

## The Robust Approach to Causation

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The Supreme Court has confirmed, on a number of occasions, that the basic test for causation in negligence cases is the “but for” test, and that causation may be inferred where the facts proven support such an inference on the basis of common sense, the robust approach to causation. Under this test, positive or scientific proof of causation is not necessarily required.

The first leading Supreme Court case on this point is *Snell v. Farrell*, [1990] 2 S.C.R. 311. In that case, the plaintiff’s optic nerve atrophied following eye surgery, resulting in loss of sight in that eye. It was alleged the defendant ophthalmologist failed to recognize blood that he observed in the eye during the surgery as a retrobulbar bleed, which is one possible cause of optic nerve atrophy. However, experts were unable to state with certainty what caused the atrophy in the plaintiff’s case. The Supreme Court upheld the lower courts’ finding of liability and made the following comments concerning the test for causation:

“The legal or ultimate burden remains with the plaintiff, but in the absence of evidence to the contrary adduced by the defendant, **an inference of causation may be drawn although positive or scientific proof of causation has not been adduced.** If some evidence to the contrary is adduced by the defendant, the trial judge is entitled to take account of Lord Mansfield’s famous precept. This is, I believe, what Lord Bridge had in mind in *Wilsher* when he referred to a **“robust and pragmatic approach to the ... facts”** (p. 569).

**It is not therefore essential that the medical experts provide a firm opinion supporting the plaintiff’s theory of causation.** Medical experts ordinarily determine causation in terms of certainties whereas a lesser standard is demanded by the law. As pointed out in Louisell, *Medical Malpractice*, vol. 3, the phrase “in your opinion with a reasonable degree of medical certainty,” which is the standard form of question to a medical expert, is often misunderstood. The author explains, at p. 25-57, that:

Many doctors do not understand the phrase ... as they usually deal in “certainties” that are 100% sure, whereas “reasonable” certainties which the law requires need only be more probably so, i.e., 51%.

In Harvey, *Medical Malpractice* (1973), the learned author states at p. 169:

Some courts have assumed an unrealistic posture in requiring that the medical expert state conclusively that a certain act caused a given result. Medical testimony does not lend itself to precise conclusions because medicine is not an exact science.

The respective functions of the trier of fact and the expert witness are distinguished by Brennan J. of the United States Supreme Court in the following passage in *Sentilles v. Inter-Caribbean Shipping Corp.*, 361 U.S. 107 (1959), at pp. 109-10:

**The jury's power to draw the inference that the aggravation of petitioner's tubercular condition, evident so shortly after the accident, was in fact caused by that accident, was not impaired by the failure of any medical witness to testify that it was in fact the cause.** Neither can it be impaired by the lack of medical unanimity as to the respective likelihood of the potential causes of the aggravation, or by the fact that other potential causes of the aggravation existed and were not conclusively negated by the proofs. The matter does not turn on the use of a particular form of words by the physicians in giving their testimony. The members of the jury, not the medical witnesses, were sworn to make a legal determination of the question of causation. They were entitled to take all the circumstances, including the medical testimony, into consideration.

With respect, it was the failure to appreciate this distinction which led Lord Wilberforce in *McGhee* to suggest bridging the evidential gap by reversing the burden of proof. He writes at p. 7:

... to bridge the evidential gap by inference seems to me something of a fiction, since it was precisely this inference which the medical expert declined to make.

In *Wilsher, supra*, Lord Bridge gave effect to this difference when he explained *McGhee* at p. 567:

... where the layman is told by the doctors that the longer the brick dust remains on the body, the greater the risk of dermatitis, although the doctors cannot identify the process of causation scientifically, **there seems to be nothing irrational in drawing the inference, as a matter of common sense, that the consecutive periods when brick dust remained on the body contributed cumulatively to the causation of the dermatitis.** I believe that a process of inferential reasoning on these general lines underlies the decision of the majority in *McGhee's* case. [Emphasis added.]

