On the Remit of the Fairchild Principle and the 'Doubles the Risk' Test for Causation

Sienkiewicz v Greif [2011] UKSC 10

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I. The Facts

The claim in *Sienkiewicz* concerned liability in negligence for occupational exposure to asbestos. The victim in question had developed, and subsequently died from, mesothelioma and her estate sought to establish that the disease had been caused by her former employer's failure to adequately protect her from asbestos in the workplace. The fault of the employer in exposing the victim to asbestos was not in dispute. Rather, the problem for the court was the fact that the victim had also been exposed to high levels of asbestos in the general atmosphere of the area in which she lived, namely, Ellesmere Port in Cheshire. It was clear on the evidence presented that, by comparison with the degree of environmental exposure to asbestos, the level of occupational exposure was very light. Relying on the fact that it could not be shown on the evidence that the victim's mesothelioma was due to the occupational exposure rather than the environmental exposure, the defendant employer argued that the claim should fail for lack of causation in law.

II. The Judgment

At first instance, Judge Main QC found in favour of the defendant. As regards causation, he held that it was necessary for the claimant to show that the occupational exposure had at least doubled the risk due to environmental exposure. On the basis of his own quantitative assessments of Mrs Costello's cumulative occupational and environmental exposures, he found that the total occupational exposure had increased the total environmental exposure by only 18% and that causation had not therefore been proven.

The claimant appealed to the Court of Appeal on the primary ground that the judge had erred in his approach to causation by failing to apply the exceptional test for causation set out in *Fairchild v Glenhaven Funeral Services*.[1] In accordance with this test, the claimant could establish causation merely by showing that the defendant had made a material contribution to the risk of the disease being contracted. Given that the occupational exposure had materially contributed to the risk of mesothelioma, the claimant ought to have succeeded and recovered in full. The Court of Appeal accepted this argument and reversed the decision of the judge.

On appeal to the Supreme Court (formerly the House of Lords), Greif contested the decision of the Court of Appeal on two alternative but interrelated grounds: (i) that the *Fairchild* test did not apply to single exposure cases and that the default test to apply was the 'doubles the risk' test; or (ii) that if the *Fairchild* test were to apply, the occupational exposure would still need to at least double the risk posed by the environmental exposure before it could be labelled as a 'material' contribution to the risk of contracting mesothelioma. Rejecting both arguments, the Supreme Court found that the *Fairchild* test for causation applied to all mesothelioma cases, regardless of whether the relevant exposures where single or multiple, and irrespective of the involvement of non-tortious elements. It further held that any contribution to the risk of harm that is more than *de minimis* will count as 'material' for the purposes of the *Fairchild* test.

III. Commentary

The primary significance of *Sienkiewicz* lies in its confirmation that the claimant-friendly *Fairchild* test for causation applies to all mesothelioma claims in UK tort law, regardless of the individual circumstances at play. In applying the *Fairchild* rule to single tortious exposure claims, the Supreme Court has

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1 [2002] UKHL 22.

extended the remit of *Fairchild* and further encroached on defendant interests. Taken in conjunction with Section 3 of the Compensation Act 2006, which sets out that liability in mesothelioma cases is always joint and several, the decision in *Sienkiewicz* effectively mandates that single defendants responsible for only a small proportion of the overall asbestos exposure are to be held liable for the entirety of the claimant's harm. The Supreme Court expressly acknowledged the harshness of this position, with Lady Hale even stating that it 'leaves us with the result that a defendant who may very well not have caused the claimant's disease – indeed probably did not do so – is fully liable for its consequences.'[2] Nevertheless, the Court considered that the claim in *Sienkiewicz* involved a straightforward application of the *Fairchild* rule and that it was now impossible, in the words of Lord Mance, to 'go back on *Fairchild*'[3] or to limit it in any way. It is argued here that the *Sienkiewicz* extension of the *Fairchild* test was both unnecessary and easily avoidable. This is because the facts of *Sienkiewicz* are sufficiently different from those of *Fairchild* for the *Fairchild* ratio to have been distinguished.

From the particular perspective of risk regulation, arguably the most interesting aspect of the *Sienkiewicz* litigation relates to the courts' treatment of the so-called 'doubling of the risk' test of causation. Focussing on the speech of Lord Phillips in the Supreme Court, this commentary will demonstrate that the judicial conception of the test is based on a lack of understanding of the science of epidemiology. It will be further demonstrated that the manner in which the test has been applied by the UK courts in recent years is wholly unscientific.

1. An unnecessary extension of the *Fairchild* principle.

In *Fairchild v Glenhaven Funeral Services Ltd*, the House of Lords allowed the claimants to establish causation by showing that the defendants' breaches of duty had merely materially increased the risk of mesothelioma. This was a policy decision designed to bridge a special kind of evidential gap. The conjoined claims in *Fairchild* were brought by victims who had contracted mesothelioma after having been exposed to asbestos during separate and consecutive periods of employment with several different employers. A combination of factors made it impossible for the claimants to establish factual causation on orthodox grounds (that is, by proving 'but for' causation on the balance of probabilities): (i) gaps in medical knowledge about the aetiology of mesothelioma; and (ii) multiple defendants, each responsible for substantial degrees of exposure.

