

INFERRING CAUSATION: RISKS, ‘COMMON EXPERIENCE’ AND SOCIAL FACTS

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When determining causation in tort law, courts often infer causal links between a defendant’s negligence and a plaintiff’s injury, even where there is only limited evidence. This article considers the principles that govern the process of drawing inferences and their application in Australian law. Causal inferences are triggered by the defendant’s conduct that significantly increases the risk of precisely the type of harm to the plaintiff that occurred, absent other plausible causal explanations for the plaintiff’s harm. Importantly, however, courts have repeatedly substantiated causal inferences based on the ‘course of common experience’, ‘common sense’, etc. As Kylie Burns demonstrates, it is important to examine judicial statements about how the world operates (‘social facts’), especially when unsupported by evidence. Although reliance on unsupported assumptions may be problematic in some contexts, this article demonstrates that social facts in causation cases usually concern day-to-day matters and do not necessarily reflect social biases.

I INTRODUCTION

To establish liability in the tort of negligence (as in tort and private law more generally), a plaintiff must establish causation: ‘the law’s concern, in relation to causation, is with the attribution ... of a causal connection between an *identified* negligent act or omission (or other wrong) and a *given* occurrence [the plaintiff’s harm]’.¹ When determining matters of causation, courts often draw inferences. They infer that a causal link exists between the defendant’s negligence and the plaintiff’s injury, even where there is only *limited evidence about that matter*. This article considers the legal principles that govern the process of inferring causation and their application in the cases. The focus is on the tort of negligence, but the arguments are more generally applicable to other areas of private law and statutory compensation schemes.

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1 *East Metropolitan Health Service v Ellis* [2020] WASCA 147, [255] (Quinlan CJ, Mitchell and Beech JJA) (‘*East Metro*’), citing *March v E & MH Stramare Pty Ltd* (1991) 171 CLR 506, 509 (Mason CJ).

Causation in negligence requires consideration of two types of questions, which in Australia are approached as distinct elements. The first, ‘factual causation’, is a question of fact (as the label suggests). The second element, scope of liability, requires consideration of whether and to what extent liability should be imposed, as noted below. Factual causation is very different, however, to questions of past or existing facts, such as whether a defendant stopped at a red light, or administered an excessive dose of drug X to the plaintiff. Causation requires answers to counterfactual, ‘what if’, questions, positing a hypothetical world in which the defendant’s negligent conduct was not present. It is in part because of the hypothetical nature of the question being asked (can we ever be certain whether, for example, the plaintiff would not have slipped on a clean floor?)² and the limits of knowledge and/or evidence about the relationships between certain events and certain occurrences, that courts resort to inferences to determine issues of causation.

Although the literature on causation is voluminous, much of the focus of commentary has been on other aspects of causation, including the appropriate tests of factual causation, scope of liability and proof of causation in the context of complex medical and scientific evidence and consequent uncertainty.³ Since much less has been written on inferences of causation where there is only limited or no evidence,⁴ this article seeks to consider the legal principles in Australian law relevant to that determination. As will be seen below, courts are likely to draw inferences where the defendant’s negligence increases the risk of harm of a similar nature to that which has occurred, and in the absence of evidence of any *other* plausible causes for such harm *except* the defendant’s negligence. The Australian approach is therefore similar to the position in United States (‘US’) law, as recently considered by Kenneth Abraham,⁵ except that the US cases require that the defendant’s conduct has *greatly or significantly* increased the risk of the type of harm that has eventuated (and not other harms more generally).

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- 2 As I say to students in tort law, to definitively answer such questions, we would need a ‘Tardis’ that travels to a parallel universe where the only difference to ours is that the defendant is not negligent at the critical time that the plaintiff was injured.
 - 3 See, eg, recent articles: Jonathan Beach, ‘Causation: The Interface between the Scientific and Legal Methods’ (2022) 49(1) *University of Western Australia Law Review* 113; Per Laleng and Charles Feeny, ‘Law and Epidemiological Evidence: Double, Toil and Trouble’ (2022) 49(1) *University of Western Australia Law Review* 159; Sara Golru, ‘The Challenge of Proving Toxic Tort Causation: Genetic Markers as the Solution?’ (2022) 49(1) *University of Western Australia Law Review* 186; Marco Rizzi and Amy Thomasson, ‘Case Analysis: Inferring Necessary Conditions’ (2022) 49(1) *University of Western Australia Law Review* 461.
 - 4 But see articles by David Hamer, which touch on aspects of causal inferences as establishing causation: David Hamer, ‘“Factual Causation” and “Scope of Liability”: What’s the Difference?’ (2014) 77(2) *Modern Law Review* 155, 156–7 <<https://doi.org/10.1111/1468-2230.12063>> (‘Factual Causation’); David Hamer, ‘Chance Would Be a Fine Thing: Proof of Causation and Quantum in an Unpredictable World’ (1999) 23(3) *Melbourne University Law Review* 557 (‘Chance’). On the difficulties of proving causation in one specific factual context where presenting any evidence will be very difficult, see Nithya Narayanan, ‘“Simply Unpredictable”: Establishing Causation for Claims of Police Negligence in Domestic Violence Cases’ (2022) 49(1) *University of Western Australia Law Review* 426.
 - 5 Kenneth S Abraham, ‘Self-proving Causation’ (2013) 99(8) *Virginia Law Review* 1811. This persuasively argued essay was one of the inspirations for this article.

Although the legal principles for inferring causation are relatively easy to state, this article also considers *the application* of those principles, and how courts support their factual conclusions that a risk in question can be inferred to have caused the harm that has eventuated. In response to factual uncertainty, Australian courts – including the High Court – have repeatedly substantiated causal inferences on evaluations based on the ‘course of common experience’, ‘common sense’, common knowledge, or intuition.⁶ More generally, drawing inferences (whether of causation or otherwise) is said to be ‘an exercise of the ordinary powers of human reason in the light of human experience’.⁷ This means that judges often draw inferences by relying on logic and ‘social facts’ – that is, ‘assumptions [that judges make] about society, the world and human behaviour’, as Kylie Burns has described them.⁸ As Burns demonstrates in her studies, social facts are widely referred to and relied on in judgments, and it is important to examine statements by judges ‘about the way they perceive the world to operate, particularly when those statements have no social scientific support’.⁹

Burns focuses on negligence cases and on the role of social facts that relate to societal behaviour and values, such as assumptions about how people behave in many diverse, ordinary contexts; for example, how people behave in various places or when pursuing various activities, or after drinking alcohol, how and why people play sport, and assumptions about modern society, family and life.¹⁰ Such ‘social facts’ are potentially problematic as they are not necessarily objectively provable or justified and, instead, may reflect judges’ personal values, experience, biases and subjective assumptions about the world.¹¹ Yet as Burns demonstrates, social facts underpin important judicial decisions – for example, in setting appropriate standards of behaviour (breach) or the boundaries of liability in novel contexts (such as heads of assessable damages).¹² Burns only briefly considers causation examples – but ‘social facts’, as defined, encapsulate any assumptions about ‘how the world operates’ (including the physical world) and judicial references to ‘human experience’ openly acknowledge their role. This article therefore considers how judges’ assumptions about the world, and resort to ‘common sense’ and ‘common

6 See, eg, *Tabet v Gett* (2010) 240 CLR 537, 578 [111]–[112] (Kiefel J) (*‘Tabet’*); *Bradshaw v McEwans Pty Ltd* (1951) 217 ALR 1, 6 (Dixon, Williams, Webb, Fullagar and Kitto JJ) (*‘Bradshaw’*); and cases quoted in Part III.

7 *G v H* (1994) 181 CLR 387, 390 (Brennan and McHugh JJ).

8 Kylie Burns, ‘The Way the World Is: Social Facts in High Court Negligence Cases’ (2004) 12(3) *Torts Law Journal* 215, 219 (*‘The Way the World Is’*). See generally at 219–21. In Kylie Burns, ‘It’s Not Just Policy: The Role of Social Facts in Judicial Reasoning in Negligence Cases’ (2013) 21(2) *Torts Law Journal* 73, 73 (*‘It’s Not Just Policy’*), Burns describes them as assumptions about ‘the behaviour of people and institutions, and the nature of the world and society’. See also Kylie Burns, ‘The Australian High Court and Social Facts: A Content Analysis Study’ (2012) 40(3) *Federal Law Review* 317.

9 Burns, ‘The Way the World Is’ (n 8) 219.

10 Burns, ‘It’s Not Just Policy’ (n 8) 73–5.

11 Ibid 83–105. See also Kylie Burns, “‘In This Day and Age’: Social Facts, Common Sense and Cognition in Tort Law Judging in the United Kingdom” (2018) 45(2) *Journal of Law and Society* 226 <<https://doi.org/10.1111/jols.12073>> (*‘In This Day and Age’*). As Abraham (n 5) 1824 puts it, courts feel competent to make assessments about why certain occurrences occur.

12 But see Burns, ‘The Way the World Is’ (n 8) and the prominent role of social facts in influencing both dissenting and majority judgments in *Cattanach v Melchior* (2003) 215 CLR 1.

experience' play out in the process of drawing causal inferences and addressing the question. In reflecting judges' personal values, experience, biases, and subjective assumptions, are factual assumptions made when inferring causation just as potentially problematic as those found in other contexts in the negligence inquiry?

Before considering the Australian principles and case law on causal inferences (Part III), and how those principles have been applied in the cases (Part IV), it is necessary – in order to provide context for when inferences are utilised – to consider in more detail some of the difficulties in proving causation more generally.

II PROVING FACTUAL CAUSATION

A The 'But For' Test of Factual Causation

The civil liability legislation in the various Australian jurisdictions requires that, save in exceptional cases, the defendant's negligence be a 'necessary condition' of the plaintiff's injury and the plaintiff bears the burden of proving this on the *balance of probabilities*.¹³ According to the High Court:

The determination of factual causation under s 5D(1)(a) [of the *Civil Liability Act 2002* (NSW) – that is, the necessary condition test] is a statutory statement of the [common law] “but for” test of causation: the plaintiff would not have suffered the particular harm but for the defendant's negligence.¹⁴

If 'but for' the defendant's negligence the plaintiff would still have been injured, then causation is not established; if the plaintiff would not have been injured, then causation is established. This requires a process of positing a counterfactual to determine whether causation is made out.¹⁵

The 'but for' test is the predominant test of causation in Australia and has the support of many commentators.¹⁶ Some other tests of causation are briefly noted

13 See, eg, *Civil Liability Act 2002* (NSW) ss 5D–5E ('NSW CLA'); *Civil Liability Act 2003* (Qld) ss 11–12 ('Qld CLA').

14 See, eg, *Strong v Woolworths Ltd* (2012) 246 CLR 182, 190 [18] (French CJ, Gummow, Crennan and Bell JJ) (citations omitted) ('*Strong*'), citing *Adeels Palace Pty Ltd v Moubarak* (2009) 239 CLR 420, 443 [55] (French CJ, Gummow, Hayne, Heydon and Crennan JJ) ('*Adeels Palace*'). See also *Adeels Palace* (n 14) 440 [45] (French CJ, Gummow, Hayne, Heydon and Crennan JJ).

15 Counterfactual inquiries are also used where a wrong has caused a legal harm, but it is necessary to quantify the losses that flowed from that harm. See, eg, *Lewis v Australian Capital Territory* (2020) 271 CLR 192 (the defendant falsely imprisoned the plaintiff, but the plaintiff was held not to have suffered any compensable loss as he would have still been imprisoned had proper procedures been adopted); Samuel Castan Blashki, "What World Are We Imagining?": Counterfactual Reasoning and the "But For" Test in *Lewis v ACT* [2021] 4 *University of New South Wales Law Journal Forum* 1.

