Journals

Medical causation

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(2002) 76 ALJ 258

Reputable medical scientists claim that factor A may cause disease B. They do not claim to have proven that A causes B; they only claim to have evidence which suggests that it may. This article examines the circumstances in which a court may accept the evidence of those scientists as amounting to proof on the balance of probabilities that a plaintiff contracted B as a result of A.

Introduction

Assume that reputable medical scientists claim that factor A may cause disease B, however, they do not claim to have proven that A causes B, they only claim to have evidence which suggests that it may. What response does this information demand? In the scientific or medical community, the reaction to the information will vary according to the occasion for its use.

1. The information may be taken as an hypothesis for further research intended to prove, by experimentation, whether A in fact causes B (or, more correctly, to disprove the null hypothesis that A does not cause B).
2. In diagnosis and treatment, the immediacy of the situation and limitations on the available data often require physicians to proceed to the best of their ability on less than optimum evidence. This may mean that, despite the fact that proof of causation is lacking, doctors treating patients with disease B will advise them to avoid exposure to A.
3. In public health, a precautionary approach is generally indicated. In this context, it may be appropriate to adopt a policy of prudent avoidance of exposure to A until it is known whether the exposure, in fact, causes disease B.
4. Different considerations apply where workers have chosen a trade that carries a risk of injury. High-rise workers cannot adopt a policy of prudent avoidance of heights, nor is it possible for a carpenter to avoid exposure to sawdust. Less exacting standards are, therefore, applied in the occupational field than in the public health arena. Hence, workers who cannot avoid exposure to A in the course of their employment should take care to minimise the exposure to the extent possible.

In each of these situations, the scientific or medical response to the information that factor A may cause disease B varies according to the occasion for its use.

Use at law

How can the information be applied when the occasion for its use is an attempt to prove in an Australian court that a plaintiff who suffers from disease B contracted it as a result of the negligent act of a defendant who exposed the plaintiff to factor A?

Ground rules

The following are the ground rules for the use of scientific evidence in such a case in an Australian court.

1. What the cause was of a particular occurrence is a question of fact which must be determined by applying common sense to the facts of each particular case.[1]

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2. Where the occurrence in question is the onset of a disease, the question of fact is medical and scientific in character. The relevant facts, therefore, emerge from the expert testimony of doctors and scientists.[2]
3. The duty of an expert giving evidence is to furnish the judge or jury with the necessary scientific or medical criteria for testing the accuracy of their conclusions, so as to enable the judge or jury to form their own independent judgment by the application of these criteria to the facts proved in evidence.[3]
4. Civil courts reason on the balance of probabilities. This means that, when considering what happened in the past, courts treat anything that is more probable than not as certain.[4]
5. The legal concept of causation differs from philosophical and scientific notions of causation.

> In philosophy and science, the concept of causation has been developed in the context of explaining phenomena by reference the relationship between conditions and occurrences. In law, on the other hand, problems of causation arise in the context of ascertaining or apportioning legal responsibility for a given occurrence.[5]

6. Sir Owen Dixon went so far as to say that the conception of legal causation was not susceptible of reduction to a satisfactory formula.[6]
7. Some courts have positively discouraged recourse to philosophical and scientific notions of causation.

> To determine what caused an accident from the point of view of legal liability is a most difficult task. If there is any valid logical or scientific theory of causation it is quite irrelevant in this connection. In a court of law, this question must be decided as a properly instructed and reasonable jury would decide it … The question must be determined by applying common sense to the facts of each particular case.[7]

Comments on the ground rules

This summary of the ground rules suggests that the process by which an Australian court will determine whether the plaintiff contracted disease B because the defendant negligently exposed the plaintiff to factor A is a matter of considerable uncertainty.

The courts seem unhappy about causation, or, at least, about being asked to explain how they approach questions of causation. How unusual is it for superior courts to concede that they are proceeding on a basis which is not capable of reduction to a satisfactory formula, or in a way that valid logical or scientific theories going to the subject at hand are quite irrelevant?

Consistently, the commonsense approach to causation is not a test of causation. It is more like an injunction to judges and jurors to do their best in a difficult situation. Whatever may be proved by the expert evidence of doctors or scientists, judges and jurors are left to sieve their evidence through the filter of their own common sense. Further, in cases where science or medicine might demand a more exacting standard of reasoning, judges and jurors need only reason on the balance of probabilities.