The issue, then, in this case is whether the trial judge drew an inference that the appellant's negligence caused or contributed to the respondent's injury, or whether, applying the above principles, he would or ought to have drawn such an inference.” (*Per Sopinka J.*, at pp. 330-332, emphasis added)

“Lord Mansfield’s famous precept” referred to in *Snell* is from *Blatch v. Archer* (1774), 1 Cowp. 63, 98 E.R. 969, wherein Lord Mansfield stated at p. 970:

“It is certainly a maxim that all evidence is to be weighed according to proof which it was in the power of one side to have produced, and in the power of the other to have contradicted.”

In 2012, the Supreme Court affirmed that this approach to causation was still the prevailing test under Canadian law in *Clements v. Clements*, 2012 SCC 32, [2012] 2 S.C.R. 181. That case concerned a husband and wife travelling together on a motorbike that was 100 pounds overloaded. Unbeknownst to the couple, a nail had punctured the rear tire. When the husband accelerated to pass another vehicle, the nail came out, the tire deflated, and the couple crashed, severely injuring the wife. She sued him, alleging that the accident was caused by driving too fast on an overloaded bike. The trial judge found that the husband’s negligence in fact contributed to the injury, but that the wife was unable to prove “but for” causation, due to the limitations of scientific reconstruction evidence. The trial judge therefore applied a material contribution test and found the husband liable. The Court of Appeal overturned the judgment and dismissed the action, on the basis that “but for” causation had not been proved and the material contribution test did not apply. At the Supreme Court, McLachlin J. for the majority allowed the appeal and ordered a new trial, providing the following reasons concerning the test for causation:

“6 On its own, proof by an injured plaintiff that a defendant was negligent does not make that defendant liable for the loss. The plaintiff must also establish that the defendant’s negligence (breach of the standard of care) *caused* the injury. That link is causation.

[...]

**8 The test for showing causation is the “but for” test The plaintiff must show on a balance of probabilities that “but for” the defendant’s negligent**

**act, the injury would not have occurred.** Inherent in the phrase “but for” is the requirement that the defendant’s negligence was necessary to bring about the injury – in other words that the injury would not have occurred without the defendant’s negligence. This is a factual inquiry. If the plaintiff does not establish this on a balance of probabilities, having regard to all the evidence, her action against the defendant fails.

9 **The “but for” causation test must be applied in a robust common sense fashion. There is no need for scientific evidence of the precise contribution the defendant’s negligence made to the injury.** See *Wilsher v. Essex Area Health Authority*, [1988], A.C. 1074, at p. 1090, *per* Lord Bridge; *Snell v. Farrell*, [1990] 2 S.C.R. 311.

10 A common sense inference of “but for” causation from proof of negligence usually flows without difficulty. **Evidence connecting the breach of duty to the injury suffered may permit the judge, depending on the circumstances, to infer that the defendant’s negligence probably caused the loss.** See *Snell and Athey v. Leonati*, [1996] 3 S.C.R. 458. [...].

11 Where “but for” causation is established by inference only, it is open to the defendant to argue or call evidence that the accident would have happened without the defendant’s negligence, i.e. that the negligence was not a necessary cause of the injury, which was, in any event, inevitable. As Sopinka J. put it in *Snell*, at p. 330:

The legal or ultimate burden remains with the plaintiff, but in the absence of evidence to the contrary adduced by the defendant, an inference of causation may be drawn although positive or scientific proof of causation has not been adduced. If some evidence to the contrary is adduced by the defendant, the trial judge is entitled to take into account of Lord Mansfield’s famous precept [that “all evidence is to be weighed according to the proof of which it was in the power of one side to have produced, and in the power of the other to have contradicted” (*Blatch v. Archer* (1774), 1 Cowp. 63, 98 E.R. 969, at p. 970)]. This is, I believe, what Lord Bridge had in mind in *Wilsher* when he referred to a “robust and pragmatic approach to the ... facts” (p. 569).” (Emphasis added)

The Court in *Clements* also clarified that the “material contribution” test, which had been invoked by some courts and whose application had raised some controversy, did not displace the “but for” test, and should only be applied in cases of multiple tortfeasors, where the plaintiff has succeeded in proving that his injury would not have occurred but for the negligence of one of them, but could not identify specifically which tortfeasor had in fact caused his injury. It is

useful to note comments made by McLachlin J. comments in relation to the material contribution test, as they relate to the need for scientific proof of causation. She stated:

“[38] “Scientific impossibility”, relied on by the trial judge in this case, is merely a variant of factual impossibility and attracts the same objections. In many cases of causal uncertainty, it is conceivable that with better scientific evidence, causation could be clarified. Scientific uncertainty was referred to in *Resurfice* in the course of explaining the difficulties that have arisen in the cases. However, this should not be read as ousting the “but for” test for causation in negligence actions. **The law of negligence has never required scientific proof of causation; to repeat yet again, common sense inferences from the facts may suffice.** If scientific evidence of causation is not required, as *Snell* makes plain, it is difficult to see how its absence can be raised as a basis for ousting the usual “but for” test.” (Emphasis added)

Most recently, in *Ediger v. Johnston*, 2013 SCC 18, the Supreme Court again confirmed that positive scientific proof of causation is not required in order for liability to exist, and provided a useful illustration of circumstances in which causation may be inferred in a medical context. That case dealt with an attempted forceps delivery which was abandoned in favour of a Caesarian section. During the interval between the use of forceps and the ultimate birth by Caesarian, the umbilical cord became obstructed, resulting in bradycardia. The child now suffers from spastic quadriplegia and cerebral palsy.

The trial judge found the doctor liable, concluding that application of the forceps likely caused the obstruction of the umbilical cord that led to the bradycardia. She held further that the failure to have surgical backup in place before attempting the forceps delivery was a breach of the standard of care. On appeal, the decision was overturned on the grounds that some expert evidence suggested that bradycardia should have occurred immediately upon termination of the forceps delivery if that was in fact the cause of the umbilical cord obstruction, and the fact that it didn't commence until one or two minutes later suggested lack of causation. However, the Supreme Court considered that there was also evidence permitting the trial judge to conclude that the use of forceps displaced the baby's head and left a space into which the cord fell and became compressed upon a subsequent contraction, thereby explaining the delay in onset of bradycardia. In the Court's view, this was sufficient to establish causation. Rothstein and Moldaver, for the

Court, provided the following reasons concerning the role of the trial judge in weighing conflicting evidence as to medical causation:

“[30] It is undisputed that the persistent bradycardia that led to Cassidy’s injury was caused by an obstruction of Cassidy’s umbilical cord. The issue is whether the obstruction was caused by Dr. Johnston’s forceps attempt or whether it arose independently of the procedure. Dr. Johnston submits that the obstruction arose independently of the procedure and thus the trial judge erred when she concluded that Dr. Johnston’s failure to have back-up immediately available and failure to obtain informed consent were “but for” causes of Cassidy’s injury.

[...]

[32] With respect, the trial judge did address the gap in time between the forceps attempt and the onset of the bradycardia. In particular, she considered testimony by Drs. Neal Shone and Duncan Farquharson that a physician’s attempt to position the forceps blades may displace the baby’s head such that the baby’s umbilical cord would become compressed upon a subsequent maternal contraction. This sequence of events accounts for the delay between the end of the failed forceps procedure and the onset of bradycardia.

[...]

[36] The Court of Appeal’s reasons also suggest that it understood the trial judge to have improperly relied on *Snell v. Farrell*, [1990] 2 S.C.R. 311, in order to draw an “inference of causation” (paras. 83-85). *Snell* stands for the proposition that the plaintiff in medical malpractice cases — as in any other case — assumes the burden of proving causation on a balance of the probabilities (*ibid.*, at pp. 329-30). Sopinka J. observed that **this standard of proof does not require scientific certainty (*ibid.*, at p. 328); *Clements*, at para. 9. The trier of fact may, upon weighing the evidence, draw an inference against a defendant who does not introduce sufficient evidence contrary to that which supports the plaintiff’s theory of causation. In determining whether the defendant has introduced sufficient evidence, the trier of fact should take into account the relative position of each party to adduce evidence (*Snell*, at p. 330).**

[37] In the present case, there is no reason to believe that the trial judge failed to follow the approach described above. At trial, Dr. Johnston introduced some evidence contrary to the “displacement” theory of causation. Dr. Johnston testified that he never applied the second forceps blade to the baby’s head. This was inconsistent with Dr. Shone’s explanation of the “displacement” theory. According to Dr. Shone, it is the application of the second forceps blade that requires the baby’s head to be manoeuvred, creating the space

necessary for the umbilical cord to become trapped, such that it is later compressed by maternal contractions. Holmes J. acknowledged that Dr. Johnston's testimony was inconsistent with the "displacement" theory. She explained, however, that she rejected Dr. Johnston's testimony because he had a weak recollection of the facts and instead accepted Dr. LeGresley's recollection that Dr. Johnston had applied both forceps blades before abandoning the procedure.

