

# WRESTLING WITH NEGATIVE AND POSITIVE CONTINGENCIES WHEN QUANTIFYING FUTURE LOSS

by: W. Augustus Richardson,  
Huestis Holm, Halifax, and

## The General Rule: Theory and Practice

1. The concept of contingencies as a factor in the assessment of future loss claims took root and flourished with the establishment of future loss damages on an actuarial basis in the trilogy.<sup>1</sup>
2. In brief, the Supreme Court of Canada in the trilogy approved the use of actuarially based calculations to generate the present value of a future loss. These calculations took into account assumptions about the annual amount of the future loss; the length of the period of future loss; the likelihood that the plaintiff would live out that period; and the real rate of interest over the future period in question; to calculate a sum which would generate a stream of income equal to the projected annual future loss over the period. The fund had to be self-liquidating, in the sense that a zero balance had to result at the end of the period in question.<sup>2</sup>
3. The use of such relatively sophisticated calculations to calculate a *future* loss stretching many years into the future gave rise to the obvious question: how did the court know that the plaintiff would have lived as long (or worked as long) as assumed by the actuary in his or her calculations? That ubiquitous advisor,

---

<sup>1</sup> I of course refer here to *Andrews v. Grand & Toy Alberta Ltd* (1978) 83 DLR (3d) 452 (SCC); *Thornton v. School District No. 57 (Prince George)* (1978) 83 DLR (3d) 480 (SCC); and *Arno v. Teno* (1978) 83 DLR (3d) 609 (SCC).

<sup>2</sup> See *Smith v. Stuppert* (1992) 117 NSR (2d) 118 (CA).

“common sense,” suggested that the vagaries of life and employment made unrealistic any such assumption; and made mandatory some form of reduction for contingencies “to allow for the so-called ‘contingencies and vicissitudes of life’.”<sup>3</sup>

4. The Supreme Court’s decisions in the trilogy appeared to suggest that as a rule a court ought to reduce any future loss award by something in the range of 10-20%.
5. In *Andrews* a young man was rendered a quadriplegic. The trial judge, without reasons, reduced his future income loss claim by 20%; the Appellate Division did the same. In reviewing this reduction Dickson, J noted the general practice “to take account of contingencies which might have affected future earnings, such as unemployment, illness, accidents and business depression.”<sup>4</sup> He also noted that there was “much support for the view that such a discount for contingencies should be made,” but went on to observe the existence of a number of caveats:

“First, in many respects, these contingencies implicitly are already contained in an assessment of the projected average level of earnings of the injured person, for one must assume that this figure is a projection with respect to the real world of work, vicissitudes and all. Second, not all contingencies are adverse, as the above list would appear to indicate. As is said in *Bresatz v. Przibilla* (1962) 108 CLR 541 (HC) ... ‘Why count the possible buffets and ignore the rewards of fortune?’ Finally, in modern society there are many public and private schemes which cushion the individual against adverse contingencies. Clearly, the percentage deduction which is proper will depend on the facts of the individual case, particularly the nature of

---

<sup>3</sup> *Tronrud v. French* (No. 2) (1991) 84 DLR (4th) 275 (Man CA), per Scott, CJM at p.287.

<sup>4</sup> *Andrews, supra*, at p.470.

the plaintiff's occupation, but generally it will be small..."<sup>5</sup>

6. His Lordship thought that "actuarial help could be of great help" in determining the appropriate contingency; and that "some degree of specificity, *supported by evidence*, ought to be forthcoming at trial." But while the use of 20% was "not entirely satisfactory," he was not prepared to interfere.<sup>6</sup>
7. In *Thornton*, involving a teenager rendered a quadriplegic, the trial judge had refused to apply any contingency reduction to his future income loss claim, saying that he had no way of knowing whether the plaintiff would meet the adverse conditions of life (such as alcoholism, unemployment, drug addiction or insanity) or the positive conditions (promotions or salary increases). "In fine," as noted by Dickson, J, "the beneficial and the adverse contingencies cancelled out."<sup>7</sup>
8. However, the British Columbia Court of Appeal concluded that the trial judge had erred by failing to make adequate allowance for contingencies and had reduced the claim by 10% to make such an allowance. Mr Justice Dickson noted that the imposition

"of a contingency deduction is not mandatory, although it is sometimes treated as if it were to be imposed in every case as a matter of law. The deduction, if any, will depend upon the facts of the case, including the age and nature of employment of the plaintiff. *Most forms of employment, however, are exposed to the possibility of layoff, illness, accidents and the like.* I do not think that the Court of Appeal can be said to have erred in applying a 10% allowance."<sup>8</sup>

---

<sup>5</sup> *Andrews, supra*, at p.470.

<sup>6</sup> *Ibid*, at p.470 (emphasis added).

<sup>7</sup> *Thornton, supra*, at p.483.

<sup>8</sup> *Thornton, supra*, at p.489.

