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## "FAIR" MATHEMATICS IN ASSESSING DELICTUAL DAMAGES

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### 1 Introduction

In assessing or quantifying delictual damages or compensation after a damage-causing event, the object or aim is to give to the injured or prejudiced plaintiff(s) the fullest possible compensation by placing them in the same financial position they were in prior to the damage-causing event.<sup>1</sup> To meet this objective of full compensation, the plaintiff is *inter alia* burdened with the duty to prove the loss he has suffered, including the uncertain future loss which might not yet have transpired at the time he has to lodge his claim.<sup>2</sup> In civil cases the measure of proof is a preponderance or balance of probability.<sup>3</sup> This means that the plaintiff must prove that he has more likely than not suffered certain heads or categories of damage and he must also prove the exact amount of damages that should be awarded to compensate for that loss.<sup>4</sup> This evidentiary burden that rests on the plaintiff will be discussed in more detail below.<sup>5</sup>

Two important rules of procedure apply to the institution of a claim for delictual damages, namely the rule on prescription and the once-and-for-all rule. According to the *Prescription Act*<sup>6</sup> a delictual debt prescribes three years after it originated.<sup>7</sup> Prescription commences to run as soon as a cause of action accrues and the debt in regard to the payment of damages is claimable.<sup>8</sup> When the first damage occurs,

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<sup>1</sup> Van der Walt *Sommeskadeleer* 1, 227; Visser *et al Law of Damages* 4.

<sup>2</sup> Visser *et al Law of Damages* 125-128, 487.

<sup>3</sup> Visser *et al Law of Damages* 488.

<sup>4</sup> Visser *et al Law of Damages* 488-489.

<sup>5</sup> See para 2.1 below.

<sup>6</sup> *Prescription Act* 68 of 1969

<sup>7</sup> Section 3(2) *Prescription Act* 68 of 1969; Neethling and Potgieter *Law of Delict* 225, 263. See in general Saner *Prescription*.

<sup>8</sup> Visser *et al Law of Damages* 137; *Evins v Shield Insurance Co Ltd* 1980 2 SA 814 (A) 842. S 17 *Road Accident Fund Act* 56 of 1996 creates two distinct causes of action, namely a claim for bodily injury, as well as a claim for loss of maintenance due to the death of a breadwinner. Although two causes of action were created by the legislator in s 17, all claims against the Fund

assuming that all of the other elements of a delict can be proven, the cause of action accrues. This implies that where some damage has already occurred, the plaintiff must within three years<sup>9</sup> institute an action against the wrongdoer. According to the common law once-and-for-all rule all losses arising from the same facts and cause of action must be claimed once in one action.<sup>10</sup> This rule compels a plaintiff to institute only one claim for both the certain loss which has already been incurred, as well as for any uncertain future loss. One could argue that the combined application of the rule on the prescription of claims and the once-and-for-all rule burdens the plaintiff with the almost impossible task of proving uncertain future loss which might not yet have transpired by the cut-off date of three years after the damage-causing event, when the claim has to be lodged.

In executing this difficult task the plaintiff could employ the services of a financial expert, such as an actuary, to assist in proving the extent of the loss he will be suffering in future. An actuary specialises in making mathematical calculations based on proven facts and realistic assumptions about the future. The important role that an actuary could play in the assessment process will be discussed in more detail below.<sup>11</sup> Mathematical calculations are not used in assessing non-patrimonial loss, for example pain and suffering, and therefore the assessment of non-patrimonial loss will not form part of this discussion.

Mathematical calculations, more specifically actuarial calculations, are an exact science in their own right and when this science has to be interpreted and evaluated by a legal expert within a legal context, potential conflict could arise. In my discussion I will endeavour to explain the reasons for this potential conflict between mathematical science and legal science and to illustrate from case law how this conflict could have a negative impact on the evaluation and calculation of the

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must still be instituted once and for all, including claims for future loss. S 17 does, however, create an exception to the common law once-and-for-all rule, in that the third party can claim only for bodily injury or loss of maintenance from the Fund. Claims for damage to the vehicle or other possessions, such as clothing, must be instituted against the wrongdoer in a separate action. See Klopper *Third Party Compensation* 148.

<sup>9</sup> A few exceptions exist, eg s 23 *Road Accident Fund Act* 56 of 1996. See Klopper *Third Party Compensation* 271-284.

<sup>10</sup> See Visser *et al Law of Damages* 135-163 for an exposition of the once-and-for-all rule. See also Neethling and Potgieter *Law of Delict* 225-227.

<sup>11</sup> See para 3 below.

plaintiff's claim. It is particularly when uncertain future loss has to be calculated for the assessment of damages that reconciliation between these two divergent sciences is essential to ensure that neither the plaintiff nor the defendant will be prejudiced by this conflict. To simplify this discussion I will focus on only two forms of uncertain future patrimonial loss, namely the future loss of income, also called loss of earning capacity, and the loss of support.

The court normally decides firstly on the value or extent of the loss suffered and thereafter adjusts this amount to make provision for relevant factors and contingencies that may affect the claim.<sup>12</sup> The manner in which the court exercises its discretionary power will determine whether or not the damages awarded will be fair towards both the plaintiff and the defendant. The different aspects of the court's judicial discretion will be discussed and commented on,<sup>13</sup> but as a point of departure I should emphasise that the proper exercise of the discretion of the court is paramount in resolving the potential conflict between pure mathematics and the fair application of legal principles. In my conclusion I will provide guidelines on how the execution of the court's judicial discretion could assist in resolving this potential conflict by ensuring that "fair" mathematics are used in assessing the damages to be awarded to the claimant.<sup>14</sup>

## 2 Presentation of evidence

### 2.1 Evidentiary burden of proof

It is trite law that the plaintiff must prove the extent of his loss, as well as the amount of damages that should be awarded.<sup>15</sup> The measure of proof is a preponderance of

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<sup>12</sup> See para 2.1 below.

<sup>13</sup> See para 4 below.

<sup>14</sup> See para 5 below.

<sup>15</sup> See *Erasmus v Davis* 1969 2 SA 1 (A) 9E: "The *onus* rests on plaintiff of proving, not only that he has suffered damage, but also the *quantum* thereof"; *Ngubane v South African Transport Services* 1991 1 SA 756 (A) 784F-G; *Hendricks v President Insurance Co Ltd* 1993 3 SA 158 (C) 163E-F: "I appreciate that in assessing damages in this type of case it is invariably impossible to have resort to precise arithmetical calculations. That notwithstanding, both the fact that damages have been suffered and, if so, the *quantum* of such damages must be proved by the plaintiff who, in order to do so, must establish that after allowing for the costs saved he is still out of pocket"; *Gauntlett Quantum of Damages* 8; *Buchanan* 1960 SALJ 187; *Zeffertt et al Law of Evidence* 45.

probabilities, which entails proving that the occurrence of the loss is more likely than not, that is, that there is more than a fifty per cent chance that it will occur.<sup>16</sup>

The measure of proof is relaxed in cases where uncertainty prevails, for instance in the case of future loss. From the judgment of Selikowitz J in *Hendricks v President Insurance Co Ltd*<sup>17</sup> the reason for establishing this exception becomes clear:

The principle applicable to the assessment of damages has as its *ratio* the policy that the wrongdoer should not escape liability merely because the damage(s)<sup>18</sup> he caused cannot be quantified readily or accurately.<sup>19</sup> The underlying premise upon which the principle rests is that the victim has, in fact, suffered damage(s) and that the wrongdoer is liable to pay compensation or a *solatium*.

Colman J explains in *Burger v Union National South British Insurance Co*<sup>20</sup> how the court should take account of an uncertain future event in the assessment of future loss:

A related aspect of the technique of assessing damages is this one: it is recognised as proper in an appropriate case, to have regard to relevant events which may occur, or relevant conditions which may arise in the future. Even when it cannot be said to have been proved, on a preponderance of probability, that they will occur or arise, justice may require that what is called a contingency allowance be made for a possibility of that kind. If, for example, there is acceptable evidence that there is a 30 per cent chance that an injury to a leg will lead to an amputation, that possibility is not ignored because 30 per cent is less than 50 per cent and there is therefore no proved preponderance of probability that there will be an amputation. The contingency is allowed for by including in the damages a figure representing a percentage of that which would have been included if amputation had been a certainty. That is not a very satisfactory way of dealing with such difficulties, but no better way exists under our procedure.<sup>21</sup>

<sup>16</sup> Visser *et al* *Law of Damages* 487.

<sup>17</sup> *Hendricks v President Insurance Co Ltd* 1993 3 SA 158 (C) 165E-F.