These factors, on their own, are sufficient to explain why there is no reason to expect that the reasoning of judges or jurors on questions of medical or scientific causation should mimic the evidence or opinions of the medical or scientific experts who testified in the case.

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Legal reasoning compared to medical or scientific reasoning

The differences between legal and scientific reasoning on questions of causation are, however, more profound.

In Henvilk v Walker ,[8] McHugh J held:

> Unlike science and philosophy, the common law is not concerned to discover universal connections between phenomena so as to enable predictions to be made. The common law concept of causation looks backward because its function is to determine whether a person should be held responsible for some past act or omission. Out of the many conditions that combine to produce loss or damage to a person, the common law is concerned with determining only whether some breach of a legal norm was so significant that, as a matter of common sense, it should be regarded as a cause of damage.[9]

Windeyer J described this type of legal reasoning as "looking back to cause instead of forward to consequences".[10]

So the legal response to the information that factor A may cause disease B varies according to the occasion for its use, just as it does in science or in medicine.

In the example under consideration, the occasion is to determine whether a breach of a legal norm (the negligent act of the defendant who exposed the plaintiff to factor A) was so significant that, as a matter of common sense, it should be regarded as a cause of damage (disease B, contracted by the plaintiff). This is to be contrasted, for example, with the scientific or medical inquiry whether an individual exposed to factor A today will contract disease B in the future.

The following statement by Mahoney JA in Barnes v Hay [11] was quoted with approval by McHugh J in Henville :

> the determination of a causal question involves, in my opinion, a normative decision as to whether, for the purposes of the case, the precedent act for which the defendant is responsible should be seen as causal of the plaintiff's loss. And, in my opinion, that evaluation is made, not by a "test" or "guide" such as the "but for" test, but by a functional evaluation of the relationship and the purposes and policy of the relevant part of the law.[12]

But, in footnoting the reference to Barnes , McHugh J also gave a reference to the following passage from his judgment in Alexander v Cambridge Credit Corp Ltd [13] (a decision given four years before the High Court decided March v E & MH Stramare Pty Ltd [14]):

> there is no reason why the legal theory of causation should be concerned with any question other than whether a particular act or condition was one of the conditions which or relations necessary to complete the set of conditions which represent the total cause. This is the basis of the "but for" test of causation which is championed by many legal writers and applied in practice by courts and juries. It accords ordinary habits of thought and speech. People attribute as a cause any condition or relation known to them "but for" which the result would not have occurred. Those who favour the "but for" test of causation as the exclusive test of legal causation urge that a person should be liable for all the consequences of his conduct as long as they are within the scope of reasonable foresight, if the issue is in tort, and within the reasonable contemplation of the parties if the issue is in contract.[15]

In March v Stramare , the High Court rejected the "but for" test as a definitive test of legal causation, but, as McHugh J points out, the "but for" test does accord ordinary habits of thought

and speech, and, in most cases, it will be perfect common sense to apply "but for" reasoning to problems of legal causation.[16]

However, McHugh J does accept that legal causation is not to be determined by applying a test, but by reaching a normative decision (that is, a decision which establishes a norm or standard), involving a functional evaluation of the relationship between the plaintiff and the defendant and the purposes and policy of the relevant part of the law. In Ricochet Pty Ltd v Equity Trustees Executors & Agency Pty Ltd [17] Lockhart, Gummow and French JJ described the "causative threshold" beyond which liability attached to the acts or omissions of a defendant as a "question of judgment".

For these reasons, as well, the reasoning of judges or jurors on questions of medical or scientific causation may depart from the evidence or opinions of the medical or scientific experts who testified in the case. How does that happen?

Elevating possibility to probability

In the example under consideration, the expert evidence suggests only that it is possible that exposure to A may cause B. In these circumstances, how can the plaintiff ever hope to prove the case on causation to the required standard of proof, namely, proof on the balance of probabilities?