16 See, eg, Michael S Moore, *Causation and Responsibility: An Essay in Law, Morals and Metaphysics* (Oxford University Press, 2009) 371–2 <<https://doi.org/10.1093/acprof:oso/9780199256860.001.0001>>, cited in Alexandra D Lahav, 'Chancy Causation in Tort Law' (2022) 15(1) *Journal of Tort Law* 109, 113 <<https://doi.org/10.1515/jtl-2021-0016>>; Jane Stapleton, 'Cause-in-Fact and the Scope of Liability for Consequences' (2003) 119(3) *Law Quarterly Review* 388, 392–3 ('Cause-in-Fact'); Jane Stapleton, 'An "Extended But-For" Test for the Causal Relation in the Law of Obligations' (2015) 35(4) *Oxford Journal of Legal Studies* 697, 705–6 <<https://doi.org/10.1093/ojls/gqv005>> ('Extended But-For Test'). The case law is equally insistent; other than in 'exceptional' cases, plaintiffs must prove causation by satisfying the but for test: see cases cited at n 14 above and Part II(C) below.

below. The test is said to have the advantage of being essentially factual – that is, to be ‘normatively neutral’¹⁷ – being about the physical world¹⁸ and the relationships between the *event* (the defendant’s negligent conduct) and *occurrence* (the plaintiff’s injury). As such, a binary choice needs to be made as to whether the defendant’s conduct was, or was not, a cause of the plaintiff’s injury.¹⁹

In Australia, factual causation is the first step in a two-step process of evaluating causation. The second step, scope of liability, requires assessment of ‘whether or not and why responsibility for the [plaintiff’s] harm should be imposed on’ the defendant.²⁰ This requires normative evaluations to be made and openly articulated by the courts. Importantly, in most cases in which factual causation is inferred, scope of liability does not raise any further hurdles for a plaintiff – the injuries being generally physical injuries of the type that are not too remote or which the defendant owed a duty to guard against. Consequently, ‘scope’ does not act as a significant further control on liability in most of these cases. This article does not consider scope of liability. I will therefore not traverse criticisms that the ‘sharpness and significance’ of the distinction between the two limbs is overstated.²¹ Such criticisms suggest that tests of factual causation ‘do not turn purely on objective facts but entail value judgments’ (that is, are not ‘normatively neutral’).²² That said, however, the following analysis of how, why and when courts draw inferences of causation does lend support to the view that factual causation questions are not entirely ‘normatively neutral’.

It is also necessary to note that the civil standard of proof, on the balance of probabilities, itself requires courts to infer ‘probabilities’ as to the persuasive weight of the parties’ respective evidence and whether the plaintiff’s case meets this notional standard. But satisfaction of the standard is only rarely referable to *actual* probabilities, supported by some objective *measure* of the persuasiveness of evidence.²³ The notion that we can ‘weigh’ evidence,²⁴ or assess the probabilities of its likely truth, is a resort to metaphors and legal fictions that demonstrate the

17 Stapleton, ‘Cause-in-Fact’ (n 16) 392–3.

18 This includes psychological aspects of that world, such as whether the plaintiff would have heeded a warning.

19 See also Lahav (n 16) 115, which discusses the unsuitability of such binary determinations where our knowledge is limited to probabilistic evidence about the *tendency* of *event* to lead to *occurrence* in some cases. Some of her arguments are briefly considered further below.

20 See, eg, *NSW CLA* (n 13) s 5D(4); *Qld CLA* (n 13) s 11(4).

21 See Hamer, ‘Factual Causation’ (n 4) 156.

22 See, eg, *ibid* 157. On the absence of normative neutrality where two omissions both operate prior to the harm occurring, see Yuval Abrams, ‘Omissive Overdetermination: Why the Act-Omission Distinction Makes a Difference for Causal Analysis’ (2022) 49 *University of Western Australia Law Review* 57. Stapleton, ‘Extended But-For Test’ (n 16) accepts the need for normative choice in such scenarios.

23 Cf *Evans v Queanbeyan City Council* [2011] NSWCA 230, [42] (Allsop P) where his Honour stated that the balance of probabilities ‘does not import a conclusion of mathematical or mechanical precision’. Some judges do, however, state the standard in terms of probabilities: see, eg, *Davies v Taylor* [1974] AC 207, 219 (Lord Reid, Lord Morris of Borth-y-Gest, Viscount Dilhorne, Lord Simon of Glaisdale and Lord Cross of Chelsea). Even then, very few cases will involve evidence that references probabilities.

24 Cf DH Hodgson, ‘The Scales of Justice: Probability and Proof in Legal Fact-Finding’ (1995) 69 *Australian Law Journal* 731, 731 where Hodgson questioned whether the plaintiff’s evidence ‘succeeded in weighing down those scales’.

inherent judgment involved. Given that difficulty, any conclusion about whether causation has been proved must involve some intuitive response to that evidence. As Hodgson J has said, writing extra-curially:

[G]enerally considerations for and against particular findings of fact cannot be expressed in numbers, to which we can apply quantitative rules so as to arrive at a numerical probability; and associated with this, there is the point that decision-making generally involves a global assessment of a whole complex array of matters which cannot be given individual numerical expression. Such a decision depends very much more on commonsense [sic], experience of the world, and beliefs as to how people generally behave (folk psychology), than on mathematical computations ...²⁵

In short, making determinations of fact on the balance of probabilities is generally a ‘process of inference, to which quantitative rules make no contribution’.²⁶ However, as will be seen below, resort to (rather simplistic) ‘probabilistic’ reasoning is more common in slip and fall cases where the issue is whether an adequate cleaning system would have picked up the spillage.²⁷ But even in those cases, ‘common sense’ and ‘folk psychology’ – that is, assumptions about social fact – are still relevant.

B ‘Direct’ Evidence of Causation Versus Circumstantial Evidence

Courts often distinguish between cases where there is ‘direct’ evidence or proof of causation, as opposed to drawing inferences based on merely ‘circumstantial’,²⁸ or little or no, evidence on the matter.²⁹ (However, this distinction is not binary; causation may also be inferred where ‘direct’ evidence is inconclusive or contradictory). It could be argued, however, that a distinction between ‘direct’ evidence and drawing inferences exaggerates the differences between those two processes, which gives the veneer of legal predictability to matters that are not directly observable – concerning hypothetical situations of non-negligent conduct³⁰ – and therefore require circumstantial proof *in all cases*.

As noted above, the ‘but for’ test requires courts to consider a counter-factual hypothetical question. Answering that question is difficult to prove, since we cannot test the issue in an alternative reality in which the defendant was not negligent (in the sequences of events leading up to the occurrence of the plaintiff’s injury). The terminology of ‘direct’ evidence is therefore somewhat misleading. As Abraham states, although the question of whether the defendant’s breach of duty caused the plaintiff’s harm seems to ‘concern what actually happened’, this is ‘not quite right’.³¹

²⁵ Ibid 736.

²⁶ Ibid 737. For arguments for applying probabilities to weighing up the truth of different evidence in reaching a determination, see Bernard Robertson and GA Vignaux, ‘Probability: The Logic of the Law’ (1993) 13(4) *Oxford Journal of Legal Studies* 457 <<https://doi.org/10.1093/ojls/13.4.457>>.

²⁷ See, eg, *Rose v Abbey Orchard Property Investments Pty Ltd* (1987) Aust Torts Reports 80-121 (‘Rose’).

²⁸ *Bradshaw* (n 6) 5–6 (Dixon, Williams, Webb, Fullagar and Kitto JJ). See also *Tabet* (n 6) 578 [111]–[113] (Kiefel J).

²⁹ Martin Davies, Ian Malkin and Tania Voon, *Focus: Torts* (LexisNexis, 10th ed, 2024) 211 [4.12].

³⁰ See also Johannes Hygen Meyer, ‘Three Categories of Causation in Tort Law’ (2022) 49(1) *University of Western Australia Law Review* 87, 90.

³¹ Abraham (n 5) 1814.

The causation question is not about events that occur in the world, but about the relationship between events in the world. It is about the relationship between separate empirical facts, in this case the relationship between the defendant's negligence and the plaintiff's injury. As a result, evidence of causation is always circumstantial, and always circumstantial in a particular way.

It is not possible to directly perceive or observe causation. Rather, causation is a conclusion we reach when we expect a certain consequence to follow a certain antecedent and we have what we consider a tenable explanation for this relationship between an antecedent and a subsequent event.³²

Consequently, the law generally answers such questions by resorting to our understanding of how the world operates and on *tendencies* that certain occurrences follow certain events.³³ To be sure, where a *positive* act (the event) is immediately followed by injury (the occurrence), logic may dictate that the evidence caused the occurrence without conscious counterfactual reasoning. For example, where the defendant pulls the trigger of a loaded gun or opens a car door as a cyclist is passing, logic and human experience suggest that the gunshot wounds and broken limbs, respectively, were uncontroversially and observably caused by those acts.³⁴ However, they are still a product of a process of reasoning which hypothesises alternative realities, where the trigger was not pulled or the door was not opened.³⁵ In *Osborne Park Commercial Pty Ltd v Miloradovic*,³⁶ the defendant breached its duty by directing the plaintiff to go to a dangerous area (to load his car), where the plaintiff was injured by a careless third party. It follows logically that if the defendant had been careful, and had not directed the plaintiff to so act, then the plaintiff would not have been at the place of danger and therefore *could not* have been injured by the third party.³⁷ Although the Court 'inferred' causation, this was a *logical* inference – asserted without any discussion of the legal principles on inferences and without resort to 'common experience'.

When we turn to omissions, however (whether part of overall negligent conduct such as failing to brake when driving, or pure omissions, such as in not rescuing) causation becomes much more difficult. We know from our lived experience that a vehicle will *usually* stop when brakes are applied, but it need not always do so. So, in answering the counterfactual question of what would have happened if the defendant *had* applied the brakes, the plaintiff can never provide definitive evidence

32 Ibid 1815 (citation omitted, noting that such an understanding of causation goes back at least to David Hume); Stapleton, 'Extended But-For Test' (n 16) 703–6.

33 Cf Lahav (n 16) 111 where it was proposed that '[c]ausation is a concept with an irreducible factual core: that an event has a tendency to produce an outcome'.

34 Cf Meyer (n 30) 91–2, 94–5 and his discussion of causation in the actual course of events.

35 Causation of such actual cause of events is not necessarily 'non-counterfactual' as it does not correspond to the facts of the case, but the evidential focus is nonetheless on actual events that are facts. Since opening a car door is not wrongful per se, however, even in this example of apparent positive acts, the correct counterfactual question is whether the defendant's *negligence* caused the injury – that is, the defendant's *failure to look* for cyclists before opening the door. If the cyclist was not visible (eg, riding without lights at night), we may conclude that even if the defendant had checked, the plaintiff would still have been injured: see *ibid* 93.

36 (2019) 54 WAR 1.

37 Ibid 40 [156] (Murphy, Mitchell and Beech JJA) (at least not at the time nor in the way that the plaintiff was injured).

that the defendant's vehicle, in the events leading to the plaintiff's injury, would have stopped. Of course, the standard of proof – on the balance of probabilities – assists plaintiffs here since the plaintiff need only demonstrate a *likelihood* that certain occurrences are caused by certain events³⁸ and some likelihoods may be as good as certain. The evidence being relied on is not 'direct', as something directly perceived or observed, but circumstantial.³⁹ This becomes more obvious when we recognise that the causation question is not whether the defendant's failure to brake caused the injury, but whether the defendant's *negligence* did so. In some circumstances, this requires us to consider whether and when the defendant should have seen the plaintiff and if the vehicle would have stopped *in sufficient time* to avoid injury to the plaintiff.⁴⁰

Abraham, again:

Because the but-for [sic] test turns on what would have happened in the absence of something that did happen, and regardless of what the courts sometimes say, under the but-for [sic] test there can never be any truly 'direct' evidence of cause-in-fact. What might, or what would have happened, but did not happen, cannot be directly witnessed or perceived ...

Sometimes the circumstantial evidence supports an inference that this probability is extremely high [that what actually happened would not have happened if the defendant had exercised reasonable care], but the evidence is always necessarily circumstantial and always about probability.⁴¹

If Abraham is correct, and I believe that he is, then when courts describe evidence as 'direct', it generally means that either the defendant's negligence is a positive act, and/or there is persuasive independent evidence that proves a *high correlation* between a particular event and a particular occurrence. The higher such correlation or probabilities, then the more likely a court will conclude that the event caused the occurrence and the more likely that a court will describe the evidence as 'direct'. The difference between so-called 'direct' evidence and inferences therefore may largely turn on the strength of the correlation between the event and the occurrence, and on the probabilities of that relationship.⁴²

Importantly, in the absence of *cogent* independent evidence of such correlation, courts may still be willing to *infer* causation. It is in this context that resort to lived experience and 'common sense' often plays a role in 'indirectly' proving causation. If, for example, the plaintiff fell on a wet, slimy algae-covered surface, our common experience that such surfaces are necessarily slippery means that we may assume that the plaintiff's fall was a result of a failure to clean the surface in

38 *Bradshaw* (n 6) 5–6 (Dixon, Williams, Webb, Fullagar and Kitto JJ).

39 'Sometimes the circumstantial evidence supports an inference that this probability is extremely high, but the evidence is always necessarily circumstantial and always about probability': Abraham (n 5) 1817.

