Singapore Journal of Legal Studies
[2014] 98–122

RECOGNISING LOST CHANCES IN TORT LAW

LIANG SHI WEI, JEREMY* and **LOW** KEE YANG**

This paper proposes the way forward in dealing with the unsatisfactory case law involving loss of chance in negligence, particularly medical negligence. It seeks to show that the current approach in England and in Singapore of applying traditional causation rules is arbitrary and inadequate, and fails to meet a deserving loss of chance claim. The authors seek to examine whether loss of chance is better understood as a theory of injury instead of a theory of causation. Inspecting major common law jurisdictions and the key controversies in reconciling the case law, it will be advanced that the best method (in terms of justice and doctrinal fit) for the development in tort jurisprudence lies in recognising and valuing lost chances as a new category of damage. A lost chance should be recognised if it fulfils a twofold precondition, namely that: (i) there was a significant chance about the outcome at the time of the alleged negligence; and (ii) the injury which affected the claimant's prospects lay in the future at the time of the alleged negligence. Once this is met, damages may be awarded accordingly in proportion to the chance lost based on a weighted mean.

I. INTRODUCTION

The concept of loss of chance, propounded in the seminal contract case of *Chaplin v. Hicks*[1] in 1911, has since ventured into the realm of negligence in tort. Loss of chance may be seen as a doctrine involved with either damages or causation.[2] As a measure of damages, the doctrine is uncontroversial, but whether it should be considered a form of actionable damage in tort is debatable.

Damage, the gist of negligence,[3] was historically confined to property and personal injury, but the list of types of harm that are accepted as actionable is not

* LL.B. (Summa), Singapore Management University.
** Associate Professor, Faculty of Law, Singapore Management University.

1 [1911] 2 K.B. 786 (C.A.). The plaintiff managed to recover damages for breach of contract against the organisers of a beauty contest for excluding her from the contest. While it could not be shown on a balance of probabilities that she would have gone on to win the contest, the court held that she was entitled to recover for her lost chance of winning the contest.

2 Kumaralingam Amirthalingam, "The Changing Face of the Gist of Negligence" in Jason Neyers, Erika Chamberlain & Stephen Piitel, *Emerging Issues in Tort Law* (Oxford: Hart Publishing, 2007) 467 at 468.

3 See *Sidaway v. Bethlehem Royal Hospital* [1985] A.C. 871 at 883H (H.L.) (Lord Scarman); *Gregg v. Scott* [2005] 2 A.C. 176 at para. 193 (H.L.) (Baroness Hale); Jane Stapleton, "Cause in Fact and the Scope of Liability for Consequences" (2003) 119 Law Q. Rev. 388 at 389 [Stapleton, "Cause in Fact"]; Jane Stapleton, "The Gist of Negligence Part 2: The Relationship between 'Damage' and Causation" (1988) 104 Law Q. Rev. 389 [Stapleton, "Gist of Negligence"].

closed[4]—*e.g.*, pure economic loss was added to the list through *Hedley Byrne & Co. Ltd. v. Heller & Partners Ltd*.[5] As medical and scientific knowledge progressed, the categories of recognised damage were expanded, and the question now is whether tort law is ready to add loss of chance to the list by recognising it as a form of actionable damage.[6]

Such recognition would permit a plaintiff to claim for the loss of a chance of avoiding physical damage, as opposed to the physical damage itself. This lost chance is, hitherto, evidently not a tangible loss to person or property, but may nonetheless be considered something of value.[7] It is parasitic upon real physical damage in the sense that the chance "hooks"[8] onto, and derives its value from, an eventual traditionally recognised form of damage. This was the argument advanced by the claimant at the U.K. Court of Appeal in *Hotson v. East Berkshire Health Authority*,[9] but this was neither addressed squarely by the House of Lords,[10] nor has it been clearly rejected—not even in the seminal case of *Gregg v. Scott*.[11]

Since the list of the types of harm accepted as actionable in negligence is not closed, should the list be expanded to include loss of chance? The focus will particularly be on loss of chance in medical negligence,[12] as this seems to lie at the centre of most debates. Loss of chance proponents generally agree that the trust and vulnerability

---

4 *Hotson v. East Berkshire Health Authority* [1987] A.C. 750 at 761 (H.L.) (Donaldson M.R.) [*Hotson H.L.*].

5 [1964] A.C. 465 (H.L.) [*Hedley Byrne*].

6 Although damage is an essential component of negligence, important extensions of the categories of actionable damage occur with little or no analysis or even acknowledgment of the fact. Perhaps due to academic neglect, there is an absence of an established framework of governing principles for what defines actionable damage. See Donal Nolan, "New Forms of Damage in Negligence" (2007) 70(1) Mal. L. Rev. 59; Donal Nolan, "Damage in the English Law of Negligence" (2013) 4(3) Journal of European Tort Law 259.

7 Martin Hogg, "Re-establishing Orthodoxy in the Realm of Causation" (2007) 11(1) Ed. L. Rev. 8 at 14 [Hogg, "Re-establishing Orthodoxy"]; Martin Hogg, "Lost Chances in Contract and Delict - Golden Opportunities for Litigation?" (1997) 9 Scots Law Times 71 at 71 [Hogg, "Golden Opportunities"].

8 Stapleton, "Cause in Fact", *supra* note 3 at 423: "as the 'hook' on to which to hang a lost chance as consequential on the actionable injury which is then recoverable under orthodox rules." *Cf. Gregg v. Scott*, *supra* note 3 at paras. 86, 87 (Lord Hoffmann).

9 [1987] 2 W.L.R. 287 (C.A.) [*Hotson C.A.*]. The claimant, Mr. Hotson, fell from a tree, and was rushed to the hospital but the hospital negligently failed to properly diagnose his injury until five days later. The trial judge found as a fact that there would have been a 25% chance of recovery (avoiding avascular necrosis) in the absence of the negligent delay in diagnosis. Mr. Hotson won at the trial court, and was awarded proportionate compensation for the 25% chance that was lost. This was affirmed on appeal, but reversed by the House of Lords, which applied the all-or-nothing test in holding that causation was not fulfilled. See further David Price, "Causation—the Lords' lost chance?" (1989) 38(4) I.C.L.Q. 735.

10 Now the U.K. Supreme Court.

11 *Supra* note 3. The argument was rejected by a majority of the Court of Appeal in *Gregg v. Scott*, but not completely overruled by the House of Lords. The claimant, Mr. Gregg, was misdiagnosed by the defendant general practitioner, Dr. Scott, as suffering from a benign lump under his arm, when he was in fact suffering from cancer (non-Hodgkin's lymphoma). This resulted in a delay in proper treatment of the cancer by about nine months, reducing the chances of survival from 42% to 25%. Mr. Gregg's claim failed at all three levels of the lower court, the Court of Appeal, and eventually, the House of Lords. See further Jane Stapleton, "Loss of the Chance of Cure from Cancer" (2005) 68(6) M.L.R. 996 [Stapleton, "Cure from Cancer"]; Simeon Maskrey & William Edis, "*Chester v. Afshar* and *Gregg v. Scott*: Mixed Messages for Lawyers" (2005) 3 Journal of Personal Injury Law 205; Lord Hoffmann, who was one of the judges in *Gregg v. Scott*, has expressed his extra-judicial views in Leonard Hoffmann, "Causation" (2005) 121 Law Q. Rev. 592.

12 *Cf.* economic loss.

in the doctor-patient relationship, and the availability of evidence make it especially appropriate in the medical field,[13] where it serves the fundamental tort aims of compensation and deterrence.

II. Approaches in Major Common Law Jurisdictions

A. *England*

1. *Current position*

As regards recognising loss of chance as a form of actionable damage in tort, the position in England is technically still open.[14] It was rejected by two Law Lords in *Gregg v. Scott*—namely, Lord Hoffmann and Baroness Hale—but was not directly addressed by the House of Lords in *Hotson H.L.*[15]

2. *Reasons for rejection*

The reasons for rejection by two of the majority Law Lords in *Gregg v. Scott* were mostly on policy grounds;[16] for Baroness Hale, it was a conclusion made "not without regret" since she admittedly recognised the conceptual force of the loss of chance argument.[17]

Lord Hoffmann felt that it was too radical a change in the law, that there were insufficient control mechanisms to prevent floodgates, and that Parliament was best equipped to handle the issue.[18] He feared that accepting the doctrine would spell

---

[13] See *Matsuyama v. Birnbaum*, 890 N.E. (2d) 819 (2008) (Mass. Sup. Jud. Ct.) [*Matsuyama*] (noted in (2009) 122 Harv. L. Rev. 1247). *Cf.* David Fischer, "Tort Recovery for Loss of a Chance" (2001) 36 Wake Forest L. Rev. 605 at 642, which describes the interesting phenomenon that many Commonwealth countries allow loss of chance for legal malpractice but not medical. The situation is the reverse in the U.S.A. See also Tory Weigand, "Lost Chances, Felt Necessities, and the Tale of Two Cities" (2010) 43 Suffolk U.L. Rev. 101 at 158-159, online: Morrison Mahoney <http://www.morrisonmahoney.com/publications/WeigandArticle_AdvancePrint.pdf> [Weigand, "Two Cities"]:

> [L]imiting loss of chance to the medical profession, or not otherwise allowing physicians to reduce their damage exposure by the same proportionality approach, is… It is the piecemeal adjudication of such intricate social issues based on perceived injustices that erodes coherence in the law and invites the reproach that 'hard cases make bad law.'

[14] See Graham Reid, "*Gregg v. Scott* and lost chances" (2005) 21(2) Professional Negligence 78 at 86:

> [I]t is perhaps arguable that the unprincipled Lost Chance Argument is not yet lost to English law… A brave advocate may therefore seek to argue that *Gregg* has not conclusively settled the Lost Chance Argument. However, he or she will face an uphill struggle in doing so.

Most recently in *Wright v. Cambridge Medical Group* [2013] Q.B. 312 at para. 84, Lord Neuberger did venture the suggestion that the U.K. Supreme Court might wish to revisit *Gregg v. Scott,* and reconsider whether all medical loss of chance cases should necessarily be treated in the same way.