An elegant explanation of the way in which a judge might approach expert evidence that exposure to A possibly causes B is found in the judgment of Reynolds JA in Fernandez v Tubemakers of Australia Ltd :[18]

> In cases, of which I think this is certainly one, where expert medical evidence is necessary to establish causal sequence, an expert may express an opinion that there is a relationship. He may express it firmly, he may express it in terms of probability or possibility, or he may expound or explain the aetiology and leave the tribunal of fact to infer the probable relationship on the whole of the facts. When a medical witness speaks of a probability of a causal relationship, he is himself drawing an inference based on medical knowledge and the facts known to him.
>
> There is no doubt that, if a medical witness expressed a view that there is a connection, or that there is probably a connection, between the suggested cause and the result, a case is made out for consideration of the issue by the tribunal of fact. Difficulty arises when an expert witness speaks only in terms of possibility in circumstances where it can be seen that he declines to draw the inference which the lay tribunal is invited to draw. It seems to me that the answer to the question which is posed in such cases begins with an understanding of the real content of the medical opinion relied upon. An expression of opinion that a condition could be or might be related to a suggested cause will have different meanings in different contexts. If nothing is known as to the aetiology of a condition or disease, no cause can be excluded as a matter of logic, and so it might be said that any suggested cause might have or could have caused it. In such case the assertion is not in the full sense an expression of expert opinion and has no probative force.
>
> If very little is known of the relevant aetiology, a similar expression of opinion may mean that present scientific knowledge does not exclude the possibility of a causative relationship. If much is known and the knowledge is explained and expounded to the tribunal of fact, an expression of opinion which does not pass beyond possibility may be regarded as a precise and guarded scientific statement which leaves the ultimate question or probability to the tribunal to pronounce upon, having regard to all the facts.
>
> I have made these observations in order to show that it is impossible to generalise in respect of an expert opinion which does not travel beyond a possible causal connection.[19]

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If expert evidence of an opinion that exposure to A possibly causes B is properly regarded as a precise and guarded scientific statement, it is open to the judge or jury, having regard to all the facts, to treat what the expert described as a possibility as being established on the balance of probabilities for the purposes of the litigation. What a scientist may describe as a possibility in the course of precise and guarded scientific

discourse, a judge or jury may regard as a probability for the purposes of civil litigation. In this way, scientific possibility may be elevated to legal probability.

In Fernandez , the only expert evidence of causation was the following question and answer: "Q: Did you feel the injury played any part in the condition of his hand? A: It could have." A majority of the Court of Appeal was prepared to elevate this evidence of possibility into a probability. The High Court affirmed the decision.[20] Mason J held that, in addition to the question and answer already set out, the jury was entitled to have regard to the circumstances that:

(a) before the accident, the respondent had no disability in his hand;

(b) the condition appeared shortly after the accident; and

(c) no alternative cause was established or even suggested.

These factors, taken in combination with the expert's answer, provided a sufficient basis for the jury to draw an inference that the accident had probably caused the disease.[21]

In Adelaide Stevedoring Co Pty Ltd v Forst ,[22] a worker had died of coronary thrombosis shortly after engaging in heavy physical work.

At first instance, the magistrate had found that coronary thrombosis could not, in the present state of knowledge, be connected with exertion.[23] The Full Court of the Supreme Court of South Australia had held that "it must be difficult and probably impossible to relate an attack of coronary thrombosis to any particular activity of the patient".[24] The Full Court, however, decided that it was open to draw the inference of causality which the medical witness had felt unable to draw.

> We fully accept his view that the evidence is in some measure inconclusive. For the purpose of a scientific deduction it may be insufficient, but we repeat that courts of justice are entitled and bound to act upon the probabilities of the case.[25]

The High Court affirmed the decision of the Full Court. Rich ACJ was greatly impressed by the sequence of events.

