ABSTRACT OF THE DISCUSSION

Mr M. Iqbal, F.I.A. (introducing the paper)**:** The process of decision making has fascinated me for some time, starting during the early 1990s, when I first became a director of a group of life companies. Although, as a team, we were committed to addressing all the key issues, more needed to be done than we had the time and the resources available to deploy. Priorities became an issue, and the urgent, but ephemeral, often got in the way of the fundamental.

In 1997, Gordon Brown, Chancellor of the Exchequer, ceded control of interest rates to the Bank of England, and the Government decided to shadow the convergence criteria for the single currency, the euro. That was also the year when I first became a consultant, and did not have the day-to-day responsibilities of a company man, being freed from having to worry about urgent, but strategically unimportant, issues. As a result, I could see very clearly the implications of these changes in terms of a likely decline in long-term bond yields. Through my firm, I arranged, towards the end of 1997, a series of seminars throughout the United Kingdom, warning the life industry of the need, amongst other things, to revisit their asset/liability profiles. The audiences must have had other priorities, as few took appropriate action. The message was repeated the following year at a Life Convention, again to little avail. Eventually, in 2000, we held another series of seminars, this time with Roger Bootle as the keynote speaker. By then it was too late, as yields had fallen significantly already, and yet not enough companies had reacted.

The industry's response was intensely depressing for me. If such a profoundly threatening message was not being evaluated, then the problem clearly was with the messenger rather than with the message. However, in a perverse sort of way, it was also reassuring, because, clearly, I and my colleagues from the early 1990s were not unusual in letting short-term pressures take precedence over more fundamental issues. It was a common problem in the industry.

When I examined the problem more widely, I realised that it was not peculiar to the life industry. Examples are commonplace in the past decade, and that was what led me to explore the field of decision theory and management behaviour. Why does management sometimes exhibit collective myopia and at other times behave like lemmings? Why is there acceptance of the inverse Murphy's law?

This is not an actuarial paper. No claim is made to originality. Somewhere in it I state that what it has to say can be regarded as profound or trite, and some of you might opt for the latter. However, I do believe that a paper of this nature needs to be discussed, if only as an antidote to the prevailing wisdom that with-profits life companies got into difficulties because of the absence of stochastic modelling. That is utter nonsense. The use of such techniques was long overdue, but companies seldom get into difficulties because of poor measurement techniques; they do so because they make wrong decisions, or sit on decisions by calling for more analysis.

Mr S. C. True, F.I.A. (opening the discussion)**:** I thank the author for a thought provoking paper. I think that it is an important one, because we are in a climate where the actuarial profession is having its influence reined in. Its ability to manage is being reviewed from all angles. This paper reminds us that actuaries do have positions of considerable influence on and, in many cases, direct involvement in decision making within life insurance companies.

For me there are two main issues, or questions, on which I should like to focus. The first is: "To what extent has the management of life companies really made poor decisions in the past?" The corollary to that is: "Do we consider those decisions poor, with the benefit of hindsight, or were they truly avoidable at the time?" Secondly: "Does this paper provide us with a robust structure for decision making which could have avoided the historic problems and which can be utilised in future?"

Another main area of interest in the paper to me is the articulation of agency costs, which is growing in recognition as being particularly relevant to firms when determining the true cost of capital.

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Let us start by considering whether historic decisions have, indeed, been poor, based on the data available at those times. The paper cites a number of examples, and I shall consider two of them. The first is the decision to compete in the stakeholder market. The paper surmises that there are four bases on which the decision was made: an incomplete analysis of risk and reward; or an inadequate explanation to the board; or an inadequate explanation to shareholders; or, perhaps, in a minority of cases, an informed basis on which the risks and rewards were understood by the board and by the shareholders.

I am afraid that I am not persuaded that the risks and the rewards were not understood. The fact that sales experience to date is disappointing does not mean that this was not recognised by companies as a possibility. As the author rightly points out, sales volumes should not be the only metric by which the success of a project is measured. Indeed, the decision to compete in this major market area contained an option value which any analysis of the pros and cons could not ignore. In practice, the challenge of competing in this market and reducing operating costs to within a 1% world has instigated enormous benefits for companies' expense levels, to say nothing of the boost to the Indian call centre employment market.

The second example, the decline in inflation and changes in bond yields, is a fairly topical subject, and, for me, is a much more compelling example of a decision making failure, and one which is directly relevant to the actuarial profession. As many of you are aware, this was a key area of concern for the Commons Select Committee early in 2004, and it is certainly exercising the mind of Sir Derek Morris at the present time.

Analysis of long-term bond yields did signpost the reduction in inflation in gilt yields, as has been pointed out by the author previously. Undoubtedly, this was an area of interest and relevance to actuaries, so how is it that important decisions were not taken at the time, moving customers out of endowments and into repayment mortgages? I invite you to consider: "Is it that the implications of the analysis were not communicated effectively, or was management fully aware of the analysis, but had a flawed decision making process?"

During the Treasury Select Committee proceedings, one chief executive of a major life office informed it that his own organisation had not advised him until 1999 that endowment mortgages were a poor deal. Can this really be correct? I invite you to consider whether it was a decision making process or the inadequacy of information flows that led to this flawed situation.

I now move to the second key issue in the paper, and that is whether managing by inequalities really constitutes a panacea in decision making. The concept of management by inequality (MBI) is recognised by the author as little more than the application of common sense. In essence, the method involves determining available resources, establishing the management decisions required, and then, with those two in mind, taking a rational approach to evaluating the relative merits of alternative options.

If we took a straw poll now, I am certain that the vast majority of you would say that that is exactly how your companies make decisions. I would be interested to hear from others whether this structure is already well utilised, perhaps under another guise.

Helpfully, the paper recommends a series of steps which could prevent the repetition of the errors of the past. Some of these include: an annual statement of critical resources and how they are deployed; analysis of management attitude to risks and behavioural traits; a blending of the management team to make sure that there is the right mix; closer alignment of management rewards with shareholders' long-term interests; new accounting standards; external performance reporting; independent computation of profit; and, interestingly, echoing what the author has recently said about being freed from the constraints of running the company, adequate thinking time for management.