[15] Stapleton, "Cause in Fact", *supra* note 3 at 397; Stapleton, "Gist of Negligence", *supra* note 3.

[16] *Supra* note 3 at para. 190. The third majority judge, Lord Phillips, was more concerned with the complexities and uncertainties involved with the use of clinical statistics in the case. He concluded that there could be a case for loss of chance where the damage had actually been sustained.

[17] *Ibid.* at para. 226 (Baroness Hale).

[18] *Ibid.* at paras. 86-90 (Lord Hoffmann). See also para. 174 (Lord Phillips), who felt that the Law Commission would have been in a better position to handle the matter, if this was in fact, an attack on the test for causation.

severe consequences for both insurance companies and the National Health Service ("NHS").

Baroness Hale, on the other hand, pointed out that almost any claim for loss of an outcome could be reframed as a loss of chance of that outcome, and would lead to liability in almost every case.[19] Although she then conceded that claims involving loss of chance of avoiding physical damage were similar to claims of loss of chance involving economic loss (which had already been recognised[20]), there was in her view, a difference between the leg one ought to have, and the chance of keeping a leg which one ought to have.

She noted that proportionate recovery would unduly favour the claimant in cutting both ways, in that if the chance was more than 50%, the claimant could claim 100% under the traditional approach, but even if the chance was less than 50%, the claimant had an alternative cause of action under loss of chance. This would mean that the defendant would almost always be liable for something; therefore she preferred the traditional all-or-nothing approach under the "but-for" test.[21] Ultimately, she felt driven to reject loss of chance because redefining personal injury claims in loss of opportunity terms would lead to more complexity and problems than the underlying policy benefits were worth.[22] It seems therefore that the principal objections from Baroness Hale and Lord Hoffmann of the majority in *Gregg v. Scott* were policy-based, and not conceptual.

3. *Criticism of current approach*

Lord Nicholls, who dissented in *Gregg v. Scott*,[23] felt that the all-or-nothing approach in drawing a line at 50% was arbitrary, irrational and indefensible, since the loss of a less than 50% prospect of success was as real as a loss of a more than 50% prospect.[24] The difference between good and poor prospects of recovery in medical cases should have been relevant to compensation,[25] not to liability.[26] Lord Hope was also in agreement with Lord Nicholls, in that the lost chance could be pursued as a cause of action in its own right.[27]

The approach of the majority in *Gregg v. Scott* may be contrasted with that of *Chester v. Afshar*,[28] decided only months before *Gregg v. Scott*, where a differently constituted House of Lords seemed to favour fairness and corrective

---

19 *Ibid.* at 224 (Baroness Hale).

20 *Allied Maples Group Ltd. v. Simmons & Simmons* [1995] 1 W.L.R. 1602 [*Allied Maples*].

21 *Supra* note 3 para. 225, citing Tony Weir, *Tort Law* (Oxford: Oxford University Press, 2002) at 74, 75.

22 *Ibid.* at para. 227.

23 *Ibid.* at paras. 117, 121. Lord Hope also came to the same conclusion as Lord Nicholls (in that he would have allowed the claim) on the basis that the defendant's negligence resulted in the claimant's loss which itself was "caused by a physical injury, the enlargement of the tumour".

24 *Ibid.* at paras. 2, 3.

25 Quantification of damages.

26 *Supra* note 3 at para. 43 (Lord Nicholls).

27 *Ibid.* at para. 121 (Lord Hope): "what has to be valued is what the appellant lost, and that the principle on which that loss must be calculated is the same irrespective of whether the prospects were better than 50%."

28 [2005] 1 A.C. 134 (H.L.) [*Chester*].

justice over strict principle, distributive justice, and legal consistency.[29] Although admittedly a decision on informed consent[30] rather than negligent treatment and therefore technically distinguishable, Fordham comments that both are "philosophically incompatible",[31] and that *Chester* has so altered the whole question of what amounts to compensable damage (at least where actions for medical negligence are concerned) as to require re-appraisal of what compensation should mean.[32] On this point, there is a growing acceptance of the vindication of rights theory of tort law, which asserts that the law of torts is and should be concerned primarily or exclusively with notions of interpersonal morality, rather than the pursuit of community welfare goals (*i.e.* concerns about defensive medicine and overall community welfare which deny loss of chance).[33]

At present, what amounts to compensable damage may differ depending on how one classifies the loss. In comparing *Gregg* and *Chester*, Fordham queries the legal distinctions made:[34]

> [I]f in *Chester*, the loss of a right to be fully informed of medical risks (even risks which could not be shown to affect a claimant's decision to undergo the treatment) was the underlying basis for liability, then why should not the underlying basis for liability in cases like *Gregg* be the loss of chance to avoid the consequence of physical illness or injury? One might question the legitimacy of a legal distinction between what was in practice—if not in theory—the loss of a right to be made aware of risks in *Chester* and the loss of a chance to avoid the consequences of a disease in *Gregg*.

---

29 Lord Neuberger of Abbotsbury, "Loss of a chance and causation" (2008) 24(2) Professional Negligence 206 at 212. See Margaret Fordham, "Loss of chance—A Lost Opportunity?" [2005] Sing. J.L.S. 204 at 213 [Fordham, "Lost Opportunity"]: Fordham notes that in *Gregg v. Scott*, with the exception of Baroness Hale, their Lordships made no connection between the two cases.

30 In *Chester*, *supra* note 28, the defendant performed an operation on the claimant with a very small risk of complication. He failed to warn the patient of this risk, but there was no evidence that she would have refused to go ahead with the operation if she had been warned earlier. As Lord Steyn (with Lord Hope and Lord Walker in the majority) said at paras. 24, 25:

> Standing back from the detailed arguments, I have come to the conclusion that, as a result of the surgeon's failure to warn the patient, she cannot be said to have given informed consent to the surgery in the full legal sense. Her right of autonomy and dignity can and ought to be vindicated by a narrow and modest departure from the traditional causation principles.
>
> On a broader basis I am glad to have arrived at the conclusion that the claimant is entitled in law to succeed. This result is in accord with one of the most basic aspirations of the law, namely, to right wrongs. Moreover, the decision… reflects the reasonable expectation of the public in contemporary society.

31 Fordham, "Lost Opportunity", *supra* note 29 at 217; Neuberger, *supra* note 29 at 212; Hoffmann, *supra* note 11.

32 Fordham, "Lost Opportunity", *supra* note 29 at 215. Note the significance of *Chester* may alternatively be seen as delimited to the area of informed consent, which is unique in that it raises issues of trespass as well. See also Kumaralingam Amirthalingam, "Causation and the Gist of Negligence" (2005) 64(1) Cambridge L.J. 32.

33 Donal Nolan & Andrew Robertson, "Rights and Private Law" in Donal Nolan & Andrew Robertson, eds., *Rights and Private Law* (Oxford: Hart Publishing, 2011) 1 at 2.

34 Fordham, "Lost Opportunity", *supra* note 29 at 216. She goes further to argue that:

> Indeed it could perhaps even be argued that *Gregg*, where Dr. Scott's negligence actually increased the likelihood that Mr. Gregg would not recover from his cancer, in principle offered a stronger cause of action than *Chester*, where Dr. Afshar's negligence in failing to inform Miss Chester of the risks of surgery did not in itself increase the likelihood that she would be paralysed.

Maskrey and Edis[35] similarly advance that it is "difficult to see that there is any coherent difference between the right to decide whether to accept a particular treatment modality [,] and the right to be made in the first place aware of its existence and the possibility of its need."[36]

B. *Australia*

1. *Current position*

Loss of chance as an actionable damage has been rejected by the High Court of Australia in *Tabet v. Gett*,[37] overruling the pro-loss of chance decision made by the New South Wales Court of Appeal in *Rufo v. Hosking*.[38]

2. *Reasons for rejection*

For reasons similar to those of the House of Lords majority in *Gregg v. Scott*, the court in *Tabet* cited policy considerations such as dangers of "defensive medicine"[39] being practiced,[40] that the language of possibilities inherent in the doctrine should not be permitted to obscure the need to establish causation,[41] and that such radical change was for Parliament.[42] For a more comprehensive review of the decision, see Luntz[43] and Walsh and Walsh.[44]

However, one key explanation for the hostility towards redefining actionable damage to include loss of chance in Australia would be the onset of legislative developments introducing a uniform statutory definition of harm. Luntz notes that in the period of 2001-2004, legislatures in every Australian jurisdiction passed Acts designed in varying degrees to limit liability and damages.[45] Although the relevant legislation in New South Wales, the *Civil Liability Act 2002*,[46] did not apply on

---

35 Simeon Maskrey Q.C. (who appeared for the claimant Mr. Gregg) and William Edis (who appeared for the defendant Dr. Scott) in *Gregg v. Scott.*

36 Maskrey & Edis, *supra* note 11 at 222.

37 (2010) 240 C.L.R. 537 (H.C.A.) [*Tabet*].

38 (2004) 61 N.S.W.L.R. 678. The New South Wales Court of Appeal awarded damages on the basis that the defendant doctor's negligence had reduced the claimant's chances of avoiding microfractures in her spine. *Cf.* Amanda Stickley, "Loss of chance in medical negligence claims now a lost cause?" (2008) 31(1) Queensland Lawyer 21: Stickley's view that the doctrine was not completely overruled, and that the question may yet be left open for future cases with more solid evidence.

39 See William Sage, "Why Are Demonstrations of Comprehensive Malpractice Reform So (At All) Controversial?" (2007) 37 U. Mem. L. Rev. 513 at 515 points out that 'defensive medicine' may merely be a convenient excuse not to practice responsible medicine.

40 *Supra* note 37 at para. 59 (Gummow A.C.J.), who emphasised the danger of costly testing procedures in preference to a sequential deductive approach to diagnosis and treatment.

41 *Ibid.* at para. 69 (Hayne and Bell J.J.).

42 *Ibid.* at para. 102 (Crennan J.).

43 Harold Luntz, "Loss of Chance in Medical Negligence" (2010) U. Melb. L.R.S. 14.

44 Greg Walsh & Anna Walsh, "*Tabet v. Gett*: The end of loss of chance actions in Australia?" (2010) 18(1) Journal of Law and Medicine 50.