9. Finally, there is *Arnold v. Teno*.<sup>9</sup> This case involved a four and a half year old plaintiff who suffered severe physical and mental injuries. In calculating the projected future loss, the Ontario Court of Appeal had assumed that she would have earned something in the same range as her mother was earning as a teacher (\$10,000). Mr Justice Spence disagreed, saying that such an assumption was not warranted. On the other hand, he was not prepared to assume in the absence of any evidence at all that she would have been a public charge. He accordingly chose \$7,500, one assumes because it was mid-way between the poverty rate (\$5,000) and her mother's income (\$10,000). However, he then reduced the figure by 20% on the grounds that having assumed that the plaintiff would have been a wage earner, "we must also consider that all wage earners are faced with possibilities of failure through illness short of death, financial disasters, personality defects, and other causes."<sup>10</sup> Hence he used the figure of \$6,000 until the age of 65 for the purpose of calculating the present value of the future income loss.
10. Anyone reviewing these cases could be forgiven the conclusion that in ordinary course a contingency factor ought to be applied to a future loss claim. In the case of future income loss claims, the assumption appeared to be (at least as set out in the trilogy) that overall a wage earner would as a matter of course suffer rather more negative than positive contingencies; and that on balance a future loss claim ought to be reduced by something in the range of 10-20%. All three stressed the negative contingencies of employment. And in *Thornton* the Supreme Court expressly upheld the British Columbia Court of Appeal's imposition of a 10% contingency figure notwithstanding that the trial judge, who had considered the issue, had concluded that the positive and negative contingencies cancelled each other out. Given the Supreme Court's repeated assertions that appellate courts ought not to interfere with trial judges in the absence of errors of law, one could easily conclude that notwithstanding Dickson, J's reservations on the point, a contingency reduction ought

---

<sup>9</sup> *Arnold v. Teno* (1978) 83 DLR (3d) 609 (SCC).

<sup>10</sup> *Ibid.*, at p.638.

normally to be applied; and that a reduction in the range of 10-20% would in many cases be an appropriate one.<sup>11</sup>

11. In the years following the trilogy many courts adopted a contingency reduction of between 10% and 20% (and even on occasion higher figures) when dealing with future loss claims.<sup>12</sup> A summary of what appears to be the general rule can be found in the comment of McLachlin, J (as she then was) in *Milina v. Bartsch*<sup>13</sup>

“In recognition of the fact that the future cannot be foretold, allowance must be made for the contingency that the assumptions on which the award for pecuniary loss is predicated may prove inadequate. *In most cases*, this will result in a deduction, since the earnings and cost of care figures are based on an uninterrupted stream that does not reflect contingencies such as loss of employment, early death, or the necessity of institutional care. *When no evidence is available, courts have made deductions for such matters in the range of 20 percent.* Where evidence is available, the deduction for contingencies may be increased, decreased, or eliminated according to the proof presented. Evidence on contingencies is to be encouraged.”  
(emphasis added)

12. In more recent years courts have shown an increasing reluctance to use the “normal” rate in assessing a contingency, at least without any evidence. In part this may have been the result of a

---

<sup>11</sup> See, for example, Dickson, J's observation in *Andrews v. Grand & Toy, supra*, at p.470: “The figure of 20% which was used in the lower courts (*and in many other cases*), although not entirely satisfactory, should, I think, be accepted” (emphasis added).

<sup>12</sup> See the comments and cases discussed in W.H.R. Charles, *The Supreme Court of Canada's Handbook on Assessment of Damages in Personal Injury Cases* (Toronto, 1982) at pp.20-21.

<sup>13</sup> (1985) 49 BCLR (2d) 33 (SC) at p.79.

recognition that not all contingencies are negative. Some are positive. Without any evidence as to the relative strength of either, courts may be becoming increasingly reluctant to assume that if a negative contingency was to be applied, it ought to be based on such a large figure. The courts have also begun to fine tune their analysis of the problem, and to consider the impact of both general contingencies (those affecting all people in the plaintiff's situation) and specific contingencies (those more or less unique to plaintiff).

### General and Specific Contingencies

13. It is submitted that one approach to the balancing of negative and positive contingencies is to adopt an analysis which breaks contingencies into categories, the nature of which will depend upon the nature of the claim and the contingency in issue. Indeed, the courts have sometimes noted that because different types of contingencies may apply to a claimant, or because the types may vary with the nature of the future claim, the contingencies should be discussed separately for each claim.<sup>14</sup>
14. General contingencies represent those kinds of contingencies (positive and negative) common to most people, and include such things as the risk of death, disability, accident, unemployment, promotion, technological change, career change and the like. Specific contingencies are contingencies peculiar to the particular plaintiff, such as a extremely marketable skill or a poor work record, or a personal record of severe depression.<sup>15</sup>
15. The nature of the contingency will also depend upon the particular kind of future loss claim being made. For example, in a claim for the cost of future care a court is required to take into account the contingency that a plaintiff will not be able to receive such care at home for the rest of his or her life; but that

---

<sup>14</sup> See *Andrews v. Grand & Toy*, *supra*, fn.1, where separate contingencies for future care and future income losses were discussed; and see *Wender v. Trikha* (1991) 8 CCLT (2d) 138 (Alta QB) at 120.