40 That raises a range of other difficult considerations, such as when the plaintiff first became visible, the defendant's speed, the weather, and normal human reaction times, amongst other things. If the plaintiff was walking across a pedestrian crossing and the defendant failed to stop at the red traffic light, then the question reverts back to a simpler 'would the defendant have stopped if the defendant had braked?' (since the breach is simply failure to stop at a red light).

41 Ibid 1816–7. Cf Hamer, 'Factual Causation' (n 4) 160, who posits the question '[c]an this hypothetical predictive inquiry be characterised as factual?'

42 Abraham (n 5) 1816–7.

question. This is because we are likely to exclude other possible causes such as tripping over one's own feet or a bump, or failing to pay attention, and so forth.

However, courts also use the term 'inferences' to refer to conclusions that flow *from* evidence rather than just to inferences made *in the absence* of evidence.⁴³ Such inferences are not the focus of this article, since the plaintiff has proven with independent evidence a high correlation between the event and occurrence. Importantly, in such cases, the weight of (often expert) evidence supports the conclusions that are drawn, and courts need not rely on assertions about 'common experience' to justify them.⁴⁴ Sometimes, expert evidence may be inconsistent or inconclusive so that courts need to 'weigh' it up to determine whether the defendant's conduct was the most likely cause (amongst other plausible contenders). For example, Australian courts have been prepared to use epidemiological evidence of possibilities to either infer, or refuse to infer, causation. This is even though such evidence does not concern the circumstances of any *individual* case and therefore does not itself directly prove causation as between any given defendant and plaintiff.⁴⁵ In *East Metropolitan Health Service v Ellis* ('*East Metro*'), the Western Australian Supreme Court ('WASCA') stated that:

Evidence of possibility, including epidemiological studies, can therefore be regarded as circumstantial evidence which may, alone or in combination with other evidence, establish causation in a specific case. As in any circumstantial case, an inference as to the probabilities may be drawn from a number of pieces of particular evidence, each piece of which does not itself rise above the level of possibilities.⁴⁶

The need to establish causation on a deterministic, 'but for' basis makes the task for plaintiffs particularly difficult in such cases.⁴⁷ However, such cases are

43 *Tapp v Australian Bushmen's Campdraft & Rodeo Association Ltd* (2022) 273 CLR 454, 501 [147] (Gordon, Edelman and Gleeson JJ) ('*Tapp*') appears to be an example. There was extensive evidence that the ground had significantly deteriorated, posing a risk to horses using it; that some horses had fallen on the surface; and, therefore, that the plaintiff's horse fell because of the condition of the ground. However, one could argue this inference still assumes, based on limited evidence, that horses are more likely to fall on uneven surfaces.

44 Indeed, the High Court has indicated that 'many issues of causation' are outside the realms of common knowledge and experience, and causation then needs to be established by regard to 'any special branch of knowledge which affects' matters of complicated facts: *Amaca Pty Ltd v Booth* (2011) 246 CLR 36, 61 [67] (Gummow, Hayne and Crennan JJ) ('*Booth*'). See also at 60–1 [61]–[68] (Gummow, Hayne and Crennan JJ).

45 See, eg, *Seltsam Pty Ltd v McGuinness* (2000) 49 NSWLR 262, 274 [78] (Spigelman CJ) ('*Seltsam*'), cited in *East Metro* (n 1) [279] (Quinlan CJ, Mitchell and Beech JJA).

46 *East Metro* (n 1) [280] (Quinlan CJ, Mitchell and Beech JJA) (citation omitted). On how epidemiological evidence might support an inference, see, eg, *Amaca Pty Ltd v Ellis* (2010) 240 CLR 111, 134–5 [62] (French CJ, Gummow, Hayne, Heydon, Crennan, Kiefel and Bell JJ) ('*Ellis*').

47 For example, in *Seltsam* (n 45), the Court was not prepared to infer causation: see below n 113. On when statistical and epidemiological evidence can be validly used to determine factual causation (and when not), amongst numerous other articles, see, eg, Jane Stapleton, 'Factual Causation, Mesothelioma and Statistical Validity' (2012) 128(2) *Law Quarterly Review* 221; cf *Sienkiewicz v Greif (UK) Ltd* [2011] 2 AC 229 ('*Sienkiewicz*'); Alex Broadbent, 'Epidemiological Evidence in Proof of Specific Causation' (2011) 17(4) *Legal Theory* 237 <<https://doi.org/10.1017/S1352325211000206>>; from a United States perspective, Kerriann Laubach, 'Epigenetics and Toxic Torts: How Epidemiological Evidence Informs Causation' (2016) 73(2) *Washington and Lee Law Review* 1019. The difficulties confronted by plaintiffs are all, at their core, caused by the need to establish (usually) deterministic causation in the context of limited medical and scientific evidence and generally reinforces Lahav's (n 16) arguments about the impossibility of *actual proof* in those cases. Inferences go some way to overcoming those hurdles.

not considered in this article, since they require the courts to weigh up competing and complex expert evidence in deciding whether causation can ultimately be ‘inferred’ and these cases are not, therefore, examples of inferences being made with limited, absent or inconclusive evidence, and where courts resort to ‘common knowledge’ or ‘common’ human experience.⁴⁸

In short, courts resort to ‘inferences’ in different contexts, not all of which are the concern of this article.

C Other Tests of Causation

In some circumstances, limitations of scientific or medical knowledge may make it impossible for the plaintiff to prove with any degree of persuasive probability that the event causes the occurrence, even where the occurrence often follows from the event. For example, evidence may be probabilistic or epidemiological, drawing on statistical correlation between certain events and particular occurrences;⁴⁹ there is a chance the occurrence will occur where the event occurs, but there is also a chance that the occurrence will occur if the event does not.⁵⁰ In such cases, it has been argued that a binary test of causation is unsuitable because of the impossibility of ever satisfying determinative tests;⁵¹ it is invariably difficult to prove, for example, that smoking caused a specific person’s lung cancer (since many non-smokers also get lung cancer). Alexandra Lahav has described such cases as examples of ‘chancy causation’. Despite such hurdles, Lahav suggests that ‘the persistence of the but-for [sic] test for causation demonstrates that the desire for certainty, expressed through the insistence on determinism, runs deep in modern law’.⁵² As already noted, sometimes courts will nonetheless infer causation based on such evidence.

Such difficulties of proof have led to some limited expansion of legal principles to make it easier for (some) plaintiffs to prove their cases. For example, a few jurisdictions in the United States have accepted the principle that the plaintiff may succeed even where they can only prove that the defendant’s negligence deprived the plaintiff of the *chance* of a better outcome (of a benefit or of avoiding

48 See also Rizzi and Thomasson (n 3) for a detailed discussion of the inferences drawn in *East Metro* (n 1) on the basis of conflicting scientific evidence.

49 See Lord Phillips in *Sienkiewicz* (n 47) 263 [80] for a definition of ‘epidemiology’.

50 Lahav (n 16) 115.

51 See, eg, Lahav (n 16). In *Ellis* (n 46), the High Court noted that such cases may not necessarily be a problem for the law; as scientific evidence advances, plaintiffs may in the future be able to prove a necessary causal link, but until such time the plaintiff’s case must fail if the plaintiff is not able to satisfy proof on the balance of probabilities. Lahav argues that in many contexts, it is highly unlikely that scientific evidence will develop beyond the probabilistic to exclude the possibility something other than the event caused the occurrence. Further, Lahav gives some examples where evidence will of necessity always be purely probabilistic and balance of probabilities proof will be impossible for all plaintiffs, even though we know that for some, the defendant’s conduct did cause the occurrence. See also McLachlin’s view that ‘too often the ... “but for” [sic], all-or-nothing test denies recovery where our instinctive sense of justice ... tells us the victim should obtain some compensation’: Beverley M McLachlin, ‘Negligence Law: Proving the Connection’ in Nicholas J Mullaney and Allen M Linden (eds), *Torts Tomorrow: A Tribute to John Fleming* (Lawbook, 1998) 16.

52 Lahav (n 16) 134.

a detriment) in relation to personal injuries.⁵³ This lowers the ‘but for’ hurdle; the plaintiff need only establish that ‘but for’ the defendant’s negligence the plaintiff had a chance of avoiding that harm, rather than that the plaintiff would not have suffered the harm. However, this principle has not been accepted in Australia (nor in the United Kingdom (‘UK’))⁵⁴ in the context of personal injury cases.⁵⁵

Similarly, the plaintiff may not be able to prove which of several defendants was responsible for the event which is a proven cause of the plaintiff’s harm (eg, cancer caused by exposure to asbestos). There is an ‘evidentiary gap’ which the plaintiff is unable to bridge and the plaintiff will therefore fail unless the courts apply an exception to the normal rules of causation.⁵⁶ In the UK, the fact that each defendant has negligently exposed the plaintiff to the risk that caused the harm means that each the defendant may be liable, despite the plaintiff’s inability to establish which defendants’ conduct was responsible.⁵⁷ Similarly, the plaintiff may be able to prove that pollution killed the plaintiff’s fish, but several defendants may all have contributed to the level of pollution. In other words, although an event is a clear candidate as a definitive cause of the plaintiff’s harm, that event is attributable to the combined conduct of several defendants. Here, the ‘material contribution’ of each defendant to the pollution may justify liability, even though ‘but for’ any individual defendant’s conduct, there may still have been sufficient pollution to kill the plaintiff’s fish.⁵⁸ The High Court has noted the possibility that such exceptions to the prevalent ‘but for’ test may be accepted in Australian law⁵⁹ (and as permitted now under the ‘exceptional’ or ‘appropriate’ case provisions of the civil liability acts).⁶⁰

In such exceptional circumstances, the burden on plaintiffs of establishing causation may be reduced and thereby, perhaps, the need for courts to draw inferences might be decreased.⁶¹ However, the operation of such exceptions is

53 See, eg, *Matsuyama v Birnbaum* 890 NE 2d 819 (Mass, 2008).

54 See, eg, *Gregg v Scott* [2005] 2 AC 176.

55 *Tabet* (n 6).

56 The phrase ‘evidentiary gap’ might suggest that these are cases where inferences might play a significant role. However, in *Fairchild v Glenhaven Funeral Services Ltd* [2003] 1 AC 32 (‘*Fairchild*’), the House of Lords accepted that it was not provable which defendant’s negligent act exposing the plaintiff to asbestos was the cause of the plaintiff’s cancer. The cases create a legal exception to proving causation on ordinary principles. See, eg, Jane Stapleton, ‘Lords A’leaping Evidentiary Gaps’ (2002) 10(3) *Torts Law Journal* 276. The case has also been subject to criticism for that reason.

57 *Fairchild* (n 56).

58 On contributing causes, see Stapleton, ‘Extended But-For Test’ (n 16) 709–13. That such material contribution could be sufficient to found liability was considered as being consistent with Australian law in, eg, *Allianz Australia Ltd v Sim* (2012) 10 DDCR 325, 368–9 [140]–[141] (Basten JA, Allsop P agreeing at 328 [1], Meagher JA agreeing at 377 [182]). Courts have generally not allowed plaintiffs to use a contributing cause argument where there are multiple possible explanations for an occurrence, only one of which can be sheeted home to the defendant’s negligence. Cf *Jackson v McDonald’s Australia Ltd* [2014] NSWCA 162 (‘*Jackson*’) discussed at Part IV(C).

59 See, eg, *Henville v Walker* (2001) 206 CLR 459, 493 [106] (McHugh J, Gummow J agreeing at 507 [153], Hayne J agreeing at 510 [167]); in the context of the civil liability legislation, *Strong* (n 14) 192–5 [22]–[29] (French CJ, Gummow, Crennan and Bell JJ).

60 See, eg, *NSW CLA* (n 13) s 5D(2); *Qld CLA* (n 13) s 11(2) (‘exceptional’ case); *Wrongs Act 1958* (Vic) s 51(2) and *Civil Liability Act 2002* (WA) s 5C(2) (‘appropriate’ case).

