B.A.J. **6**, IV, 801-816 (2000)

STAPLE INN READING
2000

THE ACTUARY AND THE LAW

READER – LORD BRENNAN, Q.C.

[Delivered to the Institute of Actuaries, 12 July 2000]

ABSTRACT

The lecture discusses the issue of actuarial evidence in personal injury cases, and how the courts have been diffident towards actuarial evidence and the utility and importance of actuarial expertise, Until recently lawyers have not understood the ways in which actuaries work with probabilities. The lecture then shows that now the law has adopted actuarial thinking in several significant ways, and in particular in damages and personal injury cases. The discount rate for calculating the multiplier for future loss is discussed, as is the new area of risk assessment and conditional fees. Lawyers need actuarial help where appropriate, and both face the daily problem of applying the laws of probability to human activity.

KEYWORDS

The Law; Actuarial Evidence; Probability; Ogden Tables; Personal Injury Cases; Damages; Conditional Fees

INTRODUCTION

Actuarial skill and the assessment of risk go hand in hand. Insurance was the engine by which actuarial expertise has prospered. Lloyd's then and now is prepared to insure almost anything. In the 18th century, at the time of Edward Lloyd, underwriters were willing to write policies against almost any kind of risk including (according to one history) house-breaking, highway robbery, death by gin-drinking, the death of horses and 'assurance of female chastity' — of which all but the last are still insurable. Now the actuarial profession is at its peak, with demand exceeding supply and the young qualified actuary in his or her mid-twenties being able to call upon a salary of between £35,000 and £70,000.

Everyone has accepted the utility and importance of actuarial expertise; everyone, that is, except our courts. They have been historically extremely diffident towards actuarial evidence.

In *Mitchell v Mulholland* [1972] 1 QB 65, 77, Edmund Davies, L.J. summed it up:

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

> "The need for caution in regard to actuarial evidence, because of its general nature, has long been recognized. Lord Pearson said in *Taylor v O'Connor* [1971] AC 115, 140:
>
> > "... I do not think that actuarial tables or actuarial evidence should be used as the primary basis of assessment. There are too many variables, and there are too many conjectural decisions to be made before selecting the tables to be used. There would be a false appearance of accuracy and precision in a sphere where conjectural estimates have to play a large part. The experience of practitioners and judges in applying the normal method is the best primary basis for making assessments."
>
> For these reasons I am not persuaded that the actuarial method has any advantages over the conventional approach. On the contrary, I think that it may ensnare one into treating as virtual certainties that which in truth are mere chances."

The conventional approach when I was first at the Bar was often encapsulated by the calculation of the multiplier, by which you simply divided the expected life span by 2 and added 1 up to a maximum 16 for loss of earnings and 18 for whole of life loss!

Surely an active role of the actuary in the law would have produced more sophisticated techniques than that!

What is the Present Role of the Actuary?

"Actuaries are trained to make financial sense of the future. Actuaries are able to analyse past events, assess the present risk involved, and model what could happen in the future." So states the literature of this Institute.

Historically focused on the insurance and pensions industry, actuarial skills are now being applied to many other areas of finance and business — corporate finance, investment, healthcare, derivatives, public finance initiatives and major capital projects.

Thus the actuary will now advise on:

(a) risk assessment;
(b) consequent financial planning; and
(c) payment systems related to risk.

All of this will be regarded by the public as based on independence and integrity.

In advising on revenue flows and payment obligations, stretching into the long distance, the actuarial role is expanding enormously. Recent projects include:

(a) development of a new standard for reporting on portfolio risk;
(b) pioneering the use of institutional asset/liability modelling;
(c) advising on the use of derivatives for risk management within fund managing and commercial and investment banks;
(d) analysing the wider implications of medical advances and the treatment of disabilities;

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

(e) assessing the impact of the ageing population; and
(f) analysis of risks for major projects:
  (1) the Channel Tunnel rail link;
  (2) financing of new rolling stock for the United Kingdom privatised rail industry; and
  (3) even the Millennium Dome — where risk in relation to payment obligation is of acute present interest!