<sup>15</sup> *Graham v. Rourke* (1990) 74 DLR (4th) 1 (Ont CA) at 14; *Tonrud v. French (No. 2)* (1991) 84 DLR (4th) 275 (Man CA) at 287.

in all likelihood will at some time be forced to receive it in an institutionalized (and hence less expensive) setting.<sup>16</sup>

16. This fine-tuning of the analysis can be assisted by actuarial evidence, but of a kind usually more detailed than that found at trial.

#### Actuarial Evidence<sup>17</sup>

17. Many of us will be familiar with actuarial evidence and its pitfalls. We may not be so familiar with the uses to which it can be put in dealing with the issue of contingencies.
18. The future loss calculations of an actuary are founded upon several kinds of assumptions, which in turn are based on certain types of evidence. The fundamental assumptions arise out of the following issues relevant to any calculation of future loss:
  - a. mortality (*i.e.*, that the plaintiff will live to a certain date);
  - b. morbidity (*i.e.*, that the plaintiff would not have been injured during the period had the accident not occurred);
  - c. retirement (*i.e.*, that the plaintiff would work until a certain date, traditionally age 65);

---

<sup>16</sup> See for example *Mortimer v. Cameron* (1994) 111 DLR (4th) 428 (Ont CA), where the future cost claim was reduced by 20% to allow for that contingency; see also *McErlean v. Sorel* (1987) 42 DLR (4th) 577 (Ont CA); *Malat (No. 2)* [1979] 4 WWR 673 at 684; *Andrews v. Grand & Toy, supra*, fn.1; and *Wenders* (1991) 8 CCLT (2d) 138, aff'd 14 CCLT (2d) 225 (Alta CA).

<sup>17</sup> I should like greatly to acknowledge the invaluable assistance of Mr Gregory L. Malone, of Eckler Partners Atlantic (Halifax) in writing this part of my paper. Mr Malone provided me with the materials attached to the paper, and took time and great care to explain the actuarial approach to me. Any errors in my presentation of his exposition are entirely my responsibility.

- d. employment (*i.e.*, that were it not for the accident the plaintiff would have worked without interruption until the termination date).
19. It is trite law to observe that expert opinions are only as strong as the evidence upon which they are based. An opinion as to future loss which is based upon assumptions which are not supported by any evidence runs the real risk of being reduced by the "usual" contingency factor. But by the same token, actuarial evidence which is properly supported will go a long way towards clarifying the nature and extent of any contingency factors to be applied. I propose to discuss the issue of mortality, as dealt with by actuaries in their calculations, in the hope the analysis will shed light on how such clarification can be achieved.
20. All future loss calculations are premised on the essential assumption that the plaintiff would in ordinary course live out his or her life in a productive capacity until the end of the future loss period. This is an assumption that we all recognize is not guaranteed. The reality of the risks of premature death and disability form the basis of the life and disability insurance industries, and can hardly be ignored by a court in assessing a future loss. Yet at the same time, we also recognize that *most* of us will live to at least 70 or 75. How does a court balance these two "risks" in a way that is fair to both plaintiff and defendant?
21. The evidence of actuaries, *if properly led and founded*, can provide assistance to the courts in this balancing act. Indeed, such evidence will in ordinary course result in contingency reductions much closer to 5% than to 20%.
22. What follows is an account of part of the actuarial approach. It is submitted that an understanding of a properly-grounded actuarial approach will point the way to the kinds of evidence that ought to be introduced at trial to support or contradict the actuarial opinion evidence.
23. An actuary's fundamental task lies with determining two basic factors or rates:
- a. The mortality rate (*i.e.*, the likelihood that the person in question would die in any given year); and

- b. The morbidity rate (*i.e.*, the likelihood that the person would become disabled in ordinary course).
24. There are of course other factors which may come into play, depending upon the nature of the future loss being claimed. For example, divorce rates would also come into play in determining a claim for loss of future support.
25. These rates, once determined, are used to determine the probability that a person would live to (or remain abled to) a given year. The loss for that year is then reduced by that probability, to produce the "actual" loss which is then used in determining the present value of the total future loss.
26. While the figures and surveys used by actuaries in determining mortality and morbidity rates are different, the process is essentially the same. We will deal with mortality rates first.
27. Actuaries use a numerical rating system which assumes that the average risk is 100%. Factors influencing mortality are expressed numerically in terms of a percentage greater or less than 100%. Debits or credits in multiples of five are added to the average risk. The total is then computed and expressed with reference to the standard of 100 percent. So, for example, if the grand total was +200, the expected mortality would be expressed as 200 percent (or 100 percent extra mortality).
28. Examples 1 and 2 in Brackenridge's *Medical Selection of Life Risks*<sup>18</sup> (see Appendix "A") demonstrate the process and are useful to review. Example 1 (at page 36) shows a man whose mortality factors are such that his mortality rating remains 100% (*i.e.*, normal or average). Example 2 (at page 38) shows a man who has so many negative mortality factors (smoker, family history of medical problems, etc.) that his mortality rating is 390% (*i.e.*, 290% extra mortality).
29. This mortality rating is then translated by a computer programme into a probability of survival figure.
30. If the morbidity rate is an issue, the actuary will then turn to various tables and perform the same type of analysis. The tables