61 For a helpful overview of possible mechanisms for circumventing proof of the ‘but for’ test, see McLachlin (n 51). Even where such tests are accepted as potentially applying, courts might still need to

likely very limited and therefore they will not significantly diminish the need for plaintiffs to prove ‘but for’ causation on the balance of probabilities in the vast majority of cases,⁶² even where there are considerable medical or scientific uncertainties.⁶³ Consequently, this article does not consider those more nuanced tests of causation and instead only considers cases in which plaintiffs relied on, or were required to meet, the ‘but for’ necessary condition test as determinative of causation.⁶⁴ Indeed, in *East Metro*, the WASCA considered that the ‘appropriate case’ exception only applies where the nature of the case means that there ‘cannot’ be any evidence on the matter, rather than where the evidence ‘does not’ establish the plaintiff’s case.⁶⁵ The plaintiff’s claim was therefore dependent on successful proof of ‘necessary condition’.⁶⁶

III LEGAL PRINCIPLES RELEVANT TO INFERRING CAUSATION

A When Inferences of Causation Are Warranted

The general principles relevant to inferring causation, in the absence of cogent evidence on the issue, were summarised in *Gold Ribbon Accountants Pty Ltd (in liq) v Sheers* (*‘Gold Ribbon’*) by Keane JA,⁶⁷ who cited the following statement by McHugh J in *Chappel v Hart*:

[I]t would seem logical to hold a person causally liable for a wrongful act or omission only when it increases the risk of injury to another person. If a wrongful

rely on inferences. For example, the plaintiff may prove that defendant 1, defendant 2 and defendant 3 all contributed to the presence of a chemical in water, but may not be able to prove on independent evidence that the chemical was the cause of the plaintiff’s fish dying.

- 62 Plaintiffs have nearly always been unsuccessful in seeking to apply the exceptions in Australian case law: see generally, Luntz et al, *Luntz and Hambly’s Torts: Cases, Legislation and Commentary* (LexisNexis, 9th ed, 2021) 284–9. Cases denying reliance on ‘exceptional’ causation include: *Powney v Kerang District Health* (2014) 43 VR 506, 523 [82]–[83], 526 [99] (Osborn, Beach JJA and Forrest AJA), accepting that in appropriate cases courts could ignore the ‘but for’ test, but holding that the case was not suitable for applying a normative determination of ‘appropriateness’; *Carangelo v New South Wales* [2016] NSWCA 126; *Sanders v Mount Isa Mines Ltd* [2023] QSC 188, [1557] (Williams J). In *King v Western Sydney Local Health Network* [2013] NSWCA 162 (*‘King’*), Basten JA would have allowed the plaintiff to rely on an ‘exceptional case’ argument, but he was satisfied that ‘but for’ was satisfied: at [34]. The majority, comprising of Hoeben and Ward JJA, held that the plaintiff could not rely on such an argument as it had not been pleaded at trial.
- 63 See, eg, *Ellis* (n 46) 123 [12] (French CJ, Gummow, Hayne, Heydon, Crennan, Kiefel and Bell JJ). The Court noted that since the plaintiff was not relying on exceptional cases of causation based on an increased risk of cancer from exposure, the plaintiff needed to prove ‘but for’ causation and that it was therefore neither ‘necessary nor appropriate’ to consider cases dealing with exceptions to that test. The plaintiff was unsuccessful in such proof.
- 64 For consideration of the interaction between different tests of causation and factual inferences as satisfying the ‘but for’ test in Canadian law, see MH Tse, ‘Tests for Factual Causation: Unravelling the Mystery of Material Contribution, Contribution to Risk, the Robust and Pragmatic Approach and the Inference of Causation’ (2008) 16(3) *Torts Law Journal* 249.
- 65 *East Metro* (n 1) [606] (Quinlan CJ, Mitchell and Beech JJA).
- 66 *Ibid* [612]. See also Rizzi and Thomasson (n 3) 469–74.
- 67 [2006] QCA 335, [277] (*‘Gold Ribbon’*).

act or omission results in an increased risk of injury to the plaintiff and that risk eventuates, the defendant's conduct has materially contributed to the injury that the plaintiff suffers whether or not other factors also contributed to that injury occurring.⁶⁸

Keane JA went on to summarise the burden of that statement, citing further cases in support, as follows:

This passage supports a process of logical inference of a causal nexus between breach and loss. It confirms that one may logically infer, from the creation or increase in the risk of an event by reason of a breach of duty and the fact of the occurrence of the event, that the breach caused the event.⁶⁹

There are many similar statements. In *Nguyen v Cosmopolitan Homes*,⁷⁰ for example, the New South Wales Court of Appeal put it as follows:

Where B (not having occurred before) closely follows A, and where there is expert evidence to suggest that an event of the nature of A may cause a result of the nature of B, then the inference of causation may be drawn if, on the evidence, there is no acceptable alternative cause available.⁷¹

The 'general principle' is therefore that causal inferences may be drawn where the defendant's conduct *increased the risk*⁷² of the *type* of injury that occurred and where, despite the absence of evidence, the plaintiff is nonetheless able to prove that the defendant's negligence was more likely than not the cause of the plaintiff's injury. Importantly, if it is unclear whether the defendant *was even negligent* (rather than the plaintiff or no one at all), such as in the context of motor vehicle accidents where very limited evidence exists as to how the accident eventuated, then there will be no basis for drawing a causal inference.⁷³

What is also not permitted, as the courts have repeatedly stressed, is 'mere conjecture' about the cause of an injury. An inference must be 'an affirmative conclusion from the circumstances proved in evidence and one which they establish

68 (1998) 195 CLR 232, 244–5 (citations omitted) ('Chappel'). See also *Commissioner of Main Roads v Jones* (2005) 79 ALJR 1104 ('Jones') discussed below.

69 *Gold Ribbon* (n 67) [277].

70 [2008] NSWCA 246 ('Nguyen').

71 Ibid [63] (McDougall J, McColl JA agreeing at [1], Bell JA agreeing at [2]). What is not permitted is the 'post hoc propter hoc' fallacy – that, because event B followed event A, therefore A caused B: at [62].

72 The notion of 'risk' is itself malleable and may be formulated more narrowly or broadly. See, eg, *Tapp* (n 43); *Coles Supermarkets Australia Pty Ltd v Bridge* [2018] NSWCA 183, [20]–[23] (Leeming and Payne JJA) and cases cited therein. How a risk is formulated may impact on whether the risk is foreseeable, which precautions might reasonably be asserted to avoid that risk, whether the plaintiff was contributorily negligent, etc. The formulation of a risk as broad or narrow is also relevant to proof of causation. For example, a broad risk, such as 'falling on stairs', does not suggest a specific event that led to the fall, and may thus make proof of causation more difficult. A narrowly formulated risk, such as 'falling on slimy, algae covered wet stairs', suggests a specific reason for the fall and may therefore make it easier to prove that any of multiple precautions (eg, handrails, regular cleaning, warning signs, closing the stairs) would have prevented slipping.

73 See, eg, *West v Government Insurance Office (NSW)* (1981) 148 CLR 62, although note the probabilistic approach by Murphy J in dissent. For an analysis of the competing approaches, see Hodgson (n 24) 734–6. A comparable Canadian case is *Fontane v British Columbia (Official Administrator)* [1998] 1 SCR 424. Cf the inference drawn in *TNT Management Pty Ltd v Brooks* (1979) 53 ALJR 267 ('TNT') that, based on the position of the vehicles after the accident, the defendant was likely on the incorrect side of the road and was thus negligent. Therefore, causation could also be inferred.

to the reasonable satisfaction of a judicial mind [on the balance of probabilities]’.⁷⁴ As the High Court stated in *Bradshaw v McEwans Pty Ltd* (*‘Bradshaw’*):

In questions of this sort where direct proof is not available it is enough in the circumstances appearing in the evidence give rise to a reasonable and definite inference: they must do more than give rise to conflicting inferences of equal degrees of probability so that the choice between them is mere matter of conjecture ... But if circumstances are proved in which it is reasonable to find a balance of probabilities in favour of the conclusion sought then though the conclusion may fall short of certainty it is not to be regarded as a mere conjecture or surmise ...⁷⁵

This was cited with approval by a majority in *Luxton v Vines*.⁷⁶ In that case, the majority held that it was mere conjecture to determine how the plaintiff, walking at night on the side of an unlit road, was struck by an unknown motor vehicle – whether because of a driver’s negligence or not. No inference was made; ‘a number of conjectures is open, equally plausible’.⁷⁷ Although conjecture must be avoided, it has also been acknowledged that ‘the distinction between permissible inference and conjecture occurs on a continuum in which there is no bright line division’.⁷⁸

In establishing a sufficient likelihood of an inference, it may therefore fall well short of certainty, but other competing inferences must not be equally probable. As Crennan J stated in *Lithgow City Council v Jackson*, ‘it is only necessary to demonstrate that a competing inference is less likely, not that it is inherently improbable’.⁷⁹ Similarly, in *Fraser v Burswood Resort (Management) Ltd* it was stated that:

[I]f there is evidence to the effect that the breach of duty had no effect, or that the injury would have occurred even if the duty had been performed, the [general] principle [set out above] will not apply.⁸⁰

The absence of evidence, therefore, of plausible explanations for the plaintiff’s harm *other* than the defendant’s negligence, assists the plaintiff in proving causation and a court may infer causation even where the cause of an accident/injury is unknown.⁸¹ Indeed, a court is entitled to draw an inference from ‘even slim circumstantial facts that exist so long as that goes beyond speculation’.⁸² The absence of other plausible explanations of the plaintiff’s harm is not alone enough, however, since the plaintiff still has the burden of persuading the court that the defendant’s breach caused the plaintiff’s harm.

⁷⁴ *Jones v Dunkel* (1959) 101 CLR 298, 304 (Dixon CJ) (*‘Jones v Dunkel’*) in dissent on the facts.

⁷⁵ *Bradshaw* (n 6) 5 (Dixon, Williams, Webb, Fullagar and Kitto JJ), citing *Richard Evans & Co Ltd v Astley* [1911] AC 674, 687 (Lord Robson).

⁷⁶ (1952) 85 CLR 352, 358 (Dixon, Fullagar and Kitto JJ) (*‘Luxton’*). Cf the dissenting opinion of McTiernan and Webb JJ at 358. See also *Jones v Dunkel* (n 74).

⁷⁷ *Luxton* (n 76) 359 (Dixon, Fullagar and Kitto JJ).

⁷⁸ See *East Metro* (n 1) [265] (Quinlan CJ, Mitchell and Beech JJA), citing *Seltsam* (n 45) 275 [84] (Spigelman CJ); *Fazio v Fazio* [2012] WASCA 72, [50] (Murphy JA, Pullin JA agreeing at [13], Newnes JA agreeing at [14]).

⁷⁹ (2011) 244 CLR 352, 386 [94] (*‘Lithgow’*).

⁸⁰ [2014] WASCA 130, [144] (Martin CJ, McLure P agreeing at [171], Newnes JA agreeing at [172]) (*‘Fraser’*). Similarly, see *Gold Ribbon* (n 67) [278] (Keane JA).

⁸¹ *Jones* (n 68) 1109 [26] (McHugh J). See also at 1119 [80]–[81] (Callinan J).

⁸² *Progressive Recycling Pty Ltd v Eversham* [2003] NSWCA 268, [7] (Young CJ in Eq, Ipp JA agreeing at [26], Davies AJA agreeing at [27]).

How do the Australian principles compare with the approaches of the US courts? In ‘Self-proving Causation’, Abraham sets out the critical factors that are present in cases in which US courts are more readily prepared to infer causation.⁸³ The starting point is that the plaintiff has introduced limited or ‘no independent evidence of cause in fact’ – that is, evidence about whether conduct of the kind engaged in by the defendant causes certain occurrences⁸⁴ – *other than the evidence of negligence itself*.⁸⁵ Indeed, in the types of cases Abraham considers, data is usually non-existent about why and how certain types of occurrences eventuate.⁸⁶ Instead of persuasive independent evidence of causation, the plaintiff’s case relies on the nature of the defendant’s conduct:

[E]vidence that the defendant’s conduct substantially increased the probability that the plaintiff would suffer the harm he or she did suffer is also circumstantial evidence of causation.⁸⁷

Abraham posits that three factors underpin the case law in which causation is inferred:

1. The *risk* that makes the defendant’s conduct negligent ‘is the particular risk that materialized in harm’.⁸⁸ This generally means that the risks posed by the defendant’s conduct can be said to lead to the single type of consequence that, in fact, occurred, and not to a variety of possible consequences;⁸⁹
2. The defendant’s conduct ‘greatly’ or ‘substantially’ multiplies or increases that risk;⁹⁰ and
3. There are no other plausible causes of (or ‘meaningful’ alternative causal candidates for) the injury, *other than* the defendant’s negligence.⁹¹

Reynolds v Texas & Pacific Railway Co (‘*Reynolds*’)⁹² is a simple example applying these principles. The plaintiff fell down unlit stairs, having been harried to proceed quickly from a well lit room down the stairs to a railway platform at 2am. The defendant argued that the plaintiff had not proven causation, since she may still have fallen in daylight. The Court rejected the argument and the plaintiff was successful in her claim; the defendant’s negligence increased precisely the risk that materialised (of falling down the stairs) and that risk was ‘greatly multiplied’ by the stairs being unlit. In the absence of any evidence led by the defendant explaining why the plaintiff fell, other than the darkness of the stairwell, the court was prepared to infer causation.⁹³

83 Abraham (n 5).

84 Ibid 1811.

85 Ibid 1819.

86 Ibid 1849–50.

87 Ibid 1819.

88 Ibid 1820. See also at 1817–27.

89 Ibid 1820.

90 Ibid 1819–20. See also ‘this kind of negligence substantially increases the chance that it will cause [that type of] harm’ at 1824.