In the individual capital assessment (ICA) environment of robust risk management, some of these suggestions certainly resonate as being potentially viable. In particular, extending the concept of capital as a key resource to other scarce resources, such as management thinking time, might be an appropriate way forward.

I now move on to my pet subject, of agency costs. The paper, helpfully, includes reference to agency costs, a feature that is becoming more widely recognised as having a real impact on the

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value of life companies. For the uninitiated, the basic tenet is that management and shareholder interests are not perfectly aligned, which, in turn, leads to some value reduction. Empirical evidence across industries suggests that higher free capital leads to an increase in agency costs. This is an interesting concept within a life company, because how much capital is genuinely free? Certainly, I feel that the goalposts have moved in the last year, and, perhaps, we have a clearer definition of what might be considered free with the introduction of the ICA framework. Perhaps this is a topic for a future paper.

Returning to one of the recommendations for avoiding the pitfalls of the past, that of aligning management rewards with shareholder long-term interests, I recently had a very interesting meeting, where an unnamed person recalled the situation where, on his first involvement with the board of a company, the first board meeting was spent with half an hour's discussion of the results. He then had an hour working on the board subcommittee which was charged with the purchase of fine art. That, for me, is the definition of agency costs.

Returning to the alignment of management rewards with shareholder long-term interests, I think that this has been something which companies have strived for over a number of years, and, indeed, was the driver behind many company decisions to align management bonuses with changes in embedded values. It is not my intention to begin a debate on the merits of embedded values as a reporting tool, nor as a basis for executive remuneration, but I would be very interested to hear suggestions as to the correct metric to be used in order to align management decisions more closely with shareholder interests.

I close on a topical, if slightly controversial, note, by adding another couple of villains, or potential villains, to the list of influences in the area of bad decision making: weak accounting standards; and poor enforcement of those standards. This is most obviously the case where some companies have managed to hide poor acquisitions by keeping excessive goodwill on balance sheets and deferring the recognition of poor management decisions.

More controversially, perhaps, weak accounting, in the past, for defined benefit schemes is another example where companies, life offices included, have provided excessive benefits to staff, and hidden, to some extent, the resulting costs from shareholders. It is rather surprising, perhaps, that this appears to be condoned with the proposition for a weak standard, with pension scheme deficits moving forward when testing solvency for both insurance companies and banks.

Mr I. J. Kenna, A.I.A.: I think that this is a very good paper, chiefly in its analysis rather than in its solutions. I do not think that the solutions are quite adequate to the problem.

It is interesting to read in ¶1.2: "that the free assets of with-profits life companies fell from 34% in 1985 to 6% in 2002 ...". Having squandered the family silver on over-large payouts related to the bubble bull market, with-profits life companies are now desperate to keep the insolvency wolf from the door. Life companies are attempting to do this by ploughing their net cash receipts of new money into the stock market to bolster share prices in order to create the impression that all is well. They are throwing good money after bad.

In ¶3.8 the paper claims: "we examine, with the benefit of hindsight, decision making in two key periods during the last 15 years.'' Hindsight is all very well. However, our motto is 'Making financial sense of the future'. Actuaries should take account of what they are told at the time when things are beginning to be done wrong. Here are four well documented examples:

(1) Somebody proved that the increase in share values was largely attributable to long-term investment institutions consistently having more cash coming in than was going out. This led to a situation of too much money chasing too few shares. This bumped up share prices, proving what a good investment shares were.
(2) Somebody reported that there were no actuarial safeguards governing the selling (or should I say mis-selling) of personal pensions.
(3) Somebody pointed out that so-called achieved profits have not, in fact, been achieved. Using guesswork, achieved profits take credit now for possible profits in the future.
(4) Somebody said that stakeholder pensions were unlikely to make a go of it on 1% charges. Building society accounts, which are comparatively simple, need more than 1%.

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I do not know who somebody is, but, more recently, he has also warned against investing customers' money in junk bonds and hedge funds. He has shown the need to prepare for future disinvestment when shares will have to be sold to pay claims, maturities and pensions.

Actuaries, and others engaged in life and pensions, need to be able to recognise the truth when it is staring them in the face. It is a pity that, because of this inability to face the facts, money, which should have been invested productively for the future benefit of policyholders and pensioners, has simply contributed to a prolonged spending spree.

As a result, with-profits life assurance and defined benefits pension schemes, the two great achievements of the actuarial profession, appear likely to go down the drain.

Mr P. J. Turvey, F.I.A.: The author concentrates on a couple of issues relating to decision making in the face of the incredible pressures which the industry and management have faced over the last 20 years or so. I want to look at some fundamentals, and consider a couple of matters which the author touches upon, but which could, usefully, be developed further.

Those two issues are: the management of systemic risk; and ensuring that the board's objectives are as close as possible to those of the owners of the business.

To start with a definition. Systemic risks are external events which could have a material adverse financial impact on the company. We can all think of examples, including: falling interest rates; moving regulatory goalposts; increased longevity; and unexpected legal decisions. The industry has seriously misjudged the likelihood and/or the impact of these events, concluding that there was no need to worry about them. There was confusion between: "It is unlikely to happen'' and "It will not happen'' or "It cannot happen''. When these events did happen, the industry was ill prepared.

The industry has to be more aware of these systemic risks. Systemic risk must be identified and then managed. No major policy decision should be taken without a formal appraisal of the systemic risks and how they will be managed if they come to pass. It should be standard for boards to require this appraisal well ahead of the regular risk assessments which we now all carry out, but they happen after the event, when you have actually taken on the business, and may be too late.

My second point is on corporate objectives. These need to be very clear before you start to make decisions, otherwise you are building a house on sand. You need, as the author has pointed out, to minimise agency costs, and more effort is needed in this area, with better processes. You would think that the task would be easiest when there was a single, intelligent shareholder who understood the business — a nice model for those who are part of an international group, perhaps. However, maybe the owner does not really understand U.K. life assurance business. Maybe the owner tries to shoehorn it into an inappropriate business model or reporting model, and, in such a case, setting objectives may be part of the problem rather than part of the solution.