<sup>18</sup> Selikowitz J uses the term "damages" continuously in his judgment when he refers both to damages and damage. This use can be confusing and therefore it is preferred that a correct distinction should be made between these terms, by using the term "damage" for loss and the term "damages" for compensation.

<sup>19</sup> *Klopper v Maloko* 1930 TPD 860 865: "Now it has been laid down that where damage has been suffered which can be measured in money, the mere fact that precise assessment is impracticable is not a justification for refusing to give the plaintiff any damage at all"; *Esso Standard SA (Pty) Ltd v Katz* 1981 1 SA 964 (A) 969H-970A: "It has long been accepted that in some types of cases damages are difficult to estimate and the fact that they cannot be assessed with certainty or precision will not relieve the wrongdoer of the necessity of paying damages for his breach of duty"; *Lazarus v Rand Steam Laundries (1946) (Pty) Ltd* 1952 3 SA 49 (T) 50H-51A; *Hendricks v President Insurance Co Ltd* 1993 3 SA 158 (C) 163H-J.

<sup>20</sup> *Burger v Union National South British Insurance Co* 1975 4 SA 72 (W) 75D-G.

<sup>21</sup> Quoted with consent by Corbett JA in *Blyth v Van den Heever* 1980 1 SA 191 (A) 225.

From this it can be deduced that in instances where the loss is difficult to prove (eg uncertain future loss) the measure of proof is lighter and the plaintiff needs only to prove the degree of probability that the uncertain loss will ensue. Robert Koch<sup>22</sup> refers to this technique of damages assessment in the case of uncertain loss as the "value of a chance".<sup>23</sup> Further, he is of the opinion that the technique of the valuation of a chance is essential in creating fairness towards plaintiffs and defendants in the assessment of damages for future loss.

Related to this, Boberg<sup>24</sup> distinguishes between the burden of proof that rests on the plaintiff to prove his loss (with a preponderance of probabilities) and the burden to prove the extent of his loss:

The element of patrimonial loss, like the other elements of Aquilian liability, must be proved by the plaintiff on a balance of probabilities. This requirement relates to the *fact* of damage; its quantum, particularly where it is prospective, may depend on various imponderables, some of which have a less than 50 per cent chance of materialising. They are not ignored on that account, but are properly represented by a contingency allowance of the same percentage as the chance of the event=s occurring. Moreover, a plaintiff who has laid the best available evidence before the court should not be non-suited merely because his loss is difficult to quantify: the court must do the best it can with the materials to hand.<sup>25</sup>

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<sup>22</sup> Koch *Reduced Utility* 71.

<sup>23</sup> Koch 1989 *THRHR* 77.

<sup>24</sup> Boberg *Law of Delict* 477-478.

<sup>25</sup> *Hersman v Shapiro & Co* 1926 TPD 367 379: "Monetary damage having been suffered, it is necessary for the Court to assess the amount and make the best use it can of the evidence before it. There are cases where the assessment by the Court is very little more than an estimate; but even so, if it is certain that pecuniary damage has been suffered, the Court is bound to award damages. It is not so bound in the case where evidence is available to the plaintiff which he has not produced; in those circumstances the Court is justified in giving, and does give, absolution from the instance. But where the best evidence available has been produced, though it is not entirely of a conclusive character and does not permit of a mathematical calculation of the damages suffered, still, if it is best evidence available, the Court must use it and arrive at a conclusion based upon it"; *Klopper v Maloko* 1930 TPD 860 866: "But where the action is not brought to establish any right but merely for damages and the plaintiff can lead evidence to enable the Court to assess the amount of the actual loss and does not do so, I do not think an award of damages can be supported on the mere ground that the defendant=s conduct was deliberate or high-handed"; *Esso Standard SA (Pty) Ltd v Katz* 1981 1 SA 964 (A) 970D-E: "In the present case it might be said with some justification that the plaintiff should have sought the assistance of an accountant. He failed to do so, but it does not follow that he should be non-suited. Whether or not a plaintiff should be non-suited depends on whether he has adduced all the evidence reasonably available to him at the trial"; *Mkwanzu v Van der Merwe* 1970 1 SA 609 (A) 632.

From this it can be adduced that Boberg requires that the plaintiff should produce the best available evidence to the court,<sup>26</sup> and if the extent of the loss is still "unprovable" the court should allow a part of the damage, equal to the percentage of the chance that the damage will transpire.<sup>27</sup> Does this exception apply to all forms of loss under any circumstances? According to Visser,<sup>28</sup> in the case of future loss the plaintiff need only prove the possibility of loss with a preponderance of probability, but the content or full extent thereof need not be proven with a preponderance of probability.<sup>29</sup>

It seems as if a clear distinction can be drawn between the application of the measure of proof in the case of facts regarding the past and in the case of the assessment of future loss.<sup>30</sup> In the case of facts regarding the past the court determines based upon the evidence adduced whether the plaintiff has proven with a preponderance of probabilities those facts or not.<sup>31</sup> In the case of the assessment of future loss the court takes a different point of view. If there is uncertainty that a specific circumstance will occur in the future, and the occurrence of this circumstance will influence the quantum of the plaintiff's claim, the court will allow for the measure of uncertainty in the prediction.<sup>32</sup> For example, if there is a forty per cent chance that the plaintiff will need an operation in future, the court will award the plaintiff the present value of forty per cent of the estimated cost of the operation.<sup>33</sup>

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<sup>26</sup> See *Chisholm v East Rand Proprietary Mines Ltd* 1909 TH 297 300 in which Mason J stated that a claim for damages is subject to contingencies to the extent that "they can be estimated". Compare *Turkstra Ltd v Richards* 1926 TPD 276 281.

<sup>27</sup> Compare *Burger v Union National South British Insurance Co* 1975 4 SA 72 (W) 74H-75A: "It has never, within the range of my knowledge and experience, been the approach of our Courts, when charged with the assessment of damages, to resolve by an application of the burden of proof such uncertainties as I have referred to. I am not dealing with a case in which the plaintiff could have called evidence to remove the uncertainty, but neglected to do so. I am referring to cases like *Turkstra Ltd v Richards* 1926 TPD 276, in which the plaintiff has laid before the Court such evidence as was available, but that evidence has necessarily failed to remove uncertainties with regard to matters bearing upon the *quantum* of damage. The Court, in such a case, does the best it can with the material available". See Visser *et al Law of Damages* 488-489; Ogu *Law of Damages* 83-84.

<sup>28</sup> Visser *et al Law of Damages* 127-128.

<sup>29</sup> See also Buchanan 1960 SALJ 189.

<sup>30</sup> Eggleston *Evidence* 210.

<sup>31</sup> Koch 1989 THRHR 76.

<sup>32</sup> Koch 1989 THRHR 76: "Evidence as to hypothetical events involves opinions, beliefs as to the *likely* course of events in the absence of any event having taken place"; *De Klerk v ABSA Bank Ltd* 2003 4 SA 314 (SCA) para 28; *Minister van Veiligheid en Sekuriteit v Geldenhuys* 2004 1 SA 515 (SCA).

<sup>33</sup> Buchanan 1960 SALJ 188-189.

One could justifiably ask why, in respect of the measure of proof, a distinction should be made between past loss and future loss. In particular one could ask why the plaintiff who has proven past loss with a fifty-one per cent probability is usually awarded the full extent of his loss, while the plaintiff who has proven future loss with the same degree of probability is awarded only fifty-one per cent of his loss by way of damages.<sup>34</sup> Eggleston<sup>35</sup> is of the opinion that there is no logical answer to this question. He thinks that the distinction may have developed from the methods used by the courts. In most civil cases the courts have to choose which one of the witnesses spoke the truth. When the court decides who to believe, it is natural for the court to regard the facts presented by that witness as certain and true. But this approach of "the winner takes all" makes it impossible to serve justice between the two parties and it seems fairer to find a system whereby losses could be shared. Eggleston regards the principle of the sharing of losses as a possible explanation for the unique manner in which uncertain future loss is assessed. Koch<sup>36</sup> also refers to the similarities between the apportionment of damages in the case of contributory fault and reduced liability in the case of uncertain future loss.

A further explanation could be that the courts award an amount based upon fairness or justice.<sup>37</sup> The award of an amount of damages on this basis can be explained as follows: If future loss (or a part thereof) cannot be proven on a preponderance of probability, that part of the claim should in principle not succeed. Since the plaintiff has already been prejudiced by the application of the rule on prescription and the once-and-for-all rule, which forced the plaintiff to institute his claim before the full extent of his loss had occurred or could be determined, the court has a discretion to assist the plaintiff based on fairness. The manner in which the courts can do this is by way of a contingency allowance.<sup>38</sup>

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<sup>34</sup> Visser *et al* *Law of Damages* 127-128.