---

<sup>18</sup> (The Nature Press, New York, 1985), pp.36-38.

are found in various books published for the life and disability insurance industry, and represent compilations of statistical surveys, studies and reports on the mortality and morbidity of various peoples, occupations, sex and so on. (Examples of such tables, from Lew and Gajewki, *Medical Risks: Trends in Mortality by Age and Time Elapsed*<sup>19</sup> can be found at Appendix "B")

31. In deciding whether or not particular morbidity factors should be taken into account a certain amount of judgment will be exercised by the actuary. If the actuary concludes that a factor may have already been accounted for in the mortality tables he or she may not include it (or may only include a portion of it) in the morbidity analysis. An example might involve a case of a miner with black lung disease. The disease would obviously play a role in the mortality rate-up, and this might influence an actuary into discounting the morbidity rate (also normally high) for that occupational category.
32. One should pause here to make the following observation. To say that someone has a 50% greater chance of dieing or becoming disabled does not mean -- and does not warrant -- a 50% reduction in their future loss.
33. Take the following example provided in Brackenridge. A basic life table shows that in a group of 1,000 healthy men all aged 40, 28 of them will be dead in 10 years. Hence the number of deaths (28) represents average mortality for this group, and produces a survival rate of 97.2%.
34. If this group is compared with a group of 1,000 men aged 40 who have a medical condition that resulted in 42 deaths over 10 years, there would appear to be a 50% increase in the number of deaths between this group and the "normal" group. However, if you compared the survival rate of this group (95.8%) with the survival rate of the normal group (97.2%) one is left with a mere 1.4% difference.
35. In other words, notwithstanding that a person in the impaired group has a 50% increased likelihood of dieing (as opposed to a person in the normal group), the increased likelihood of any particular person in that group (*i.e.*, the Plaintiff) dieing is only

---

<sup>19</sup> (Praeger, New York, 1990), vol I.

- 1.4%. Thus while the difference in the survival rate would warrant a contingency, it would not warrant a reduction in the range of 50% – or even in the range of 20%. In fact, the figure would be much smaller.
36. This phenomenon is demonstrated in Tables 1, 2 and 3 on the following pages.<sup>20</sup> All tables use the same individual: a 31-year old Newfoundland male police officer. The tables use morality rate ups of 0%, 200% and 400% respectively. The first rate up represents a normal healthy male; the last represents someone with severe positive mortality factors. In the first table, the individual has a 94% chance of surviving to the retirement age of 55; the last only a 72% chance. Yet a comparison of the final net present value figures for each table demonstrates that significant differences in mortality rates have a relatively minor effect on the final value of the loss.
37. For example, Table 1 produces a present value of \$273,604.48; while Table 3 produces a present value of \$256,393.66: a difference of only \$17,210.82, or roughly 6%.
38. This analysis suggests that notwithstanding the “usual” contingency reduction, a more appropriate reduction for the risks of mortality and morbidity, *at least where supported by the evidence*, is in the range of 4-5%.
39. I pause here to note that the same result may obtain insofar as that other contingency of life is concerned, unemployment, albeit for different reasons. The courts have noted on a number of occasions that the sting of unemployment has been reduced if not eliminated in modern society by the social safety net (and in particular, unemployment insurance and workers’ compensation).<sup>21</sup> The effect of the social safety net is to reduce

---

<sup>20</sup> I should again like to acknowledge the assistance of Mr Malone of Eckler Partners Atlantic (Halifax). He graciously prepared the three tables of calculations discussed here.

<sup>21</sup> See, for example, *Joubert v. Rosetown (Town)* (1987) 60 Sask CA 200 (CA) at 215; *Andrews v. Grand & Toy* (1978) 83 DLR (3d) 452 (SCC) at 470; *Hspahic v. Fernandez* (1987) 47 Man R 306 (CA) at 307-308, where the court noted that workers’ compensation benefits would have offset unemployment caused

ASSUMPTIONS:      MORTALITY:      NEWFOUNDLAND (MALE) 1990-92  
                          VALUATION DATE:      DECEMBER 1, 1995  
                          RETIREMENT AGE:      55  
                          CARRER:      POLICE OFFICER (RNC)  
                          MORTALITY RATE-UP:      0%