The largest number of cases is, of course, when the company is quoted, but here the vast majority of shareholders will have no understanding of subtle key strategic issues, such as whether or not to launch a stakeholder product. Shareholders can only be expected to opine on very broad objectives, such as dividend policy and capital raising. It is a weakness of U.K. company law that they only get involved when the decision is already a *fait accompli.*

I am happy with the author's concept that, in a proprietary company, the board should determine the company's appetite for risk, and communicate it to the owners of the business through its words and actions, so that shareholders can decide whether the result is acceptable. A shareholder in such a company can express his views on whether or not he likes management style by buying or selling shares. In that sense, you can regard the stock price as something of a moving referendum on the competence of the board.

The last case is a mutual. In a mutual, the policyholders are also the owners of the business, but there is no analogous process of buying and selling. An owner who does not like the board's policies only has the nuclear option of surrendering his policy, which is like throwing the baby out with the bath water. The board of a mutual has to be very much more sensitive to the needs

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and the wishes of the owners, and somehow to find a way of involving them in major strategic decisions, such as asset mix, expansion or contraction.

As the author points out, it is much too easy for the interests of the owners and the management to become mis-aligned, especially where the business is struggling. How many examples are there of optimistic managements of mutuals who have decided to carry on in the hope that something will come up?

I do not have a solution to this, apart from hoping that the members of the board are full of integrity, but one device that might be helpful would be to require an annual report on the underlying profitability of the company and its continued viability as a stand-alone institution.

While we are in this area, I would like to respond to something that the opener said about what the right measure is for judging the progress of a board. The answer is that there is no single right measure. One board may validly conclude that the thing to do is to maximise dividends. Another board might conclude that the right thing to do is to maximise embedded value. Both of these are valid decisions in different companies, with different sorts of shareholders and different sorts of shareholders' interests. This is a decision that only the board can take. Therefore, I would reject the author's idea that the profit should be computed externally by an independent expert. It is a lovely idea, but someone has to decide upon what basis the profit should be calculated, and decide on judgemental factors, such as the discount rate which should be assumed.

Mr P. Sharma (a visitor; Financial Services Authority)**:** I hope that the author will not take it amiss if I say that the most important aspect of the paper is not any particular point that is made in it, but that a paper of this sort is being brought to a sessional meeting, and I also hope that this is not the last paper on this subject, but the beginning of a series of such papers that are brought to sessional meetings and to the actuarial profession.

When discussing this paper before reviewing it, I started with a prejudice: "Oh dear, this will be another actuarial paper that takes a problem which is not unique to the life insurance industry, and tries to address it solely from actuarial wisdom, without sufficient reference to wisdom from outside the profession or, indeed, the industry.'' I am happy to say that this is certainly not the approach that has been taken here. There has been no comment so far about the extent to which the author has reviewed the huge amount of learning and research that has taken place outside of the actuarial profession on some of the fundamental issues to do with effective decision making. That learning needs to be imbibed into the profession and into the industry.

I have not looked at the current syllabus for the students of the profession recently, so I ask the question: "Are these decision making theories which the author has identified on the syllabus? Should they be on the syllabus? Should more about the general approach to management be on the syllabus?'' I leave that as an open question.

I now extend the point which I have just made, and say that, when looking back for examples of significant decisions which one can say were poor decisions, and were made for inadequate reasons, one should not confine one's attention just to the life insurance industry.

In many ways, you are too close to the decisions which were made in the life insurance industry. You feel too passionately about them, you have too much of your past emotional history attached to them. You will not be objective. I am sure that some of you will, but most of you will not, be objective when you come to review those decisions and decide whether each was a good decision or not a good decision.

Future papers would benefit from focusing on classic wrong decisions that were made in other industries, at other times, where you can stand back and be more objective. So, I look forward to the future actuarial paper that reviews the decision by Coca-Cola to drop the classic blend and go for a sugary alternative version, or other famous business mis-decisions.

I now comment on the detail of the paper. I am impressed by any paper that, in one paragraph can quote Shakespeare's 'Richard III', and in the next paragraph has a double integral — suffice it to say, I found the quote from Shakespearean English easier to interpret than the

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double integral! More seriously, there are a number of themes, even though they are not that well brought out and are only hinted at, which I want to pick on and to re-emphasise. However, before doing that, I repeat a point that has been made already, which is that the solutions and the recommendations in this paper should, perhaps, not be taken too seriously. They should be taken as the beginning of a debate which leads to solutions. I believe that that is the spirit in which you offer the paper, which is to focus attention on decision making. Nonetheless, there are one or two solutions on which I shall comment.

First, there is the blending of the management team. All of the research on decision making, about which I am aware, makes the point that the more diverse the decision making group, the more open it is to new ideas, the more open it is to hearing traditional ideas challenged. If you will forgive the glib phrase, there is the problem of the actuarial monoculture. I know that it is a problem which is being addressed by the profession. The problem is that a group of people, all of whom have the same, or very similar, academic and professional backgrounds, who have had the same professional discipline, who work in the same industry throughout their lives, and often in the same companies, creates a monoculture within an organisation.

One consistent thing which the paper mentions, and which is brought out consistently in the research, is that a monoculture leads to poor decision taking, particularly when the environment changes. In fact, the situation where you have good decision taking for a very long time, followed by a bout of inexplicably extremely bad decision taking, describes, classically, what happens when you have a monoculture which is quite well adapted to the way in which the world is currently, but is very slow to respond to the way that the world becomes.

The second point is that I think that a large part of the solution to the decision making problem is culture, not process. Who should report what to whom and what report should be issued, etc., are important. All of that is important, but, if you get the culture right first, then the process follows.

One should be very careful about assuming that, by changing the process, you change the culture. I think that it is very much the other way round — once you have the culture for decision making correct, the process adapts accordingly.

My third point is about this false dichotomy which is being made, not by the author, but by one or two of the previous speakers, about whether the decision was bad or was it the adequacy of the information flow to the decision maker. For a single decision, that is a rational question to ask: "Was it that I made a bad decision, based upon the information which I had, or was it that I had inadequate information?" For a single decision, that is a good way of looking at things.

In the context of continuous decision making, the decision taker must take responsibility for the adequacy of the information flows that come in. In other words, another well known fact, which I believe that empirical research fully bears out, is that decision makers get the information and the analysis which they deserve. If you do not believe me, watch 'Yes, Minister'.