> What weighs with me so much is the fact that he was brought to a standstill, as any lay observer would think, by the exertion he had undergone.[26]

He took a sideswipe at the expert evidence, describing it as

> an abundance of medical evidence from witnesses whose attainments and eminence neither were nor could be challenged, but whose opinions exhibited no greater degree of unanimity than is commonly met with in other departments of abstruse knowledge and of scientific research.[27]

He approved the process of reasoning undertaken by the Full Court, which he described as

> a course of reasoning which combined common sense with the application of logic to physiological facts, to infer "on the preponderance of probabilities" that the thrombus was precipitated as the result, in part, of some unusual exertion undertaken by the workman before his collapse.[28]

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Starke J described it as a case in which, "medical science gives no certain answer to the question, and the medical witnesses differ among themselves as to the proper conclusion",[29] but he was satisfied on all of the evidence that exertion contributed to the onset of the thrombosis.[30] McTiernan J criticised the magistrate for failing to give enough weight to the facts of the case as distinct from the medical opinion.[31] The inference of causality could be drawn from all the facts. The magistrate's decision rested on an "inadequate and somewhat abstract basis".[32]

Dixon J dissented. He found that the magistrate had given proper effect to the evidence adduced.[33] He gave the following three reasons for disagreeing with the approach of the Full Court.

1. The evidence did not admit of an affirmative answer to the question of causation. Competent and trustworthy expert opinion regarded an affirmative answer as lacking justification either as a probable inference or as an accepted hypothesis. In that situation, the plaintiff had not discharged the burden of proof.
2. He did not read the totality of the evidence as meaning that physical effort was commonly, although not invariably, the inciting cause of coronary thrombosis.
3. Whether an inference could be drawn from the fact that the death followed closely the exertion depended on the answer to the pathological question whether there was any natural connection between exertion and the formation of a thrombus.[34]

> Tempting as it always is, particularly in matters of bodily health, to argue from a sequence of external events, such reasoning is justified only when positive knowledge or common experience supplies some adequate ground for believing that the events are naturally associated. The evidence upon which the special magistrate acted is to the effect that there is no such ground.[35]

Whilst Rich ACJ criticised the expert evidence for its lack of unanimity and McTiernan J treated it as something of a distraction, Dixon J found it competent and trustworthy. Distrust of expert testimony seems to be a common factor in judgments which advocate the commonsense approach to causation.

Rich ACJ's claim that the Full Court had combined common sense with the application of logic to physiological facts begs the questions, "what were the physiological facts?" and, "from what evidence were those facts deduced?". Evidently, the physiological facts did not come from the expert evidence. Rather than seeking to draw a conclusion of probable cause from an understanding of the real content of the medical opinion relied upon, Rich ACJ appears to have put the expert evidence to one side and proceeded on his own assessment of events.

The approach of Starke J was conventional. He found in the medical evidence, passages which supported the view that exertion was a possible contributor to the formation of the blood clot. He, therefore, moved from an understanding of what the medical evidence allowed was possible, to a judicial finding that it was probable.

Dixon J's approach was also conventional. Working on the basis that the expert evidence had not established any natural connection between exertion and the formation of a thrombus, he held that causation had not been proved. In the absence of expert evidence attaching medical significance to the sequence of events, he was not prepared to attach lay significance to the sequence.

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Reasoning from the sequence of events

Dixon J's approach found endorsement in Quinn v Cameron & Robertson Ltd .[36] The question there was whether exposure to silica dust in the workplace caused the pursuer to contract pneumoconiosis. Viscount Simonds was not impressed by the sequence of events. He held that, " 'Post hoc, ergo propter hoc' [after this therefore because of this] is a fallacy in respect of a breach of a statutory regulation as it is in respect of any other event in life".[37] It may well be that, whilst logic will not accept a causal proposition in the form "post hoc ergo propter hoc", it remains an approach which is sometimes accepted as reasonable as a matter of common sense. Who could say that the approach taken by Rich ACJ, which was based on the significance he attached to the sequence of events, was contrary to common sense?

When the High Court decided March v Stramare ,[38] did it intend to endorse "post hoc ergo propter hoc" as a valid tool of commonsense reasoning acceptable for use in civil cases, and to overrule the criticisms of that form of reasoning made by Dixon J and Viscount Simonds? Of course, those criticisms were not expressly overruled, but the High Court's endorsement of common sense as the touchstone of causation must

have meant something. If it is common sense to accept a departure from stricter logical positions, such as those taken by Dixon J and Viscount Simonds in relation to "post hoc, ergo propter hoc", is that departure not also embraced as a permissible tool of reasoning on questions of causation, for instance, as an example of "looking back to cause instead of forward to consequences"?