45 Luntz, *supra* note 43 at 33.

46 (N.S.W.), online: N.S.W. Legislation <http://www.legislation.nsw.gov.au/inforcepdf/2002-22.pdf?id=5e88bb 05-5ac9-6ed8-ccbf-eaca0a94aa7f>.

the case facts, the intermediate Court of Appeal in *Tabet* declined to accept loss of chance because "it would be inappropriate for the general law to develop a concept of harm which departed from the assumptions underlying a tolerably uniform statutory definition of harm."[47] Luntz comments that although the statutory definition of "harm" was an inclusive one,[48] the Court of Appeal thought that the substitution of "loss of the opportunity of a better outcome" in the substantive provisions where the word "harm" occurred was "at best awkward".[49]

Given that the legislature in Singapore has not embarked upon any sort of statutory definition of harm as Australia has, might not the onus lie with the courts to consider whether such "harm" should include loss of a chance, especially in the medical negligence context?

C. *U.S.A.*

1. *Current position*

Initially most courts in the U.S.A. required "certainty" of proof of damage and rejected loss of chance, but the recent position has changed in certain states as the result of an influential article by Joseph H. King Jr.[50] The *Restatement (Third) of Torts: Liability for Physical Harm* has recognised this change in the medical negligence area as an exception to the usual requirement of satisfying the "but for" test.[51] Note that while "but for" is often associated with the threshold of balance of probabilities, both are distinct concepts, and it is more the latter that is a problem for the loss of chance doctrine.

According to the Supreme Judicial Court of Massachusetts in *Matsuyama*,[52] a majority of U.S. courts that have considered the matter now allow loss of chance, in some medical cases at least. The court in *Matsuyama*[53] decided unanimously to follow this trend and accept loss of chance in medical malpractice actions, applying it subject to the requirement that the less favourable outcome had already occurred.[54] According to one writer in 2008, 23 states have accepted the doctrine in some form, 21 have rejected it, and 7 have left it open.[55]

---

47 *Gett v. Tabet* (2009) 254 A.L.R. 504 at 388 (H.C.A.) [*Tabet C.A.*].

48 *E.g.*, *Civil Liability Act 2002* (N.S.W.), s 5.

49 *Tabet C.A.*, *supra* note 47 at 384.

50 Joseph King, Jr., "Causation, Valuation, and Chance in Personal Injury Torts Involving Preexisting Conditions and Future Consequences" (1981) 90 Yale L.J. 1353 [King, "Preexisting Conditions"]; Joseph King, Jr., "'Reduction of Likelihood' Reformulation and Other Retrofitting of the Loss-of-A-Chance Doctrine" (1998) 28 U. Mem. L. Rev. 491 [King, "Reformulation and Retrofitting"]. The many differing attitudes in the different jurisdictions in the United States are described in John Hodson, "Medical Malpractice: 'Loss of Chance' Causality" (1995) 54 American Law Reports 4th 10.

51 The U.S.A. *Restatement (Third) of Torts: Liability for Physical Harm* §26, Comment *n* (2001), which contains references to some of the literature on the topic.

52 *Supra* note 13; Stephanie Buckler, "Medical Malpractice Law—Loss of Chance: Recovery For the Lost Opportunity of Survival—*Matsuyama v. Birnbaum*" (2009) 5 Journal of Health & Biomedical Law 117.

53 *Supra* note 13.

54 Followed in *Renzi v. Paredes,* 890 N.E. (2d) 806 (2008) (Mass. Sup. Jud. Ct.).

55 See Brie Wallace, "Poor Policy Stunts Tennessee Tort Law Again: The Need for Tennessee's Adoption of the Loss of Chance Doctrine in Medical Malpractice Litigation" (2009) 40 U. Mem. L. Rev. 215 at Appendices A, B, C.

2. *States that accept loss of chance*

The decision of *Matsuyama*[56] in Massachusetts is the leading pro-loss of chance case. There, Marshall C.J. reasoned that recognising loss of chance in the limited domain of medical negligence would advance the fundamental goals and principles of tort law, that if "loss of a chance" was to be recognised as actionable, it would be better understood as an injury recognised by the law of tort, than as a separate cause of action or as a surrogate for the necessary element of causation in a negligence claim.[57]

As a matter of doctrinal fit, loss of chance was said to further the compensation and deterrence functions of the tort system, as medical negligence which harmed a patient's chances of a more favourable outcome contravened the expectation at the heart of the doctor-patient relationship; additionally, the imposition of liability would induce "the physician [to] take every reasonable measure to obtain an optimal outcome for the patient."[58] Abraham has argued that "healthcare providers undertake to maximise a patient's chances of survival, [and so] their failure to do so should be actionable."[59]

As a matter of policy, since it is common for patients to have a less than even chance of survival or of achieving a better outcome when they present themselves for diagnosis, the shortcomings of an arbitrary all-or-nothing rule would be particularly widespread.[60]

Also, looking at the doctor-patient relationship where doctors are better situated to prevent harm than patients, failure to recognise loss of chance in medical malpractice actions would, unfairly, force the party least capable of preventing the harm, to bear the consequences of the more capable party's negligence.[61]

Further, and more fundamentally, any loss of chance to recover from injury, no matter how small (subject to the *de minimis* rule[62]), has value, and indeed, much of the treatment of diseases is aimed at extending life for brief periods and improving its quality, rather than curing the underlying disease. On this basis, the emanating criticism has been that negligent healthcare providers should not be able to get off scot-free just because, instead of killing his victim outright, he merely inflicts an injury that is likely—though not certain—to shorten the victim's life.[63]

---

56 *Supra* note 13.

57 *Ibid.* at 832:

> [W]e recognise loss of chance not as a theory of causation, but as a theory of injury…
>
> …a plaintiff must prove by a preponderance of the evidence that the physician's negligence caused the plaintiff's injury, where the injury consists of the diminished likelihood of achieving a more [favourable] medical outcome.

58 *Ibid.* at 835.

59 Kenneth Abraham, *The Forms and Functions of Tort Law*, 3rd ed. (Minnesota, U.S.A.: Foundation Press, 2007) at 117, 118, cited in *ibid.*

60 *Ibid.* at 828.

61 *Ibid.* at 828. See the U.S.A. *Restatement (Third) of Torts: Liability for Physical Harm* §26, Comment n (2001). King, "Preexisting Conditions", *supra* note 50 at 1378, argues that "[b]ut for the defendant's tortious conduct, it would not have been necessary to grapple with the imponderables of chance. Fate would have run its course."

62 *Fairchild v. Glenhaven Funeral Services Ltd.* [2003] 1 A.C. 32 at para. 41 (H.L.) (Lord Nicholls) [*Fairchild*]. See also Nolan, "Damage in the English Law of Negligence", *supra* note 6, who argues that the *de minimis* rule is fundamental to recognised damage.

63 *DePass v. United State*s, 721 F.2d 203 (1983) (Cir.) at 208 (Posner J. dissenting).

3. *States that reject loss of chance*

The legislatures in Michigan and South Dakota have passed measures to preclude "loss of chance" actions where the opportunity to survive is less than 50%.[64] In *Kemper v. Gordon*,[65] a majority of the Supreme Court of Kentucky held that loss of chance should not apply in medical negligence cases.[66]

Detractors of the doctrine argue that the tort system never intended to compensate for every injury, questioning why the loss of a chance should be special. Also, why target the medical (and not other) professions? Medicine being an inexact science, it would be impractical to require courts to speculate on liability based on an unpredictable discipline. Similar to the majority reasoning in *Gregg v. Scott*, states that reject the doctrine also cite fears of a medical malpractice insurance crisis, and that the legislature, not the courts, should make such reforms.[67]

To these reasons, it may be countered that loss of chance is special in that it lies at the heart of the doctor-patient relationship where the doctor undertakes not to guarantee a cure, but to give the patient a chance of that cure—recognising lost chances would be consistent with the objective of medical treatment. As to the unpredictability of medicine, courts already deal with this on a daily basis, as shown in the wide realm of medical negligence. Furthermore, loss of chance should not be delimited to the medical profession, although many of the cases addressing the loss of chance doctrine have involved medical malpractice where the duty generally is based on a consensual relationship or undertaking. This shows that it is in the healthcare context that the need to develop a coherent theory on loss of chance is especially pressing.[68] As to increased costs, such worries should not be exaggerated, since the quantification of damages may serve as an appropriate control mechanism.

III. Key Controversies

A. *Reconciling* Gregg v. Scott *and* Hotson

According to *Clerk and Lindsell on Torts*, medical negligence may be divided into two categories, depending upon whether the patient's condition at the time of the negligence does or does not give rise to significant medical uncertainty as to what the outcome would have been in the absence of negligence.[69] The former situation where there was significant uncertainty may be loosely referred to as "indeterministic", while the latter may be referred to as "deterministic".

---

64 Mich Comp. L. §600.2912a(2) (2002); S. Dak. Codified Laws §20-9-1.1.

65 272 S.W. (3d) 146 (2008) (Ky. Sup. Ct.). [*Kemper*]

66 For a detailed comparison of *Matsuyama*, *supra* note 13, and *Kemper*, *supra* note 65, see Weigand, "Two Cities", *supra* note 13 at 140-144.

67 Wallace, *supra* note 55 at 247-252.

68 See reasoning in *Matsuyama*, *supra* note 13 at 832, 834: where the court said that reliable expert evidence establishing loss of chance is more likely to be available in a medical malpractice case than in some other domains of tort law.

69 Michael Jones & Anthony Dugdale, eds., *Clerk and Lindsell on Torts*, 20th ed. (London U.K.: Sweet & Maxwell, 2010) at para. 2–87.

The difference between these may be illuminated by Reece's analogy with tossing an unbiased coin:[70]

> The chance of it landing heads is always 50%. So long as the coin has yet to be tossed, it is impossible to know whether it will land heads or tails: the situation is indeterministic, as there can be no right answer. But, if the coin has already been tossed, but is covered, the fact that no one may know the outcome (because the coin is covered) does not prevent there being only one right answer. Because the coin has been tossed, the outcome is deterministic.