<sup>35</sup> Eggleston *Evidence* 222-223.

<sup>36</sup> Koch *Reduced Utility* 76: "The similarity between an apportionment of damages and the technique of value of a chance is unmistakable. Both involve a scaling down of the liability for damages".

<sup>37</sup> *Burger v Union National South British Insurance Co* 1975 4 SA 72 (W) 75: "Even when it cannot be said to have been proved, on a preponderance of probability, that they will occur or arise, *justice* may require that what is called a contingency allowance be made for a possibility of that kind" (emphasis added).

<sup>38</sup> See Steynberg *Gebeurlikhede* 163-181 for a detailed discussion on the distinction between contingency allowances and contingency adjustments.



This term "contingency" needs to be explained because of its vital importance to the plaintiff's claim. Contingencies could be defined as uncertain<sup>39</sup> circumstances of a positive or negative nature which, independent of the defendant's conduct<sup>40</sup> and if they should realise,<sup>41</sup> would probably influence a persons health, income, earning capacity, quality of life, life expectancy or dependency on support in future or could have done so in the past. These "uncertain" circumstances must consequently be taken into account in a fair and realistic manner by increasing or decreasing the plaintiff's damages during the quantification process. If the relevance of a positive contingency is proved it will increase the amount of damages to be awarded, and if the relevance of a negative contingency is proved, it will decrease the amount of damages to be awarded.<sup>42</sup>

Essential to this definition is the element of uncertainty. Sometimes the uncertainty does not relate to the question of whether the hypothetical event or occurrence will take place at all, but to *when* it will take place in the future. For example, in a claim for loss of support where a breadwinner spouse was killed, the probability of remarriage by the dependent spouse could be regarded as a contingency. The claim for loss of support will be affected by remarriage, but equally important is the estimation of *when* such a remarriage will take place. A "contingency adjustment" could be made to the claim for loss of support for the probability that the remarriage will take place some time in the future.<sup>43</sup> Evidence will be presented to the court and the legal team representing the dependent spouse will make a suggested contingency adjustment or even suggest that no such adjustment should be made. The court will then, based on the evidence presented and the presentations made, use its judicial discretion to decide on a contingency adjustment in reduction of the claim. If judgments in the past are used as a basis, this could vary from zero per cent

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<sup>39</sup> "Uncertain" relates to something that cannot be proven with a preponderance of probability.

<sup>40</sup> If a causal link between the defendant's conduct and the contingency can be established with a preponderance of probability, the defendant will be held liable for the full effect it has on the damage.

<sup>41</sup> See Steynberg *Gebeurlikhede* 138-140 for the determination of the hypothetical causal link.

<sup>42</sup> Steynberg 2008 *De Jure* 109-125.

<sup>43</sup> Steynberg 2007 *PER* 1-25.

to seventy per cent of the claim for loss of support.<sup>44</sup> The judicial discretion of the court in these circumstances will be discussed in more detail below.<sup>45</sup>

The duty to prove is also a duty to present to court the full and best possible evidence within the knowledge and contemplation of the plaintiff, also in respect of negative contingencies.<sup>46</sup> All of the relevant contingencies, positive and negative, which can be deduced from the plaintiff's evidence, should be embodied in the actuarial calculations (if such evidence is used).

In the process of taking contingencies into account, the court must basically follow two steps each time. It should first of all determine if the contingency is relevant, and secondly it must decide to what extent the contingency influenced the loss and therefore the amount of the damages. During both these decisionmaking processes the court can be convinced by facts, and sometimes the court may even make a policy decision in circumstances where no facts were presented to the court or no facts could convince the court. The following facts could be relevant in the case of a claim for loss of earning capacity or loss of support: the life expectancies of the dependent spouse, of the breadwinner husband had he not been killed in the accident, and of their dependent children; the annual income of the injured plaintiff and the deceased breadwinner immediately before the damage-causing event, etcetera. Expert evidence will be necessary to prove these facts with a preponderance of probabilities. The court can also under certain circumstances take judicial notice of particular facts,<sup>47</sup> like the rate of inflation, the fact that most

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<sup>44</sup> *Milns v Protea Assurance Co Ltd* 1978 3 SA 1006 (C) 1014A-E.

<sup>45</sup> See para 4 below.

<sup>46</sup> *Visser et al Law of Damages* 488-491. See *Hendricks v President Insurance Co Ltd* 1993 3 SA 158 (C) 165A-E: "The duty however, remains squarely on the plaintiff to adduce all the evidence reasonably available to him before he can request the Court to come to his assistance by estimating a fair and reasonable *quantum*. ... [I]f the Court were obliged to make an estimate in circumstances where further evidence was available, it may *ex post facto* appear that the Court had done an injustice to one of the parties. Also, if the withholding of evidence is permitted, even once, it may result in a party deliberately withholding evidence in the belief or in the hope that the Court's calculation may be more favourable than if all the evidence were led. The already difficult task of assessing damages would be increased"; *Modern Engineering Works v Jacobs* 1949 3 SA 191 (T) 193; *Paizes* 1999 SALJ 580-582; *Pillay v Krishna* 1946 AD 946 956; *Mabaso v Felix* 1981 3 SA 865 (A) 873D-E; *Eskom v First National Bank of Southern Africa* 1995 2 SA 386 (A) 392D-E.

<sup>47</sup> *Kotwane v Unie Nasionaal Suid-Britse Versekeringsmaatskappy Bpk* 1982 4 SA 458 (O) 466-467.

employees can experience a break in income, the fact that the life of a human being can be ended at any time, or that after the death of the breadwinner the surviving spouse could marry again, etcetera.

## 2.2 *Degrees of probability*

In the law of evidence reference is continuously made to probabilities because we live in a world full of uncertainties.<sup>48</sup> When the courts apply probabilities to determine the amount of damages to be awarded, they clearly distinguish between facts of the past and the probabilities in respect of what could happen in the future.<sup>49</sup>

In determining facts the courts make use of the normal principles of reasoning, and the making of assumptions and conclusions forms part of this process. The existence or occurrence of essential facts can be derived from the court's direct knowledge of certain information and from the evidence presented by witnesses.<sup>50</sup> However, this process is never undertaken in complete certainty, but only in varying degrees of probability.

Dr Daan van Rensburg<sup>51</sup> points out in his doctoral thesis the difference between the concepts "probable" and "possible". He explains that a probability, even the smallest degree thereof, points to something more than a mere possibility. On the other hand, the word "possible" is often used in everyday spoken language to indicate a minor degree of probability. He further states that it is incorrect to speak of equal or

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<sup>48</sup> See Robertson and Vignaux 1993 *OJLS* 458, 468-469 for a discussion of the criticism that things cannot probably occur; in truth things either happened or did not happen at all. See also Cohen *Probable and Provable* 345-356: "If the sceptical philosophers of science are right, matters of fact can never be proved beyond reasonable doubt. But an inductivist analysis of probability and certainty allows such proof to be possible wherever the analysis applies. ... In fact the sceptical fashion, in modern philosophy of science, has flourished on ignorance about the true structure of inductive reasoning. The generalized method or relevant variables, the empirical character of support-assessments, the systematic analogy of structure between inductive reliability and logical truth, the existence of a concept of inductive probability that grades the weight of evidence B all these features of inductive reasoning have gone largely unnoticed or unacknowledged. Once their importance is recognized it becomes clear how we can, at least in principle, have inferential knowledge about the past, the unobserved present, and the future".

<sup>49</sup> Eggleston *Evidence* 25-26.

<sup>50</sup> The court can take judicial note of general well-known facts. See Schmidt and Rademeyer *Bewysreg* 188.

<sup>51</sup> Van Rensburg *Juridiese Kousaliteit* 70.

unequal possibilities, or to speak of degrees of possibilities - possibility is an absolute concept; it is not capable of being graded or scaled. However, it is correct to refer to degrees of probability.<sup>52</sup>

When discussing the concept a "preponderance of probabilities" as a measure of proof, one must ask whether the term "probability" in a legal context differs from the term "probability" in a mathematical context. Put differently: does legal probability differ from statistical or mathematical probability?<sup>53</sup> Legal probability and statistical probability are not in conflict with each other, but it could create problems if one simply assumes, for example, that a medical expert is necessarily also an expert in probabilities.<sup>54</sup> Statistical or mathematical probabilities, as presented in expert evidence on their own, cannot meet the measure of proof: rather it should be the totality of the evidence that must meet the measure or standard.