[38] Dr. Johnston also testified that, contrary to Drs. Shone's and Farquharson's "displacement" theory, applying both forceps blades would not create sufficient space for the umbilical cord to slip and become trapped. He also adduced evidence of other possible causes of umbilical cord obstruction, including a short, kinked or nuchal cord (where the umbilical cord is wrapped around the baby's neck).

[39] **Faced with this conflicting expert testimony on the feasibility of the "displacement" theory and evidence of other potential causes, it was incumbent upon Holmes J. to weigh the evidence before her and determine whether Cassidy had proven causation on a balance of the probabilities.** Holmes J. ultimately concluded that Cassidy did satisfy this burden for three reasons. First, as already described, Drs. Shone's and Farquharson's testimony regarding the physical effects and distortions of labour contractions, as well as the timing of the steps leading up to a cord compression, were consistent with what occurred here. Second, multiple experts testified that mid-level forceps procedures are potentially dangerous and carry the risk of acute cord compression. Third, the close proximity in time of the forceps attempt and the bradycardia supported the conclusion that the forceps attempt was connected to the cord compression. As a result, Holmes J. concluded that, although she could not be *certain* of the precise mechanics leading to cord compression, "[t]he only reasonable inference from all the evidence is that the mid-forceps attempt likely caused the cord compression that in turn caused the bradycardia" (para. 135).

[40] There was no palpable and overriding error in this conclusion. **It was open to Holmes J. to accept Drs. Shone's and Farquharson's testimony regarding the displacement theory over Dr. Johnston's testimony. It was also open to her to conclude that the close proximity in time between the forceps attempt and the bradycardia, combined with the well-recognized risk of bradycardia associated with mid-level forceps deliveries, supported a finding of causation in this case.** (Emphasis added)

Thus, as all of these cases from the Supreme Court illustrate, proof of causation need not be established with scientific certainty in order for a finding of liability to be made. Rather, the "but

for” test permits a court to take a robust approach and infer causation where there are facts supporting that inference on a balance of probabilities.

The above-described approach established by the Supreme Court has been applied in a number of cases in Alberta. In *Rhine v. Millan*, 2000 ABQB 212, 263 A.R. 201, Ritter J. examined extensive and conflicting medical evidence (paras. 146-185), and concluded that, on a balance of probabilities, the defendant physician’s over-prescription of corticosteroids to a patient suffering from Crohn’s disease was a likely cause of the patient’s avascular necrosis (AVN), but did not cause her to develop multiple sclerosis (MS). In doing so, he commented on the test to be applied, as well as the extent of proof presented by the defense that might be sufficient to refute an inference of causation:

**“[130] Causation need not be established to a scientific or mathematical certainty. The Court may take a robust approach to causation and it may be appropriate to draw adverse inferences where the Defendant is uniquely able to lead evidence to rebut an inference of causation and does not do so.** However, at the end of the day, the onus lies upon the Plaintiff to establish causation on the balance of probabilities (*Snell v. Farrell*, (1990), 72 D.L.R. (4th) 289; *Athey v. Leonati*, *supra*, and *Brown (Next Friend of) v. University of Alberta Hospital*, *supra*).

**[131] It must also be remembered that in looking at the testimony of medical experts, they often couch their opinion in terms which are consistent with medical and scientific certainty. This is more than the Court requires for legal causation.** (*Snell v. Farrell*, *supra*).

[...]

**[173] I recognize that the defence need not prove that Mrs. Rhine’s avascular necrosis was not caused by Crohn’s disease. All I am saying is that the theory presented by Dr. Freeman [the defense expert] does not move me any substantial distance to concluding that here is another explanation for AVN in the major joints of the body that being it is caused by Crohn’s disease itself.**

[...]