In all of these areas, both traditional and modern, the interrelationship between the actuary and the law becomes ever more involved.

The Historical Attitude of the Law to the Actuary

The courts were, in the past, inured to the idea of the actuary dealing with insurance and pension calculations. It is only comparatively recently that actuarial evidence has come into play in a significant way in the courtroom.

In *Mallett v McMonagle* [1970] AC 166, 177, Lord Diplock in the House of Lords had regard to the number of years that a dependency would have endured in a fatal accident claim as the number of years between the date of the deceased's death and that which he would have reached on retiring age. That and the mortality of the widow were calculable from actuarial tables; but the chances of earlier death, illness or injury or the widow's remarriage were not. Hence he returned to the conventional approach in a fatal accident claim whereby he concluded:

> "Having regard to the uncertainties to be taken into account, 16 years would appear to represent a reasonable maximum number of years' purchase where the deceased died in his twenties."

That was based on interest rates appropriate to times of a stable currency, such as 4%-5%, which he recommended should be adopted.

In *Hodgson v Trapp* [1989] AC 807, Lord Oliver was explicit:

> "It would, I think, be extremely undesirable that trials of personal injury cases should be encumbered with evidence from actuaries and accountants directed to demonstrate the unprovable as scientific fact for the purposes of an exercise which is, in its very nature, incapable of being scientific."

He explained his view on determining future loss:

> "In the making of that assessment, account has also to be taken of a number of unpredictable contingencies and in particular that the life expectancy from which the calculation starts may be falsified in the event by supervening illness or accident entirely unconnected with the event for which compensation is being awarded. Such an assessment cannot, therefore, by its nature be a precise science. The presence of so many imponderable

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

factors necessarily renders the process a complex and imprecise one and one which is incapable of producing anything better than an approximate result."

Yet, by the time of the decision of the House of Lords in *Wells v Wells* [1999] 1 AC 345, actuarial tables were being treated as, at the very least, a reliable starting point, and perhaps the best material available for a framework within which to calculate future loss.

So, unlike the United States of America and some other jurisdictions in which actuarial evidence is well accepted, here it was regarded until recently as imprecise, speculative and reliant more on prophecy than calculation.

But, as I will seek to show shortly, the current approach following *Wells* shows a radical change in some areas of the law.

Why was the Law of England and Wales averse to Actuarial Evidence?

The simple explanation is that lawyers have not understood what the actuary is about. How could he or she really be relevant to the resolution of real issues in ordinary life?

There was in the origins of statistics and actuarial thinking an inevitable clash between reality and abstraction when seeking to apply any laws of probability. The common lawyer abhors abstraction, and abides by practical common sense; but was this too restrictive a view of how to judge probabilities?

A theory of probability can define chances at the roulette wheel or in the Lottery. The European roulette wheel has 37 slots and the American 38. Each slot has a different number. Mathematical analysis is circumscribed as to number, or alternate colour, when determining chance when gambling at the roulette wheel.

But in real life, relevant information based on human activity is essential. In human life we never have all the information we need. The past is never complete in its sources.

The science of the actuary goes back to the publication of mathematical treatises by Christiaan Huygens, John Graunt, Jan de Witt and Edmond Halley in the late 17th century. But of the founding fathers of modern actuarial thinking, three deserve special mention and acknowledgment by the legal world in their contribution to the laws of probability.

Of the Bernouilli family, Jakob, in the late 17th century, established the need for information, the integrity of data and the relevance of measurement applied to probability.

His theorem for calculating probabilities a posteriori was known as the Law of Large Numbers. The Law basically tells us that the average of a large number of events will be more likely than the average of a small number of events to differ from the true average by less than some stated amount.

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

Soon after Jakob, Abraham de Moivre in the early 18th century, in his work *The Doctrine of Chances*, put matters elegantly in defining risk as chance of loss:

> "The Risk of losing any sum is the reverse of Expectation; and the true measure of it is the product of the Sum adventured multiplied by the Probability of the Loss."

