did a service to the Canadian industry. I would recommend that others in the industry express their views, but they should do it soon. It is much easier to influence decision-making before the decisions are made. I have indicated that decisions have not yet been made. If I have stimulated any of you to express your views, my participation on this panel will have been worthwhile.

In conclusion I would like to say that I personally see considerable hope that the C.A.'s will develop GAAP which will not conflict with acceptable actuarial standards of solvency, both from the standpoint of the companies and from that of the regulatory authorities, and which will not be against the best interests of the companies, their shareholders and policyholders, or the public in general.