The essential points are: diversity, culture, learning from other industries, and not hiding behind: "I was not given the right information", because not creating the environment in which you are given the right information is the problem. It is not the excuse; it is not the reason why there is not a problem; that is the decision making problem in large measure.

Mr D. G. Robinson, F.F.A.: I will share a personal experience with you which I think is relevant. I was a member of the management team, in the mid to late 1990s, of a medium-sized Scottish mutual which did take some very brave decisions. We decided not to pursue the pensions boom, not to pursue the investment boom, but to specialise in protection insurance. That was a decision taken in 1996, significantly at odds with the perceived wisdom at that time. I have often wondered how we did that. How did we manage to take such a contra-market approach as that? First, picking up on the point made by Mr Sharma, we had a very diverse team. We did not just have a team of actuaries; we had both males and females on the team. We also had people from other sectors, people from the IT sector; and people from the chemical industry, where risk

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has to be managed very carefully. I think that the other thing which we had going for us, being a mutual, was that we were able to discuss strategy, plan and act behind closed doors. If we had been a plc, and if we had gone to the market in 1996 and had said: "Yes, there is a big pensions boom", and: "Yes, the world is marching into investment products, but we are having none of that, we are going into the protection market", we would have been told, as we were told when the market eventually discovered what we were doing, that we were absolutely insane. If we had been a plc, I am in no doubt that the executive team would have been replaced!

Four years later, that business had grown its market share from 2% of the market to 32%, and it was able to demutualise and to sell the business to a U.K. bank for a very good deal. We did excellently for the policyholders in doing that.

Thus, our ability to buck the trend, and to be very successful in the process, was driven by a number of factors: the make up of the executive team, and hence the diversity of DNA in the business; the fact that we were able to work behind closed doors; and, importantly, the fact that we had a very supportive board, which was prepared to take a long-term view and to back the executive team.

This takes me to a second theme, namely the analysis of risk. I think that most people find it very difficult to know themselves — they need external challenges to help to identify strengths and weaknesses. This is also something that most businesses are not good at, that is having an objective view of strengths, weaknesses and, in the context of this paper, the risks being faced. I do not know the answer to this, but whenever I am talking to journalists or visitors, when they visit the new protection business which I have now set up for another mutual in Edinburgh, I find that they notice things which I do not see any more. I am sure that it is the same in the assessment of risk for any business. Risks are being run that are just not seen, because those who are running the business are just too close to it and are somewhat blinkered. I think that it is important for businesses to find mechanisms for generating that external challenge into the business, so that they can be shown risks that, perhaps, they were not aware of, or that they were subconsciously aware of, but which had not surfaced.

I am very pleased that a paper such as this one has been presented to the Institute. Management decision making is a topic which is discussed far too infrequently in actuarial circles.

I believe that this paper should be required reading for all executive teams in any business. I am certainly taking two copies to show to my management team, and to encourage them to read it, to help us to get our own decision making much better in our own business.

Mr P. A. C. Seymour, F.I.A.: Unfortunately, I do not have a positive example of a management decision made in the past, but I, too, was prompted to think about some of my own experiences, and why they did, or did not, work.

Mr Turvey said that he was not concerned about what measures are actually used, and that different measures are appropriate to different circumstances. Of course, there is a truth in that. However, I have now formed a personal view that we, as a profession — and I am sorry to be introverted — have been too bedazzled by embedded value. That has pushed many managements into very illogical decisions. In particular, it has disguised the fact — a point made by an earlier speaker — that we are counting profits before we have made them. That is a pretty dangerous thing to do. It can mean that people will go on flogging uneconomic products in bad ways to customers who do not need them, and mask all that with massive increases — apparent increases — in shareholder value, under the name of embedded value accounting. That is definitely a concern.

There may be some of us who still quite like embedded value accounting, but not me, although I must accept responsibility for my own change of heart. We had a life insurance subsidiary in Germany, for which I was responsible at one point in my life, and we thought that it was doing wonderfully well, because the embedded value figures were absolutely excellent. However, eventually, somebody had to be paid to take the business away.

That is the sort of thing which happens unless you actually use management systems in

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which other people believe — most notably other buyers. So, I just leave you with that warning thought.

Ms K. J. Byrne, F.I.A.: I have recently completed a dissertation for my MBA in consumer understanding of risk. As part of this, I read much about risky decision making, including many of the papers which the author has cited. One of the things that I thought, when I started looking at this subject, was that, being an actuary, I knew what risk was. However, I soon came to discover that it is not quite as straightforward as that.

We tend to think of risk in terms of probabilities and being able to place values on things, but what we find when we read some of the literature is that this is just, perhaps, one end of the spectrum of views. There are plenty of authors, like Kahneman & Tversky (1992), with their prospect theory, and many others whom I have found. What these authors look at is the behavioural aspects of risk, as well as the probability aspects of risk. Some of the authors have identified that risk is not a single thing, but that it is actually continuous. There are many different facets of it. At one end, we have the probabilistic end, which is where we tend to focus and where experts tend to focus. At the other end we have the contextualist end, which is based more on feelings and the context in which decisions are based.

I agree with what has been said about widening the actuarial syllabus to include some of these other aspects of risk, not just probabilities, but also the more behavioural aspects. One thing which we might expect is that, being actuaries, we are always rational and we make rational decisions. I know that some of the management decisions which I have made have been far from rational, and have demonstrated some of these things, like loss aversion, etc., that is in the literature. When we read in the literature about some of the choices which are open, they look very simple. If we work it out, the probabilities are the same. Why would people choose this one over that one? However, in practice, it is never that simple. The reasons why they chose those simple decisions was to show how irrational people could be on very simple things.

I did a session at the Life Conference on the research which I have done, and one of the things which I did was to talk about representativeness. I threw that over to the audience, gave them an example, and asked them to vote which they thought was the most likely from four different scenarios. I was unsure whether I would get the rational answer or the behavioural answer. Actually, I got the behavioural answer, and people actually chose the wrong solution, because it was more stereotypical of what they expected.

So, I do not think that we have all the answers, and one of the things which we should be doing is to be aware of our own fallibilities and to try to make more effective decisions by being aware of them. We should also take on board lessons from other people and other disciplines.