91 Ibid 1824, 1850–1.

92 37 La Ann 694 (La, 1885) (‘*Reynolds*’), cited in Abraham (n 5) 1819–20.

93 ‘The defendant was negligent because it unduly risked causing what actually occurred’: Abraham (n 5) 1820.

The Australian general principles are broadly consistent with Abraham's summary of US law: the focus is on an *increased* risk of an occurrence, the *type* of which occurs *after the breach*, and the absence of other plausible explanations for the occurrence. There is one notable difference, however; there is no particular emphasis in Australian cases on the increase in risk of that occurrence being *significantly* or *greatly* multiplied. That said, such an assumption may be implicit in some decisions, even if it has not been expressly articulated.

B Does the Evidential Burden Shift to the Defendant?

Some Australian judicial statements about the process of drawing inferences, particularly in earlier cases, seem to suggest that courts may draw inferences from the mere sequence of events. For example, in *Adelaide Stevedoring Co Ltd v Forst*,⁹⁴ where medical evidence suggested, at best, that certain events could in some cases cause the plaintiff's medical condition, Rich ACJ stated that he could:

[N]ot see why a court should not begin its investigation, i.e., before hearing any medical testimony, from the standpoint of the presumptive inference which this sequence of events would naturally inspire in the mind of any common-sense [sic] person uninstructed in pathology ... why should not a court say that here is strong ground for a preliminary presumption of fact in favour of the view that the work materially contributed to the cause of death?⁹⁵

Statements such as those of Gaudron J in the High Court appear to be to similar effect:

[I]f an injury occurs within an area of foreseeable risk, then, in the absence of evidence that the breach had no effect, or that the injury would have occurred even if the duty had been performed, it will be taken that the breach of the common law duty caused or materially contributed to the injury.⁹⁶

Such statements might support views endorsed in some judgments that elevate inferences to a higher status: in effect, that where an injury falls within the foreseeable risks created by a breach, an *evidentiary* burden shifts to the defendant to adduce evidence that the injury would have occurred absent breach. That view was encapsulated by obiter in the Western Australian Court of Appeal in *Amaca Pty Ltd v Hannell* ('*Hannell*');

94 (1940) 64 CLR 538.

95 Ibid 563–4. His Honour noted that the expert opinion exhibited no unanimity about the possible cause of the plaintiff's medical condition. Before the passage cited above, Rich ACJ stated that he was 'greatly impressed by the sequence of events'. See Dixon J (as his Honour was then) dissenting at 570.

96 *Bennett v Minister of Community Welfare* (1992) 176 CLR 408, 420–1 ('*Bennett*'). See also '[o]nce a plaintiff demonstrates that a breach of duty has occurred which is closely followed by damage, a prima facie causal connection will have been established': *Chappel* (n 68) 273 (Kirby J). See also *Chappel* (n 68) 244–5 (McHugh J). See also the dissent of Basten JA in *King* (n 62) [6]:

[T]he result [denying causation] is counter-intuitive and apparently anomalous. The legal duty of care required that the mother be offered a treatment which was available for the purpose of boosting immunity to the chickenpox virus. In breach of that duty, the treatment was not offered. The harm which was sought to be avoided came to pass. Normally that sequence would allow an inference as to the causal link between the breach and the harm. It is necessary to be satisfied that there is a sound reason why that inference was not drawn in the present case.

As we understand the law in Australia, once a plaintiff demonstrates that a breach of duty has occurred followed by injury within the area of foreseeable risk, a prima facie causal connection will be established and the defendant has an evidential burden to adduce evidence that the breach had no effect or that the injury would have occurred even if the duty had been performed.⁹⁷

This appears to posit an evidential burden that *requires* the defendant to produce evidence to counter the plaintiff's case, or else a court is *bound* to decide in the plaintiff's favour.⁹⁸ This differs from an evidential burden in the sense that it may be *tactically prudent* for the defendant to produce evidence, or else face the risk of losing; that is, the plaintiff's evidence *entitles* (but does not compel) a court to find in the plaintiff's favour.⁹⁹

The issue has been subject to ongoing disagreement in the courts and other cases have rejected any shift in the evidential burden to the defendant. In *Flounders v Millar*, Ipp JA (Handley AJA agreeing) stated that:

[A] rule that the evidential onus shifts once a breach of duty has occurred followed by injury within the area of foreseeable risk is in conflict with these basic principles of the common law [that the plaintiff must prove his or her case].¹⁰⁰

Shifting an evidential burden may also be inconsistent with a more recent High Court decision in *Amaca Pty Ltd v Booth* ('*Booth*'), where the plurality of Gummow, Hayne and Crennan JJ stated:

[Q]uestions of causation, a step in the ascertainment of rights and the attribution of liability in law, call for sufficient reduction to certainty to satisfy the relevant burden of proof for the attribution of liability.¹⁰¹

Further, any reversal of the evidential onus would also probably be inconsistent with the various civil liability acts which categorically state that a plaintiff 'always' bears the onus of proving 'any fact relevant to the issue of causation'.¹⁰² However, more recent cases have still conceded the possibility that although there can be

97 (2007) 34 WAR 109, 194–5 [395] (Steytler P and McLure JA) ('*Hannell*'). The origin of the shifting of the evidential burden theory is said to be – according to *Flounders v Millar* [2007] NSWCA 238, [30] (Ipp JA, Handley AJA agreeing at [41]) ('*Flounders*') – statements of Dixon J (as his Honour was then) in *Betts v Whittingslowe* (1945) 71 CLR 637, 649. However, Ipp JA (Handley AJA agreeing at [41]) in *Flounders* (n 97) canvassed the authorities at [1]–[34] and noted that Dixon CJ's statement in *Jones v Dunkel* (n 74) 304–5 are inconsistent with an approach shifting an evidential burden to the defendant. In *Roads and Traffic Authority v Royal* (2008) 245 ALR 653, Kiefel J notes that no decision of the High Court holds that there 'is some lessening of the requirement of proof': at 688–9 [139]–[143].

98 *Strong* (n 14) 202 [54] (Heydon J), who called this the 'third sense' of the meaning of the term evidential burden. See also at 200–8 [46]–[64]. It is not clear whether Heydon J considers that a rule imposing an evidential burden on the defendant in the third sense is consistent with Australian law.

99 *Ibid* 202 [53] (Heydon J), who called this the 'second sense' of the meaning of evidential burden.

100 *Flounders* (n 97) [36]. Similarly, in *Siegwerk Australia Pty Ltd (in liq) v Nuplex Industries (Aust) Pty Ltd* (2016) 334 ALR 443, Beach J rejected an 'onus of exculpation' resting on the defendant to disprove causation for breach of contract: at 461–2 [78]–[83]. Beach J accepted, however, that a tactical evidential onus may arise at times to rebut an inference of causation is 'unremarkable'.

101 *Booth* (n 44) 61–2 [69]. See also *Ellis* (n 46) 121–2. See, eg, *BGC Residential Pty Ltd v Fairwater Pty Ltd* [2012] WASCA 268 ('*BGC Residential*'), in which counsel conceded that reliance on Gaudron J in *Bennett* (n 96) and the Western Australian Court of Appeal in *Hannell* (n 97) was no longer possible in light of such High Court statements. See also *Fraser* (n 80) [144] (Martin CJ, McLure P agreeing at [171], Newnes JA agreeing at [172]).

102 See, eg, *NSW CLA* (n 13) s 5E; *Qld CLA* (n 13) s 12.

no alteration of the general principles as to the onus of proof, nonetheless an evidentiary onus might arise in the circumstances of a case.¹⁰³

C The Role of Common Experience

As noted above, in justifying inferences being made, courts have repeatedly acknowledged that ‘common knowledge’ and ‘common sense’ are important in judicial reasoning in justifying decisions. For example, in *Bradshaw*, Dixon J (as his Honour was then) stated that inferences can be made that an injury arose from the defendant’s negligence where such are more probable ‘according to the course of common experience’.¹⁰⁴ This is particularly so where there is little or no evidence about day-to-day occurrences such as slip and falls, and so forth.¹⁰⁵

As Burns has stressed however, and as noted above, assumptions based on intuition, judicial experience, and common sense are the result of the human cognitive process, with all its fallibilities,¹⁰⁶ especially when assumptions are made without resort to social science or other evidence (if such evidence even exists). One such fallibility is that ‘common experience’ may simply reflect individual biases about how the world operates. Some members of the judiciary have recognised the problem.¹⁰⁷ Further, in *Strong v Woolworths Ltd* (*‘Strong’*), Heydon J noted that appellate courts are not ‘necessarily well equipped to speak’ on some aspects of ‘common experience of ordinary life’.¹⁰⁸ Indeed, Heydon J considered that “‘common sense”, “common” experience tends to elicit answers which are not common, but diverse’.¹⁰⁹

References to ‘common experience’ are an open acknowledgment by the courts that assumptions about the world – ‘social facts’ – are relevant in drawing inferences. That said, the courts have also rejected resort to ‘common experience’ in some types of cases. For example, in *Booth*, concerning the causes of the plaintiff’s mesothelioma (cancer caused by exposure to asbestos), Gummow, Hayne and Crennan JJ stated that:

Further, many issues of causation, including ... those which arise on the present appeals, lie outside the realm of common knowledge and experience. They fall to be

103 *Bauer Media Pty Ltd v Khedrlarian* [2018] NSWCA 208, [51] (Leeming JA, McColl JA agreeing at [1], Macfarlan JA agreeing at [2]). Although, this case is probably only a reference to a *tactical* onus since the judgment denies its status as a ‘general principle of law’.

104 *Bradshaw* (n 6) 6 (Dixon, Williams, Webb, Fullagar and Kitto JJ).

105 Cf Davies, Malkin and Voon’s view that ‘[t]he court is forced to take a more rigorous probability-based approach where there is little or no direct evidence’: Davies, Malkin and Voon (n 29) 212 [4.13], citing *Strong* (n 14). This is correct in some limited cases, such as *Strong* (n 14), but not an option in many of the cases under consideration.

106 Burns, ‘In This Day and Age’ (n 11) 238. Burns summarises some of these fallibilities: at 238–47. Burns suggests that such social facts may be problematic, given that judicial ‘common sense’ may be misplaced or inaccurate.

107 See Burns, ‘It’s Not Just Policy’ (n 8) 84–5 for some examples. See also Burns, ‘In This Day and Age’ (n 11) 227, citing Lord Neuberger, ‘Judge Not, That Ye Not Be Judged: Judging Judicial Decision-Making’ (Speech, FA Mann Lecture, 29 January 2015) [24]–[29] <https://supremecourt.uk/uploads/speech_150129_782eb16593.pdf>, noting the likely impact of cognitive illusions and cognitive bias.

108 *Strong* (n 14) 210 [69].

109 *Ibid.*

determined by reference to expert evidence, for example, medical evidence. In such cases, the investigation of difficult and complicated facts cannot be separated from an appreciation of any special branch of knowledge which affects them.¹¹⁰

In short, in such cases, ‘in place of ... “the rough and ready answers of the practical man”, an exact and reasoned solution’ is now required.¹¹¹ This does not mean that courts are not prepared to draw inferences in such cases by assessing complex and perhaps contradictory and inconsistent expert evidence as, indeed, the High Court was prepared to do in *Booth*.¹¹² We cannot, however, draw on our ‘experience’ or ‘knowledge’ to resolve these causation questions, and expert evidence may itself be open to different interpretation and possible conclusions as to what it proves.¹¹³ Any attempt to explain such decisions and inferences of causation that are made (if any) would require a detailed consideration of the expert evidence specific to the issues in each case, and it is therefore difficult to generalise from them.