The approach which the High Court took to the facts of Forst [39] may encourage the hypothetical plaintiff if he can show that he contracted B shortly after exposure to A. Things may be different if B is a disease of long latency and the exposure to A was many years before he contracted B. In the latter case, the element of immediacy which was persuasive in Forst is lacking, and the plaintiff may have been exposed to many other harmful substances in the years between his exposure to A and the onset of B.

In strict logic, the sequence of events can only be used to exclude cases in which causation is not made out. If it is shown that the plaintiff suffered from B before he was exposed to A, the cause of his disease must lie elsewhere.[40]

In Dahl v Grice ,[41] there was evidence from five medical experts. Two were prepared to find a possible causal connection between the accident and the plaintiff's injury, however, neither would talk in terms of probability. The other three experts did not relate the injury to the accident.[42]

The Full Court of the Supreme Court of Victoria (Gobbo J, Young CJ and Kaye J concurring) readily accepted that the courts recognised that a possible cause could be elevated to a probable cause.[43] The Full Court contended, however, that it was undesirable for the opinion of the experts as to causal connection to be stated in terms of possibilities or probabilities for three reasons:

(a) assessing probability is the role of the tribunal of fact and the ultimate task rests with the judge or jury;

(b) it is generally inadmissible for an expert to give evidence in a form that takes up the very ultimate issue that is the responsibility of the tribunal of fact; and

(c) there is inevitably much difference in the views of expert witnesses as to what constitutes a probability as opposed to a possibility, whether in terms of a particular case or simply as a matter of logic – there is an obvious danger that an expert, when asked to provide an opinion as to whether a causal link exists, may do so in terms of scientific proof that may be altogether too exacting for the degree of satisfaction necessary in a legal proceeding.[44]

On this analysis, the question of causation is seen as one of semantics, with the court permitted to talk in terms of possibilities and probabilities, and the experts forbidden to.[45] Gobbo J did, however, acknowledge that there were many exceptions in practice to the general rule forbidding questions to be put which call for an answer to the ultimate issue,[46] and the High Court has since doubted the existence of an absolute rule precluding an expert witness from expressing a view as to the ultimate issue.[47]

In the context of causation, it seems entirely arbitrary to forbid the experts to talk in terms of possibilities or probabilities simply because they may use those terms in a scientific sense which is more exacting than the legal sense.

Reynolds JA gives an alternative approach. The expert may give evidence

> in terms of probability or possibility, or he may expound or explain the aetiology and leave the tribunal of fact to infer the probable relationship on the whole of the facts.[48]

When such evidence is given, it is the task of the tribunal of fact to arrive at "an understanding of the real content of the medical opinion relied upon" and, with that understanding, to decide whether the evidence which the expert gave in terms of scientific possibility amounted to proof on the balance of probabilities for legal purposes.[49]

The Full Court accepted that Dahl v Grice was a proper case to elevate the expert medical evidence of possibility to legal proof on the balance of probabilities. It approved the approach which Mahoney JA had taken in Fernandez .[50] The step from possible cause to actual cause was not simply "intuitive" and subject to no limitations. Rather, the question was

> whether the evidence showed the connection between the possible cause and the condition which occurred was sufficiently close to warrant a reasonable mind, faced with the problem of determining the question upon the evidence before it, concluding that the possible was the actual cause.[51]

In Seltsam Pty Ltd v McGuiness ,[52] the New South Wales Court of Appeal considered the question whether evidence of a possibility could be elevated to a probability. The evidence of a possibility was epidemiological evidence to the effect that the relative risk of contracting renal cell carcinoma in a group of individuals exposed to asbestos compared to a similar group of individuals without the exposure was 1.4 with a 95 per cent confidence interval ranging from 1.1 to 1.8.