Keynes<sup>55</sup> declares that the grading of probabilities is determined by the weight of the evidence.<sup>56</sup> He further states that the weight of the evidence cannot be analysed by way of the mathematical approach to probabilities.<sup>57</sup> The weight of the evidence is determined by the totality of all favourable and unfavourable evidence, while the degree of probability of an argument is an indication of the difference between the favourable and the unfavourable evidence. The "evidence" referred to here includes expert evidence, proven factual evidence and evidence regarding the relative regularity with which certain events take place. The degree of probability is determined by the court and will depend *inter alia* on this evidence. It seems as if Keynes draws a clear line between where the expert's functions should end and where the court should step in to complete the task of grading the probability.

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<sup>52</sup> Van Rensburg *Juridiese Kousaliteit* 70.

<sup>53</sup> See in general Eggleston 1991 *ALJ* 130-148.

<sup>54</sup> Robertson and Vignaux 1992 *OJLS* 400.

<sup>55</sup> Keynes *Treatise on Probability* 77. See also Keynes *Treatise on Probability* 71: "As the relevant evidence at our disposal increases, the magnitude of the probability of the argument may either decrease or increase, according as the new knowledge strengthens the unfavourable or the favourable evidence; but *something* seems to have increased. In either case, we have a more substantial basis upon which to rest our conclusion. I express this by saying that an accession of new evidence increases the *weight* of an argument. New evidence will sometimes decrease the probability of an argument, but it will always increase its weight".

<sup>56</sup> Compare Stein 1996 *CJLJ* 298-317.

<sup>57</sup> See Cohen *Probable and Provable* 36 and 254.

### 2.3 *Objective or subjective approach?*

Probabilities are not surrendered to human imagination, which means that a supposition or assumption is not probable merely because someone thinks so. The facts that establish the knowledge upon which the probability is based should be determined objectively and independently of human opinion.<sup>58</sup>

Robertson and Vignaux<sup>59</sup> add that all probabilities are subjective in the sense that they are valuations made by a unique individual with a unique combination of knowledge and experience. They further state that the valuation of probabilities should hopefully also be objective, especially in respect of two aspects: firstly that it is determined by generally accepted rules, and secondly that the same conclusion should always be reached in the case of individuals with identical information.

The recognition by the courts of the valuation of a chance as a clear separate technique to assess loss is, according to Koch,<sup>60</sup> a step in the direction of a more mathematical approach.<sup>61</sup> This approach could appear to be more objective because of the use of actuarial tables and the opinions of medical experts and employers. Koch,<sup>62</sup> however, acknowledges that in spite of the objective appearance of this approach, it is predominantly based on subjective considerations which appear reasonable at the time of the assessment of the loss.<sup>63</sup> The result of an actuarial

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<sup>58</sup> See further Keynes *Treatise on Probability* 18.

<sup>59</sup> Robertson and Vignaux 1993 *OJLS* 477. See also Ligertwood *Australian Evidence* 20.

<sup>60</sup> Koch *Reduced Utility* 74.

<sup>61</sup> See Koch 1989 *THRHR* 77: "In general, commentators are in agreement that the principle of valuation of a chance, as a method for assessing damages, is essential to achieving fairness between man and man and man and state".

<sup>62</sup> Koch *Reduced Utility* 74.

<sup>63</sup> Koch 1986 *THRHR* 217: "This principle requires that the value of the expected loss or financial advantage be determined as a *certainty* and then this certain value reduced by a percentage reflecting the chance that the contingent event may not have arisen at all. The determination of a suitable percentage by which to discount for the risk will often be a somewhat unscientific estimate based upon the expectations of a reasonable man. A greater degree of objectivity is achieved when mortality or other statistical tables are used. The percentage is not a prediction of the future but rather a reflection of current beliefs governing the forces which will mould the future". See also *Goodall v President Insurance Co Ltd* 1978 1 SA 389 (W) 392: "In the assessment of a proper allowance for contingencies, arbitrary considerations must inevitably play a part"; Reinecke 1976 *TSAR* 31: "Somtyds is die onsekerhede van so 'n aard dat die hof slegs 'n min of meer arbitrêre bedrag kan toeken. Die eindresultaat is egter elke keer niks anders nie as dat gepoog is om 'n realistiese indien subjektiewe waarde vir die betrokke vermoënsverwagting te vind".

calculation is usually adjusted on account of general contingencies and this adjustment is substantially subjective; it thus blends the scientific and equitable approaches to assessing damages.<sup>64</sup> Thus Innes CJ held in *Hulley v Cox*<sup>65</sup> that:

[i]t is at any rate desirable to test the result of an actuarial calculation by a consideration of the general equities of the case.

One could ask whether the adding of subjective considerations to the predominantly objective measure will assist in reaching a fair result, or whether it will hamper it. In other words, are subjective considerations, such as the judge's feeling of what is just in the circumstances, necessary to create "fair" mathematics? The formulation of a proper theory on probability could assist in answering this question.

## 2.4 Probability theory

The probability theory that presents the basis for the assessment of the degree of probability must be based on logic<sup>66</sup> since it has to do with the degree of belief that is rationally present in given circumstances, and not merely on the belief of a specific individual (eg the judge), which could be rational or irrational.<sup>67</sup> Eggleston<sup>68</sup> describes probability as someone's evaluation (eg the presiding officer or the expert witness) of the likelihood that a future event will take place, subject to the facts and suppositions accepted or made by that person for purposes of the evaluation.

Koch<sup>69</sup> is of the opinion that the focus of the court on its own discretionary feeling (rather than mathematical calculations) leads to the award of rounded percentages of degrees of probability, such as five per cent ten per cent or twenty per cent. Also in various older decisions the courts adjusted the amount of damages to a rounded-

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<sup>64</sup> Koch *Damages for Lost Income* 239.

<sup>65</sup> *Hulley v Cox* 1923 AD 234 244.

<sup>66</sup> Keynes *Treatise on Probability* 6: "Between two sets of propositions, therefore, there exists a relation, in virtue of which, if we know the first, we can attach to the latter some degree of rational belief. This relation is the subject-matter of the logic of probability".

<sup>67</sup> Keynes *Treatise on Probability* 4: "What particular propositions we select as the premisses of *our* argument naturally depends on subjective factors peculiar to ourselves; but the relations, in which other propositions stand to these, and which entitle us to probable beliefs, are objective and logical".

<sup>68</sup> Eggleston *Evidence* 10.

<sup>69</sup> Koch *Reduced Utility* 156.

off amount.<sup>70</sup> The suggestion is that streams of probabilities should rather be used or, to put this differently, that rounded-off degrees of probability should be in line with practice and the positive law. If the streams of probability are wide, this will alleviate the task of the court to award a specific degree of probability to the contingency.

From the above we can conclude that it is generally accepted that the determination of the degree of probability that an event will happen cannot be made by the judge solely on a subjective basis, but that objective factors should also be considered. The following is a theory on probability that could possibly form the basis for the determination of degrees of probability for the realisation of contingencies:

The probability that a relevant contingency will realise in future is determined by the court in view of objective measures in the form of a percentage chance expressed as a degree of probability, on the basis of factual averments and logical suppositions or assumptions from the totality of the expert and other evidence presented to court.

### 3. The actuary as an expert witness

Evidence led by experts may be regarded as an exception to the opinion rule.<sup>71</sup> According to the opinion rule witnesses are forbidden to give their opinion or view on something they have not themselves experienced with their five senses.<sup>72</sup> The opinion of an expert is, however, admissible if it is relevant, and that will be the case if the expert is better equipped than the court, because of his special knowledge and experience, to make assumptions based on the facts.<sup>73</sup>

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<sup>70</sup> *Clair v Port Elizabeth Harbour Board* 1886 EDC 311 317-318; *Waring & Gillow Ltd v Sherborne* 1904 TS 340 349-350; *Chisholm v ERPM* 1909 TH 297 302; *Union Government v Clay* 1913 AD 385 389; *Hulley v Cox* 1923 AD 234 246.

<sup>71</sup> *Schmidt and Rademeyer Bewysreg* 456-457; Meintjies-Van der Walt 2001 *THRHR* 238.

<sup>72</sup> Meintjies-Van der Walt 2001 *THRHR* 238.