Competing expert evidence cases are therefore not the focus of the next section, which is on cases in which plaintiffs’ injuries generally arise during events on which little data or evidence exists as to the anatomy of how such injuries, either generally, or in the specific circumstances of each case, occur. Importantly, these are cases, as stated in *BGC Residential Pty Ltd v Fairwater Pty Ltd* (*‘BGC Residential’*), citing *Booth*:

[W]here ‘other disciplines’ cannot give any conclusive answer, in which case a commonsense [sic] assessment of the evidence is the only method which can be used to reach a conclusion about whether a breach ... has caused the claimed damage.¹¹⁴

IV CASE EXAMPLES: INFERRING CAUSATION AND SOCIAL FACTS

A ‘Acts’ Versus ‘Omissions’

Given the difficulties of proving causation are particularly acute in the context of omissions, courts are more likely to need to rely on inferences where the

110 *Booth* (n 44) 61 [67].

111 *Ibid* 61 [68] (Gummow, Hayne and Crennan JJ), citing Sir Owen Dixon, ‘Science and Judicial Proceedings’ in Judge Cazimir Woinarski (ed), *Jesting Pilate* (Lawbook, 1965) 11, 14.

112 *Booth* (n 44). The case relied on expert evidence as to the possible cause of mesothelioma from exposure to brake linings. The plurality inferred that causation was proven despite epidemiological evidence that was argued to disfavour a conclusion that brake mechanics were at greater risk of such illness. The plurality noted flaws in such studies (when sought to be applied to brake mechanics specifically): at 68 [89]. The plurality further noted that the inference of causation based on exposure to brake linings was still open on those studies: at 68 [88]. See, eg, *East Metro* (n 1).

113 See, eg, *Seltsam* (n 45) in which the majority (Spigelman CJ, Davies AJA agreeing at [265]) held that varying expert evidence – including epidemiological studies and interpretations of those studies – as to whether exposure to asbestos was a cause of the plaintiff’s renal cancer, did not justify an inference. The evidence went ‘no further than establishing a possibility’ and therefore the plaintiff had failed to prove his case on the balance of probabilities: at [183]. Cf the comments of Stein JA, stating that inferring causation was permissible and ‘rose well above conjecture’ at [250].

114 *BGC Residential* (n 101) [51] (Pullin JA, Newnes JA agreeing at [67], Murphy JA agreeing at [68]), citing *Booth* (n 44) 61–2 [69] (Gummow, Hayne and Crennan JJ).

defendant's alleged breach is a failure to take a precaution to prevent harm – rather than where the defendant engages in positive conduct that leads to the plaintiff's harm.¹¹⁵ In many cases of positive acts of negligence, there may be cogent independent evidence of the causal relationship between the defendant's act and the plaintiff's harm. As Hamer notes, 'in a case of commission, the court will often be able to assume that, but for the defendant's breach, the *ante quo* position would have continued'.¹¹⁶ We might readily say that the defendant's striking of a match near highly flammable petrol fumes was the cause of an explosion, because, had the match not been struck, no explosion would have occurred – we can assume that the *ante quo* non-explosive state would have continued.¹¹⁷ Many cases of positive acts therefore do not raise troubling causation questions.¹¹⁸

When we consider a failure to act on the part of the defendant, however, causation questions often prove far more difficult. Compared to the petrol example above, it is much more difficult to determine whether the defendant's *failure to warn others* about the dangers of matches near petrol would have prevented those others from lighting matches. We either do not have 'common experience' to easily draw upon, given the question turns on the subjective response of specific individuals, or alternatively, our 'common experience' tells us that some people do not pay attention to warnings or do stupid things even when warned. In *Clare & Gilbert Valleys Council v Kruse*, the question was whether drivers would have slowed down had there been a 'slow down' warning near some road works.¹¹⁹ The Court observed that '[t]here is always an artificiality to such a question in a case like this. The answer to the question necessarily involves retrospective reasoning'.¹²⁰ This was especially so given that the drivers had not even been questioned on the issue.¹²¹

Many of the cases where courts explicitly resort to inferences, based on common experience, are therefore ones of omission. The 'but for' question in omissions cases is whether the risk that should have been removed was the most

115 *BGC Residential* (n 101) [50] (Pullin JA, Newnes JA agreeing at [67], Murphy JA agreeing at [68]). This case concerned a breach of contract.

116 Hamer, 'Chance' (n 4) 603 (emphasis in original). As Hamer points out, the conclusion that the status quo would have continued is still hypothetical, however. It assumes that the event did in fact cause the harm, when in fact the harm might still have happened anyway.

117 See, eg, the 'Freak Gasoline-Fight Accident' from the film *Zoolander* (Paramount Pictures, 2001) 0:14:48–0:16:29. This assumption may not be correct; maybe some unobserved spark from another event in fact caused the explosion.

118 This need not always be so, however. For example, if the plaintiff fell on a wet floor, it may be difficult to determine whether the moisture caused the fall, irrespective of whether that moisture was there because the defendant negligently spilt water (positive act) or failed to clean it up.

119 [2019] SASFC 106.

120 *Ibid* [97] (Blue, Lovell and Hinton JJ). 'The question is necessarily hypothetical': at [91].

121 Even if they had, the 'temptation' to assert that, of course, 'I would obey a legal restriction' would impact such evidence: *ibid* [97] (Blue, Lovell and Hinton JJ). See also *Jones* (n 68) (the driver would not have slowed down as they had been speeding excessively on similar roads for many hours prior to the accident). A similar problem arises where the causation question turns on whether 'better' training would have allowed the plaintiff to avoid a workplace injury. See, eg, *Munday v St Vincent's Hospital Ltd* [2021] VSCA 170 (whether training on the use of a device would have avoided injury, but the precise content of such training was not articulated).

likely cause of the injury. A failure to light a stairwell is a cause of a fall if it can be inferred that darkness was the most likely cause of the particular fall.¹²²

B Cases in Which Courts Have Inferred Causation

Consistently with the principles set out above, courts will more readily draw inferences where there is only one likely consequence that follows from the risk created by the defendant's conduct, which consequence in fact has occurred, and the defendant's conduct increased the risk of that consequence occurring. In many of these cases, there is no source of data or 'independent' evidence about how and why certain events occur. Hence, reliance on social facts and assumptions about how the world works form an important basis for causal inferences.

A simple example is *Perisher Blue Pty Ltd v Harris*, where the defendant's negligence was a failure to put barriers or warnings around or near a ditch on a beginner ski slope.¹²³ Would such barriers or warnings have prevented an out of control beginner skier (with limited turning skills) from hitting the ditch? The defendant had suggested that the plaintiff might not have been able to avoid the ditch even if there were barriers or warnings. However, on 'sketchy' evidence, Sackville AJA inferred causation as the skier 'probably' would have been able to avoid the hazard. It was simply assumed that the plaintiff could have sought to execute a turn or slowed down (despite his limited skill) had he been warned.¹²⁴ No further reasons were given, but the case is consistent with the principles for drawing inferences. Specifically, (1) the precise risk created by a ditch is a skier hitting it and landing badly; (2) it significantly increases that risk (especially for beginner skiers); and (3) the defendant was unable to suggest plausible alternatives as to the cause of the injury, other than the assertion of the skier's beginner status.

There are many examples illustrating this pattern. Slipping is precisely the occurrence that might follow from the event of a smooth floor being wet and wetness increases the risk of the plaintiff slipping.¹²⁵ Fire escaping is precisely the occurrence that might follow from the absence of maintained firebreaks and such absence increases the risk of fire spreading.¹²⁶ Collisions are precisely the type of occurrences that typically follow from vehicles driving on the incorrect side of the road¹²⁷ or without headlights at night,¹²⁸ and those events (significantly, one would think) increase the risks of those eventualities.

These assumptions about facts in the physical world may seem uncontroversial, even if unsubstantiated, perhaps because the correlation between event and

122 The inference was strengthened by the fact that the plaintiff was hurried along to move from a well lit room into the darkened stairwell: *Reynolds* (n 92).

123 [2013] NSWCA 38.

124 Ibid [27] (Sackville AJA). Cf at [93]–[99] (Young AJA).

125 Therefore, it can be inferred that the plaintiff would not have fallen if there was considerably less moisture on the floor. Cf *Sutherland Shire Council v Safar* [2017] NSWCA 203.

126 *Weber v Great Hume Shire Council* (2019) 100 NSWLR 1. The Court held that firebreaks would have prevented or slowed the spread of a fire.

127 *TNT* (n 73) 53.

128 *Bradshaw* (n 6) 5 (Dixon, Williams, Webb, Fullagar and Kitto JJ). However, the evidence that the defendant's van was driving without lights was very limited.

occurrence appears to be so strong. Yet many assumptions about how the world works are untested and are often made in circumstances where no data exists as to likelihood. By their nature, they may reflect differing viewpoints, and may be true in some circumstances but not others. For these reasons, they may be subject to disagreements among judges, as seen in the following cases.

In *Langmaid v Dobsons Vegetable Machinery Pty Ltd* ('*Langmaid*'), the plaintiffs suffered harm caused by a fire.¹²⁹ It was unclear how the fire had started: '[t]he evidence ... as to the cause of the fire was wholly circumstantial'.¹³⁰ The difficulties in proving causation were twofold: (1) it was not clear whether the fire had started as a result of 'hot' work (welding, grinding, etc) done on the premises; and (2) since that work had been done by two employees of the defendant and an employee of one of the plaintiffs, it was unclear whose work was responsible. The fire had started a considerable time after the hot work was completed and so, if caused by the hot work, it would have been because undetected embers smouldered for some time before alighting combustible materials.

The Tasmanian Full Court held by majority (Porter J, with Pearce J agreeing) that inferences could be drawn, to overcome this double hurdle, both that the hot work caused the fire and that it was more probably a result of the work of the defendant's employees:

[T]he [plaintiffs] must, of course, prove on the balance of probabilities that the [defendant's] breach of duty was a necessary element of the occurrence of the harm. That involves processes of inference. In this case the exercise may involve a two-stage factual inquiry as to the probabilities of hot work causing the fire, and then as to whose hot work did so, but the ultimate question is whether it has been shown on the balance of probabilities that the [defendant's] omissions caused the fire.¹³¹

Relying on previous High Court authority, Porter J noted that the question was whether the defendant's 'omissions amounting to the breach' resulting in 'an accident of the kind that might thereby be caused' was enough to justify an inference;¹³² the facts needed to be 'compelling' to justify such inference.¹³³

Porter J stressed that fire was an 'outcome of the kind'¹³⁴ that would follow from the defendant's failures (in part, in not adequately safeguarding combustible materials). Further, Porter J considered that it was more likely than not that the fire was the result of the welding, which was carried out at a greater elevation and later into the evening by one of the defendant's employees.¹³⁵

In dissent, Blow CJ decided that, even though the hot work theory was the 'least unlikely explanation', it was not possible to conclude whose work was responsible and an inference of causation was, overall, not justified. The possibilities that the fire was unrelated to the hot works or not caused by the defendant's employee had

129 (2014) 24 Tas R 18 ('*Langmaid*').

130 Ibid 22 [2] (Blow CJ).

131 Ibid 52 [131].

132 Ibid 52 [132].

133 Ibid 52 [133].

134 Ibid 52 [134].

135 Ibid 55 [144]–[146]. Cf *Nguyen* (n 70) where the Court refused to infer that the defendant's negligence caused the fire in light of other competing, possible causes identified by expert witnesses.

not been excluded,¹³⁶ and this meant that the plaintiffs had not proved their case on the balance of probabilities.

Important to the majority's decision in *Langmaid* was that other plausible explanations of the fire had been largely excluded by the expert evidence, whereas the hot work had not been so excluded and there was some evidence supporting the plaintiffs' case – which was held to outweigh the evidence of other possible causes of the fire. In any case, it has been said that a court may infer causation even on 'meagre and unsatisfactory evidence' if a defendant does not call *any* evidence.¹³⁷

In *Brown v Hewson* ('*Brown*'), three judges reached contrary conclusions as to the possible causes of an injury, and none of the different inferences were based on any evidence supporting those conclusions.¹³⁸ The plaintiff, a three and half year-old boy, suffered injury when either jumping or falling (there was doubt about which had occurred) off a balance beam at a childcare centre. There were two alleged breaches of duty: (1) that the beam was approximately five centimetres above regulation height; and (2) that the boy's shoes had been fitted on the wrong feet. Macfarlan JA inferred that even if the boy jumped, it was likely that the shoes being on the wrong feet would have contributed to his fall; the shoes 'impaired' his balance and coordination.¹³⁹ However, Sackville AJA and Adamson J disagreed, and concluded that – if the injury arose from a jump – the shoes being on the wrong feet would not have impaired the child.¹⁴⁰ Nonetheless, the plaintiff succeeded in establishing causation (and therefore liability) overall because Sackville AJA held that the five centimetre difference in beam height caused the injuries; the safety standards supporting an inference that even a minor increase in height increased the risk of injury.¹⁴¹ However, Macfarlan JA and Adamson J disagreed; the height difference was minimal and the increased risk was not of itself sufficient to support an inference that the height caused the injury.¹⁴² Importantly, the plaintiff succeeded despite a majority of judges disagreeing with each of the two possible causal inferences.