Spigelman CJ held that epidemiology was concerned with the study of disease in human populations; it was not, of itself directed to the circumstances of an individual case. Hence, for

the purposes of determining whether exposure to a particular substance was the cause of the disease from which the plaintiff suffered, it only provided evidence of possibility.[53] However, the evidence of possibility, including epidemiological studies, should be regarded as circumstantial evidence which, alone or in combination with other evidence, might be capable of forming the "strands in a cable" capable of supporting a circumstantial case.[54]

When the plaintiff seeks to make a circumstantial case based on evidence of what is possible, the court must assess whether the evidence as a whole permits an inference of causation, or whether it merely invites conjecture as to the possible cause of the plaintiff's disease. According to Spigelman CJ, "Characterisation of a reasoning process as one or the other occurs on a continuum in which there is no bright line division".[55] He held that the law in Australia was as stated by Glass JA in Fernandez :

> The evidence [of a possibility] will be sufficient if, but only if, the materials offered justify an inference of probable connection. This is the only principle of law. Whether its requirements are met depends upon the evaluation of the evidence.[56]

In the result, the Court of Appeal held by majority that the evidence did not support an inference of probable connection between exposure to asbestos and the plaintiff's disease. In order to reach that conclusion, it had to analyse the epidemiological studies and the opinions expressed in evidence by the expert epidemiologists. The conclusion of the Chief Justice was:

> Epidemiological studies and expert epidemiological opinion evidence on general causation go no further than establishing a possibility. Applying a common sense test of causation to the evidence of possibility in the present case does not, in my opinion, justify an inference of causation on the balance of probabilities in the individual case.[57]

Davies AJA agreed with the Chief Justice.[58]

In his dissenting judgment, Stein JA held that the trial judge had been justified in concluding that, on the balance of probabilities, exposure to asbestos could cause or materially contribute to the contraction of renal cell carcinoma. The inferences drawn by the trial judge were permissible, open and rose well above conjecture.[59] He held that:

> Quite apart from the epidemiological evidence, there was evidence of a non-statistical nature supporting the plaintiff's case on causation. This was the evidence of biological plausibility which supports a common sense approach to causation. It includes the plaintiff's lengthy and heavy exposure to asbestos dust and fibre, asbestos being a known carcinogen.[60]

Stein JA listed several other factors, including the latency period of the disease, the finding of asbestos fibres in urine, and other evidence, which in his view supported the non-statistical direct evidence on biological plausibility.[61]

Common sense

The divergence of views in the Court of Appeal on the application of common sense to the facts of Seltsam illustrate a problem with the commonsense approach mandated by March v Stramare .

Common sense is idiosyncratic. What is common sense for one individual may not be

common sense for another. For some, an intuitive approach may amount to common sense. For others, some analysis of the closeness of the connection between the possible cause and the condition may be necessary in order to form a commonsense view. The difficulty is that there is no basis for those who take one view of common sense to criticise those who take another. Common sense is not an objective test of causation.

If a trial judge, applying his or her common sense, finds intuitively that the exposure to A probably caused the plaintiff to contract B, and an appeal court, applying its common sense, finds that the exposure to A was not sufficiently closely connected with the onset of B, how is the appeal court sensibly to overrule the trial judge? It is no basis to uphold an appeal that the appellate judges hold a different view of the common sense of the matter than the trial judge.

A genuine test of causation?

In his dissent in March v Stramare , McHugh J described the recourse to the notion of common sense as the application of a policy choice, which allowed the tribunal of fact to determine legal liability on broad grounds of moral responsibility for the damage which had occurred.[62] He argued that causation should be determined by applying the "but for" test of causation in a practical commonsense way.[63] He said that there was no consistent commonsense notion of what constituted a cause. Further, there was a danger that leaving the determination of causation to common sense would lead to uncertain and unreliable results:

> This is particularly so in many cases where expert evidence is called to explain a connexion between an act or omission and the occurrence of damage. In these cases, the educative effect of the expert evidence makes an appeal to commonsense notions of causation largely meaningless or produces findings concerning causation which would often be made by an ordinary person uninstructed by the expert evidence.[64]

This passage emphasises once again the importance of understanding the real content of the medical evidence as the first step towards deciding questions of medical causation.

The solution which McHugh J proposed was that the "but for" test of causation should be adopted as the exclusive test of legal causation, with exceptions made for those circumstances in which the test cannot be applied.[65] The "but for" test had the advantage that it was an objective test. It applied to questions of causation alone.