Resolving the problem of how to quantify what is a significant result in assessing risk was greatly advanced by de Moivre. He devised the concept of the 'bell curve'. In it the largest number of observations is clustered in the centre close to the average, or mean, of the total number of observations. Then, from the top of the 'bell' symmetric curves descend, flattening out so that observations far from the mean are less frequent than observations close to the mean.

The shape enabled him to calculate a statistical measure of dispersion around the mean — the standard deviation. This was, and is, critically important in judging whether a set of observations comprises a sufficiently representative sample of the world of which they are just a part. In any normal distribution approximately 68% of the observations will fall within 1 standard deviation of the norm of all the observations. 95% of them will fall within 2 standard deviations of the mean.

In the Abbeystead explosion case, *Eckersley v Binnie* [1988] 18 Con.LR 1, the Court of Appeal had to consider the use of standard deviations. An important area of the evidence in the case was a set of readings from Draeger gas test machines. They had been used to measure the presence of methane in the atmosphere during tunnelling works. There was only a small number of readings. The question was whether they were sufficiently representative to indicate whether there was a real risk of danger from methane in the atmosphere of the tunnel. The majority fell within one standard deviation of a safe mean, whereas the vast majority fell within two standard deviations. Only one or two were in what can be described as the 'danger zone', and these were well outside two standard deviations. The question was raised as to whether the tests, because of their number and content, could reliably indicate the absence or presence of a methane risk. Without the concept of standard deviations a judicial decision on the issue would have been superficial and unscientific.

The final progenitor of modern actuarial thinking was Bayes. The Bayes system of statistical inference in action is well known. It compares posterior probability with the priors. So new information is used to revise probabilities based on old information. This was, and is, of great importance. In recent years the use of DNA science to establish the identity of the perpetrator of a crime has led members of the Bar to cross-examine on, and make speeches to, juries and appellate judges, about the reliability of DNA tests and whether the Bayes Theorem, when applied to DNA test data, enables a jury to be satisfied of the criminal burden of proof beyond a reasonable doubt.

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

In *Regina v Adams* [1996] 2 Cr App R 467 and *Regina v Adams (No.2)* [1998] 1 Cr App R 377, the first Court of Appeal had quashed a rape conviction where the only evidence was based on a DNA sample, on the grounds that the trial judge's directions to the jury on the Bayes Theorem evidence, used by the defence, left them without adequate guidance as to how to evaluate the DNA evidence in the light of the non-DNA evidence, and had ordered a retrial. On appeal, after conviction on retrial, the Lord Chief Justice noted that again the prosecution case had rested solely on the DNA evidence that the profile from a vaginal swab matched that of the defendant's blood sample. The court reviewed the statistical evidence of the random occurrence of that match, which had been the subject of criticism in expert evidence by the defence. The defence expert had sought to apply the Bayes Theorem as a means of expressing the non-DNA evidence in terms of a mathematical probability, which could then be more readily be applied to the DNA figures, so as to reduce the probabilities if the jury judged it appropriate. The evidence was long and complex, including calculations and detailed explanations. The court accepted that the Bayes Theorem was a soundly reliable and logical approach in some circumstances. However, the court had "the greatest reservations about its use in jury trials". The court regarded reliance on evidence based on exposition of the Bayes Theorem "as a recipe for confusion, misunderstanding and misjudgment, possibly by counsel, probably among judges and almost certainly among jurors".

The court was clearly of the opinion that in cases such as this, lacking special features (which were absent here), expert evidence should not be admitted to induce juries to attach mathematical values to probabilities arising from non-scientific evidence adduced at the trial.

The approach of courts, in the past, to actuarial thinking was sometimes based on a lack of understanding and an undue attachment to the supposed unpredictability of chance and risk. At other times the virtue of common sense was enough of a basis for a factual decision on probability. "The qualification [i.e. the actuary] is a qualification in applied common sense, and common sense is a commodity in short supply" (Geraldine Kaye, actuary and managing director of an actuarial recruitment agency). The question arises — who has the more common sense, actuary or lawyer? Actuarial and statistical concepts are very relevant to judicial decision making, especially when aligned with common sense.