Hotson fell into the deterministic category,[71] where there was no significant uncertainty about what would have happened to the claimant's hip. The coin had already been tossed, and since it was covered, it was up to the judge to determine as a matter of evidence whether it was heads or tails. Unfortunately for the claimant, and although the trial judge's language seemed to alternate between lost chance (see his first finding in fact) and ultimate loss (see his fourth finding in fact),[72] he was however regarded by the House of Lords as having ultimately made a key factual finding that it was tails—had the plaintiff's fracture been timely diagnosed and treated at the initial examination, there was a high probability of 75% "that the plaintiff's injury would have followed the same course as it in fact has."[73] It was therefore "improbable" that the fall had left intact enough blood vessels to keep the epiphysis alive, even if prompt surgical intervention had arrested the bleedings and thus prevented the compression of the remaining blood vessels.[74]

There is a distinction between a past fact and a hypothetical fact.[75] As Lord Ackner explained, "the debate on the loss of a chance cannot arise where there has been a positive finding that before the duty arose the damage complained of had already been sustained or had become inevitable."[76]

As such, on a balance of probabilities, at the time of the negligent diagnosis the hip in *Hotson* was already doomed to develop a permanent disability. The past fact was

---

70 Neuberger, *supra* note 29 at 209, citing Helen Reece, "Losses of Chances in the Law" (1996) 59 Mal. L. Rev. 188, at 193. The latter article was also cited by the House of Lords in *Gregg v. Scott*, *supra* note 3 at para. 79.

71 Reece, *ibid.* at 195-196.

72 Hogg, "Golden Opportunities", *supra* note 7 at 74:

> The Court of Appeal decided the case as one of lost chance, the House of Lords as one of ultimate loss. The confusion seems to originate in the findings of fact made by Simon Brown J. at first instance, for his language alternates between lost chance (see his first finding in fact) and ultimate loss (see his fourth finding in fact). The Court of Appeal chose to go with the first emphasis, the House of Lords the second. In the last analysis however, it is the House of Lords who have the final say… The case emphasises the importance of properly understanding the medical evidence and applying it correctly.

73 *Hotson v. East Berkshire Health Authority* [1985] 1 W.L.R. 1036 at 1040 (Q.B.) (Brown J.) [*Hotson*]

74 Note that much turns on the phrasing and interpretation of key findings of fact, as Hogg, "Golden Opportunities", *supra* note 7 at 74 notes. Had the trial judge in *Hotson*, *ibid.* made a finding of fact as to the possibility of a cure instead of a finding of fact of the condition of the claimant, the loss of chance issue might still have been alive.

75 *Hotson H.L.*, *supra* note 4 at 785 (Lord Mackay).

76 *Hotson H.L.*, *supra* note 4 at 792. See also 782 *per* Lord Bridge:

> In some cases, perhaps particularly medical negligence cases, causation may be so shrouded in mystery that the court can only measure statistical chances. But that was not so here… This was a conflict, like any other about some relevant past event, which the judge could not avoid resolving on a balance of probabilities.

that only a specific number of blood vessels remained intact following the child's accident. The coin had already been tossed,[77] and the claimant was either in the 75% or the 25% category. The insufficiency of medical evidence, however, made it impossible to establish that the claimant fell within the 25%, so his claim was bound to fail.[78] On this view, there was no loss of chance as there was no chance involved at all; there was no chance that proper treatment could have averted the condition.

Gregg v. Scott however, fell into the indeterministic category, where the coin has not been tossed, or still remains in the air,[79] and the "coin is whipped out of the air before it has been able to land".[80]

According to Lord Hope:[81]

> This case is different from *Hotson*'s case, where the probable effect of the delay in treatment was determined by the state of facts existing when the plaintiff was admitted to hospital. So, as Lord Mackay put it in [*Hotson*]… he had no chance of avoiding the consequences of that delay. … *In this case the enlargement of the tumour*—the injury which affected the appellant's prospects of a successful recovery—*still lay in the future* when the appellant was seen by the doctor. The entire case rests on the hypothesis that his illness might have taken a different course but for *this* injury which was cause by the delay in treatment.

Gregg v. Scott was a loss of chance case, but *Hotson* was not.[82] The latter is about likely cause and fact ascertainment, but the former is about likelihood of avoiding harm, which involves risk and likelihood.

Burrows comments that the initial question that must always be asked in this area, is whether the relevant uncertainty that is in issue is about a past fact or not. If the uncertainty is about what had happened in the past or what the state of affairs was in the past, the traditional but for approach applies. A "loss of a chance" approach would only be on the agenda should the uncertainty in issue concern the future (that is, what will the claimant's position be after trial) or a hypothetical event (that is, what would have happened to the claimant, in the past or in the future, had there been no breach of duty).[83]

On this view, *Hotson* seems correctly decided.

---

77 *Gregg v. Scott*, *supra* note 3 at para. 211 (Baroness Hale): "The coin had already been tossed, and had come down heads or tails".

78 Neuberger, *supra* note 70 at 209.

79 *Tabet v. Gett*, *supra* note 37 para. 16 (Gummow A.C.J.). See also Kiefel J., at para. 131.

80 *Gregg v. Scott*, *supra* note 3 at para. 211 (Baroness Hale).

81 *Ibid.* at para. 109 (Lord Hope) [emphasis added].

82 *Cf.* Andrew Burrows, "Uncertainty about uncertainty: damages for loss of a chance" (2008) 1 Journal of Personal Injury Law 31 at 40:

> The truth of the matter is that the real uncertainty in *Hotson* was over a hypothetical question, would the claimant's permanent hip disability have been avoided had the defendant complied with its duty. It was not really uncertainty about a past fact at all.

83 *Ibid.* at 34. Courts have been careful to distinguish between the "finding" of past facts and the assessment of future or hypothetical damage: see *Davies v. Taylor* [1972] 1 Q.B. 286 (C.A.), aff'g [1974] A.C. 207 at 213 (Lord Reid) (H.L.): "[y]ou can prove that a past event happened, but *you cannot prove that a future event will happen and I do not think that the law is so foolish as to suppose that you can. All that you can do is to evaluate the chance*" [emphasis added]; *Mallett v. McMonagle* [1970] A.C. 166 at 176 (H.L.) (Lord Diplock): "[i]n determining what did happen in the past a court decides on the balance of probabilities. Anything that is more probable than not it treats as certain."

B. *Treating Medical Negligence Differently from Pure Economic Loss?*

It is ironic that while the courts have generally been more averse towards imposing a duty of care for pure economic loss than for physical injury, the reverse seems to have occurred in loss of chance. The U.K. Court of Appeal in *Allied Maples*[84] accepted loss of chance for pure economic loss, and the two-stage test it propounded was applied in Singapore in the contract case of *Asia Hotel Investments Ltd v. Starwood Asia Pacific Management Pte. Ltd.*[85] In *Allied Maples*, a solicitor's negligence deprived the client of a chance to negotiate for a better bargain with a third party. This occurred because the solicitor failed to advise the client on the need for proper contractual protection against third parties, *i.e.* through the insertion of a warranty or a protection clause. Here, two hypothetical actions were required along this chain of causation: one by the claimant, and another by the third party. The court applied the following two-stage test: firstly, the claimant had to prove on the balance of probabilities that he would have taken action to obtain the relevant benefit or avoid the relevant risk (*i.e.* negotiate for the bargain/protection). Once this has been established, he need then only show that the chance which he/she has lost was real or substantial, rather than speculative (*i.e.* that there was a real and substantial chance that the third party would have agreed to the bargain/protection).

Commentators however, have criticised the different treatment between pure economic loss and physical injury as "anomalous".[86] In addition, Stapleton questions why hypothetical questions about the conduct of the claimant and defendant are answered on a balance of probabilities, while hypothetical questions about the conduct of a third party are answered on the basis of a real and substantial chance. She argues that all hypothetical conduct, whether by the claimant, defendant, or a third party should be evaluated in terms of chance, and not balance of probabilities.

One possible reason given by Baroness Hale in *Gregg v. Scott*,[87] and echoed by Kiefel J. in *Tabet*,[88] was that a commercial interest lost could readily be seen to be of value itself, so long as the opportunity provides a substantial and not merely speculative prospect of acquiring a benefit, but the same could not be said of a chance of a better medical outcome or a person's interest in it. The value given to the latter was derived from the final physical damage, because of a qualitative difference between a lost leg and a chance that one might not have lost that leg.[89]

---

84 *Supra* note 20.

85 [2005] 1 S.L.R.(R.) 661 (C.A.) [*Asia Hotel*] (noted in David Lee, "Proving Causation in a Claim for Loss of Chance in Contract" (2005) 17 Sing. Ac. L.J. 426); *JSI Shipping (S.) Pte. Ltd. v. Teofoongwonglcloong* [2007] 4 S.L.R.(R.) 460 (C.A.). Also accepted by the High Court of Australia in *Sellars v. Adelaide Petroleum N.L.* (1994) 179 C.L.R. 332.

86 Stapleton, "Cause in Fact", *supra* note 3 at 406-411; Stapleton, "Cure from Cancer", *supra* note 11 at 1005. *Contra* Coote, "Chance and the Burden of Proof in Contract and Tort" (1988) A.L.J. 761 at 772; Burrows, *supra* note 82 at 36, citing *McGregor on Damages*, 17th ed. (London: Sweet & Maxwell, 2003) at para. 8–035, and arguing in favour of the current distinction:

> At first glance it may seem somewhat strange to have different tests applicable to hypothetical acts of the claimant and hypothetical acts of third parties. But it can be seen to make sense. For a claimant can hardly claim for loss of a chance that he himself would have acted in a particular way: he must show that he would have done.

87 *Tabet v. Gett*, *supra* note 37 at para. 124.

88 *Ibid.* at paras. 122-124.