Year Begins Dec. 1	Age	Prob. of Survival	Annual Amount	Interest Factor	Valuation Factor	Present Value	Investment Adminstration
1995	31.72	0.998654	20,000.00	0.968468	0.967164	19,343.29	1,368.02
1996	32.72	0.997501	20,000.00	0.908357	0.906086	18,121.73	1,271.31
1997	33.72	0.996300	20,000.00	0.854061	0.850901	17,018.03	1,180.70
1998	34.72	0.995064	20,000.00	0.804977	0.801004	16,020.08	1,095.61
1999	35.72	0.993794	20,000.00	0.760563	0.755842	15,116.85	1,015.51
2000	36.72	0.992480	20,000.00	0.720349	0.714932	14,298.64	939.92
2001	37.72	0.991116	20,000.00	0.683916	0.677840	13,556.80	868.43
2002	38.72	0.989701	20,000.00	0.650899	0.644195	12,883.91	800.65
2003	39.72	0.988234	20,000.00	0.620971	0.613665	12,273.29	736.23
2004	40.72	0.986702	20,000.00	0.595274	0.587358	11,747.15	674.86
2005	41.72	0.985078	20,000.00	0.573377	0.564821	11,296.42	616.12
2006	42.72	0.983328	20,000.00	0.553605	0.544376	10,887.51	559.64
2007	43.72	0.981424	20,000.00	0.534515	0.524586	10,491.72	505.20
2008	44.72	0.979349	20,000.00	0.516084	0.505426	10,108.53	452.75
2009	45.72	0.977066	20,000.00	0.498288	0.486860	9,737.21	402.20
2010	46.72	0.974518	20,000.00	0.483813	0.471485	9,429.69	353.52
2011	47.72	0.971643	20,000.00	0.472402	0.459006	9,180.13	306.37
2012	48.72	0.968386	20,000.00	0.461261	0.446679	8,933.57	260.47
2013	49.72	0.964696	20,000.00	0.450382	0.434482	8,689.64	215.80
2014	50.72	0.960518	20,000.00	0.439760	0.422397	8,447.95	172.35
2015	51.72	0.955781	20,000.00	0.429388	0.410401	8,208.02	130.11
2016	52.72	0.950404	20,000.00	0.419261	0.398467	7,969.35	89.07
2017	53.72	0.944319	20,000.00	0.409373	0.386578	7,731.57	49.22
2018	54.72	0.937464	5,639.97	0.399718	0.374721	2,113.42	10.57
						273,604.48	14,074.62
							287,679.10

ASSUMPTIONS:      MORTALITY:                      NEWFOUNDLAND (MALE) 1990-92  
                          VALUATION DATE:                      DECEMBER 1, 1995  
                          RETIREMENT AGE:                      55  
                          CARRER:                                  POLICE OFFICER (RNC)  
                          MORTALITY RATE-UP:                      200%

Year Begins Dec. 1	Age	Prob. of Survival	Annual Amount	Interest Factor	Valuation Factor	Present Value	Investment Administration
1995	31.72	0.997526	20,000.00	0.968468	0.966073	19,321.46	1,323.78
1996	32.72	0.994072	20,000.00	0.908357	0.902972	18,059.43	1,227.17
1997	33.72	0.990482	20,000.00	0.854061	0.845933	16,918.65	1,136.87
1998	34.72	0.986796	20,000.00	0.804977	0.794349	15,886.98	1,052.28
1999	35.72	0.983017	20,000.00	0.760563	0.747646	14,952.92	972.84
2000	36.72	0.979118	20,000.00	0.720349	0.705307	14,106.14	898.08
2001	37.72	0.975082	20,000.00	0.683916	0.666874	13,337.48	827.55
2002	38.72	0.970906	20,000.00	0.650899	0.631961	12,639.23	760.86
2003	39.72	0.966589	20,000.00	0.620971	0.600224	12,004.47	697.66
2004	40.72	0.962092	20,000.00	0.595274	0.572708	11,454.16	637.64
2005	41.72	0.957344	20,000.00	0.573377	0.548919	10,978.38	580.37
2006	42.72	0.952240	20,000.00	0.553605	0.527165	10,543.31	525.48
2007	43.72	0.946709	20,000.00	0.534515	0.506031	10,120.61	472.76
2008	44.72	0.940706	20,000.00	0.516084	0.485483	9,709.66	422.16
2009	45.72	0.934129	20,000.00	0.498288	0.465465	9,309.30	373.61
2010	46.72	0.926821	20,000.00	0.483813	0.448408	8,968.16	327.06
2011	47.72	0.918619	20,000.00	0.472402	0.433958	8,679.15	282.22
2012	48.72	0.909383	20,000.00	0.461261	0.419463	8,389.26	238.83
2013	49.72	0.898991	20,000.00	0.450382	0.404889	8,097.78	196.88
2014	50.72	0.887314	20,000.00	0.439760	0.390205	7,804.10	156.39
2015	51.72	0.874190	20,000.00	0.429388	0.375367	7,507.33	117.37
2016	52.72	0.859440	20,000.00	0.419261	0.360330	7,206.59	79.84
2017	53.72	0.842938	20,000.00	0.409373	0.345076	6,901.52	43.80
2018	54.72	0.824590	5,639.97	0.399718	0.329603	1,858.95	9.29
						264,755.03	13,360.80
							278,115.83