Early and Late Recognition in the Law of the Role of the Actuary

Now the law can be shown, by historical circumstance, to have adopted actuarial thinking in several significant ways.

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

The Government Actuary's Department

The first time an actuary was employed in the civil service was in 1822, during a period of explosive growth for the life insurance industry. As social provision and the need for insurance control became increasingly important during the 19th century, government came to rely more and more on actuarial advice. Following the 1908 Old Age Pensions Act and the 1911 National Insurance Act, the post of Government Actuary was created in 1917. Even so, it was not until the expansion of the state's role in pensions, social security and healthcare after the Second World War that the importance of the profession's contribution to the civil service and the government began to be consistently appreciated. Today the Department's work is of such significance that it has become an essential adjunct of policy-making itself.

The Government Actuary's Department has operated as a separate government department since 1919, financed by means of a Parliamentary Vote and providing actuarial services to ministers and government departments. As its role and reputation develops, a number of paying clients have been taken on from the wider public sector of the U.K. and some from overseas.

Since 1995 the Department has been on a full net running costs control basis, monitored by the Treasury only on its expenditure net of fee income.

The areas of interest of the Department indicate the strong legal background to actuarial work in government. The Department's work includes occupational and personal pension schemes; demography, including the production of life tables and national population projections; insurance supervision; compensation for loss of pension rights in industrial tribunals; and actuarial tables for use in personal injury and fatal accident cases — known as the Ogden tables.

The Ogden Tables

Slowly, lawyers, and later judges, have come to accept and rely on the Ogden tables in calculating the multiplier for future loss in both personal injury and fatal accident cases.

Section 10 of the Civil Evidence Act 1995 provides that the court may take account of them. In the Lord Chancellor's Department's recent consultation paper on damages, it is promised that the section will now be brought into force.

In *Wells v Wells* [1999] 1 AC 345, the House of Lords unanimously concluded that investment in Investment-Linked Government Stock (ILGS) was the most accurate way of calculating the present value of the loss which claimants would actually suffer in real terms. They held that the court should calculate the damages on the assumption that the claimant would invest prudently.

Sir Michael Ogden, Q.C.'s working party had recommended, in 1984, and again in 1994, that the discount rate should be based on the assumption that funds would be invested in ILGS.

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

This recommendation was endorsed by the Law Commission in their report No. 224 on 'Structured Settlements and Interim and Provisional Damages' in 1994.

In *Wells* the House determined that a discount rate of 3% p.a. net was reasonable, based on the then experience of ILGS. They produced the 3% by rounding a three-year average. In particular, they determined that the Ogden tables should be the starting point for calculating the multiplier. Finally, the discount rate was retrospective, and it would apply to past claims which had not yet been litigated to settlement or trial.

In the field of personal injury, the actuarial basis of the Ogden discount tables has been accepted.

They find their counterpart in matrimonial law in the not dissimilar use of Duxbury tables in determining ancillary relief issues.

Actuarial Principles in Damages and Personal Injury Cases

The Discount Rate for Calculating the Multiplier for Future Loss

Wells radically changed the method of calculating the multiplier, and the House clearly accepted the utility of actuarial evidence. Indeed, Lord Hope suggested, in seeking to determine the correct rate, that any court should use the 'best evidence' available, implicitly including actuarial evidence.

Tables 1-10 of the Ogden tables are based on historic mortality, which probably underestimates longevity. The decision in *Worrall v Powergen plc* (1999) Lloyd's Rep Med 177 established the more appropriate use of tables 11-20, which are based on projected mortality.

However, the recent performance of ILGS has led to calls for the 3% rate to be reduced to 2%.

The *Wells* approach requires calculation of the net rate of return after tax to be derived from a gross rate of return to redemption based on ILGS.

The changes in the investment climate since *Wells* include:

(a) an increase in equity returns;
(b) a decline in ILGS rates; and
(c) inflation reduced and largely controlled.