By contrast, the commonsense test was not a test of causation at all. It was a policy-based rule concerned with remoteness of damage. Its purpose was to arm the tribunal of fact with a means of preventing or permitting recovery of damages according to its subjective view of the

morality of the situation (expressed as common sense), and to release the tribunal from the constraints of deciding questions of causation on an understanding of the real content of the medical evidence.[66]

On the approach advocated by McHugh J, the hypothetical plaintiff would have to prove that he would not have contracted B but for the exposure to A. For this purpose, he would need to educate the tribunal of fact as to the real content of the medical evidence. The outcome would depend on the tribunal's assessment of the strength of the medical evidence, an assessment which would be made without regard to idiosyncratic notions of common sense.

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Conclusion

When an Australian court is required to assess the information that factor A may cause disease B for the purposes of the hypothetical plaintiff's claim for damages, current Australian law requires the court to receive expert evidence on that subject.

The evidence is received as evidence of scientific or medical fact. The purpose of the evidence is to give the judge or jury the necessary scientific or medical criteria for testing the accuracy of their conclusions, so as to enable them to form their own independent judgment by the application of those criteria to the facts proved in evidence.

The judgment of the court will, however, be truly independent, since the tribunal of fact is entitled to sieve the scientific and medical evidence through the filter of its own common sense. There is no objective test of legal causation.

The extent to which the hypothetical plaintiff is entitled to complain on appeal if he disagrees with the manner in which the tribunal of fact applied its common sense to the expert evidence is not clear.

The legal response to the claim of the reputable scientists that factor A may cause disease B is, therefore, avowedly subjective. The adoption of a subjective test means that the test is not, in truth, one of causation in fact. Rather, it is a test of remoteness of damage, which allows the court to award damages or not, according to subjective views of causation, which may be influenced by considerations of policy or morality.

It may be accepted that considerations of policy and morality should have a place in the law relating to the recovery of damages, but they are matters which should be raised and considered openly and frankly. They should not be raised in disguise as part of a so-called test of causation. The question of scientific or medical fact whether exposure to factor A caused the hypothetical plaintiff to contract disease B deserves to be considered separately from factors of policy or morality which might count against an award of damages in his favour.

It is respectfully submitted that the approach which McHugh J took in March v Stramare is to be preferred to that of the majority.

The elements of a genuine Australian test of factual causation in the medical and scientific context are to be found in the dissenting judgments of Dixon J in Forst ,[67] Reynolds JA in Fernandez ,[68] and of McHugh J in March v Stramare .

Footnotes | Top

1 March v E & MH Stramare Pty Ltd *(1991) 171 CLR 506 at 515*.

2 Adelaide Stevedoring Co Ltd v Forst *(1940) 64 CLR 538 at 568*.

3 Davie v Edinburgh Magistrates (1953) *SC 34 at 40*.

4 Mallett v McMonagle [1970] *AC 166 at 176*.

5 March v E & MH Stramare Pty Ltd *(1991) 171 CLR 506 at 509 per Mason CJ*.

6 Fitzgerald v Venn *(1954) 91 CLR 268 at 278*.

7 Stapley v Gypsum Mines Ltd [1953] *AC 663 at 681 per Lord Reid*; in March v E & MH Stramare Pty Ltd *(1991) 171 CLR 506 at 515*, Mason CJ quoted the last sentence of this passage as stating the common law tradition on questions of causation.

8 (2001) 75 ALJR 1410.

9 Ibid at [97].

10 National Insurance Co of New Zealand Ltd v Espagne *(1960) 105 CLR 569 at 592*.

11 (1988) 12 NSWLR 337 at 353.

12 Henville v Walker (2001) *75 ALJR 1410 at [98]75 ALJR 1410 at [98]*.

13 (1987) 9 NSWLR 310.

14 (1991) 171 CLR 506.

15 Alexander v Cambridge Credit Corp Ltd *(1987) 9 NSWLR 310 at 350-351*.

16 Henville v Walker (2001) *75 ALJR 1410* is an example of a case in which "but for" reasoning fails; see also examples given in March v E & MH Stramare Pty Ltd *(1991) 171 CLR 506 at 516-517 per Mason CJ*.

17 (1993) 41 FCR 229 at 235.

18 [1975] 2 NSWLR 190.

19 Ibid at 193-194.

20 Tubemakers of Australia Ltd v Yernandez (1976) *50 ALJR 720*.

21 Ibid at 724.

22 (1940) 64 CLR 538.