ASSUMPTIONS:      MORTALITY:                      NEWFOUNDLAND (MALE) 1990-92  
                          VALUATION DATE:                      DECEMBER 1, 1995  
                          RETIREMENT AGE:                      55  
                          CARRER:                                  POLICE OFFICER (RNC)  
                          MORTALITY RATE-UP:                      400%

Year Begins Dec. 1	Age	Prob. of Survival	Annual Amount	Interest Factor	Valuation Factor	Present Value	Investment Administration
1995	31.72	0.996399	20,000.00	0.968468	0.964981	19,299.62	1,281.97
1996	32.72	0.990648	20,000.00	0.908357	0.899862	17,997.23	1,185.47
1997	33.72	0.984686	20,000.00	0.854061	0.840983	16,819.65	1,095.48
1998	34.72	0.978579	20,000.00	0.804977	0.787734	15,754.68	1,011.39
1999	35.72	0.972333	20,000.00	0.760563	0.739520	14,790.40	932.61
2000	36.72	0.965906	20,000.00	0.720349	0.695789	13,915.79	858.66
2001	37.72	0.959270	20,000.00	0.683916	0.656060	13,121.20	789.08
2002	38.72	0.952422	20,000.00	0.650899	0.619930	12,398.61	723.48
2003	39.72	0.945366	20,000.00	0.620971	0.587044	11,740.89	661.48
2004	40.72	0.938035	20,000.00	0.595274	0.558387	11,167.75	602.78
2005	41.72	0.930319	20,000.00	0.573377	0.533424	10,668.47	546.94
2006	42.72	0.922054	20,000.00	0.553605	0.510454	10,209.08	493.60
2007	43.72	0.913128	20,000.00	0.534515	0.488081	9,761.62	442.55
2008	44.72	0.903479	20,000.00	0.516084	0.466271	9,325.42	393.74
2009	45.72	0.892952	20,000.00	0.498288	0.444947	8,898.94	347.12
2010	46.72	0.881311	20,000.00	0.483813	0.426390	8,527.80	302.62
2011	47.72	0.868314	20,000.00	0.472402	0.410194	8,203.87	259.98
2012	48.72	0.853767	20,000.00	0.461261	0.393809	7,876.19	218.96
2013	49.72	0.837510	20,000.00	0.450382	0.377199	7,543.99	179.58
2014	50.72	0.819384	20,000.00	0.439760	0.360332	7,206.65	141.86
2015	51.72	0.799191	20,000.00	0.429388	0.343163	6,863.26	105.83
2016	52.72	0.776725	20,000.00	0.419261	0.325651	6,513.01	71.51
2017	53.72	0.751879	20,000.00	0.409373	0.307799	6,155.97	38.95
2018	54.72	0.724614	5,639.97	0.399718	0.289641	1,633.57	8.17
						256,393.66	12,693.81
							269,087.47

if not totally eliminate the effect of the contingency of unemployment (for whatever reason).

40. This conclusion is in accord with a number of recent appellate decisions to the effect that contingency reductions for *general* contingencies, when made, ought to be "modest,"<sup>22</sup> and in the range of 4%.<sup>23</sup>

41. A note of caution has to be sounded here.

42. The actuarial approach deals with statistical averages, and assumes that one cannot say for sure whether a particular plaintiff will fall within a risk or not. That is, the fact that in any given year 20 of a cohort of 1,000 will die of lung cancer will only justify a mortality rate up based on a 2% chance of death in any given year, because on the statistics alone one cannot say whether any particular person in that cohort will fall within the group of 20 who die.

43. In other words, and using the analysis developed in the courts, the actuarial approach is dealing with *general* contingencies.

44. However, if there is evidence which suggests that the plaintiff will probably fall within that group of 20 within the next year, or the next five years, one would surely be entitled to use a much higher contingency factor than that used by an actuary.

45. Such evidence would establish the existence of a *specific* contingency which would justify a departure from the *general* contingency figure otherwise used. Such evidence need not be established on a balance of probability, but "the evidence must be capable of supporting the conclusion that the occurrence of the contingency is a realistic as opposed to a speculative possibility."<sup>24</sup>

by injuries; and *O'Hara v. Belanger* (1989) 98 AR 86 (QB) at 118.

22 *Graham v. Rourke* (1990) 74 DLR (4th) 1 (Ont CA), per Doherty, JA at 15.

23 *Joubert v. Rosetown (Town)* (1987) 60 Sask LR 200 (Sask CA); *Fobel v. Dean* (1991) 83 DLR (4th) 385 (Sask. CA) at 419.

24 *Graham v. Rourke* (1990) 74 DLR (4th) 1 (Ont CA), per Doherty, JA at p.15.