Thus, despite the *Wells* approach to ILGS, the Court of Protection invests in an equity/ILGS split that strongly favours equity investment. Market performance in recent years justifies their approach.

The Sharpe Ratio is a method of considering the relationship of risk and return over the long-term. It provides a useful measure of equity/gilt performance

The Sharpe Ratio enables a judgement to be made as to how much return an asset offers per unit of risk. It does this by taking the return in excess of

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

cash (which is assumed to be risk free) and dividing this by the standard deviation of return over the period in question.

The comparison of the ten-year rolling Sharpe Ratio for equities and gilts led the authors of the 1999 Barclays Capital Equity/Gilts Study to comment:

> "It is apparent that over the entire period (1928-1998) it is rare for the Sharpe Ratio for equities to fall below that for gilts, suggesting that they are the more 'efficient' asset in terms of the risk/reward trade-off. This is consistent with the findings of previous equity/gilt studies which have demonstrated how the risk of equities declines with longer holding periods."

By comparison, they concluded from another analysis that: "ILGS have consistently offered the least optimal choice in terms of the risk/return trade-off."

Following *Wells*, the subsequent decline in the rate of return of ILGS reached its lowest point in March 1999, now settling at about 2%; but, in the recent case of *Warren v Northern General Hospital NHS Trust* [2000] 1 WLR 1404, the court refused to vary the rate down to 2% or any other figure than the figure of 3% decided in *Wells*.

Will the rate stay at 3% or are there alternatives? This all depends on the Lord Chancellor's March consultation paper on damages and the discount rate and alternatives to lump sum payments in damages.

The paper raises many issues, e.g.:

(a) Should there be variable discount rates? The greater the size of the fund, the greater should be the flexibility of investment with a different rate based on equity/gilt performance. The lower the fund, is it more appropriate to use ILGS? It is suggested that in larger awards a mixed investment of equities and gilts would produce a different formula to the 3% or any other rate emerging from the *Wells* approach of risk-free investment. By contrast, the ILGS investment guide would be used for security for the short-term fund. The longer-term fund would be exposed to some form of the prevailing equity/gilt average.

(b) How will this be done? Whether by the Government Actuary or some advisory panel calls for debate. The critical question is the need for certainty for the insurer and claimants.

(c) Should any prescribed rate or rates be retrospective? Whilst *Wells* was applied to existing claims, an overall retrospective effect would be extremely expensive to insurers who have not calculated their past premiums with this risk in mind. The consultation paper suggests that the reduction in the discount from 4.5% to 3% has produced an annual on-going cost of £115 million and one-off costs of £400 million to insurers. It is estimated that a reduction from 3% to 2% would produce a further annual £100 million cost and a one-off cost of £380 million. The cost implications for insurance premiums are obvious and significant.

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

These costs are substantial, but are all the product of a system designed to achieve fair compensation. That fairness should include considerations of how the claimant can avoid investment risks so as to secure his or her fund for his or her lifetime of need. The joint response by the Faculty and Institute of Actuaries and the Association of Consulting Actuaries is imaginative on this and other issues. They recommend that:

> "instead of a prescribed discount rate which will not change as often as changes in the investment markets dictate, we recommend a formula-based approach with the Government Actuary publishing the discount rate suggested by the formula on a monthly or quarterly basis."

I agree.

They go on to posit whether there might not be different discount rates for different heads of damage, bearing in mind the following:

(a) earnings and care costs need not be tied to RPI when both earnings and care costs traditionally increase substantially more than RPI; and
(b) improvement in overall mortality is likely to be even greater than the Ogden projected tables.

Why not, they ask, put the vitally important future care award into ILGS, and the award for loss of earnings into equities with appropriate discount rates for each head of claim? These are imaginative proposals that seek to achieve fair compensation.

These ideas do not present any practical problems to lawyers and insurers, who have become accustomed to detailed calculations carried out on different bases.