89 Burrows, *supra* note 82.

Lord Hoffmann has even likened economic chances to property in *Gregg v. Scott*: "most of the cases in which there has been recovery for loss of a chance have involved financial loss, where the chance can itself plausibly be characterized as an item of property, like a lottery ticket."[90] Interestingly, some 24 years ago, King used this same lottery ticket analogy to refer to chances in general, including physical damage.[91]

In Lord Hoffmann's words in *Gregg v. Scott*, this distinction is "apparently arbitrary", and "obviously rests on grounds of policy".[92] Lunney and Oliphant ask whether this distinction "result[s] in greater protection to financial interests than to personal injury, and, if so, is it desirable?"[93] It is submitted that this distinction is irrelevant to the question of whether loss of chance should be recognised. If anything, this should relate to quantification, and not identification of actionable damage.[94]

If we examine the limited situations in which loss of chance for pure economic loss is recoverable, such as where there is a contractual relationship between the parties,[95] or a similar close relationship in which the defendant has assumed responsibility to the claimant,[96] the essential feature is the same—a deserving loss of chance claim.

C. *Difference between Increase in Risk and Loss of Chance*

The High Court of Australia in *Tabet*[97] commented that the "so-called loss of an opportunity" may be seen as a claim based upon an increased risk of harm.[98] As Lord Walker said in *Barker v. Corus U.K. Ltd.*, "'increase in risk' [has, as] its mirror image, 'loss of a chance'".[99] Lord Hoffmann of the majority in *Gregg v. Scott*, who opposed loss of chance, even used the two interchangeably in the same sentence.[100] This is significant because a defendant's material contribution to an "increase in risk of injury" has been accepted in *Fairchild*[101] and *McGhee v. National Coal*

---

90 *Supra* note 3 at para. 83.

91 See Tory Weigand, "Loss of Chance in Medical Malpractice: The Need for Caution" (2002) 87 Mass. L. Rev. 3 at 8, citing King, "Preexisting Conditions", *supra* note 50 at 1378: King analogised loss of chance to the loss of a lottery ticket, an asset of value even though the odds of winning might have been less than 50%.

92 *Supra* note 3 at para. 83 (Lord Hoffmann).

93 Mark Lunney & Ken Oliphant, *Tort Law: Text and Materials*, 4th ed. (Oxford: Oxford University Press, 2010) at 224.

94 Stapleton, "Cure from Cancer", *supra* note 11 at 1005: "the lost chance constitutes the gist of the action and must be identified."

95 *Kitchen v. Royal Air Force Association* [1958] 1 W.L.R. 563 (C.A.).

96 *Spring v. Guardian Assurance Plc.* [1995] 2 A.C. 296 (H.L.).

97 *Supra* note 37.

98 *Ibid.* at para. 129.

99 [2006] 2 A.C. 572 (H.L.) at para. 114 [*Barker v. Corus*].

100 *Ibid.* at para. 39.

101 *Supra* note 62. See Margaret Fordham, "Causation in the Tort of Negligence—a Dispensable Element?" [2003] Sing. J.L.S. 285; Jane Stapleton, "Lords a'Leaping Evidentiary Gaps" (2002) 10 Torts L.J. 276; Tony Weir, "Making it more likely v. Making it happen" (2002) 61(3) Cambridge L.J. 519.

Board[102] as a means of overcoming scientific gaps in establishing causation.[103] Having said this, it is noted that *Barker v. Corus* has modified the position somewhat by reformulating the *Fairchild* principle, such that the latter applies not to address the question of causation, but rather the question of actionable damage (discussed below).

It seems that deserving loss of chance claims may in fact be reformulated as an "increase in risk of injury"[104] where the standard of proof is much lower.[105] Admittedly, a factual difference exists in that cases involving an increase in risk such as *McGhee* and *Bonnington Castings v. Wardlaw*[106] concerned personal injuries that arose from exposure to a harmful state of affairs, rather than a singular accident as such in loss of chance cases. However, might it not then be argued that cases involving loss of chance should be more deserving of being recognised damage, since a singular source of liability to pinpoint the fault to, is much easier than in exposure to harm over a period?

From a different angle, the authors of *Clerk and Lindsell on Torts* have queried:[107]

> If it would be unjust, or unfair, or 'morally wrong' to impose a test of causation which would inevitably preclude liability in *Fairchild* why did the same notions of morality or justice not apply [to loss of chance in cases like *Gregg v. Scott*]—were the victim of medical negligence entitled to a different brand of justice and morality from the victims of industrial disease?

One may be tempted to explain the distinction on policy grounds—the negligent manufacturing conglomerate that had injured its employee whilst acting solely in pursuit of commercial gain, versus noble professionals such as doctors who injure their patients whilst attempting to ameliorate a naturally occurring injury.[108] The distinction is unconvincing, certainly, from the patient's viewpoint.

---

[102] [1973] 1 W.L.R. 1 (H.L.) [*McGhee*]. Lord Hoffmann commented in *Barker v. Corus*, *supra* note 99 at para. 13 that: "*McGhee* must therefore be accepted as an approved application of the *Fairchild* exception."

[103] Jones & Dugale, *supra* note 69 at para. 2–68.

[104] And *vice versa*. See Hogg, "Re-establishing Orthodoxy", *supra* note 7 at 14, 15:

> In both *McGhee* and *Fairchild* the House of Lords might have provided a better solution to the problem at hand by using lost chance analysis…
>
> …Lost chance analysis has two principal virtues over the material increase in risk approach adopted in *McGhee* and *Fairchild.* First, it maintains the traditional rules of causation… Secondly, whereas the material increase in risk test means that a defender may be held liable for an injury which, on a *sine qua non* basis, he did not actually cause, lost chance recovery provides an equitable *via media* to the problem of causal uncertainty by compensating only the pursuer's loss of a chance of avoiding the harm, damages being valued by reference to the magnitude of the chance.

[105] The standard in such cases of "material contribution" to increase in risk is that of "not insubstantial"—*i.e.* "more than *de minimis*". See *Fairchild*, *supra* note 62 at para. 41 (Lord Nicholls); Christopher Walton, ed., *Charlesworth & Percy on Negligence*, 12th ed. (London: Sweet & Maxwell, 2010) at para. 6–46; Jones & Dugale, *supra* note 69 at para. 2–64.

[106] [1956] A.C. 613 (H.L.) [*Bonnington Castings*].

[107] Jones & Dugale, *supra* note 69 at para. 2–79.

[108] Sarah Green, "Coherence of Medical Negligence Cases: a Game of Doctors and Purses" (2006) 14(1) Med. L. Rev. 1 at 19: "there is a clear distinction to be made between the policy issues inherent in a medical negligence case such as *Chester* [and *Gregg v. Scott*] and an action against a commercial employer such as the one in *Fairchild*".

Nevertheless, the legal recognition of an "increase in risk of injury" but not its converse image of loss of chance strengthens the case for loss of chance. One may even argue, as King does, that not accepting loss of chance and being faced with the injustice of the arbitrary all-or-nothing rule would create pressure to "manipulate and distort other rules affecting causation and damages in an effort to mitigate this perceived harshness."[109] Manipulation of the standard of proof represented by the "material contribution to risk" line of cases is a prime example. To date, Amirthalingam has counted at least six different causation tests in the case law.[110]

D. *Concurrent Liability in Contract*

It seems the courts are more open to loss of chance in contract.[111] This is evident in the U.K. from *Chaplin v. Hicks*,[112] in Australia from *Tabet v. Gett*,[113] and Singapore from *Asia Hotel*.[114] A contractual claim could not be pursued in *Gregg v. Scott* and *Hotson*, because the defendants were NHS doctors, and (for policy reasons) public patients did not have the benefit of a contract with their doctors.[115] It might have been different had the case involved a private hospital instead.[116]

Given that loss of chance can be actionable in contract, it seems that claimants in tort are at a disadvantage for no good reason.[117] This indeed affected the U.K. Court of Appeal's approach to the matter in *Hotson*, that there was no sense in a distinction which allowed damages to be recovered from a private doctor but not against a NHS doctor.[118] It is submitted therefore, that the availability of recovery in contract should not affect concurrent recovery in tort.[119] Accordingly, Luntz states that "the

---

109 King, "Reformation and Retrofitting", *supra* note 50 at 1377, 1378.

110 Kumaralingam Amirthalingam, "Causation, Risk and Damage" (2010) 126(4) Law. Q. Rev. 162 at 164:

> To recapitulate, the causation tests in existence now are the traditional "but for" test, the *Bonnington Castings* material contribution to injury test (which arguably falls within the "but for" test for divisible injury but not for indivisible injuries), the *McGhee* material increase in risk test, the *Fairchild* mesothelioma exception, the *Metal Box/Novartis* doubling of risk test, and the *Barker/Sienkiewicz* "new tort" of increased risk of personal injury.

111 *Contra* Burrows, *supra* note 82 at 41, 42:

> Secondly, is there a different approach to loss of a chance in contract and tort? I think the answer is "no". As we have seen, there are cases in both contract and tort applying a loss of a chance approach, but just as the *Kitchen* case does not mean that a chances approach is always applied in tort, nor does *Chaplin v. Hicks* mean that a chances approach is always applied in contract. So *while it is of course true that a breach of contract is actionable per se so that there is an indisputable claim for nominal damages, this does not mean that the increased risk of suffering from a disease in the future is an actionable head of loss in contract any more than it is in tort* [emphasis added].

112 *Supra* note 1; *Kitchen v. Royal Air Force Association*, *supra* note 95.

113 *Supra* note 37.

114 *Supra* note 85.

115 Jonathan Morgan, "A Chance Missed to Recognise Loss-of-a-Chance in Negligence" (2005) 3(8) L.M.C.L.Q. 281 at 289.

116 Burrows, *supra* note 82 at 42: "[a]nd surely *Gregg v. Scott* would have been decided in the same way if Mr. Gregg had been treated privately, and therefore had a concurrent claim in contract, rather than being treated under the NHS."

117 Jones & Dugale, *supra* note 69 at para. 2–79.

118 *Supra* note 9 at 760 (Sir John Donaldson), at 768 (Croom-Johnson L.J.).