46. For example, all of us may run a statistical chance of committing suicide; but where there is medical evidence of long-standing mental illness and severe depression, one might be entitled to use a much higher contingency, as in *Haines v. Bellissimo*,<sup>25</sup> where a 50% reduction was applied on the basis of such evidence. Similarly, in *Graham v. Rourke*<sup>26</sup> the evidence at trial established that the plaintiff as of the accident had already had a bad back, which made her susceptible to injury in any event. The trial judge refused to allow for any contingency. The Ontario Court of Appeal disagreed, observing that evidence of such a *specific* contingency warranted a 25% contingency reduction in the future loss assessment.
47. Specific contingencies need not always result in reductions. In *Bush v. Air Canada*<sup>27</sup> the trial judge balanced the usual negative contingencies with evidence from the plaintiff's employer that she was a valued and conscientious employee, which supported an argument that in the future she would likely receive a higher salary than that allowed for by the actuary; and, arguably, would be more likely to obtain a job in the event she were laid off. He accordingly did not reduce the award for future loss. While this result can be justified as a result of the "balancing approach," it is equally consistent with the approach suggested in this paper. That is, while evidence of general contingencies might in ordinary course lead to a (modest) reduction, evidence of specific contingencies (*i.e.* a superior employee pattern) acts as a kind of set-off, effectively cancelling the reduction that would otherwise be applied.
48. In essence then there ought to be a several-step process in dealing with contingencies when calculating future loss claims:
- a. first, one determines on the basis of the plaintiff's medical and occupational history the mortality and morbidity ratings *for actuarial* purposes; that is, one determines the *general* contingency; this contingency will generally be negative and will generally be modest; and

---

<sup>25</sup> (1977) 82 DLR (3d) 215 (Ont HC).

<sup>26</sup> (1990) 74 DLR (4th) 1 (Ont CA).

<sup>27</sup> (1992) 87 DLR (4th) 248 (NSCA).

- b. second, one determines whether there is any evidence of a *specific* contingency which would justify a higher or lower contingency than that used by the actuary, on the grounds that there is a realistic possibility that the plaintiff will in fact experience the "risk" in question.
49. This leads us to the kinds of evidence that are available and which ought to be introduced at trial in support of submissions about contingencies.

### Fitting the Evidence to the Contingency

50. From a plaintiff's perspective, the best way to ward off a "conventional" contingency reduction of anything higher than 5-6% is evidence. A solicitor who contents him- or herself with the actuary's assumption that the plaintiff is average runs the risk of a trial judge refusing to accept it on the grounds that it is unproved.
51. The evidence should not be hard to obtain.
52. First, the plaintiff (and his or her family physician, where appropriate) should introduce evidence similar to the kind sought on life and disability insurance forms: height; weight; blood pressure; prior diseases; family medical history; and so on. Such evidence can then be used to bolster the actuary's assumption regarding the mortality rate. Similar evidence ought to be obtained concerning the plaintiff's employment. Statistics abound as to the unemployment and accident rates for various industries. Such evidence can be used for both mortality and morbidity ratings.
53. As discussed above, such evidence will result in modest reductions to allow for general contingencies; but ought to have the benefit of ensuring (from a plaintiff's perspective) that in ordinary course the reduction is no more than that: modest. In the absence of such evidence (the burden of which ought in normal course to be on the plaintiff), the defendant ought to be able to argue that the "usual" contingency rate ought to be applied.
54. Second, the evidence ought to be scrutinized to determine whether there is support for a specific contingency that would

have the effect of either increasing or reducing the general contingency allowance. Did the plaintiff have pre-existing problems that made the risk of injury or unemployment or death more likely in any event? Does the plaintiff work in a position (or an industry) with sliding salary scales. If so, how do people advance through those scales. How has the plaintiff performed historically? Was the plaintiff a valued worker or a misfit? Were there any medical or emotional factors (for example, alcoholism) that might have had an impact on their employment or their income.

55. One ought also to look for statistical and sociological evidence that may have the effect of supporting or weakening the various assumptions that underpin an actuarial analysis.
56. One example can be found in the assumption respecting the age of retirement.
57. Traditionally, one could expect a court to conclude that a retirement age of 65 was an acceptable end point for future income loss calculations. That was the traditional age of retirement
58. On the other hand, social and demographic changes which have been accelerating over the last decade suggest that that assumption is no longer valid, at least for all people at all times. There is more and more statistical evidence available to the effect that the age of retirement depends upon a number of factors, including sex, age and type of employment.
59. For example, a recent report from Statistics Canada suggests that in 1994 the average retirement age for men was 62; for women was 58; and for both was 61 (not 65). It also suggests that the higher the household income, the lower the retirement age; and that a majority of female part-time workers retire before the age of 60.<sup>28</sup>
60. Such evidence can reduce or enlarge the projected retirement age, depending upon the plaintiff. For example, a defendant could reasonably argue that a government employee with a good

---

<sup>28</sup> Statistics Canada, "Age at retirement: a different perspective for men and women," Fact Sheet (October 1995).

pension and a working spouse will retire at 60 rather than 65. But a plaintiff in a low-income industry in the private sector with no pension plan could equally well argue that he could not afford to retire before 65 – if indeed not later.