Mr Turvey: In ¶5.2, the author dismisses game theory, and says that it probably does not apply. I reject that. I find game theory an interesting topic, and I have promised myself that I am going to understand it much better. Game theory is a mathematical way of modelling what is going on in a particular business or a particular industry. That is exactly what we need; to apply the ideas and the language of game theory to the way in which the industry acts and reacts. Companies compete with each other. They need to determine strategies which take into account the strategies of other people.

There is a book called *Coopetition*, which I can recommend as an amusing, easy read, and it left me with all sorts of thoughts as I went through it. What are we missing in the life assurance industry that other people have discovered as ways of looking at their businesses? I recommend the book.

Mr M. A. Salman: There have been comments on the inclusion in the current education syllabus of behavioural finance theories. They are currently there, but, like most things in the actuarial examinations, a simple acronym and looking at a couple of past exam papers will get you through.

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What is important is that the application of these to the running of a life office or of other financial institutions is given greater weight and is examined further in future.

I now pick up on something that Mr Sharma said. Getting non-actuarial people, such as accountants and lawyers, more heavily involved in the decision making process, thereby improving our diversification, is all well and good, but I think that the reverse needs to apply. As a young member of the profession, I want to see us get more involved in the work of other people in other companies, as risk masters, so that, ultimately, there is more work for the profession in the future.

Mr N. B. Masters, F.I.A.: I shall pick up a couple of thoughts on the template for the future, and on some of the things which we could do better. I was certainly struck by some of the issues given in ¶17.2(8), which is about adequate thinking time. I am not convinced that the problem is adequate thinking time. I think that it is more about challenging thinking. I was taken aback, at a recent meeting, where we were talking about ICAs and what should be taken into account. People, quite rightly, said: "We ought to think about the implications should gene therapy really achieve a great breakthrough. If it does, the problems which we now have with longevity are nothing compared to what we are going to see in five or six years' time.'' That has very serious capital implications. We do not like to think about these things, but it is exactly these areas about which we do have to think.

It would be great if we could have a way of thinking 'out of the box', but remain within the structures which we have at the moment, and yet look seriously at some of these issues.

Reacting to previous speakers, the answer on embedded value and other measures is that you need all of them. I have seen some tremendous improvements in management by using embedded value techniques to pick up companies which were running their capital into the ground. On the other hand, embedded value is not the whole answer. You do have to be sceptical about the assumptions, you do have to challenge them, and it is certainly not the only way forward. I believe that embedded value is a great piece of management information. It tells you whether or not management is creating value. I do not think, necessarily, that it tells you whether you are creating funds which you can distribute as shareholder dividends. I think that that is a different measure. It should be a more conservative measure.

Maybe, now that we are beginning to scratch the surface of management behaviour, we ought to start thinking about what we are putting into realistic balance sheets for manager behaviour. I am not sure that we have thought about that as much as we should.

Mr M. R. Kipling, F.I.A.: Mr Masters has started a theme about management which I now continue. With the regulatory changes that are, at present, taking place within the life insurance industry, quite a lot more decision making responsibility is being placed on management for the first time, not least, in theory, in the field which actuaries have kept for themselves for the past 100 years or so, that of actually deciding what basis to use for the year end valuation. Previously, most management teams did their best to steer clear of very much involvement in this part of the process. Within the next few weeks, they are going to be presented with a very large number of choices about, for example, annuitant longevity, about the economic assumptions to use in stochastic models, or about the allowance to make for future mis-selling costs and other operational risks. A huge quantity of decisions, often in areas where boards have never had to make decisions before, are going to have to be made.

I hope, as Mr Masters said, that the quality of management is greatly improved. However, I should like to go back to one or two cases where I thought that good, quantitative analysis was presented to management, and surprising decisions resulted. I hope that these will illustrate something about the ability, at least in the past, of management to assess quantitative information and, in particular, to balance quantitative and qualitative information, and so to know on which to place greater reliance.

The first example goes back about 15 years or so, and relates to when, as a junior actuary, I was working on the sales side of a life company. I was asked to produce some sales force

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remuneration forecasts for the coming year. I went about it in a fairly scientific way, examining the per capita sales which had been achieved in the current year, applying an achievable rate of increase, whilst taking into account the reducing size of the sales force. I also took into account the rate at which policies were lapsing, because the sales force was penalised, in terms of its earnings, for business which went off the books. I produced a net projected earnings figure for the sales force, with what looked like reasonably stretching per capita new business targets, but with a relatively small increase in gross production, reduced by a rather larger growth in expected terminations, as an almost inevitable consequence of the larger historic sales force size.

The sales director took one look at it, and said: "This is simply not acceptable. Net income has to be 50% up on this year.'' The whole of the scientific input was ignored, because it did not give the answer which was being sought. The result was an unrealistic remuneration target that never came close to being achieved.

My second example relates to the decision on whether or not to enter stakeholder pensions. One of the most important considerations was the rate of persistency. Assuming a low enough rate of persistency made stakeholder pensions look attractive, but, simply by looking at the natural rate of turnover of members within pension schemes, the rate at which schemes terminated because employers closed down, and the rate of turnover because employers switched between pensions providers, one could build up, reasonably scientifically, a rate of expected persistency which made stakeholder pensions look positively unattractive. The unattractiveness increased if one considered that other players might only enter the market in 2011 or 2016, when large funds will have been built up and all the initial losses will have been incurred in running the schemes for ten or 15 years, whilst small. Then there will be a nice 'pot', which can be acquired at a relatively low rate of commission, and run extremely cheaply, just at the time when the original players were hoping to make some profits! Perhaps the firms which have not entered yet have intentionally made that decision and are biding their time, but will this turn out to have been a wise decision? The Government has recently 'chickened out', and has lifted the maximum on stakeholder products. A decision to 'buy' a share of the pensions market for four or five years may yet turn out to have been correct after all! Of those firms which did so, or tried to, how many, I wonder, used persistency assumptions which are proving to be accurate?

What I feel has been lacking in most teams of management which I have been advising over the years is a structured and scientific approach to decision making. Too often, decisions have been made on irrational grounds, or, what is possibly worse, on what are rational grounds relative to the inappropriate measures which are being used to assess the performance of that management team.