<sup>73</sup> *Schmidt and Rademeyer Bewysreg* 463, 468; *Ruto Flour Mills v Adelson (1)* 1958 4 SA 235 (T) 237B; *Gentiruco AG v Firestone SA (Pty) Ltd* 1972 1 SA 589 (A) 616H: "[T]he true and practical test of the admissibility of the opinion of a skilled witness is whether or not the Court can receive appreciable help from that witness on the particular issue".

Many different experts<sup>74</sup> can testify in a claim for damages, but for the purposes of this publication I will focus only on the actuary as an expert witness. Koch<sup>75</sup> describes the role of the actuary as an expert witness as follows:

It would seem that the role of the actuary as an expert witness is not that of a valuator but rather that of an expert calculator, economist and statistician who makes his skills available to assist the court in arriving at a fair and proper value for the loss. ... An actuary may thus appropriately be seen to act as a calculation assistant to the court in circumstances where the court does not itself have the necessary technical ability. In acting in this capacity the actuary does not have an unfettered discretion to exercise his own judgment as to what is fair, for the law is responsible for the purpose and framework within which the calculations are to be performed.<sup>76</sup>

According to Koch<sup>77</sup> the original purpose with actuarial witnessing was to advise the court on an appropriate price for the issuing of a life annuity. Actuarial witnessing entails *inter alia* the application and explanation of mathematical or actuarial calculations in respect of future loss in particular.<sup>78</sup> Because future loss is surrounded by uncertainty, the actuary can predict future loss only by making assumptions, conclusions and presumptions based on the relevant information available to him at that stage.<sup>79</sup> In actuarial sciences various sources are used to assist in making actuarial calculations. Mathematical formulas and interest rates, rates of inflation, life tables, consumer price indexes etcetera are applied to assess the current value of uncertain future losses.<sup>80</sup>

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<sup>74</sup> Psychiatrists, occupational therapists, medical specialists, etc.

<sup>75</sup> Koch *Damages for Lost Income* 7.

<sup>76</sup> See also *Krugell v Shield Versekeringsmaatskappy Bpk* 1982 4 SA 95 (T) 101A: "Myns insiens sou dit foutief wees om, waar die gegewens wel beskikbaar is wat 'n aktuariële berekening prakties moontlik maak, daardie handige middel eenvoudig oorboord te gooi en dit te vervang met 'n lukrake raaiskoot wat bloot op intuïsie gegrond is. Ek sal dus van die syfers wat by wyse van aktuariële berekeninge bereik is, gebruik maak. Dit beteken nie dat ek van mening is dat sulke berekenings in alle gevalle blindelings gevolg moet word nie".

<sup>77</sup> Koch *Reduced Utility* 115-116. Koch states that one of the oldest references to actuarial calculations in SA case law can be found in *Clair v Port Elizabeth Harbour Board* (1886) 5 EDC 311 317-318.

<sup>78</sup> See Anderson *Actuarial Evidence* 1: "When an actuary serves as expert witness, he provides the court with an opinion as to the actuarial lump sum present value of future contingent payments. By evaluating a host of contingencies, the actuary is able to translate the value of an award payable in installments over a future period into an equivalent lump sum payable in the present".

<sup>79</sup> See *AA Mutual Insurance Association Ltd v Maqula* 1978 1 SA 805 (A) 812B: "For purposes of his calculations he relied on certain assumptions such as that owing to the accident the plaintiff would no longer be able to work and that the plaintiff's life expectancy had not been influenced by the accident".

<sup>80</sup> See Koch *Reduced Utility* 75: "A decision based on the balance of probabilities reflects a judicial opinion as to the probative value of the evidence before the court. The procedure implies the



The desirability of using statistics<sup>81</sup> as the basis for actuarial calculations has been reviewed on many occasions by academic writers and in case law.<sup>82</sup> Divergent views exist, but the value of statistical evidence in the application of contingencies cannot be underestimated.<sup>83</sup> It can be stated that statistics should not be regarded as the only determining factor,<sup>84</sup> but rather as one of many objective factors that should be considered by the courts in deciding on a contingency adjustment.<sup>85</sup>

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existence of a past event or present state of affairs. Our human condition prevents us having knowledge of future events but a witness may validly testify as to his beliefs concerning future events. The state of mind of the witness as regards future events is a question of fact. Many events, such as marriage or continuing employment, are known to occur with greater or lesser likelihood. Although accurate prediction in respect of any one individual is not possible, averages and frequencies of occurrence for large groups can be predicted with some degree of confidence. It is these perceptions of future possibilities and probabilities that form the basis of value judgments concerning the present price for which to exchange the prospect of an uncertain future financial gain or loss"; *Anthony v Cape Town Municipality* 1967 4 SA 445 (A) 451C-D: "The actuary, in the course of his evidence, referred to mortality tables, rates of interest, currency depreciation, and certain calculations such as the present value of various sums capitalised over a period of years".

<sup>81</sup> See Fienberg *Statistical Assessments* 4: "One school of statistical thought defines statistics as the science of decision making under uncertainty and, since courts deal with uncertainty in reaching decisions, this school argues formal statistical theory can provide a proper framework for improving judicial decision making"; and 9: "Statistical methods and forms of analysis can be invaluable in presenting succinct summaries of complex data, in providing a reliable basis for inference and predictions, in providing quantitative estimates of damages, and in clarifying loose verbal formulations of complex relations. Properly used, statistical approaches can benefit the court in much the same fashion that statistics has assisted those who work in other disciplines".

<sup>82</sup> See Anderson *Actuarial Evidence* 59-60; Stauch 1997 *OJLS* 218-222; Eggleston *Evidence* 228: "[W]here there are available statistics on which an expert witness can found an opinion, he should not be prevented from applying acceptable methods of calculating probabilities and presenting the results to the court. But it will also be apparent that on the whole the [English] courts have not been receptive to attempts to use experts in any way that might deprive the judges or juries of their traditional function in relation to fact-finding or prediction".

<sup>83</sup> See Fienberg *Statistical Assessments* 1: "In recent years statisticians and others who use statistical methods have participated in the legal process with increasing frequency, both as consultants and as expert witnesses. This trend can be attributed in part to the increasing amount of information relevant to legal cases that requires statistical interpretation. Use of statistical experts also rests on the belief, among legal decision makers and others in the society, that both statistical knowledge and its applicability to real problems involving inferences have increased. This belief reflects the evolution of statistics as a body of knowledge and as a professional activity, especially over the past 85 years".

<sup>84</sup> Eggleston *Evidence* 19: "Of course, no judge would want to assess damages that took account of the possibility of remarriage without seeing the widow concerned, but the statistics regarding the remarriage of widows would obviously be helpful"; *Laferrière v Lawson* 1991 1 SCR 541 609: "Statistical evidence may be helpful as indicative but is not determinative".

<sup>85</sup> See Koch *Reduced Utility* 14: "The deduction for general contingencies and the value of a possibility are both commonly determined by a process of subjective impression rather than arithmetic calculation.... Formal statistics and monetary amounts are then merely ways for objectivising the subjective impression".

There is further uncertainty as to if it is reasonable and fair to make use of statistics and averages in assessing life expectancies and occupational expectancies for individuals.<sup>86</sup> Koch<sup>87</sup> is of the opinion that averages in the case of uncertainties could establish consensus between parties. He reckons that one can effectively handle uncertainties only by way of averages. He explains that a claim for the loss of earning capacity is calculated on the basis of an "expected" income and not a "predicted" income. The expectation in respect of the income is described as a "personalised average", meaning that all available information (including statistics) is added together in such a way that the career of the plaintiff is individualised as far as possible. It is, however, inevitable that a degree of uncertainty will exist, which necessitates a form of generalising.<sup>88</sup>

In assessing future loss the expert evidence of actuaries is commonly led as a substitute for the court's own, less sophisticated calculations.<sup>89</sup> An actuary is an expert witness whose opinion is merely part of all of the other evidence before the court, to be given greater or lesser weight according to the circumstances of the case.<sup>90</sup> The value of expert witnessing cannot be denied, but the fear of the unknown

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<sup>86</sup> Koch *Reduced Utility* 95: "Statistical prediction tells us what proportion of a group will suffer loss but it cannot tell which members of the group will suffer. The power of an average as a predictor is at its absolute worst when applied to a single individual. In fact it is no predictor at all and it would be an abuse of the information to use it in the sense of a predictor. What the average does indicate to us is the present marginal utility of an uncertain future event. It is the decision criterion, the point at which in the mind of a reasonable person the prospect of gain balances the prospect of loss"; *De Sales v Ingrilli* 2002 212 CLR 338 (HC) 364-365: "Statistics may throw some light on some of the questions we have mentioned. They may tell their reader what is the average life expectancy of a person of a certain age. They may reveal how frequent is remarriage among people of a certain age. But great care must be exercised in their use. What are the characteristics reflected in the statistics? Are those relevant to the present inquiry? Why can it be assumed that the individual will conform to the average? To apply a statistical average to an individual case assumes that the case has all the characteristics which, blended together, create the statistic"; *Parker v The Commonwealth* 1965 112 CLR 295 (HC) 311: "I was told by the actuary who gave evidence that about one-third of the women who become widows at the age of forty remarry at some time. This piece of information seems to me interesting but not very helpful. So much depends upon matters peculiar to the person and her circumstances, on various factors both emotional and material".