The Incidence of Tax

The discount rate is determined on a net basis. Whilst it is often difficult to divide the yield between the taxable and non-taxable elements, the impact of higher rate tax at 40% has a potentially serious adverse effect. Should allowance be made for this in the calculation of the multiplier?

In *Hodgson v Trapp* [1989] AC 807, Lord Oliver found it difficult to contemplate how rates of tax could affect the multiplier save "in very exceptional circumstances". He concluded that the incidence of taxation in the future should ordinarily be assumed to be satisfactorily dealt with on the conventional assumption of a rate of interest applicable to a stable currency and the selection of a multiplier appropriate to that rate. In *Wells*, several members of the House of Lords adopted this general approach, that tax would only become a factor in very exceptional cases. It must be remembered that *Wells* did not deal with funds greater than £1 million over a 20-year life.

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

But the *Hodgson v Trapp* approach cannot be applied simplistically because:

(a) the value of awards is vastly greater now than it was then — it is believed that the impact of *Wells* has been to increase the higher awards by as much as a quarter to a third;
(b) the House has now adopted the ILGS approach of risk-free investment;
(c) then inflation was very high; it is not now; and
(d) Lord Oliver himself accepted that, for tax to have an impact, it required "a very large annuity before a significant additional fiscal burden was attracted."

We now have such circumstances with awards of £3-4 million.

In an interesting commentary by Peter Dickerson of Baker Tilly in *Warren v Northern General Hospital NHS Trust*, and referred to by the Court of Appeal in the allied case of *Van Oudenhoven v Griffin Inns Ltd* [2000] 1 WLR 1413, he produced an appendix illustrating the impact of tax, both beneficial and adverse, on funds ranging from £100,000 to £3.5 million, using ILGS rates as of February 2000. This illustrated a benefit to funds in the lower range and an adverse effect in the higher range:

(a) regardless of the gross rate of return adopted, the adverse tax effect at £3.5 million never exceeds the beneficial tax effects on portfolios of £100,000 and below; and
(b) applying the 0.5% rounding up or down from *Wells*, it appears that higher rate tax will not have a significant effect unless the fund affected subject to that tax exceeds £2.7/2.8 million.

The Future

We now await the results of the Lord Chancellor's Department's consultation on the discount rate and alternative methods of compensation, such as periodical payments.

The Lord Chancellor has indicated that a decision will be made on the discount rate before the Parliamentary recess.

It is important to remember that Section 1(2) of the Damages Act 1996 provides that the court shall not be prevented from taking a different rate of return into account "if any party to the proceedings shows that it is more appropriate in the case in question".

This cannot be read to mean 'exceptional circumstances'. It must surely mean where it is 'more appropriate' to meet the justice of the case. Thus, it ought to embrace changing the discount rate to take into account the adverse interest of tax if the evidence establishes that the adverse effect is substantial.

We have become accustomed to a culture of lump sum payment. Structured settlements are, at present, unattractive, because of the current low interest rates. The alternative method of periodical payments is, therefore, to be highly

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

commended as a new basis for awarding damages. That would involve the court determining the mulitplicand for each head of annual or recurrent future loss. That will then be paid by the defendant / insurer for the life of the claimant. If it is without review, then clearly the evidence in support of it must be comprehensive. If it is to be with review, then insurers will complain about uncertainty and potential adverse effects should there be a successful review upwards. The court should have the power to order damages to be paid by periodical payments.

But it is beneficial. The claimant has certainty. The insurer and especially the NHS can avoid huge capital payments. The periodical payment should be tax-free and index-linked, preferably to the rate of earnings increases rather than RPI. The Institute and many lawyers, including me, agree that this is an important and necessary change.

A New Actuarial Approach to Damages in Fatal Accident Cases

Traditionally the multiplier is fixed at the date of death; *Cookson v Knowles* [1979] 2 AC 536. The multiplier was then split into two parts, the first reflecting the period between death and trial, and the second the future after trial.