The case illustrates both the willingness of judges to rely on their own assumptions about how the world works – here, the basic physics at work in the anatomy of a fall – and doing so with minimal evidence on point as well as despite their colleagues reaching opposite conclusions. Of course, judges denying causation can always refer to the plaintiff's failure to discharge their onus on the balance of probabilities. However, judges relying on inferences must conclude that the plaintiff has discharged their onus. Significantly, in *Brown*, there was no

136 *Langmaid* (n 129) 28 [25]–[26] (Blow CJ).

137 *Bradshaw* (n 6) 5 (Dixon, Williams, Webb, Fullagar and Kitto JJ).

138 [2015] NSWCA 393.

139 *Ibid* [9]–[12].

140 The shoes on the wrong feet contributed to the risk of *an* accident, but not *the* accident that actually occurred (from jumping): *ibid* [96]–[99] (Sackville AJA, Adamson J agreeing at [156]).

141 *Ibid* [102] (Sackville AJA). The mere increase in risk does not shift the onus to the defendant, but nonetheless, it was justifiable to make inference, despite 'sparse' evidence: at [103]. Even a small increase in height could have increased the force of impact or changed the plaintiff's position when landing: at [103]–[109].

142 *Ibid* [2]–[4] (Macfarlan JA). See also at [146], [153] (Adamson J).

evidence to suggest that minor increases in beam height would have increased the risk of the injury that actually occurred nor that shoes on the wrong feet increased the risk of the precise way in which the injury that occurred (if jumping off the beam). Any range of alternative reasons for those outcomes was possible.

Burns has highlighted the role of assumed social facts in *Strong*, an important High Court case on causation in the context of a slip and fall in a shopping centre.¹⁴³ In many slip and fall cases, the defendant's breach is argued to be a failure to have a regular system of inspection and cleaning of spillages. In *Strong*, the plaintiff slipped on a chip in a shopping centre at 12:30pm. The New South Wales Court of Appeal had held that the plaintiff had not established causation. A system of cleaning at regular intervals would not necessarily have removed the chip, as 12:30pm was within 'the range of time at which people ordinarily eat lunch'. Consequently, the Court reasoned that there was no basis for rejecting the possibility that it had been dropped relatively soon before the accident.¹⁴⁴ The High Court rejected this assumption of social fact. It was based on speculation. Instead, it reasoned – seemingly based on probabilistic logic – that since the food court was open since the morning, the opportunity for the chip to have been purchased and dropped was far longer than any assumed start of the lunchtime rush.¹⁴⁵ The Court was prepared to infer causation on probabilities based on the number of hours since opening in which the spillage could have occurred, when compared to the assumed reasonable intervals for cleaning. Although this suggests a rigorous, value-neutral probabilistic approach to causation,¹⁴⁶ that appearance might be deceiving. I would argue that the justification for resorting to probabilities to conclude that causation was satisfied itself involved affirmation of a social fact – here, an assumption about people's ordinary eating habits not based on evidence – that people eat chips throughout the day, including for breakfast or as a snack.¹⁴⁷

In dissent, Heydon J stressed that the plaintiff bore the burden of proof and that she had not discharged that burden, and that reliance on 'probability theory' was not convincing. His Honour stated that there had to be an 'actual persuasion' of the Court of the occurrence of the matter, and that he did not 'subjectively believe that the chip was probably dropped before 12:15pm'.¹⁴⁸

Even before *Strong*, some cases used probabilistic reasoning, based on comparing time frames before and after a reasonable cleaning would have occurred

143 *Strong* (n 14).

144 *Woolworths Ltd v Strong* [2010] NSWCA 282, [68] (Campbell JA, Handley AJA agreeing at [80], Harrison J agreeing at [81]). Therefore, a cleaning system at regular intervals would not on the balance of probabilities have picked up the chip.

145 *Strong* (n 14) 197–8 [37]–[38] (French CJ, Gummow, Crennan and Bell JJ). See Burns, 'It's Not Just Policy' (n 8) 80–2, discussing in particular the social facts inherent in the New South Wales Court of Appeal decision and in Heydon J's dissent.

146 See Davies, Malkin and Voon (n 29) 212.

147 *Strong* (n 14) 198 [37] (French CJ, Gummow, Crennan and Bell JJ). The assumptions about day-to-day occurrences can be mundane: see, eg, *Brady v Girvan Bros Pty Ltd* (1986) 7 NSWLR 241, 256 (McHugh JA) ('*Brady*') for the inference that a reasonable cleaning system would have removed the spillage in part based on jelly having melted).

148 *Strong* (n 14) 211–2 [75]–[76] (Heydon J).

to justify inferences of causation.¹⁴⁹ In other cases, however, courts have dismissed claims, citing a lack of evidence from plaintiffs as to how long the offending spill was present. For example, *Strong* contrasts with an earlier decision in *Dulhunty v JB Young Ltd*, in which the High Court dismissed the plaintiff's claim for injury caused by slipping on a grape in the defendant's store (which did not sell food) because evidence as to when the grape was dropped and how long it had been there 'was indispensable' in the plaintiff's case.¹⁵⁰

In a more recent case, applying *Strong*, the plaintiff was injured 6.5 hours after shop opening by slipping on a grape. The plaintiff succeeded in proving causation on an assumed system of hourly inspections, because '[t]he probabilities are that the grape was dropped in the earlier five hours and 32 minutes rather than the one hour immediately preceding the fall'.¹⁵¹

Particularly problematic are cases where causation questions turn on how an individual would have behaved in changed circumstances.¹⁵² In such cases, courts look to evidence that focuses on the behaviour and personality of the persons in question, their response to similar circumstances, etc. There is less scope for inferences based on 'logic' or probabilities. There can rarely be 'data' or even necessarily 'common experience' to draw on, especially if there is no evidence about the personality or previous behaviour of the individual in question.¹⁵³ A simple example is *BGC Residential*,¹⁵⁴ concerning a breach of contract and whether the breach – a failure to have security guards present at a site when it was firebombed – caused such firebombing. The WASCA acknowledged that there could be no certainty about what would have happened had a security guard been at the premises. However, the Court was prepared to infer that the unknown firebomber(s) did not want to be observed and therefore, on the balance of probabilities, a security guard would have deterred the firebomber.¹⁵⁵

C Cases in Which No Causal Inferences Have Been Drawn

Cases in which the courts have refused to infer causation illustrate the converse of those considered in the previous section: the alleged breach did not (significantly) increase the risk of the type of accident that led to the injury, or alternatively, other plausible causes of the accident had not been excluded by the plaintiff or, often, both.

149 See, eg, *Rose* (n 27).

150 (1975) 7 ALR 409, 410 (Barwick CJ, Mason J agreeing at 411, Jacobs J agreeing at 411).

151 *Buljat v Coles Supermarkets Australia Pty Ltd* [2022] ACTCA 71, [56] (Elkaim, Mossop and Kennett JJ).

152 Where the individual in question is the plaintiff, the Civil Liability Acts dictate that the question of how the plaintiff would have responded had the defendant not been in breach is a subjective one. See, eg, *NSW CLA* (n 13) s 5D(3); *Qld CLA* (n 13) s 11(3). But this is also so where the conduct of a third party is at issue.

153 Cf *Jones* (n 68), discussed below, where evidence of the plaintiff's previous driving allowed the Court to infer that a warning sign would not have changed the plaintiff's behaviour.

154 *BGC Residential* (n 101).

155 *Ibid* [54] (Pullin JA, Newnes JA agreeing at [67], Murphy JA agreeing at [68]), distinguishing *Adeels Palace* (n 14) in which the miscreant was brazen in his willingness to carry out the criminal acts and did not care about being witnessed by others.

An example where the breach did not necessarily increase the risk of the harm that occurred is *Robinson v The Owners of Reflections Waterfront Apartments West Tower Strata Plan 58085*, in which the plaintiff slipped while walking.¹⁵⁶ She alleged a breach of duty in failing to clean a ‘stain’ on the ground. The Court was not prepared to infer causation, even if there was a breach of duty in failing to adequately clean. There was nothing to suggest that the small, discoloured area of tile was greasy or slippery, or even that the plaintiff had slipped on the stain, rather than in its vicinity. Stains neither necessarily lead to falls, nor significantly increase the risk of falls (unless, for example, they are grease stains). Since there was no evidence as to the state of the walkway more generally, there may have been any number of other plausible reasons for the fall.¹⁵⁷

Similarly, in *Shoalhaven City Council v Pender*, the plaintiff alleged that he slipped on a ramp due to the build-up of dry algae.¹⁵⁸ The Court was not prepared to infer that the plaintiff would not have slipped had the ramp been cleaned. Although McColl JA (Barrett JA agreeing) noted that it can sometimes ‘be inferred as a matter of common sense and common knowledge, that particular surfaces will ordinarily be slippery, particularly when wet’, the same could not be said for dry surfaces.¹⁵⁹ Therefore, ‘common knowledge or experience’ did not support an inference of causation that the plaintiff’s slip was caused by the defendant’s negligence.¹⁶⁰ That conclusion was further supported by evidence suggesting that a plausible mechanism for the fall was the slope of the ramp and the manner in which the plaintiff stood up.¹⁶¹

Even where the defendant’s negligence increases the risk of the very type of harm that has occurred, courts are reluctant to infer causation where there are other, plausible events that may have led to an occurrence and the evidence does not provide any basis for preferring one explanation over another. In *Lithgow City Council v Jackson*, the plaintiff suffered serious injuries from a fall down into a concrete drain, allegedly from tripping over a concealed retaining wall.¹⁶² There was no testimony as to how the fall occurred (the plaintiff himself being found unconscious) and other evidence sought to be relied on was inconclusive. The Court refused to infer that the fall had occurred as argued by the plaintiff, there being at least two other plausible ways in which the plaintiff could have fallen.¹⁶³

156 [2017] WASCA 190.

157 Ibid [47] (Martin CJ, Murphy and Mitchell JJA). Similarly, see *Coles Supermarkets Australia Pty Ltd v Meneghello* [2013] NSWCA 264, [41] (Barrett JA, Ward JA agreeing at [122], Emmett JA agreeing at [123]–[124]). No inference was drawn as to two equally likely causes of the plaintiff’s fall (that she stepped on pieces of cardboard or that she did not): ‘[c]ommon experience would not suggest that the [plaintiff]’s foot landed in one place rather than the other’.

158 [2013] NSWCA 210.

159 Ibid [88].

160 Ibid [89]–[90] (McColl JA, Barrett JA agreeing at [98]). See also at [205]–[206] (Ward JA, Barrett JA agreeing at [98]).

161 Ibid [120] (Ward JA, Barrett JA agreeing at [98]).

162 *Lithgow* (n 79).

163 Ibid 379 [67] (French CJ, Heydon and Bell JJ, Gummow J agreeing at [81]). In *Booth* (n 44) 61 [67], Gummow, Hayne and Crennan JJ viewed this case as one in which questions of causation are ‘outside the realm of common knowledge and experience’ and therefore need to be determined by resort to

Although the plaintiff relied on the severity of his injuries to argue that the fall must have been from the vertical wall, rather than the sloping sides of the drain, the Court rejected this ‘common sense’ reasoning:

To establish it would call for more than the application of ‘commonsense’ [sic] or the court’s experience of ordinary life. The proposition turns on an inference from the nature of the [plaintiff’s] injuries to their probable cause. That inference could only be drawn in the light of expert medical evidence.¹⁶⁴

Similarly, in *Perisher Blue Pty Ltd v Nair-Smith*, the plaintiff alleged that her reaction to the defendant’s employee’s failure to address the risk – a ski chair lift with its bar still down, meaning that the plaintiff could not alight on it as required – led to her being misaligned and thus being struck by the chair.¹⁶⁵ The Court noted various reasons that could have led to the plaintiff being misaligned prior to the chair striking her, all of which were plausible.¹⁶⁶ Indeed, the plaintiff had seen the risk (the bar being down), and was reacting to it, even before the defendant’s employee had any opportunity to respond, that is, before any alleged negligence of the defendant’s employee.¹⁶⁷ The Court concluded, ‘[t]he course of common experience does not establish why any one of these explanations is the more probable inference that ought to be drawn in the circumstances.’¹⁶⁸

In *Jackson v McDonald’s Australia Ltd*, the plaintiff fell at or near the top of stairs while descending.¹⁶⁹ He alleged that his shoes had become wet from walking (several metres before the stairs) on a freshly cleaned floor. The Court was not prepared to infer that wetness on his shoes (if any water remained) caused the fall. There was no evidence to show a greater risk of falling on dry stairs where shoes are wet (especially given the areas before and at the top of the stairs were dry and of non-slip materials), there were other possible causes for the fall (such as inattention, speed, or not using a handrail),¹⁷⁰ and the plaintiff had not rebutted those other plausible causes.