<sup>87</sup> Koch *Reduced Utility* 18.

<sup>88</sup> Koch 1989 *THRHR* 76.

<sup>89</sup> Koch *Damages for Lost Income* 4.

<sup>90</sup> Koch *Damages for Lost Income* 6.

could cause courts to react negatively to expert witnessing that appears unknown and strange.<sup>91</sup>

The court is not obliged to accept the evidence presented by the actuarial expert, and if the evidence of two or more experts differs, the court must attempt to reconcile the inconsistencies or otherwise prefer the evidence of one expert above that of the other.<sup>92</sup> It is also common for the trial court to ask the actuaries concerned, where there is conflicting actuarial evidence, to discuss the matter between themselves and to resolve their differences. This practice could obviate a considerable waste of court time,<sup>93</sup> but could also reflect an abdication by the court of its responsibility to adjudicate.<sup>94</sup> The court should not merely accept the actuary's figures and make a deduction for contingencies, but should endeavour to come to grips with the underlying reasoning of the actuary.<sup>95</sup> Therefore it is submitted that expert witnesses should give reasons for reaching their conclusions.<sup>96</sup> The court is required to take care that the opinion of an expert witness does not usurp the function of the court.<sup>97</sup> Most particularly, it is the function of the court, not the expert witness, to determine

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<sup>91</sup> Fienberg *Statistical Assessment* 7; Koch *Reduced Utility* 3: "There is a large divide between legal science and actuarial science. This gives rise to an intellectual no-man's land considered unduly actuarial by the lawyers and unduly legal by the actuaries".

<sup>92</sup> Charles *Handbook on Assessment of Damages* 5: "In the majority of cases, a court will be faced with conflicting expert testimony and will be forced either to choose that evidence which it thinks most accurate or to reject the evidence of both experts and proceed on the basis of data which represents an inbetween position".

<sup>93</sup> Koch *Damages for Lost Income* 5, 238; Schmidt and Rademeyer *Bewysreg* 434.

<sup>94</sup> See Koch *Damages for Lost Income* 4-5: "The expert evidence of actuaries is commonly led as a substitute for the court's own, less sophisticated, calculations ... The Appellate Division has displayed considerable reluctance to interfere with the detail of actuarial calculations and a wide variety of practices is accepted without question or comment".

<sup>95</sup> Koch *Damages for Lost Income* 6-7.

<sup>96</sup> Schmidt and Rademeyer *Bewysreg* 467; Meintjies-Van der Walt 2001 *THRHR* 255.

<sup>97</sup> Schmidt and Rademeyer *Bewysreg* 468-469; *Carstens v Southern Insurance Association Ltd* 1985 3 SA 1010 (C) 1021B: "While the Court will generally have regard to arithmetical calculations and to actuarial evidence of probabilities to assist it in its assessment, ultimately it must decide whether the results of such calculations and evidence accord with what is a fair and just award in each particular case"; *Anthony v Cape Town Municipality* 1967 4 SA 445 (A) 451B-D: "When it comes to scanning the uncertain future, the Court is virtually pondering the imponderable, but must do the best it can on the material available, even if the result may not inappropriately be described as an informed guess, for no better system has yet been devised for assessing general damages for future loss.... The actuary, in the course of his evidence, referred to mortality tables, rates of interest, currency depreciation, and certain calculations such as the present value of various sums capitalised over a period of years. This evidence is helpful in a general way but, as was mentioned in *Legal Insurance Co Ltd v Botes* 1963 (1) SA 608 (AD) at p 614, the Court is not tied down by inexorable actuarial calculations".

the relevant law.<sup>98</sup> This highlights the line drawn between the assistance the actuary provides and the responsibilities of the court.

If the actuaries are unable to resolve their differences, it then becomes the responsibility of the court to hear the conflicting points of view and to choose between them.<sup>99</sup> This was well explained in *Burger v National South British Insurance Co*:<sup>100</sup>

I am not bound to accept, and I do not accept in their entirety, the views of any one of the experts. I take from their testimony and from the probabilities as I see them, such help as I can get towards an assessment of damages. Doing the best I can with the evidence and the probabilities, I reach findings between the two extremes that I have mentioned.

On the other hand, if there is a shortcoming in the actuarial calculations the court can also request a fresh actuarial calculation based upon assumptions dictated by the court.<sup>101</sup> In *Nochomowitz v Santam Insurance Co Ltd*<sup>102</sup> the court held the following on this issue:

The matter will now stand down until such time as the actuaries have completed their calculations on the foregoing basis. It may then be mentioned again for the purpose of leading further evidence, if necessary, and of enabling me to make such final awards or orders as may be appropriate.

If the plaintiff fails to lead available actuarial evidence, he will not be deprived of a right to compensation, but it may give rise to a lower award than might otherwise have been the case.<sup>103</sup> A court may also *mero motu*, but with the consent of both

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<sup>98</sup> Schmidt and Rademeyer *Bewysreg* 464; Hodgkinson *Expert Evidence* 352: "The decision in the case is for the court, not for the witness".

<sup>99</sup> *Nochomowitz v Santam Insurance Co Ltd* 1972 1 SA 718 (T).

<sup>100</sup> *Burger v Union National South British Insurance Co* 1975 4 SA 72 (W) 75H-76A.

<sup>101</sup> *Smart v SAR&H* 1928 NLR 361; *Snyders v Groenewald* 1966 3 SA 795 (C); *Nochomowitz v Santam Insurance Co Ltd* 1972 1 SA 718 (T).

<sup>102</sup> *Nochomowitz v Santam Insurance Co Ltd* 1972 1 SA 718 (T) 728G.

<sup>103</sup> *Koch Damages for Lost Income* 48; *Arendse v Maher* 1936 TPD 162 165: "It remains therefore for the Court, with the very scanty material at hand, to try and assess the damage. We are asked to make bricks without straw, and if the result is inadequate then it is a disadvantage which the person who should have put proper material before the Court should suffer"; *Beukes v Mushet (Minister of Posts and Telegraphs)* 1947 EDL 204 205: "In regard to the above claims I have not had the assistance of an actuary to assess the amounts; and so must endeavour to fix a sum which appears to be fair".

parties, request expert assistance to perform complex calculations.<sup>104</sup> In *Kotwane v Unie Nasionaal Suid-Britse Versekeringsmaatskappy Bpk*<sup>105</sup> the court took judicial notice of interest rates, inflation and the increase in the salaries of black persons. An application for extension was brought in order for the evidence of an actuary to be heard. The court, however, rejected this application and made its own calculations.<sup>106</sup> In contrast with this approach, the court requested the actuary in *Trimmel v Williams*<sup>107</sup> to recalculate the damages award based on amended assumptions.<sup>108</sup> The latter procedure would be preferred to a situation where the court decides to make its own calculations on complicated issues.

It is also possible to have instances where the uncertainties regarding the future of the specific plaintiff and his circumstances are of such a nature that they do not justify actuarial calculations. In *Griffiths v Mutual & Federal Insurance Co Ltd*<sup>109</sup> the court held that:

[i]n a case where there is no evidence upon which a mathematical or actuarially based assessment can be made, the Court will nevertheless, once it is clear that pecuniary damage has been suffered, make an award of an arbitrary, globular amount of what seems to it to be fair and reasonable, even though the result may be no more than an informed guess.

It seems as if the courts are hesitant to allow expert evidence in respect of matters over which the court should make the judgment.<sup>110</sup> Taking account of contingencies

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<sup>104</sup> Koch *Damages for Lost Income* 48.

<sup>105</sup> *Kotwane v Unie Nasionaal Suid-Britse Versekeringsmaatskappy Bpk* 1982 4 SA 458 (O) 466-467.