If one goes back a few years, then annual profits from a with-profits company were pretty stable. It was the metaphorical freight train, which has a high momentum and takes a very long time to stop. It is going to take 20 years, or possibly a huge derailment like the last few years, for the 10% of policyholder bonus every year to change very much. What made news, therefore, was not the change in profit from year to year, it was the sales figures. Sales figures were, therefore, a very big driver of management direction, which led to inherently misdirected measurement systems and management performance.

Embedded value may have been a better system for reporting, but even this can be misdirected if key assumptions are excessively favourable. An example might be new business profitability. Fortunately, I think that the new FSA regime, particularly the requirement to hold capital at a level which covers, to a high probability, all the risks realistically assessed, is going to make boards much more orientated to managing capital on a scientific basis. They will have to understand all of the risks to which their firms are exposed, and will have to get better at balancing the views of a range of experts. The day may well be coming when we will have more managers and directors with academic, technical and mathematical backgrounds, and rather fewer with a background in sales and other traditional areas. This, potentially, can be a good development.

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Ms H. C. Johnson, F.I.A.: As a member of the profession who no longer works as an actuary, I was delighted that a paper such as this was coming to a sessional meeting, and that the profession was going to discuss a subject about general management.

I have added applied psychology to my actuarial background, and I work with boards and senior management teams on the human dynamics and culture of organisations. In my experience, working both in our industry and much wider than this, decisions are made on emotional grounds very often, rather than on purely rational grounds. I agree with Mr Sharma's comments, that the diversity of a decision making group, and the culture of that group, are the key things to get right in order to come up with a sensible, rational decision. If the culture is right, and the decision making team is aware of the issues covered in this paper, then the process will emerge, and it is far more likely that a rational decision is made.

I am really encouraged that the profession is open to discussing these issues, and thinking about what contributions we can make as to how decisions are made, particularly in life insurance companies.

Mr D. J. McLean, F.I.A.: I welcome the idea that boards of management should be much more balanced and open to a rounded approach to problems rather than to a technical approach, but I wonder whether we need to balance that by acknowledging that some of the difficulties which we have faced within our own industry are because we, as actuaries, have, at times, not been technical enough, and not kept our strictly technical skills up to speed. I recognise that people are frivolous if they laugh at the double integral in the paper, but there are times when our mathematical skills have not moved ahead as fast as they could, and we have genuinely been frightened of double integrals.

My second analysis of what has been said so far relates to the extent to which, with the benefit of hindsight, we would have made better decisions and got it right. Perhaps much of our experience during the period which the paper describes is a period in which people have made wrong decisions and done very nicely on the back of them. I think that this is particularly true of some of the mutual companies, which have made some very foolish decisions, and then been fortuitous at the time when they have been taken over. Across the industry, there has been much random noise in the way in which those decisions have been rewarded or not. Judging some of the other issues with hindsight, against that background, is, perhaps, a little tricky.

Mr H. W. Froggatt, F.I.A.: Mention has been made of the double integrals in ¶9.6. In terms of complexity and technical analysis, double integrals are not very advanced. In the context of the paper, they arise from using a single measure of value and integrating over all possible scenarios and over time.

Life offices, in particular, are complex entities, affected by many influences (independent and dependent). The independent variables could be used in the evaluation of possible scenarios. If this were done, the double integrals of the paper could be re-expressed as higher order integrals (with an integral sign for each independent variable, and with an additional one for time)!

Mr A. Saunders, F.I.A.: I have some comments, based upon my own experience, which ties in with a number of the points made by previous speakers. I am particularly thinking of the tendency to follow the herd, and the author's inverse Murphy's law. During the period when bonus rates first began to reduce, why did firms hang around for so long before they actually bit the bullet and started to cut back on bonuses? Basically, they were following the herd because of the way that firms were perceived in the market.

I remember anguishing about these things over a number of years. I have been involved in preparing projections and advice which said that bonus rates needed to be reduced in the light of possible scenarios in which inflation and interest rates decline further, but nothing happened, for a number of reasons. One was the way in which offices were perceived, particularly in the IFA market. If an office cut bonuses more than the office next door, then it was perceived as weak, and its supply of new business became at risk. There was a huge need to stick with the

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herd, and, for a few years, nobody felt strong enough to take any action that stood out from the crowd, until one particular office actually started to raise its head above the parapet. Even then, it took a long time before a general move in the right direction started to gather some momentum.

The other reason was that, whenever I was presenting scenarios for consideration, I found that a version of the inverse law came into play, which is that the future is always going to be more optimistic than the actuary suggests. For example, during the recent prolonged bear market, there was a consistently optimistic view that the market was going to recover in the next year, which persisted for three years as markets came down, before a greater degree of realism started to take hold.

I agree with the author's approach of seeking a more objective decision making process. However, you need a considerable degree more management objectivity in some of the input to make it work. I do not know quite how one achieves that. It seems to me that management frequently has an over-optimistic view of what is possible. The person time needed to achieve mandatory developments is always underestimated. Therefore, the amount of resources available to do other things is always over estimated when you are trying to make decisions on them. Markets are always going to be better. The cost and time taken to implement any new administration system is always underestimated. I am not sure about the comments about including, in calculated profits, a proper allowance for all the future costs of your business — I think that firms actually believe that they are doing that. It is just that they underestimate what those costs are going to be.

Also, I thought that the author dismissed game theory too easily. I am no expert in game theory, but I think that the comment was that it does not work out as a zero sum game. I suspect that the answer is that there are probably some more players in the game which have not been identified. One, I suspect, is the customers, who might actually have done quite well for a while by, possibly, getting insurance cheaper than they should have done, or getting higher bonuses than they should have done, for a period. It depends which generation of customers you are, of course. I wonder whether the regulator is also potentially a player in the game, although I could not quite work out what its objective is, apart from, perhaps, being able to sleep at night.

Mr P. R. Bradshaw, F.I.A. (closing the discussion)**:** One of my heroes is Warren Buffett, who describes investment as simple, but not easy. I think that that is what the author refers to in the context of life company management. It is simple, but it is surely not easy. In ¶9.7, the author refers to how you run a life company: you see what you can do; you decide what matters; and then you differentiate between them. That sounds extremely simple, but it is most certainly not easy.