119 *Henderson v. Merrett Syndicates Ltd.* [1995] 2 A.C. 145 (H.L.); endorsed locally in *Go Dante Yap v. Bank Austria Creditanstalt A.G.* [2011] 4 S.L.R. 559 (C.A.).

solution to the problem of loss of chance should [not] vary according to whether an implied contract between doctor and patient can or cannot be discovered."[120] This is because, although the fundamentals of tort and contract may differ slightly, for most part both civil regimes are compensatory.

The present situation betrays tort fundamentals as it allows medical practitioners to be careless in any case where the chance of a better outcome is less than 50%. The legal issue is that a duty, if imposed, should not be devoid of content, as it currently is where the chance is less than 50%. It is of no assistance to refer to altruistic belief, as Baroness Hale did in *Gregg v. Scott*, that "doctors and other health care professionals… are motivated by their natural desire and their professional duty to do their best for their patients."[121]

Perhaps one way of ascertaining the requisite content of a doctor's duty is to ask, "to what extent should tort law reinforce the existing incentives towards the maintenance of standards in the medical profession?"[122]

IV. The Singapore Position and the Way Forward

Loss of chance has been recognised in contract but not yet in tort.[123] Application of the traditional but-for test in loss of chance cases in medical negligence such as in *Tan Hun Hoe v. Harte Denis Mathew*,[124] reinforce the authors' view that the courts still see loss of chance as a theory of causation. Given the problems with this arbitrary, irrational, and indefensible view as highlighted earlier, it is submitted that there are three possible methods to deal with this conundrum, and the third is to be most preferred.

A. *Reject Loss of Chance*

The criticism of this has been discussed above, in that it draws an arbitrary line at 50% and produces injustice. Given the uncertainty of outcome of medical treatment, seeing loss of chance in this way (*i.e.* as a causation question) is not reflective of medical reality[125] or the nature of the doctor's duty, where the heart of the doctor-patient relationship is a chance of a cure, and not the cure itself. A proper reflection of reality involves taking a step back before the inevitable causation question, and asking first, "Should loss of a chance be recognised, in and of itself, as actionable damage?" If yes, then the causation question comes into the picture to ask whether that chance may be proved on a balance of probabilities.

---

120 Luntz, *supra* note 43 at 20.

121 *Supra* note 3 at para. 217 (Baroness Hale).

122 In *Hill v. Van Erp* (1997) 188 C.L.R. 159, the High Court of Australia held a solicitor liable for the negligent supervision of the execution of a will, and explained that this was because of the importance of maintaining the standards of the profession. See Luntz, *supra* note 43 at 43.

123 *Asia Hotel*, *supra* note 85; *Straits Engineering Contracting Pte. Ltd. v. Merteks Pte. Ltd.* [1995] 3 S.L.R.(R.) 864 (C.A.) (noted in Lynn Kuok, "Loss of Chance in Contract: *Straits Engineering Contracting Pte Ltd v. Merteks Pte Ltd*" (1996) 17 Sing. L. Rev. 322).

124 [2001] 3 S.L.R.(R.) 414 (C.A.), applying *Hotson H.L.*, *supra* note 9. See Gary Chan Kok Yew & Lee Pey Woan, *The Law of Torts in Singapore* (Singapore: Academy Publishing, 2011).

125 *Gregg v. Scott*, *supra* note 3 at paras. 24, 42 (Lord Nicholls); Morgan, *supra* note 115 at 289.

B. *Leave Matter to Parliament*

Parliament may draw guidance from the U.S.A.'s §323 of the *Restatement (Second) of Torts: Liability for Physical Harm* (1965),[126] or it may follow the Australian legislative approach in formulating a uniform statutory definition of harm.[127] The problem with this however, is that Parliament may not be willing or prepared to engage with the technicalities of probability, statistical evidence, and loss of chance.[128] As the issue implicates the deterrent and corrective roles of personal injury law in tort, it is urged that the courts should take the lead in this matter.

C. *Accept Loss of Chance as Actionable Damage*

Loss of chance as a theory of actionable damage may be accepted in either of two ways: the "pure loss of chance" or the more conservative "threefold precondition" approach.

1. *Pure loss of chance approach*

(a) *The theory*: This pure loss of chance approach advocates treating the lost chance as the gist of the damage, and notable proponents include the Supreme Judicial Court of Massachusetts in *Matsuyama* (U.S.A.), academics such as King,[129] and possibly Stapleton[130] and Amirthalingam.[131]

Accurate recognition of a doctor's duty is fundamental to the identification of recoverable loss.[132] The argument is that in cancer cases like *Gregg v. Scott*, the purpose of the general practitioner's duty of care is to give the patient a chance to be cured by timely referral to a specialist. More generally, doctors do not hold themselves out as guaranteeing a cure, but do hold themselves out as giving patients a chance to improve their condition or, at least, to prevent the condition from worsening. The gist of the damage in a breach of this undertaking is the loss of a chance and nothing else; failure to recognise this thwarts the purpose of personal injury law.[133]

---

[126] Which states that:

> One who undertakes, gratuitously or for consideration, to render services to another which he should recognise as necessary for the protection of the other's person or things, is subject to liability to the other for the physical harm resulting from his failure to exercise reasonable care to perform his undertaking if (a) his failure to exercise such care increases the risk of harm, or (b) the harm is suffered because of the others reliance upon the undertaking.

See Pat van den Heever, *The Application of the Doctrine of a Loss of Chance to Recover in Medical Law* (South Africa: Pretoria University Law Press, 2007) at 24, suggesting that legislation in such form could then be further integrated into the system through case law.

[127] See Part II.B above.

[128] Chris Miller, "*Gregg v. Scott*: Loss of Chance Revisited" (2005) 4(4) Law, Probability and Risk 227 at 227.

[129] King, *supra* note 50.

[130] See Jane Stapleton, "Law, Causation and Common Sense" (1988) 8(1) Oxford J. Legal Stud. 111; Stapleton, "Gist of Negligence", *supra* note 3; Stapleton, "Cure from Cancer", *supra* note 11.

[131] Kumaralingam Amirthalingam, "Loss of Chance: Lost Cause or Remote Possibility?" (2003) 62(2) Cambridge L.J. 253 [Amirthalingam, "Lost Cause"].

[132] Maskrey & Edis, *supra* note 11 at 217.

[133] Amirthalingam, "Lost Cause", *supra* note 131 at 255. See *Chester*, *supra* note 28 at para. 87 (Lord Hope): "[t]he function of the law is to enable rights to be vindicated and to provide remedies when

A claimant's survival, or the actualisation of the eventual damage, should be irrelevant to the finding of actionable damage, although it may feature in quantification of damages.[134]

In the medical negligence context, a *carte blanche* release from liability[135] for a negligent doctor where the patient's chances were below 50%, leaves the doctor's duty barren of content, in the same way as the employer's duty not unreasonably to expose the plaintiff to asbestos in *Fairchild* was, by reason of the unknown aetiology of mesothelioma, barren if there was no imposition of liability.[136]

(b) *Criticism*: Weigand however argues[137] that this approach is "a concept chasing its own tail. When the dew leaves the rose, it is still a rose. The reasonable probability of a chance of survival is still just a possibility."[138]

He notes that while treating loss of chance as a distinct injury seemed to alleviate the problem of not side-stepping causation, this distinction was "not particularly compelling",[139] as the central issue in either formulation would remain permitting tort liability based on lost possibilities, hence the meaning of causation would still be radically altered.[140]

He further criticises that:[141]

> [O]ne may reasonably question how the value of a claimant's lost chances of recovery is necessarily equal to some specific percentage value of the ultimate harm… The award would instead project a very different and seemingly perverse legal rule: courts will hold the defendant liable notwithstanding the possibility [if not probability] that he or she [caused] no [actual harm].

The importance of respecting causation was reflected in Baroness Hale's statement in *Gregg v. Scott* that nearly every case involving causation could be recast as a chance

---

duties have been breached." *Contra Gregg v. Scott*, *supra* note 3 at para. 217 (Baroness Hale): "doctors and other healthcare professionals are not solely, or even mainly, motivated by fear of adverse legal consequences. They are motivated by their natural desire and their professional duty to do their best for their patients."

134 Noted in Fordham, "Lost Opportunity", *supra* note 29 at 214, 215.

135 *Gregg v. Scott*, *supra* note 3 at para. 43 (Lord Nicholls), citing Dore J. in *Herskovits v. Group Health Cooperative of Puget Sound* 664 P.2d 474 (1983) (Wash. Sup. Ct.) at 477: "[t]o decide otherwise would be a blanket release from liability for doctors and hospitals any time there was less than a 50% chance of survival, regardless of how flagrant the negligence."

136 Luntz, *supra* note 43. King colourfully labels this a "tortiously inflicted blind spot", that "It is easier to view a tortiously inflicted blind spot as part of the risk for which a defendant should be held accountable when the defendant's duty is based on a relationship or undertaking." See King, "Reformulation and Retrofitting", *supra* note 50 at 546.

137 Based on the Supreme Court of Kentucky in *Kemper v. Gordon*, *supra* note 65 at 151, 152.

138 Weigand, "Two Cities", *supra* note 13 at 145, 146.

139 *Ibid.* at 371 citing *Kemper v. Gordon*, *supra* note 65 at 151, 152.

140 *Ibid.*, citing *Dumas v. Cooney*, 235 Cal.App.3d 1593 (1991) (Cal. Ct. App.) at 1610; Lunney & Oliphant, *supra* note 93 at 224:

> …is it an attempt to compensate for the underlying injury itself even though balance of probability causation has not been satisfied? As Voyiakis, "The Great Illusion: Tort Law and Exposure to Danger of Physical Harm" (2009) 72 MLR 909-935 at 917 notes: 'Knowing how much risk I have imposed on you and how much compensation I would have to pay you if I had caused you actual physical harm does not by itself suggest how much I should pay for having exposed your physical health to danger.' Do you think it is realistic to value the chance in a way other than by reference to the injury to which that chance relates?