<sup>106</sup> See Koch *Damages for Lost Income* 2: "The expert testimony of an actuary is a common feature of any well-prepared action for damages for loss of income. Where such testimony is lacking South African courts will frequently supplement the deficiency by themselves performing actuarial calculations". See also Koch *Damages for Lost Income* 7 and 72-73; *Arendse v Maher* 1936 TPD 162 162-163: "No actuarial or expert evidence has been put before us, and in my opinion evidence of this kind is of very great assistance to the Court. The Court is not bound by this evidence. Its discretion and its assessment of certain contingencies is still necessary. But in a fundamental question such as assessing how much capital must be paid to a person at this stage to enable that person to have a fixed sum per month for life, the evidence of an expert is invaluable".

<sup>107</sup> *Trimmel v Williams* 1952 3 SA 786 (C) 792-793.

<sup>108</sup> See also *Snyders v Groenewald* 1966 3 SA 785 (C) 795.

<sup>109</sup> *Griffiths v Mutual & Federal Insurance Co Ltd* 1994 1 SA 535 (A) 546F-G.

<sup>110</sup> *Meintjies-Van der Walt* 2001 *THRHR* 239; *Holtzhauzen v Roodt* 1997 4 SA 766 (W) 774; *S v Gouws* 1967 4 SA 527 (EC) 528D: "The prime function of an expert seems to me to be to guide the court to a correct decision on questions falling within his specialised field. His own decision should not, however, displace that of the tribunal which has to determine the issue to be tried".

in the assessment of damages is one of the areas of potential conflict between the expert witnesses and the court. The court could argue that expert witnesses enter the domain of the court if they make suggestions regarding contingency adjustments, while the court itself has a wide discretion in respect of the application of contingencies. It is, however, often impossible for the actuary to complete the calculations without making suggested contingency adjustments. The reasoning behind the actuary's calculations should be of such a nature that the court can be convinced of their logic and fairness. The contingency adjustments suggested by the actuary should be handled by the court in exactly the same manner as the calculations themselves – they serve merely as a guideline to the court.

The following guidelines in handling expert actuarial evidence can be deduced from the various case decisions and the preceding discussion:

- a) Actuaries should clearly indicate in their report on which assumptions and premises they based their calculations, as well as the contingencies they have already provided for in their calculations.
- b) The actuarial calculations should be taken as the starting point or basis for the assessment of damages by the court in the case of future loss.
- c) The court is not bound to the expert actuarial calculations.
- d) When confronted with two conflicting expert reports or evidence, the court has a discretion to choose between the two, or to appoint an alternative expert.
- e) In assessing the final damages award, the court has a wide discretion to adjust the findings of the expert evidence.

#### **4 Judicial discretion**

How wide is the judicial discretion of the court and can it be limited or restricted by expert evidence? According to Koch<sup>111</sup> the deduction for general contingencies

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<sup>111</sup> Koch *Reduced Utility* 149; Thomson 1988 *De Rebus* 68: "In the courts, the amount of the deduction is subjectively determined, after consideration has been given to such matters as the widow's appearance, her personality, her financial circumstances, the number of children and whatever else the judge may consider relevant. It is, however, customary for the actuary to give expert evidence on the amount, not only of the value of the widow's loss of support, but also on the amount of the deduction to be made for the possibility of her remarriage"; Koch *Reduced*

reflects the court's subjective impression as to the adequacy of the primary actuarial calculations. According to this, it would be the subjective discretion of the court that limits expert evidence rather than the other way around. It is important to note that actuarial evidence can be applied without the court's ever sacrificing its judicial discretion.<sup>112</sup> In a recent decision of the Supreme Court of Appeal in *Road Accident Fund v Guedes*<sup>113</sup> Zulman AJ confirms this:

The court necessarily exercises a wide discretion when it assesses the *quantum* of damages due to loss of earning capacity and has a large discretion to award what it considers right. Courts have adopted the approach that in order to assist in such a calculation, an actuarial computation is a useful basis for establishing the *quantum* of damages. Even then, the trial court has a wide discretion to award what it believes is just.

Actuarial calculations are not, however, always regarded as the correct method to assess the loss. The court is free to choose whichever method it considers best suited to the facts and circumstances of the case.<sup>114</sup> In respect of the claim for loss of support the Court of Appeal decided as long ago as 1923 in *Hulley v Cox*<sup>115</sup> that there is more than one method of calculating that can be applied. The court can use either the annuity method or the method by which a rough estimate is made. In the case of the annuity method, actuarial calculations are used. The court chose in *Hulley v Cox* to make a rough estimate because this method gave the court more freedom to consider the particular circumstances of the case.<sup>116</sup>

In respect of the claim for loss of earning capacity or future loss of income Nicholas JA explained in *Southern Insurance Association Ltd v Bailey*<sup>117</sup> two possible approaches to be followed by the court:

Any enquiry into damages for loss of earning capacity is of its nature speculative ... All that the Court can do is to make an estimate, which is often a very rough estimate, of the present value of the loss. It has open to it two possible approaches.

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*Utility* 328: "One must in any event express serious reservations about the subjective judicial assessment of remarriage prospects for widows from unfamiliar cultural backgrounds".

<sup>112</sup> Reinecke 1976 TSAR 31.

<sup>113</sup> *Road Accident Fund v Guedes* 2006 5 SA 583 (SCA) 587A-B.

<sup>114</sup> *Fair v South African Eagle Insurance Co Ltd* 1997 2 All SA 396 (E) 407h.

<sup>115</sup> *Hulley v Cox* 1923 AD 234 243-245.

<sup>116</sup> See also *Paterson v South African Railways and Harbours* 1931 CPD 289 299-301.

<sup>117</sup> *Southern Insurance Association Ltd v Bailey* 1984 1 SA 98 (A) 113H-114E.

One is for the Judge to make a round estimate of an amount which seems to him to be fair and reasonable. That is entirely a matter of guesswork, a blind plunge into the unknown. The other is to try to make an assessment, by way of mathematical calculations, on the basis of assumptions resting on the evidence. The validity of this approach depends of course upon the soundness of the assumptions, and these may vary from the strongly probable to the speculative. It is manifest that either approach involves guesswork to a greater or lesser extent. But the Court cannot for this reason adopt a *non possumus* attitude and make no award. ... In a case where the Court has before it material on which an actuarial calculation can usefully be made, I do not think that the first approach offers any advantage over the second. On the contrary, while the result of an actuarial computation may be no more than an 'informed guess', it has the advantage of an attempt to ascertain the value of what was lost on a logical basis; whereas the trial Judge's 'gut feeling' (to use the words of appellant's counsel) as to what is fair and reasonable is nothing more than a blind guess.<sup>118</sup>

In adjusting actuarial calculations, different methods can be used by judges within their judicial discretion. Some judges will make various adjustments during the different stages of the actuarial calculations if they do not agree with the suppositions and assumptions on which they were based. They may then also choose to make a general contingency adjustment at the end when the final award is assessed. Other judges will adjust only the final award reached by the actuarial calculations by way of a general contingency adjustment. If judges choose to follow the first route, they should be very careful when adjusting an actuarial calculation that was done by an expert in the field. Charles<sup>119</sup> warns against the possible temptation on the path of the courts to adopt only a part of the actuarial report and to combine that evidence with other evidence received from an independent other source.<sup>120</sup> The judges would

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<sup>118</sup> *Griffiths v Mutual & Federal Insurance Co Ltd* 1994 1 SA 535 (A) 546F-G: "In a case where there is no evidence upon which a mathematical or actuarially based assessment can be made, the Court will nevertheless, once it is clear that pecuniary damage has been suffered, make an award of an arbitrary, globular amount of what seems to it to be fair and reasonable, even though the result may be no more than an informed guess"; *Roxa v Mtshayi* 1975 3 SA 761 (A) 769G-770A: "While evidence as to probable actual earnings (but for the injury) is often very helpful, if not essential, to a proper computation of damages for loss of earning capacity, this is not invariably the case. In the present case the imponderables were vast. The Court had to consider the position of a young child struck down almost in infancy... When one further considers that the working period under consideration stretches some 30 or 40 years into the future, it becomes clear that any attempt at an actual calculation of loss of future income would be a fruitless exercise". The trial Judge took a broad view of the situation and awarded a globular amount which he considered appropriate in the circumstances. Also see *Union and National Insurance Co Ltd v Coetzee* 1970 1 SA 295 (A) 301D-E; *Guardian National Insurance Co Ltd v Engelbrecht* 1989 4 SA 908 (T) 911G-I.

<sup>119</sup> Charles *Handbook on Assessment of Damages* 5.