[179] I am satisfied that many of these articles do not exactly support the Plaintiff’s causative theory. I am satisfied that some of the individuals who were the subject of the studies involved were suffering from a different level of Crohn’s than was Mrs. Rhine. I know that some of the articles refer to disease

mechanisms other than Crohn's. I am aware that in rare cases the medical literature seems to indicate that the use of corticosteroids for a particular disease mechanism does not appear to cause AVN. **However I am also satisfied that it is more likely than not that Mrs. Rhine's AVN was caused, or materially contributed to by one or more of the six periods of treatment complained about by her. I conclude that the Plaintiff has established the causative element required of her.**

[180] It is also the Plaintiff's position that her MS condition was caused or materially contributed to by the excessive dosages of corticosteroids. The Plaintiff suggests that a chain reaction has occurred. It is her position that the corticosteroids caused the AVN and I have determined that to be the case. It is further her position that in turn the MS was precipitated or was triggered, at least to a degree, by virtue of the stress and trauma she experienced due to the AVN.

[...]

[184] It is the Plaintiff's position that on the basis of the discussion in *Webster v. Chapman, supra*, a material increase in the risk of injury is sufficient to establish probable cause. I have some concerns that *Webster v. Chapman* does not follow the decision of the Supreme Court of Canada in *Snell v. Farrell, supra*, and I am bound by a decision of the Supreme Court of Canada but not bound by a decision of the Manitoba Court of Appeal. **In any event I am satisfied that there is no evidence that the stress experienced by Mrs. Rhine which emanated from her AVN condition increased her risk of injury. I take Dr. Witt's evidence to mean that practically anything was a possibility but not a probability**

[185] In consequence I am satisfied that **Mrs. Rhine has not established that her MS condition was caused or materially contributed to by the Defendant's actions.** Further I am satisfied that there is no proof that Mrs. Rhine's risk of contacting MS was heightened by the Defendant's actions. I conclude that the causal requirement relating to Mrs. Rhine's MS claim has not been established." (Emphasis added)

In *T. (A.) (Next Friend of) v. Mah*, 2012 CarswellAlta 2371, 228 A.C.W.S. (3d) 570, it was held that the failure of the obstetrician's office to notify the mother of the proper date for her appointment, failure to detect the IUGR condition of the baby, and the decision to attempt to deliver the baby vaginally rather than by Caesarian, resulted in the baby suffering permanent and severe brain injury. The mother had detected changes in fetal movement a few weeks prior to delivery, and had concerns about the fact that she was not getting as big as she felt she should be at that stage of the pregnancy. The errors in scheduling resulted in the mother missing her

appointment, when the issue would likely have been raised and the IUGR condition detected. No other appointment took place prior to the birth. Graesser applied the “but for” test and concluded that, on a balance of probabilities, the neurological injury to the fetus likely occurred during the period when the mother was under the defendant doctor’s care, rather than earlier in the pregnancy or after birth, despite the symptoms noted by the mother during the pregnancy, and despite a period of hypoglycemia following the birth. He summarized the medical evidence as follows:

“313 Indicia of potential neurological damage were identified soon after her birth, which narrows possible causes, and implicates Dr. Mah and her negligent activities. I have previously concluded that A. experienced a significant period of stress as a fetus, while she underwent IUGR. That raises the possibility that A.'s nervous system injury had occurred prior to the June 12, 2001 period during which Ms. T.-B. was under Dr. Mah's care. In that scenario Dr. Mah would not have caused her injuries, and though negligent, Dr. Mah would not be liable in law.

314 Alternatively, Dr. Mah's negligence may have had no or minimal contribution to factors that at birth resulted in A.'s injuries. Put another way, if it was inevitable that A. would have experienced these kinds of injuries at birth, then again Dr. Mah cannot be said to have caused those injuries.

[...]

392 Dr. Bingham was unwilling to narrow the point at which A. was injured. He concluded that her injuries were multifactoral, and involved IUGR, a period of low oxygen concentration, and hypoglycemia. Those extended before and after her birth. He did not wish to put 'weights' on which factor had more effect, and arguably that is very fair, because my understanding of the interrelationship between those three factors and hypoxic ischaemic injury certainly show those processes can and do intertwine.