These cases illustrate that where an injury may have been caused by factors other than the defendant’s negligence, and no specific evidence establishes an anatomy of the injury consistent with the defendant’s negligence being the cause, then the plaintiff will fail in their claim – not being able to establish causation on the balance of probabilities.¹⁷¹

expert evidence. See also *Moama Bowling Club Ltd v The Thompson Group Pty Ltd* [2014] VSCA 245 (two possible causes of fire, one being the defendant’s negligence).

164 *Lithgow* (n 79) 378–9 [66] (French CJ, Heydon and Bell JJ, Gummow J agreeing at [81]).

165 (2015) 90 NSWLR 1.

166 *Ibid* 36–7 [162] (Barrett, Gleeson JJA and Tobias AJA).

167 *Ibid* 36 [161].

168 *Ibid* 37 [163]. Choosing one explanation over another ‘is no more than speculation’.

169 *Jackson* (n 58).

170 *Ibid* [119] (Barrett JA, McColl JA agreeing at [1], Ward JA agreeing at [181]).

171 See, eg, *Officeworks Ltd v Christopher* [2019] NSWCA 96 (causation not proven in relation to one of the plaintiff’s injuries); *Swift v Wearing-Smith* [2016] NSWCA 38, [107]–[108] (Hoeben JA, Meagher JA agreeing at [1]) (other possible mechanisms for the failure of a glass panel on a balcony).

V ANALYSIS

The principles that govern causal inferences can be stated readily enough, and there are numerous case examples illustrating the application of those principles. Where harm has occurred, the courts consider whether the plaintiff's harm is of *the type* that follows from the risk created by the defendant's conduct. If the defendant's negligence likely increased that risk, then, absent other plausible explanations, courts are likely to infer causation. However, this raises the important question: on what basis do judges make the factual assumptions underpinning causal inferences in the absence of any clear evidence on the relationship between particular events and occurrences? Although the courts repeatedly refer to 'common knowledge and experience' and 'common sense', as Heydon J has noted, common sense questions may well elicit uncommon answers.¹⁷²

In cases concerning other aspects of negligence, for example, standards of *acceptable* conduct or the boundaries of liability (such as whether a duty arises),¹⁷³ justifiable concerns have been raised about judges' biases and prejudices. In such often influential and important cases, as Burns has demonstrated, 'social fact' assumptions need not necessarily accurately reflect society or societal *values* and, indeed, may themselves 'contribute to the construction of social norms'.¹⁷⁴ There is a consequent danger of damage being done where those social facts 'are incorrect, incomplete, out of date or tell the story of some members of society, but shut out the reality of the lives of others'.¹⁷⁵

When we turn to causation, factual assumptions appear to be of a different type. Where injuries occur because of the physical state of things (wet or algae-covered surfaces, wet shoes, falling down drains, hitting ditches while skiing), assumptions about basic physics, the slipperiness of different surfaces, how fires start or move, how human bodies react to physical dangers, etc drive those conclusions. Indeed, some inferences of causation are mundane, such as how long jelly had been on a floor based on its melted state.¹⁷⁶ Whether, however, such conclusions are built on sound foundations, reflecting some commonality of human experience and knowledge, is certainly open to question, and more so where judges disagree.

Even if we doubt the accuracy of some of these assumptions, nonetheless, it seems fair to state that concerns about possible cognitive biases or assumptions (of judges) about social values and how *society* functions are not as relevant when we consider cases on inferring causation. Although there are exceptions, they mostly do not assume, for example, how people *behave* in different circumstances. On the one hand, therefore, causal inferences seem generally less 'value laden' and more concerned with applications of logic and assumptions about the physical and natural world rather than about 'social' facts.¹⁷⁷ Even where causation cases do expressly

172 *Strong* (n 14) 210 [69].

173 Burns, 'It's Not Just Policy' (n 8) 84.

174 Burns, 'The Way the World Is' (n 8) 238.

175 *Ibid.*

176 *Brady* (n 147) 256 (McHugh JA).

177 Arguably, a narrow definition of that phrase could exclude such matters altogether.

consider how people behave – consider *Strong*, and the varying assumptions made by various judges about when people eat hot chips – such assumptions do not pose any risk of having broader social implications beyond their role in resolving the specific case itself.¹⁷⁸

On the other hand, however, we ought not to too readily dismiss the importance of courts being prepared to draw inferences of causation (assuming that the other elements of negligence are satisfied), as this allows plaintiffs to succeed in their claims even where they may not have presented strong evidence in support of one element of their claim. The boundaries between cases in which courts reject claims because plaintiffs have not established causation on the balance of probabilities and where they allow claims based on inferences are not easy to draw. The application of the relevant principles is not easily predictable. This means that underlying such decisions may be intuitive conclusions about whether an individual plaintiff is deserving of success and such conclusions might reflect deeper, underlying biases.

This may be particularly so where causation depends on how the plaintiff or a third party would have responded to risks if the defendant had not breached their duty, such as by providing safety equipment or issuing certain warnings. The general principles set are much more difficult to apply – and courts may struggle to draw inferences – in this context. The question is answered, supposedly, subjectively and what one person may have done may differ considerably from what another might do. Consequently, *where it is available*, courts seek to rely on specific evidence to try to reach a conclusion. For example, in *Gold Ribbon*, the issue was whether imprudent loans would still have been made if better lending practices had been adopted.¹⁷⁹ The Court concluded yes (and therefore causation was not proved), given the previously cavalier approach of the lender. In *Commissioner of Main Roads v Jones*, the question was whether the plaintiff driver would have slowed down if an 80 km/hr sign or a sign warning of straying animals had been put up.¹⁸⁰ The High Court held not, as the plaintiff had been dangerously exceeding speed limits by around 50% for large parts of his lengthy journey. Such reasoning draws on the limited evidence available about the behaviour of specific persons, but by its nature is hypothetical and largely speculative.

Despite the supposed subjective approach, however, David Hamer notes that in cases where causation is dependent on the responses of individuals, the willingness of courts to infer causation may vary according to the social context of the injury. Hamer suggests that courts may be more willing to infer causation in favour of plaintiffs in the context of workplace or consumer accidents, and less willing to do so in the context of medical or recreational misadventures.¹⁸¹ Hamer suggests that this means that values and policy concerns, such as what classes of

178 See discussion in Part IV(B).

179 *Gold Ribbon* (n 67).

180 *Jones* (n 68). Cf *Curtis v Harden Shire Council* (2014) 88 NSWLR 10, in which the issue was whether the (deceased) driver lost control of a vehicle due to the loose surface of the road. The Court by majority (Bathurst CJ and Beazley P, Basten JA dissenting) held that the expert evidence supported an inference that the loose surface was the cause of the loss of driver control. It appears to have assumed that had a reduce speed warning been posted, the (deceased) driver would have slowed down.

181 Hamer, 'Factual Causation' (n 4) 162–3.

plaintiffs may be more deserving of protection from negligently caused harm, may impact on the process of inferences being drawn. As he summarises: '[t]he facts are inaccessible, and factual findings instead are made on the basis of policy-based proof rules'.¹⁸² If this is so, then the preparedness of courts to draw inferences may reflect other concerns, such as a conclusion about who should win in certain classes of cases. Such concerns might include that liability in some contexts should be imposed for risky conduct even if it cannot be proven that a given the defendant's conduct was indeed the cause of the plaintiff's harm. For example, in *Duma v Mader International Pty Ltd*, Neave JA noted that many cases of breaches of occupational health and safety statutory duties give rise to 'a strong inference' of causation.¹⁸³ Alternatively, refusing to draw inferences might be driven by views that certain classes of plaintiff are less deserving. If Hamer is correct, and he cites supporting authority mostly from the United States for some of his propositions,¹⁸⁴ such decisions demonstrate that a refusal or willingness to draw inferences may stem from the different value society places on the protection of persons engaged in different conduct. Such evaluations, whether justified on 'common experience' or not, may therefore reflect 'social fact' assumptions that concern higher 'societal values', including unstated policy or normative evaluations, rather than just mundane assumptions about daily life.

Perhaps this is not problematic if underlying the process of inferring causation is a recognition by courts of the inherent difficulties faced by many plaintiffs of proving on the balance of probabilities that they would not have been injured but for the defendant's negligence. This is especially so in circumstances in which, apart from the fact that there was some negligent conduct by the defendant, little else is known. As Rizzi and Thomasson argue, however, there is a contradiction in drawing inferences in the face of scientific uncertainty while adhering to a necessary condition requirement that suggests a matter has been proven on the balance of probabilities as more likely than not.¹⁸⁵ Rizzi and Thomasson conclude that where there is an evidential gap due to scientific uncertainty, drawing inferences demonstrates that 'a measure of normative judg[e]ment in the factual inquiry is not only unavoidable but desirable'.¹⁸⁶ I agree; however, it is also doubtful that courts

182 Ibid 163. 'The very uncertainty as to what *might* have happened opens the door wide for conjecture. But when conjecture is demanded it can be given a direction that is consistent with the policy considerations that underlie the controversy': at 162, citing WS Malone, 'Ruminations on Cause-in-Fact' (1956) 9(1) *Stanford Law Review* 60, 67 <<https://doi.org/10.2307/1226919>>.

183 [2013] VSCA 23, [2]–[5]. Her Honour noted the difficulties facing plaintiffs in meeting the 'high burden of establishing the precise aetiology of [their] injury' were it otherwise, if 'such inferences could not normally be drawn'. Nonetheless, her Honour accepted that the jury were entitled not to draw the inference in the circumstances of that case.

184 Hamer does not give any authority to support the conclusion that in recreational cases, courts may be 'less pro-plaintiff' in inferring causation: Hamer, 'Factual Causation' (n 4) 163. Indeed, to the contrary, some cases seem very willing to conclude that the plaintiff would have averted a risk if properly warned: see, eg, *Nagle v Rottmest Island Authority* (1993) 177 CLR 423 ('Nagle'); *State of Queensland v Kelly* [2015] 1 Qd R 577. In Australia, the lack of plaintiff success in recreational cases more recently than *Nagle* (n 184) stems more from failures to establish breach of duty or the impact of specific defences.

185 Rizzi and Thomasson (n 3) 469–74. This is similar to the arguments made by Lahav (n 16).

186 Ibid 474.

‘fudging’ conclusions on causation by inferring it, where there is little evidence on point, is the best means of achieving justice. As McLachlin J has noted extracurially, ensuring that tort law remains relevant may require the adoption of more relaxed tests of causation so as to emphasise group responsibility for particular types of harms.¹⁸⁷ It may therefore be better to challenge the ‘all or nothing’ approach itself, rather than relying on courts to be more liberal in accepting that proof by the plaintiff has met the balance of probabilities standard.¹⁸⁸

VI CONCLUSION

Australian law largely reflects an approach (consistent with Abraham’s statement of US legal principles)¹⁸⁹ that justifies causal inferences being drawn where the defendant’s conduct increases the risk of the sort of harm that actually eventuated, in the absence of any other plausible explanations for that harm. That principle allows inferences to be made but does not dictate them: a plaintiff must still convince a court on the balance of probabilities that causation is satisfied. The drawing of inferences is therefore not an ad hoc or unprincipled process. Nonetheless, applying those principles can be unpredictable and differences of opinion are common, because (differing) assumptions about social facts determine many cases of uncertain causation. Given the ordinariness of many of those social facts, however, the dangers of judges’ biases, about important social values and social ordering, the policy impact of decisions, and the like, may not be as much of a concern as they are in the context of other legal issues.

187 McLachlin (n 51) 31–5.

188 Lahav (n 16) would agree.

189 See discussion in Part III(A).