<sup>120</sup> *Holian v United Grain Grovers Ltd* 1980 5 WWR 501 (CA) 503: "...there is a danger if the judge picks amounts here and there in the report and arrives at his own calculation without making the same deductions as the actuary has made for reasons which are well known to his expertise, which expertise is not available to members of the judiciary".



be advised to rather instruct the actuary to change the assumptions and recalculate the loss. On the other hand a general contingency adjustment at the end of the calculation falls squarely within the wide discretion of the court and can also have the desired effect.

To illustrate this point I wish to refer to the recent Supreme Court of Appeal decision in *Road Accident Fund v Guedes*.<sup>121</sup> In an action for damages for bodily injuries arising out of a motor vehicle accident, the High Court awarded the respondent (Ms Guedes) an amount of approximately 3.12 million rand in respect of her future loss of income or earning capacity. Ms Guedes was only partially incapacitated owing to the injuries sustained. The court arrived at the *quantum* of its award on the basis of actuarial calculations of the income Ms Guedes would have received but for the accident and the income she stood still to earn having regard to the accident, from which figures it made contingency deductions of 10% and 30% respectively, and then awarded the difference.

Value of income <i>but for</i> the accident	R7 954 150		
10% contingency deduction	R 795 415		
		=	R7 158 735
Value of income <i>having regard to</i> accident	R5 770 981		
30% contingency deduction	R1 731 294		
		=	R4 039 687
<b>Difference = Total to be awarded</b>			<b>R3 119 048</b>

In reaching the figure in the "but for" scenario, the actuary made the assumption that Ms Guedes would have been promoted and received an income on the highest level. In reaching the figure in the "having regard to" scenario, the actuary made the assumption that Ms Guedes would not be promoted to any level further than the one she occupied at the time. On appeal, the appellant (Road Accident Fund) contended that the correct approach should have been to find that Ms Guedes would have been promoted to the same level pre- and post-accident and argued for a higher contingency deduction from the "having regard to" scenario than that for the "but for" scenario, or alternatively to deduct a substantially higher contingency in the "but for"

<sup>121</sup> *Road Accident Fund v Guedes* 2006 5 SA 583 (SCA).  
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scenario and a low contingency in the "having regard to" scenario. The Road Accident Fund therefore contended that the court of first instance misdirected itself and ought to have made deductions of 40% and 20% respectively, and ought, consequently, to have awarded the respondent an amount of only R155 700.

Value of income <i>but for</i> the accident	R7 954 150		
40% contingency deduction	R3 181 660		
		=	R4 772 490
Value of income <i>having regard to</i> accident	R5 770 981		
20% contingency deduction	R1 154 196		
		=	R4 616 785
<b>Difference = Total to be awarded</b>			<b>R 155 705</b>

The Supreme Court of Appeal held that the court of first instance did in fact misdirect itself in misapplying the guideline given by Koch in his well-known textbook the *Quantum Yearbook*. Koch suggests a sliding scale of half a per cent for every year to retirement age. The respondent, Ms Guedes, was 26 years of age at the time of the accident. An application of Koch's sliding scale to this matter would have led to a contingency deduction of 19.5% to the "but for" scenario. In respect of the "having regard to" scenario, the Supreme Court of Appeal held that, based on the evidence presented to the High Court, the 30% deduction was appropriate. The final award by the Supreme Court of Appeal was thus calculated as follows:

Value of income <i>but for</i> the accident	R7 954 150		
20% contingency deduction	R1 590 830		
		=	R6 363 320
Value of income <i>having regard to</i> accident	R5 770 981		
30% contingency deduction	R1 731 294		
		=	R4 039 687
<b>Difference = Total to be awarded</b>			<b>R2 323 633</b>

This case clearly illustrates the difference a contingency adjustment could make to the final amount awarded to the plaintiff and thus also illustrates the importance of the judicial discretion in regards to contingency adjustments.

My discussion would be incomplete if I did not also briefly mention the difference between a general contingency adjustment and a specific or special contingency adjustment. Specific or special contingencies are regarded as specific because they are primarily relevant in specific people's lives at specific times, for example remarriage or divorce. Specific contingencies have to be substantiated by evidence, although not necessarily proven on a preponderance of probabilities. The evidence referred to here would include statistics, the personal circumstances of the plaintiff or the deceased breadwinner, oral evidence given during the trial, or other documentary evidence presented to the court. Because a specific contingency adjustment could be very high in comparison with a general contingency adjustment, as I will presently illustrate from case law, the court should be very careful when determining the size of the specific contingency adjustment and remember that it should always relate to the proven facts.

All of the following examples from case law relate to a specific contingency adjustment made for a possible remarriage by the widow. In *Milns v Protea Assurance Co Ltd*<sup>122</sup> Watermeyer J described the widow as "a very presentable young lady with no attachments and ... rate[d] her chances of remarriage as high". This led to a seventy per cent specific contingency deduction of her claim for loss of support based upon a possible remarriage. In this case the court also at first made a twenty-two per cent general contingency adjustment, which collectively amounted to an almost eighty per cent deduction in the widow's total claim. In *Shield Insurance Co Ltd v Booyesen*<sup>123</sup> Trollop AJ distinguished the widow in this case from the one in the *Milns* case in that this widow was older and had three children, one of whom was out of wedlock. This prompted him to make a contingency deduction for remarriage of "only" fifty per cent. In *Trimmel v Williams*<sup>124</sup> a seventy per cent contingency adjustment for remarriage was also made, based on the following facts: the widow had capital, her children were provided for, and she was young and attractive. From these examples it must be clear that a specific contingency adjustment best illustrates the power of the judicial discretion of the court and how the exercising of this discretion could dramatically influence the damages to be awarded.

<sup>122</sup> *Milns v Protea Assurance Co Ltd* 1978 3 SA 1006 (C) 1014A-E.

<sup>123</sup> *Shield Insurance Co Ltd v Booyesen* 1979 3 SA 953 (A) 966C-F.

<sup>124</sup> *Trimmel v Williams* 1952 3 SA 786 (C) 793A-E.

## 5. Conclusion

Based upon the various legal procedures and problems I have endeavoured to highlight, it is suggested that in assessing the damages to be awarded, the judicial discretion of the court be exercised in the following manner:

- a) The court should choose the method of assessment carefully, knowing that the method so chosen will influence the use of actuarial calculations and the manner in which contingencies will be taken into account.
- b) In the assessment of the contingency adjustment, the court should take note of the objective factors present, *inter alia* logic and common knowledge, the proven factual circumstances of the plaintiff, the expert and other evidence, etcetera.
- c) In applying subjective considerations the court should exercise its wide judicial discretion with caution, especially when making a specific contingency adjustment.
- d) The court should give reasons for deviating from the actuarial calculations and should refrain from making its own mathematical calculations or amending the actuarial calculations of an actuary.

Finally, I wish to state that the court should function as the caretaker of the damage assessment process, and not operate as the bully who uses its wide discretion to simply overrule the actuary and to usurp the whole assessment process as if it is the sole domain of the court. The old saying that justice must be seen to be done also applies here. In assessing delictual damages, it is the duty of the court, within its wide discretion, to ensure that both objective and subjective factors are considered in such a manner that the assessment could be regarded as an application of "fair" mathematics.

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**List of abbreviations**

ALJ	Australian Law Journal
CJLJ	Canadian Journal of Law and Jurisprudence
OJLS	Oxford Journal of Legal Studies
PER	Potchefstroom Electronic Law Journal
SALJ	South African Law Journal
THRHR	Tydskrif vir Hedendaags Romeins-Hollandse Reg
TSAR	Tydskrif vir die Suid-Afrikaanse Reg

**"FAIR" MATHEMATICS IN ASSESSING DELICTUAL DAMAGES****L Steynberg\*****SUMMARY**

In assessing delictual damages the plaintiff is burdened with the duty to prove loss with a preponderance of probability, including uncertain future loss. In quantifying such a claim an actuary is often used to make actuarial calculations based on proven facts and realistic assumptions regarding the future. The role of the actuary is to guide the court in the calculations to be made. Relying on its wide judicial discretion the court will have the final say regarding the correctness of the assumptions on which these calculations are based. The court should give detailed reasons if any assumptions or parts of the calculations made by the actuary are rejected. It should preferably refrain from making its own calculations if an actuary is involved and should rather instruct the actuary to do recalculations if necessary. It does, however, fall within the wide discretion of the court to make a general contingency adjustment after the basic calculations have been accepted. In assessing delictual damages it is the duty of the court to ensure that both objective and subjective factors are considered in such a manner that the assessment may be regarded as an application of "fair" mathematics.

**KEYWORDS**

Delictual damages; actuary; expert witness; evidence; burden of proof; judicial discretion; contingencies; probability

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