23 Ibid at 563.

24 Ibid at 565.

25 Ibid at 565.

26 Ibid at 563.

27 Ibid at 562-563.

28 Ibid at 563.

29 Ibid at 565.

30 Ibid at 567.

31 Ibid at 573.

32 Ibid at 576.

33 Ibid at 568.

34 Ibid at 569-570.

35 Ibid at 570 per Dixon J.

36 [1958] AC 9.

37 Ibid at 23; this appeal to a principle of logic may be contrasted with what the same judge said in Overseas Tankship (UK) Ltd v Morts Dock & Engineering Co Ltd (Wagon Mound [No 1]) [1961] *AC 388 at 419*: "The impression that may well be left on the reader of the scores of cases in which liability for negligence has been discussed is that the courts were feeling their way to a coherent body of doctrine and were at times in grave danger of being led astray by scholastic theories of causation and their ugly and barely intelligible jargon."

38 March v E & MH Stramare Pty Ltd (1991) *171 CLR 506* [PDF].

39 Adelaide Stevedoring Co Pty Ltd v Forst (1940) *64 CLR 538* [PDF].

40 Consistently, temporal sequence is one of the so-called Bradford-Hill criteria, used in science to establish whether an observed relationship is likely to be causal.

41 [1981] VR 513.

42 Ibid at 515-518.

43 Ibid at 522.

44 Ibid at 522.

45 See *Cross on Evidence* (Aust ed, par 29,125: "In many cases the operation of the ultimate issue rule amounts to nothing more than a play on words."

46 Dahl v Grice [1981] *VR 513 at 522*.

47 R v Murphy *(1989) 167 CLR 94 at 110,127*.

48 Fernandez v Tubemakers of Australia Ltd *[1975] 2 NSWLR 190 at 193-194*.

49 Ibid.

50 Ibid at 200.

51 Ibid at 200 per Mahoney JA (quoted in Dahl v Grice [1981] *VR 513 at 523*); the difference between the approach advocated by Mahoney JA and an intuitive approach is not entirely clear.

52 (2000) 49 NSWLR 262.

53 Ibid at 274.

54 Ibid at 276; indeed, in appropriate cases, circumstantial evidence could be sufficient to provide proof beyond a reasonable doubt.

55 Ibid at 275.

56 Fernandez v Tubemakers of Australia Ltd *[1975] 2 NSWLR 190 at 197*.

57 Seltsam Pty Ltd v McGuiness *(2000) 49 NSWLR 262 at 291*.

58 Ibid at 305-314.

59 Ibid at 302.

60 Ibid at 303.

61 Ibid at 303.

62 March v E & MH Stramare Pty Ltd *(1991) 171 CLR 506 at 531*.

63 Ibid at 532.

64 Ibid at 533 per McHugh J.

65 Notably, in the unusual case that there are two separate and independent events each of which was sufficient to cause the damage in question.

66 March v E & MH Stramare Pty Ltd *(1991) 171 CLR 506 at 531-534*.

67 Adelaide Stevedoring Co Ltd v Forst (1940) *64 CLR 538* [PDF].

68 Fernandez v Tubemakers of Australia Ltd [1975] *2 NSWLR 190* [PDF].

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Fitzgerald v Venn *(1954) 91 CLR 268 at 278*

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Henville v Walker (2001) *75 ALJR 1410 at [98]75 ALJR 1410 at [98]*

Mallett v McMonagle [1970] *AC 166 at 176*

March v E & MH Stramare Pty Ltd *(1991) 171 CLR 506 at 515*

March v Stramare

National Insurance Co of New Zealand Ltd v Espagne *(1960) 105 CLR 569 at 592*

Overseas Tankship (UK) Ltd v Morts Dock & Engineering Co Ltd (Wagon Mound [No 1]) [1961] *AC 388 at 419*

Quinn v Cameron & Robertson Ltd

Ricochet Pty Ltd v Equity Trustees Executors & Agency Pty Ltd

R v Murphy *(1989) 167 CLR 94 at 110,127*

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Seltsam Pty Ltd v McGuiness

Stapley v Gypsum Mines Ltd [1953] *AC 663 at 681 per Lord Reid*

Tubemakers of Australia Ltd v Yernandez (1976) *50 ALJR 720*