This produces an injustice, especially when the period to trial is too long. This was recognised in *Corbett v Barking* [1991] 2 QB 408. Where there was a long delay in pursuing a fatal accident claim, the known fact of the dependant's survival up to the date of trial was taken into account when calculating the multiplier from the date of death. It was also held that a minor addition should be made to the multiplier where evidence of the dependant proceeding into higher education was evenly balanced. In such circumstances, a multiplier of 12 was considered too low and was adjusted upwards to 15.

However, such a conclusion was exceptional. Most cases have involved a rigid application of the multiplier calculated at 4.5%, later 3%, from death. The true position, therefore, is that, in fatal accident cases, the multiplier has been applied discounted as at date of death for accelerated receipt. But, in fact, the period between death and trial should not be subject to that discounting. This period embraces actual and known past loss. Therefore, the accelerated payment discount should not be applied in the period to trial, but only for the period from trial into the future.

Equally, it is important to determine, not only the deceased's expectancy in relation to mortality risks had he or she not died, but also the mortality of any dependant in the anticipated period of dependency.

Apart from the mortality risks, there are the usual discounting factors of illness and unemployment.

A solution suggested by David Kemp, Q.C. in the June 1999 issue of his work on damages was the use of a nil discount table for the period to trial.

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

If that were applied to the period to trial, and overall multipliers were determined by reference to the projected mortality tables 11-20 of Ogden, then a more equitable award would fall to be made.

In a recent and helpful review of this issue, Edward Ross-McNairn and Kirsty McLeod concluded that such a change would be beneficial for claimants, but unfortunate for defendants. However, they concluded that, in truth, any increased dependency really reflects the loss of "a double discount, which they (the insurers) have long enjoyed''.

Thanks to Sir Michael Ogden, Q.C.'s determined approach to issues such as this, we may expect that the fourth edition of the Ogden tables, due in September 2000, will embrace the concept of an overall multiplier with a zero discount for the period between death and trial.

A New Area of Actuarial Principles and the Law: Risk Assessment and Conditional Fees

The use of conditional fees to fund litigation was reinforced by the Access to Justice Act 1999. It is lawful to conduct litigation on a basis whereby the lawyer receives nothing if he loses, but receives enhanced costs if he wins. The regulations made under the Act limit the enhancement to a maximum of 100% of normal fees. The enhancement is called the 'uplift' or 'success fee'. It is supposed to reflect the risk to a lawyer of taking a case on. The 100% limit is not scientifically based, but is rather an arbitrary maximum. The system applies to all money claims, *not* only personal injury claims. So it embraces commercial disputes as well. The cost of the uplift and any insurance against having to pay the defendant's costs are recoverable by a successful claimant from the defendant. The defendant is able to challenge the reasonableness of the amount of the uplift at the costs assessment stage.

It is obviously important to determine how the uplift should be reliably calculated. The Bar was not impressed by the simplistic calculations that practitioners produced in the early days of conditional fees. Indeed, there were some solicitors who recommended 100% uplift in *every* case. One such lawyer has been known to describe his conditional fee cases as a portfolio of business assets!

It seemed to us at the Bar that this was a topic which would benefit from actuarial advice. Paul Kennedy, barrister and actuary, assisted. The independent advice came from Watson Wyatt and was debated at a Bar Conference in June 1998.

Watson Wyatt noted that the risk factors and the calculation of the fee included:

(a) professional experience of case settlement and litigation in personal injury;

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

(b) the fees resulting from cases likely to settle compared with fees from cases which fought to trial;
(c) the number of cases likely to go to trial;
(d) the relative loss to a senior practitioner with a smaller case load of losing a trial, compared to such a loss to a junior practitioner with a larger case load;
(e) the adverse selection risk whereby solicitors would only send to counsel the riskier cases; and
(f) the effect of chance whereby even competent practitioners could lose more cases than they would expect.

The results were revealing. Basically, any case with a probability of success of 60% required an uplift of 100%, *and more* if delayed payment was taken into account. Those with an 80%-100% probability of success merited a 66% uplift, without any factor for delay in payment. Watson Wyatt concluded that, because of the workings of chance, some individuals, although perfectly competent and indeed typical of the profession, will be materially worse off, even if the conditional fee uplifts ensure that the profession, as a whole, is no worse off. There are likely to be significant individual winners and losers.