393 That said, Dr. Bingham agreed the period of oxygen deprivation occurred before birth, and A.'s injuries were not simply the result of hypoglycemia.

394 Dr. Hill was more direct and linked A.'s neurological damage to the events immediately before her birth and a period in which she received reduced oxygen supply as a consequence of uterine contractions.

395 In many ways, the umbilical cord blood chemistry measurements are determinative. They disclose significantly elevated lactic acid concentrations and abnormally acidic blood. That would only occur if A., as a fetus, had experienced a period of inadequate oxygen supply. The self-correcting nature

of metabolic processes means that interruption was more likely close in time than distant. In the immediate past there is an event that the medical experts agreed could and probably would be associated with compromise of the already inadequate operation of A.'s placenta.

396 My conclusion, on a balance of probabilities, is that a hypoxic ischemic event and associated injury occurred during the period in which Dr. Mah had ordered induced labour.”

A contrary finding was reached in *Gallant (Guardians of) v. David Thompson Regional Health Authority No. 6*, 2013 CarswellAlta 1052, 2013 ABQB 340. In that case, the plaintiffs alleged that a hypoxic or anoxic event must have occurred during the extraction of the patient's wisdom tooth, leading to brain damage that caused psychological and behavior problems, as well as seizures. They claimed that the anaesthesiologist's charting was inadequate, making it impossible for them to know whether the patient had been properly monitored, oxygenated or ventilated. They also alleged administration of an inappropriate dosage of Rocuronium. After reviewing the evidence, Bast J. held that there was no breach of the standard of care, but proceeded to examine the causation issue anyway. Bast J. cited the test as formulated by the Supreme Court in *Clements* and *Ediger*, namely that the law of negligence does not require scientific proof of causation (at para. 120). She then observed that the plaintiff's medical evidence assumed that a hypoxic or anoxic event had occurred, without substantiating that proposition. Moreover, some of the behavioural changes observed in the patient appeared to have existed prior to the procedure, and were not shown to have arisen in a manner that clearly linked their onset to the date of the procedure (paras. 207 et seq.). Bast J. held that an inference of causation could not be drawn on the basis of the evidence:

“233 I find no reason to deviate from the standard "but for" test for causation. On the evidence before me I find that the Plaintiffs have not proven on a balance of probabilities that "but for" Dr. Farries' alleged breach of the standard of care, Shawn would have suffered injuries.

234 **In my view, this is not a case where an inference of causation can be drawn. The "robust and pragmatic" approach adopted in *Snell v. Farrell* [1990 CarswellNB 82 (S.C.C.)], and recently reaffirmed in *Ediger*, is not available when there is evidence to the contrary on the plaintiff's theory of causation.** The Plaintiffs have not established a theory of causation, and furthermore, if they had, I find there is evidence to the contrary in this case.

235 There is no expert evidence that persuades me in any way, that a hypoxic or anoxic event occurred, or that Shawn's injuries are a result of such an event. Further, the Plaintiffs failed to adduce the necessary evidence, either circumstantial or direct, capable of supporting such a theory. This is not a case where no other evidence was available and further evidence may have been obtained through the testimony of Dr. Nye, the nurses and the respiratory technician who were present in the operating and recovery rooms. There is absolutely no evidence, expert or otherwise, to establish that an anoxic or hypoxic event or any other type of event occurred, or that establishes that any changes in Shawn's physical or mental state were caused by Dr. Farries' actions.

236 Based upon all the evidence before me, I accept that Shawn is experiencing some type of decline. However, the evidence suggests that Shawn's condition is progressive as opposed to sudden, that is, immediately following the dental surgery. Further, the evidence illustrates in the months after surgery he was observed to have lucid periods which in my opinion does not correspond with damage suffered from a lack of oxygen. I do not accept the Plaintiff's theory that he went into the surgery in one state and came out completely in another." (Emphasis added)

Based on the above cases, it is clear that absolute scientific proof of causation is not required to establish a finding of liability and that a robust approach to causation may be taken. Even where there is controversy in the medical evidence as to causation of the injury at issue, a judge may validly conclude that causation has been proven if the evidence supports an inference, on a balance of probabilities, that the injury would not have occurred but for the defendant's negligence.

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