I now make some personal comments, and then will move on to try to summarise the discussion. While we should all welcome the opportunity to manage better, one of the themes which I will come on to is that we should especially welcome external influences. Sometimes, when I read this paper and now have listened to this discussion, I have wondered whether the life industry wears a hair shirt or is over-arrogant. Some of the observations in this paper are slightly hair shirtish. Picking up on Mr Sharma's point, there are many other examples, as well as Coca-Cola, of industries which made stupid decisions. Consider the sheer loss of shareholder value in the bid for third generation mobile phone licences, which seem to have changed from being assets worth invaluable sums of money to things which were more of a liability in the space of about six months. Then, closer to home, maybe, consider the customer and shareholder value destruction in sister industries, which occurred in split capital trusts and technology funds. If you talk to some of the shareholders who own split capital trusts, maybe those shareholders did rather worse than they did in life companies!

I support one of the author's conclusions, that a decision not to do something can be really valuable. Mr Robinson really stole my thunder on this point. I then thought about what were the individual best decisions which I had seen over the last 30 years, which is the positive thing to do. Perhaps sadly, I came to the conclusion that both of my best choices were decisions not to do something. The first is the one referred to by Mr Robinson, as a tremendous increase in mutual

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ownership value created by refusing to do pensions business, when it was self-evident that that company was not going to succeed in that market, but could succeed in another market. I think that that is my number one best decision over the past 30 years.

My second example concerns those few companies which recognise that controlled distribution is a specialised, difficult and mostly value destroying activity. Companies which recognised that in the 1980s went on to prosper. Maybe, my advice is that we ought to think back to 1988 and the herd instinct to move into controlled distribution, when we think about the depolarised world.

In summing up the discussion, the first and the strongest point to make is that the one piece of consensus is everybody's welcome of the paper. I think that we all agree that there is a huge value in it as a start to a process which, almost by definition, will never finish. However, the requirements to get more objective about decision making, to put it into the education syllabus, and for us to train our students and ourselves in decision making does seem to me as fundamental for any business, but most especially for a business like the life insurance industry, which is entrusted with other people's money.

So, I heard three key things in this wide ranging discussion. The first was openness, open doors and the desire for a diverse team. That very much included Mr Sharma's comments that the paper relies on external academics, and has not looked, particularly, at the Institute for academic leadership in this area. Hooray! Let us open our doors to diverse influences from everywhere. Everybody agrees with that, but certainly, in my experience, it is easier said than done.

The second point which emerged is to learn from, and to be challenged by, outside influences, to hypothesise a board where everybody is genuinely challenging. I think that that is the only way to go against the herd instinct.

The third issue, which to me opened up a whole bundle of issues, was the loose area of governance which I heard covered in many comments. Certainly, there were a lot of comments made on accounting; several somewhat cynical comments about embedded value; and a lot of implied cynicism about the ability of management to draw up 'true and fair accounts'. As somebody who has drawn up accounts, may I say that it is pretty easy to 'cheat'. I say that with my tongue in my cheek.

One of the lessons which I learnt in running a business was that, if you have a salesforce and you put an incentivisation programme in for them, you have to change it every year. Why do you have to change it every year? It is because a good salesforce will learn how to work those rules against you. I do not care how clever you are, how good the rules are, you have to change them every year. May I say that that somewhat cynical appraisal is my only view about how you measure management in a business going forward. You cannot define what you want in the long term and achieve perfect alignment, especially in an industry where shareholders can actually only define success over decades.

So, I drew from this discussion those three points: the necessity for openness; the necessity to be challenged; and the sheer difficulty of governance and making sure that long-term value matches management goals.

Some speakers talked about the lessons which the author tried to draw from historic mistakes. I did not hear a consensus that any objective decision making would have changed the landscape on stakeholder pensions. I share that cynicism. If the Government tells you that you have to go in one particular direction, it is difficult and brave not to go in that direction. I was rather disappointed that the discussion focused on that rather than on the huge equity madness that prevailed in the late 1990s, and the complete reluctance of management teams to listen to an argument that increased exposure to bonds was a good thing. I was reminded, when I read that part of the paper, of Mr Buffett, who, in the late 1990s, said that he no longer understood what investing was about, but he had the courage to stick with what he did understand. Maybe courage is one of the things that you need in making decisions in life companies.

Mr M. Iqbal, F.I.A. (replying)**:** The point was made that value destruction is not unique to life

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companies. Indeed, that is the case, but the paper was about life companies, so I did not go outside life companies to state examples. Having said that, it is useful to learn from other industries. In many cases it is quite easy to see errors in them. It is easier to see the mote in someone else's eye than the beam in one's own eye, but the problem is actually to transfer that knowledge, and to say: "What does that mean for us?'' I remember, ten or 15 years ago, laughing at the American savings and loans institutions for getting into mis-matching problems, yet we are sitting on similar problems ourselves today.

Management objectivity, in terms of decision making, is quite a challenge. In an earlier draft of this paper, I said that the only way round it was to have the decision making process independently verified. That was struck out by the scrutineers, because I am a consultant, and so it might sound biased. I think that it is very difficult to have a culture where you have internal devil's advocacy. It just does not work. It may work for year or two, but it will not work for ever. The kind of person who gets to be a chief executive will not often tolerate dissent.

A couple of speakers referred to the suggestion that profits be independently computed. I did not put that forward, but I said that it would be a good thing, but why should we single out life companies compared to others?

On game theory, I think that the biggest lesson from game theory is that the true source of uncertainty is in the actions of others, and, to that extent, game theory does apply.

The opener wondered whether poor decision making was a question of process or data. I think that Mr Sharma answered that by saying that, if it is an isolated case, then that may be so; but if it is generic, then I think that data and process are part of a decision making process anyway.

The other thing that the opener said in relation to the MBI was that he thought that that was how companies made their decisions, that they did look at what the options were and what the resources available were, and looked at what decisions added most value. That is not my experience from the companies which I have seen. I think that, generally, there is a prioritisation process, and the focus is essentially on capital or IT, and not on anything else. I have seen many companies where you see positive statements from the chief executives, but, when you go into the organisation, you find chaos, because new product developments are regularly started and abandoned, and staff do not know where they are.