Barristers will be reluctant to take on cases where they estimate the probability of success as under 60%. Indeed, commercial prudence may lead them to restrict themselves to cases with an even greater chance of success, or require uplifts of 100% even for cases with higher chances of success.

Review of the uplift will only occur in cases which are successful, and it is very difficult to be objective about what the chances of success were after the event.

Different uplifts may be appropriate to different barristers or different caseloads.

Barristers' incomes may, because of the fact that a significant part of that income relates only to a few cases, be very volatile, especially if they have little work *not* subject to conditional fees.

It is too early to tell what the experience of lawyers in conditional fee work has been. The Lord Chancellor's Department is engaged in a monitoring exercise of the new system. As yet we have no experience of challenges to uplift and risk assessment in these cases. But clearly, on the claimant's side, the lawyers must have contemporary documentation of a coherent risk assessment. This can then be produced at cost assessment after settlement or trial. Otherwise, the defendants will use the actual knowledge of how the case went to determine what the original risk assessment ought to have been. That would be plainly unjust. Indeed, the cost rules prohibit assessment of costs with the court using hindsight and applying what actually happened to what it was thought might have happened at the time of risk assessment.

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

This is a critically important area in which actuarial principles materially affect lawyers, clients and courts in the practical conduct of everyday litigation.

Conclusion

In criminal cases proof of guilt is required beyond reasonable doubt. In civil cases it is required on the balance of probabilities — what is likely to have happened.

Judges and lawyers have historically approached these issues intuitively rather than scientifically. However, Judge Richard Posner of the U.S. Federal Appeal Courts has actually devised a mathematical formula to determine whether the civil burden of proof has been satisfied.

This may be seen to be taking the laws of probability too far into the realm of human behaviour. However, it is significant in illustrating that there are judges who are ready to adopt a more structured analysis of fact and probability than simple reliance on intuition and experience. But even that latter approach means that, where there is a conflict of evidence which cannot be readily resolved, the judge is entitled to have objective regard to what is more likely to have happened in determining an issue on the balance of probabilities.

Thus, there is an inevitable and permanent relationship between the laws of probability and the life of practical lawyers. We lawyers need actuarial help where appropriate. We must realise that actuarial science has never been complete. Its power is to predict rather than to be certain. It may be of much greater use in civil, rather than criminal, cases.

The task of both the professional actuary and the lawyer is to apply the concept of probability to raw data or evidence. In such an exercise, there is no complete answer.

As Leibniz said in 1703:

> "Nature has established patterns originating the return of events, *but only for the most part*." (my emphasis)

Actuaries and lawyers face the daily problem of applying these laws of probability to human activity. As Keynes rightly concluded:

> "The importance of probability can only be derived from the judgment that it is *rational* to be guided by it in action; and a practical dependence on it can only be justified by a judgment that in action we *ought* to take some account of it.
>
> It is for this reason that probability is to us the 'guide of life', since to us, as Locke says, "in the greatest part of our concernment, God has afforded only the Twilight, as I may so say, of Probability, suitable, I presume, to that state of Mediocrity and Probationership He has been pleased to place us in here." " (Keynes, J.M. *A Treatise on Probability* (1921), p 323)

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press

References

In preparing this lecture I have had substantial assistance from:
(1) the literature of the Institute of Actuaries;
(2) *Against the Gods — The Remarkable Story of Risk*, by Peter Bernstein (John Wiley and Sons, 1998);
(3) the Government Actuary's Department;
(4) 'Changes in Loss of Dependency Multipliers', by Edward Ross-McNairn and Kirsty McLeod. In *The Barrister*, 6 June 2000;
(5) the Ogden tables in general, and Sir Michael Ogden, Q.C. in particular; and
(6) other sources identified in the text.

https://doi.org/10.1017/S1357321700001999 Published online by Cambridge University Press