141 Weigand, "Two Cities", *supra* note 13 at 145, 146.

case.[142] She preferred the traditional "more likely than not" approach to causation as it would better suit both sides.[143] Indeed, it is recognised that perhaps the greatest difficulty with accepting loss of chance as actionable damage is its potential to offend balance of probability causation.[144]

(c) *Defending the theory*: With respect, the above criticisms miss the point.[145] If properly applied, traditional causation principles are not offended as the lost chance must still be proved on a balance of probabilities.[146] The chance question is separate from the proving of facts. Rather, a plaintiff must still prove that it is more likely than not that the defendant's actions reduced his or her chance of a better outcome.[147]

For example:[148]

> [I]n an everyday motor accident case, it could be said that there was a 10%, 20%, 30%… 90% chance that the collision would not have occurred if the defendant had applied the brakes more quickly. Or in a medical negligence case where the defendant negligently omitted to warn the plaintiff of a risk, it could be said that there was a 10%, 20%, 30%… 90% chance that the plaintiff would not have undergone the operation if the defendant had given the appropriate warning.

The law is clear that in these cases the plaintiff must prove "but-for" causation. If it is asserted that there was a 10% chance of a better outcome, that 10% chance must be proved on a balance of probabilities. So what happens if the lost chance is greater than 50%? Ideally loss of chance principles should operate there as well: a 60% chance should only permit recovery for that 60%, and not 100%. Traditional "all or nothing" causation rules cut both ways, so this should too.[149]

(d) *Key to success of theory*: The key to the successful application of the theory is the reliability of the evidence available to the fact finder.[150] While it used to be in the

---

142 *Supra* note 3 para. 225 (Baroness Hale).

143 *Ibid*.

144 Lunney & Oliphant, *supra* note 93 at 224.

145 Also noted by counsel for both the plaintiff (Mr. Gregg) and defendant (Dr. Scott) in *Gregg v. Scott*, *supra* note 3, in the following article: Maskrey & Edis, *supra* note 11 at 213:

> [Baroness Hale's] analysis did not reflect the claimant's concession that in every case a claimant would have to prove on a balance of probabilities that the delay had in fact reduced the chance of a better outcome and that such claims would only ever be for proportionate recovery whatever the initial chance.

146 *Gregg v. Scott*, *supra* note 3 at para. 213 (Baroness Hale):

> The attractions of adopting this reformulation of the gist of the action are many… First, *the conventional approach to causation is, in theory at least, retained*. The claimant still has to prove that it is more likely than not that the negligence led to the damage. But the damage is no longer defined in terms of the outcome… It is defined in terms of the loss or diminution of the chance… [emphasis added].

147 King, "Reformulation and Retrofitting", *supra* note 50 at 492.

148 Luntz, *supra* note 43 at 30.

149 King, "Reformulation and Retrofitting", *supra* note 50 at 556. See Maskrey & Edis, *supra* note 11 at 213, 214: Although a claimant may have dual claims under the traditional injury rules (where if he wins he gets 100%) as well as loss of chance (where he gets only proportionate recovery), this should be no double recovery. In some cases, the claimant should be made to elect between the causes of action.

150 *Matsuyama*, *supra* note 13 at 827.

past that courts often lacked reliable expert evidence of what the patient's chances of survival or recovery would have been absent the alleged negligence, the court in *Matsuyama* stated:[151]

> [N]ow medical science has progressed to the point that physicians can gauge a patient's chances of survival to a reasonable degree of medical certainty, and indeed routinely use such statistics as a tool of medicine.

It is thus appropriate to recognise loss of chance as a form of injury[152] especially in the medical field, as reliable expert evidence establishing loss of chance is more likely to be available in a medical malpractice case than in some other domains of tort law.

In *Matsuyama* the court justified its decision to confine loss of chance to medical negligence by maintaining that statistics in the treatment of different cancers at their different stages were much more robust than in other areas, for example, the prediction of the outcome of litigation.[153]

2. *Twofold precondition approach*

(a) *The theory*: This is a more conservative approach,[154] and draws support in part from *Clerk and Lindsell on Torts*. As opposed to the pure loss of chance approach, this requires a twofold precondition to be met before a chance may be recognised. The two factors correspond accordingly to two strands of persuasive *dicta* of the Law Lords in *Gregg v. Scott*, and the factors are:

1 There was a real and substantial chance of obtaining a better outcome at the time of the alleged negligence (Lord Nicholls);[155] and
2 The injury which affected the claimant's prospects lay in the future at the time of the alleged negligence (Lord Hope).[156]

In relation to factor 1, a distinction should be drawn between the worried well, and those who actually manifest symptoms of the disease (say, cancer). What qualifies as minimum actionable damage? Clerk and Lindsell would require that the claimant have actually died of cancer. Although this explains the existing case law, it is be open to criticism for setting the threshold too high, and may lead to *ex post facto* ascertainment of liability. Why should events that occur subsequent to the breach affect liability of the defendant which was triggered at the point in time of the breach?

---

151 *Ibid*.

152 *Cf.* Weigand, "Two Cities", *supra* note 13, at 139, 140.

153 Luntz, *supra* note 43 above; see also Saul Levmore, "Probabilistic Recoveries, Restitution, and Recurring Wrongs" (1990) 19 J. Legal Stud. 691 at 670, who notes that in cases other than medical malpractice cases, a probabilistic tort rule, "is much less attractive… where there is a dearth of statistical information about the effectiveness of (the omitted conduct or safeguards), statutory warnings and other safeguards."

154 Jones & Dugale, *supra* note 69 at paras. 2–87 to 2–90. See also Michael Jones, *Medical Negligence*, 4th ed. (London : Sweet & Maxwell, 2008) at para. 5-098.

155 The requirement of a threshold minimum "significant uncertainty" is consistent with *Allied Maples*' "real or substantial chance as opposed to a speculative one" (*Allied Maples*, *supra* note 20 at 1614), as well as the *de minimis* rule in cases of "material contribution" to increase in risk. See *Fairchild*, *supra* note 62 at para. 41 (Lord Nicholls).

156 Jones & Dugale, *supra* note 69 at para. 2–90, note this may effectively be the same condition as factor 1.

Although it has some emotional influence on the judge, whether the claimant is alive or dead at the time of the trial should not matter. One should not be swayed by the state of claimant's condition at the time of trial, because what was harmed at the time of treatment was the chance itself. At the very least, post-breach events should only be relevant for the question of damages, not liability.

V. Quantifying the Lost Chance

Once the lost chance has been recognised, the next step is to quantify this loss. The traditional approach has been to award damages "proportionate to the increase in the chance of the adverse outcome."[157]

This "proportional damages" approach is currently applied to loss of chance in tort for economic loss cases,[158] and also gleans support from the U.K. House of Lords in *Barker v. Corus*, in its novel application of the *Fairchild* principle. Proportional damage is similar to recovery under the *Fairchild* principle (as applied in *Barker v. Corus*)[159] in that both are meant to be fair ways of dealing with the uncertainties involved in compensation.[160] While the alternative of leaving the claimant with no remedy would have been unfair, it does not follow that fairness meant that the claimant should recover in full from the defendant.[161]

Courts may apply the proportional damages approach in two different ways:[162] the single outcome approach, or the weighted mean approach.[163] The single outcome approach is simpler, and involves the court estimating the most likely time that the patient will suffer the eventual outcome (*i.e.* death). The loss is then completely

---

157 *Gregg v. Scott*, *supra* note 3 at para. 190 (Lord Phillips).

158 Hogg, "Golden Opportunities", *supra* note 7 at 73:

> In all three cases [of *Allied Maples v. Simmons & Simmons* [1995] 1 W.L.R. 1602, *First Interstate Bank of California v. Cohen Arnold, The Times*, 11 December 1995, and *Stovold v. Barlows* [1996] E.C.C. 101], recovery was allowed proportionate to the magnitude of the chance lost.

159 Note although *Fairchild* would entitle the claimant to full compensation from the negligent defendant, with no question of apportioning the loss, *Barker* however, held that a defendant would only be liable to the extent that he contributed to the risk of the condition developing. After *Barker*, it seems that the *Fairchild* principle would apportion the loss by reference to the extent to which the defendant contributed to the risk. See Jones & Dugale, *supra* note 69 at para. 2–64.

160 Lunney & Oliphant, *supra* note 93 at 242:

> The Law Lords' approach [in *Barker v. Corus*] accord with a trend towards proportionate liability in cases of causal uncertainty in other European jurisdictions (see *e.g.*, the decision of the Netherlands High Court noted by M. Faure and T. Hartlief in *European Tort Law* 2006 (Netherlands, no. 22ff), and with the recommendations of the European Group on Tort Law in its *Principles of European Tort Law* (2005).

161 See also Lord Hoffmann in *Barker v. Corus*, *supra* note 99 at para. 43:

> In my opinion, the attribution of liability according to the relative degree of contribution to the chance of the disease being contracted would smooth the roughness of the justice which a rule of joint and several liability creates. The defendant was a wrongdoer… and should not be allowed to escape liability altogether, but he should not be liable for more than the damage which he caused and, since this is a case in which science can deal only in probabilities, the law should accept that position and *attribute liability according to probabilities* [emphasis added].

See also para. 62 (Lord Scott).

162 Wallace, *supra* note 55 at 232.

163 Howard Feldman, "Comment, Chances as Protected Interests: Recovery for the Loss of a Chance and Increased Risk" (1987) 17 U. Balt. L. Rev. 139 at 156.

attributed to the future death, where "the probability that the future event will occur is then multiplied by the loss attributed to the future event."[164]

The alternative of a weighted mean approach (also known as the "expected value" approach) is more accurate, and also more complicated. Under this approach, which is similar to that taken in actuarial science and the calculation of probabilities in insurance law, the court will have to compute the "weighted average of all the possible outcomes, the weight assigned to each outcome being determined by the likelihood of its occurrence"[165] along a hypothetical virtuous[166] chain of causation.[167]

King gives an example of how this may be done in practice:[168]

> [A]ssume… that as a result of the accident there is a 25% chance of the onset of injury-induced blindness occurring at fifty years of age, a 4% chance at forty, a 1% chance at thirty, and a 70% chance that such blindness would never result. Assume further that these are the only possible outcomes. Finally, assume that if blindness occurs at age fifty the loss would be $100,000; if at age forty, $200,000; and if at age thirty, $300,000. Under the expected-value [or weighted-mean] approach, the chance would be valued by aggregating the possible outcomes discounted to reflect their degree of likelihood. Thus, we would add $25,000 (25% of $100,000), $8,000 (4% of $200,000), $3,000 (1% of $300,000), and $0 (70% of $0), giving a total value of the chance of injury-induced blindness of $36,000. In this example, the expected-value [or weighted-mean] method produced a higher damage figure than the single-outcome test. Under a different set of probabilities, however, the opposite might be true. The difference can be pronounced, especially as the prospects of occurrence of an adverse consequence approach 100%.