Concerning Mr Kenna's contribution, there are several reasons why free assets fell from 34% to 6%. Part is, of course, that, in the past, there were margins for bonus rates within the free assets, so that it is not really a sensible statistic to use, but it was the only statistic which I had which went back 18 years.

I take on board everything that Mr Seymour said. If you sort out the culture, then the process follows. In spirit that is right, but I do not know whether that is completely the case.

Ms Byrne referred to a wider range of behavioural papers, and Mr Sharma said that such papers should be in our reading syllabus. There is more progress than is obvious at first sight. There was a paper earlier this year on operational risk in non-life insurance (Tripp *et al.*, 2004), which refers to behavioural science. The problem is, basically, that actuaries are rational individuals, and tend to disregard behavioural aspects. Whether having it in the literature will necessarily bring about a change in behaviour is something that remains to be seen.

Mr Saunders talked about herd instinct. I think that it is common throughout all businesses, and not just to the life industry. If you look at how banks compete with each other and look at each other's trading performances, it is probably a common human failing. It may be that market consistency is, effectively, another aspect of herd instinct, because everyone will converge to the same approach, which reduces the risk of things coming out of line with others, but also increases the likelihood of all being wrong.

The President (Mr M. A. Pomery, F.I.A.): Listening to the discussion and reading the paper, it seems to me that anybody who takes decisions in a management role is taking them in the light of an uncertain future. The role of actuaries is to explain the implications of alternative courses of action in an uncertain world. I am trying to get that down to a short enough phrase to replace 'Actuaries make financial sense of the future'. I have not quite got there yet!

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As part of what we are trying to do, to make changes in our education syllabus to recognise that actuaries need to understand the business framework within which their work and their advice take place, I am glad to say that we now have business awareness in part of our examination syllabus. The recent Chairman of the Education Board has told me that we now allow an MBA as an exemption in place of a specialist technical subject in our examinations, so we are moving in the right direction.

As a pensions actuary, I was fascinated by listening to people talking about stakeholder pensions from the other side of the fence. I was also fascinated by the discussion about the impact of falling gilt yields and irrational exuberance in the equity market from a different point of view. I do not know whether there are any other pensions actuaries in the audience — I doubt it, since this is very much a life company paper, as its title suggests. I only wish that more actuaries would listen to discussions on papers in different practice areas, because I am sure that they would learn a huge amount from them.

I should like to thank the author, not least because he introduced me to a delightful quotation from Mr Ritchie Benaud: "Captaincy is 90% luck and 10% skill, but do not try it without the 10%.'' I think that, if you switched the word 'Presidency' for 'Captaincy', you are probably about right. I have been very lucky tonight, because a large number of you have joined in the discussion, when, at one stage, it looked as though it might be short. Thank you all for that. What we lacked in quantity, compared with the last sessional meeting, we certainly made up for in quality. I thought that we had an excellent discussion, and particularly enjoyed the two contributions on behavioural finance. The more we have of that thrown into our discussions here, the better.

I ask you to join with me in thanking the author, the opener and the closer.

WRITTEN CONTRIBUTION

The author subsequently wrote: It seems appropriate to write a few lines, as I did not do justice to the comments by the speakers on the day.

Generally, I was disappointed that there was not much discussion on the approach proposed in the paper. The opener invited a discussion on MBI, but no one took up the challenge. Much criticism was heaped upon embedded values, but there was no discussion on the accounting changes which I suggested.

There seems to be common ground that the right blend of behavioural skills is essential. Mr Sharma dwelt on this at some length. It is also pleasing to note that an actuary, Ms Johnson, is making a career out of advising companies on how to do it.

Mr Turvey commented on the need better to understand systemic risk. I totally agree. I refer to it in ¶6.3, but, perhaps, I did not dwell on it sufficiently.

Mr Masters wondered what allowances firms were making for management behaviour in realistic balance sheets. At a technical level, the question is whether the management actions being taken credit for in the ICA calculations are realistic, particularly when they relate to the management of the future. (Imagine a firm of head hunters putting a circumscribed job description into play!) More pragmatically, the paper had suggested replacing ICA with an IRA as a check on management optimism on its ability to deliver.

I found myself in agreement with practically all of Mr Saunders comments, as they corroborate my own experience.

The opener referred to falling bond yields, and wondered whether the inaction was due to a flawed process or poor information flow. Mr Sharma answered that by saying that the latter was a sub-set of the former. I think that the problem is a combination of herd instinct (a fear of being out of line) and lack of adequate thinking time. Certainly, I regard my inability to persuade people to take notice, as I mentioned in my opening remarks, to be the biggest single failure of my working career. One of the consequences of herd instinct is that it is, indeed, possible for all of the people to be wrong at the same time, making peer group benchmarking a dangerous exercise.

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Mr Sharma referred to an 'actuarial monoculture'. I think that that is unfair. Whilst that certainly applied at the Equitable Life and at another mutual which had a very public spat with the FSA, in many companies there now exists a mix of competencies (though, not necessarily, a complementary mix of behaviour types), and often, as Mr Saunders stated, it is the sales/marketing people who prevail. Had Mr Sharma referred to a 'company monoculture', I would have agreed with him. External challenge is essential if the entire management team is home grown.

A variation of the theme is the danger of someone holding the same job too long, and, relying on past analysis, failing to recognise that the environment has changed. An example of this was when I was touring the country talking of a low inflation environment and the need to do some asset/liability matching. One response which I met was: "I do not need to worry, I have tested my life fund, and it can withstand another 1974 scenario'', quite missing the point altogether.

Several speakers discussed the decision making process relating to the decision whether or not to enter the stakeholder pensions market, and whether my comments had the benefit of hindsight. I still have the slides which I used to persuade a number of pension providers not to compete. Nobody challenged the argument that there was no money to be made (low lapses and high average case size appear to add value, until you factor in the risk of the business being enticed away by a competitor just as it reaches critical mass). However, without exception, they felt that they had to be 'in the market'. Was that a rational decision, arrived at by considering the cost/benefits of competing *vis-à-vis* not doing so? Had they correctly allowed for the opportunity costs in terms of failing to address other issues, such as falling bond yields?

Finally, the closer mentioned that management was simple, but not easy. I wish that I had thought of that elegant phrase. It encapsulates much wisdom, and is a good point on which to end.

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