61. Another example of the use (and importance) of statistical and sociological evidence to support or weaken actuarial assumptions can be found in cases involving very young plaintiffs who lack any employment history upon which to base future loss calculations.
62. The obvious problem with such plaintiffs is that they lack any earning's (and indeed often any educational) history to support the levels of annual income which form the basis of an actuary's calculations. Yet there is and has been a great deal of statistical and sociological evidence accumulated over the years which correlates the achievements of children with those of their parents. To take a recent example of such evidence, a Statistics Canada survey released in January 1996 suggests that low income may beget low income; that a child's income as an adult is strongly associated with household income during childhood; and that high-income fathers are likely to have high-income sons; and low-income fathers are likely to have low-income sons.<sup>29</sup>
63. While the Supreme Court of Canada in *Arnold v. Teno*<sup>30</sup> was clearly uncomfortable with the assumption that the infant plaintiff's future income would *equal* that of her mother as a teacher, it was still prepared to use that salary as a reference point. A similar approach to social statistics is found in *Wipfli v. Britten*.<sup>31</sup> There the plaintiff was an infant disabled at the moment of birth. The evidence at trial indicated that a poverty line income was in the range of \$10,000 a year; that a minimum wage income was in the range of \$7,800; and that the average income of men in the 20-24-year old category was \$15,000. The trial judge chose \$12,500 as the future annual income loss for the plaintiff, with no contingency allowance. The British Columbia

---

<sup>29</sup> Statistics Canada, "Income through the generations," Research Paper series no.89: The intergenerational income mobility of Canadian men," Jan 1996. Of course, this correlation is not new.

<sup>30</sup> *Arnold v. Teno* (1978) 83 DLR (3d) 609 (SCC).

<sup>31</sup> [1984] 5 WWR 385 (BCCA).

Court of Appeal upheld this approach, noting that the balancing of negative and positive contingencies had already been performed in the determination of the annual future loss.

64. Finally, one must also be alert to the fact that various degrees and kinds of contingencies may be applied to the same plaintiff, depending upon the nature of the loss (or expected gain) in issue. For example, in *Joubert v. Rosetown*<sup>32</sup> the plaintiff was a construction worker before the accident which gave rise to the action. The resulting injury prevented him from returning to work in the construction industry. To mitigate his loss he trained to become an animal health technician. The trial judge arrived at the plaintiff's loss by deducting what he might earn in mitigation from what he would have earned in construction had the accident not occurred. However, in making these calculations he had to determine what contingencies ought to be applied to each stream of income.
65. The trial judge decided to apply a contingency reduction of only 4% to the income the plaintiff would have earned had the accident not occurred on the grounds that he had had a good employment history. However, he applied a 40% contingency reduction to the expected income as an animal health technician, noting that only 70% of graduates obtained employment; and that since the plaintiff was now 40 he would probably find it more difficult to find employment in his new field.

### Conclusion

66. By way of conclusion I would like to suggest that counsel not content themselves with the "usual" contingencies when dealing with future loss claims. Actuarial opinion which is based on assumptions based on evidence will result in a better approximation of what the plaintiff's actual loss is. Such opinion evidence can be supplemented with statistical and sociological evidence, as well as medical or employment evidence where appropriate, to fine tune the analysis. Such an approach might result in something along the following lines:

---

<sup>32</sup> (1987) 60 Sask LR 200 (CA).

- a. first, medical evidence similar to that used by life and disability insurers might be introduced to bolster the actuary's mortality and morbidity ratings;
  - b. third, consideration ought to be given to any public insurance schemes (such as unemployment insurance or workers' compensation) or private benefit plans (available to the plaintiff from his or her former employer) which would have had the effect of reducing or eliminating any income loss that might otherwise be caused by the contingencies of disability and unemployment;
  - c. third, evidence tending to establish that the plaintiff is more likely to fall within the positive or negative contingencies ought to be introduced, so as to justify a higher (or lower) contingency factor than that produced by the "general" contingencies of life; such evidence may be found in statistical or sociological research, or in the plaintiff's own personal medical or employment history; and
  - d. fourth, a separate contingency analysis ought to be employed for each head of future loss claimed.
67. The greater the detail of evidence, and the finer-tuned the analysis, the easier it will become for the trial judge to assess the contingencies of a future loss claim; and the more difficult it will become for an appellate court to overrule such an analysis. For if there is a lesson to be learned, "it is that actions of this kind, depending as they do so much on the assessment of the evidence (which in turn depends on the trial judge's impression of witnesses), are won or lost at trial."<sup>33</sup>

---

<sup>33</sup> *Tronrud v. French (No. 2)* (1991) 84 DLR (4th) 275 (Man CA), per Scott, CJM at p.290.