The weighted mean approach was seen to be applied locally by Lai J. in the *Asia Hotel* litigation (in contract),[169] and in the U.K. to assess lost future employment in *Ministry of Defence v. Wheeler* (in tort).[170] In the latter, the U.K. Court of Appeal was confronted with three contingencies along the same hypothetical virtuous chain of causation: (i) that the applicant would return to work on the first day that she could after the birth of her child; (ii) that she would have remained for a relevant period of five years; and (iii) that she would have remained after the relevant period of five

---

164 Margaret Mangan, "The Loss of Chance Doctrine: A Small Price to Pay for Human Life" (1996-1997) 42 S.D.L. Rev. 279, at 311. See also King, "Preexisting Conditions", *supra* note 50 at 1383:

> Consider its application to a tortious accident to a twenty-year old plaintiff that creates a chance that blindness will result in the future… a 'single outcome' approach, would involve two stages. Initially, the trier of fact would determine the most likely time of onset of blindness. Assume that if blindness does result in the future, the most likely age of onset for this particular plaintiff would be age fifty. Assume further that if blindness does occur at fifty, the loss attributable to that condition would be $100,000. Because, however, it is not certain that the injury will result in blindness, it would not be appropriate to award the full $100,000. If the probability that the injury will result in blindness at any time is 30%, one might value the chance at $30,000.

165 King, "Preexisting Conditions", *supra* note 50 at 1384.

166 Events leading to a favourable outcome for the plaintiff.

167 *Allied Maples*, *supra* note 20. Applied locally in contract, see *Asia Hotel*, *supra* note 85.

168 King, "Preexisting Conditions", *supra* note 50 at 1384.

169 *Asia Hotel Investments Ltd. v. Starwood Asia Pacific Management Pte. Ltd.* [2007] SGHC 50. This was the follow-up to the Singapore Court of Appeal decision in *Asia Hotel*, *supra* note 85.

170 [1998] 1 W.L.R. 637 (C.A.) at 650 (Swinton Thomas L.J.), referring to it as the "cumulative percentage approach".

years. The chances were respectively, 50%, 50% and 50%, and the court calculated that the lost chance would be $50\% \times 50\% \times 50\% = 12.5\%$.

If this approach were to be applied in *Gregg v. Scott*, it would mean that, depending on the various contingencies in the hypothetical virtuous chain, the maximum recovery that Mr Gregg could get would be 42%, since this represented the ultimate value of the chance of recovery. The court would start with asking, "If the doctor had diagnosed Mr. Gregg properly and referred him to the hospital or specialist for examination, would he have opted for such treatment?"[171] Assume the likelihood of this to be assessed at 90%. Next, the court would have to ask, "What are chances that the hospital would have detected the cancer and referred Mr. Gregg for surgery?" Assume the likelihood of this to be 80%. Finally, the court would ask, "What are the risks and expenses involved in the surgery, and given these, what are the chances that Mr. Gregg would have had a successful surgery?" Assume this to be 40%. In calculating the weighed mean, the court would execute the following calculation: $90\% \times 80\% \times 40\% \times 42\% = 12\%$. This means that Mr. Gregg can only claim for the 12% chance of recovery, and not 45%. This "fairly ensures that a defendant is not assessed damages for harm that he did not cause."[172]

At present it seems that the *Allied Maples* framework (endorsed locally in *Asia Hotel*), would require that hypothetical actions of the plaintiff be proved on a balance of probabilities, which is higher than the standard of "real or substantial" as applied to hypothetical actions of third parties. Although this point was particularly highlighted in the dissenting judgment of Chan C.J. (as he was then) in the contract case of *Asia Hotel*,[173] it is submitted that this sets too high a threshold; a real or substantial chance that the plaintiff would have acted should suffice. The reason for this is that all hypothetical conduct, whether by the claimant, defendant, or a third party should be evaluated in terms of chance, not balance of probabilities.

Calculations may get more complicated depending on the factual scenario. If there are multiple alternatives available, there may be multiple hypothetical virtuous chains, which may be dealt with by aggregating all the possible alternatives as King shows us in the example above.[174]

These mathematical complications are surmountable,[175] as Lai J. shows us in the *Asia Hotel* litigation. Per Lai J. at the Singapore High Court in *Asia Hotel Investments Ltd. v. Starwood Asia Pacific Management Pte. Ltd.*:[176] [177]

---

[171] At present, it seems that the *Allied Maples* framework (endorsed locally in *Asia Hotel*, *supra* note 85) would require that hypothetical actions of the plaintiff be proved on a balance of probabilities. It is submitted that this sets too high a threshold; a real or substantial chance that the plaintiff would have acted should suffice. See Part IV.C.2 above.

[172] *Matsuyama*, *supra* note 13 at 839, 840. The defendants in *Matsuyama* argued that this approach would require the use of statistical evidence and expert testimony that could lead to imprecise and skewed evidence. The court rejected their arguments, that not only was such evidence used throughout tort law, but that any issues of statistical bias or unreliability were matters to deal with in a pre-trial motion.

[173] *Supra* note 85 at paras. 61-70.

[174] See Part V above. See also *Doyle v. Wallace* [1998] P.I.Q.R. Q146 (C.A.); *Langford v. Hebran* [2001] EWCA Civ 361 (where there were four chances/scenarios to consider); *Stovold v. Barlows* [1996] 1 P.N.L.R. 91 (C.A.) at 104.

[175] King, "Preexisting Conditions", *supra* note 50, footnote 106.

[176] *Supra* note 169 at paras. 476, 477.

[177] See further *MFM Restaurants Pte. Ltd. v. Fish & Co. Restaurants Pte. Ltd.* [2011] 1 S.L.R. 150 (a contract case) where the Singapore Court of Appeal boldly engaged with statistics in quantifying damages. See

> For the reasons I have given above… I have evaluated the plaintiff's chance as follows:
>
> > (a) Likelihood of securing financing element: 4% (being 10% of 40% weightage for this element);
> > (b) Likelihood of securing shareholder element: 18% (being 60% of 30% weightage for this element); and
> > (c) Likelihood of securing management element: 12% (being 40% of 30% weightage for this element).
>
> … Adopting the framework in [34] above and applying it to the weightage I had prescribed (of 40:30:30), the plaintiff's lost chance stands at $4\% + 18\% + 12\% = 34\%$.

It is submitted that because of its accuracy, the weighted mean approach should be preferable to the single outcome approach. The latter method may even be subject to some of the criticisms levelled at the all-or-nothing view of chance in that "[w]hile valuing the most likely chance, other less likely chances are not accurately valued except by generally discounting the most likely chance to reflect the probability of any occurrence."[178] The weighted mean approach is therefore more aligned with one of the purposes of valuing chance—achieving a more rational and accurate compensation.

VI. Conclusion and Future for Loss of Chance

This paper began with the diagnosis that the current law in England and Singapore on loss of chance, especially in medical negligence, is unsatisfactory and inadequate. It examined how claimants in a medical negligence scenario with a less than 50% chance of a cure were at a significant disadvantage for no good reason. This deficiency was seen to be compounded by the fact that contract law had already progressed to recognise loss of chance, but tort law had only done so for economic loss and not physical harm. Furthermore, tort law had even gone ahead to recognise loss of chance's twin—increase in risk of harm—and in doing so, stretched traditional causation rules for it to fit in. A theory was then proposed to the effect that the problem lay with the courts viewing the loss of chance scenario with the wrong lenses. Instead of using causation lenses (which see things in binary terms), loss of chance would be better understood as existing in a spectrum and this would require a focus instead on whether it could and should be understood as an independent form of actionable damage. This question precedes the causation analysis.

It was submitted that amongst the three ways forward for Singapore in loss of chance, *viz.*, retaining the current unsatisfactory approach, legislation, or developing the doctrine through case law, the third method of accepting loss of chance as a theory of actionable damage is the most preferred (as a matter of justice and doctrinal fit).

---

also Ivan Png & Ooi Pei Gan, "Fish & Co: Using Multiple Regression Analysis to Determine Causation and Quantify Damages", *Singapore Law Gazette* (November 2010) feature 2, online: Singapore Law Gazette <http://www.lawgazette.com.sg/2010-11/>.

[178] King, "Preexisting Conditions", *supra* note 50 at 1384.

The next step was to determine the threshold for what would amount to a chance for purposes of actionable damage, and a twofold precondition approach was proposed:

1 There was a real and substantial chance of obtaining a better outcome at the time of the alleged negligence; and
2 The injury which affected the claimant's prospects lay in the future at the time of the alleged negligence.

These two limbs are control mechanisms used to complement the existing role played by the discounting of damages, in discouraging and deterring the undeserving "worried well" from making claims.

If loss of chance is recognised as actionable damage, the question of quantification of damages would next arise. It was advanced that proportional damages could be used, and between the simpler "single outcome" and the more complex "weighted mean" approach, the latter would be preferable as it would provide more accurate compensation. Some examples of how the approach would work in practice were given, and it was argued that the administrative complexities are surmountable. Also, this choice addresses the reluctance to accept the loss of chance doctrine based on worries about the need for floodgates.

The current law in Singapore and the U.K. on loss of chance is unsatisfactory and inadequate, and fails to meet deserving loss of chance claims. The arbitrary line drawn by traditional causation rules results in injustice to the defendant by overcompensating the claimant at a full 100% if the chance was only 50.1%, and injustice to the claimant by undercompensating him at 0% (in fact not compensating him/her at all) if the chance was only 49.9%.

The current law has to change because, quite simply, it is not in accord with either justice or mathematical logic.