As regards the aetiology of mesothelioma, it is not known whether the contraction of the disease is due to the inhalation of a certain quantity of asbestos fibres or whether it can be brought about by the ingestion of a single 'rogue' fibre. A further crucial characteristic of mesothelioma is that once its trigger has been activated and the disease has materialised, it is not aggravated by further exposures to asbestos. In legal terms, it is therefore described as an 'indivisible' disease. When *Fairchild* was decided, a so-called 'single fibre theory' was prevalent and it played a central role in the House of Lords' decision-making. Taken in conjunction with the fact that there were multiple defendants, this theory led the House of Lords to treat the particular instances of mesothelioma in question as potentially attributable to single defendants. On this reasoning, if the mesothelioma had been triggered during the victim's period of employment with Defendant A, then his subsequent periods of employment with Defendants B and C would have been causally irrelevant to the claim in negligence and vice versa. On conventional causation grounds, the claimant was duly defeated by the ability of each individual defendant to argue that it is as (if not more) likely that the harm was due to the wrongful conduct of the other defendants. The *Fairchild* decision was therefore based on a twin desire to prevent innocent victims of a deadly disease from being defeated by a lack of scientific knowledge and to prevent negligent employers from escaping liability by blaming each other.

Liability on the multiple defendants in *Fairchild* was imposed on a traditional joint and several liability basis. In accordance with this principle of attribution, where multiple defendants are liable for an indivisible harm, each defendant is theoretically liable for the entirety of the harm, subject to contribution rights. Thus, the claimant can ask any one of the multiple defendants to pay the entirety of the damages

2 [2011] UKSC 10 at para. 168.

3 *Ibid* at para. 189.

awarded. In order to recoup the contributions paid out on behalf of the others, this defendant then has to initiate contribution proceedings under the Civil Liability (Contribution) Act 1978.

Fairchild blatantly prioritises claimant interests. In an attempt to redress the balance, the House of Lords subsequently modified the *Fairchild* principle in *Barker v Corus*,[4] where the factual circumstances were very similar. In this case, it decided that where the exceptional *Fairchild* test of 'material contribution to the risk of harm' applied, liability would be several (or proportionate) rather than joint and several. Under the doctrine of several liability, the liability of multiple defendants is limited to the extent of their respective contributions to the overall harm and the burden of defendant insolvency is duly placed on the claimant rather than on a co-defendant. This compromise position was however short-lived. Parliament responded uncharacteristically swiftly by enacting section 3 of the Compensation Act 2006 and effectively overruling *Barker* in the issue of several liability.

For present purposes, it is important to note that both *Fairchild* and *Barker* involved the same kind of evidentiary gap. Each of the multiple defendants involved had exposed the victims to significant amounts of asbestos such that each defendant was as likely as the other to have been the source of the fibre or fibres that triggered the mesothelioma. This, taken in conjunction with the indivisible nature of the disease, made it impossible to establish any kind of 'but for' causation on the balance of probabilities. The adoption of an exceptional approach to causation could thus be justified. *Sienkiewicz*, by contrast, involved a much less complex scenario insofar as there were only two sources of exposure and one was known to be much more significant than the other. Nor did it present the problem of multiple defendants trying to hide behind the evidential uncertainty problem. As such, it would have been entirely possible to have applied the orthodox test for causation and to have determined that the more significant exposure was the likely cause of the harm. Given that the more significant exposure was the non-tortious environmental exposure, the claim in *Sienkiewicz* should arguably have failed for lack of causation.

It is argued here that the Supreme Court was wrong to have dismissed the relevance of the distinction between single and multiple exposure cases. To add insult to injury, not only was the single defendant in *Sienkiewicz* held liable for harm that he probably did not cause, he was also held liable for the entirety of the harm under the doctrine of joint and several liablity. By contrast to the *Fairchild*-type scenario, the non-tortious nature of the other source of exposure in *Sienkiewicz* ruled out the possibility of the defendant being able to recoup any of this cost through contribution proceedings.

2. The doubling of the risk test for causation – a misunderstanding of epidemiology.

The Supreme Court had no doubt about the applicability of the Fairchild test to the claim in *Sienkiewicz*. Nevertheless, it spent considerable time discussing *obiter* the general relevance of the so called 'doubling of the risk' test for causation. This was because it wanted to take issue with a suggestion made by Lady Justice Smith in the Court of Appeal that this test should operate as the default test for causation in scientific uncertainty scenarios.[5] Most interestingly, the Supreme Court's discussion of the 'doubles the risk' test reveals a lack of understanding of the science of epidemiology.

At the very beginning of his speech in *Sienkiewicz*, Lord Phillips states that the 'doubles the risk' test is usually applied to epidemiological evidence and that it operates by attributing causative effect to any factor that more than doubles a risk that would otherwise have been present.[6] He then proceeds to relate the test to the epidemiologic concept of 'relative risk' (hereafter RR). He explains that RR measures the risk of a disease relative to exposure by comparing the experience of a group that is subject to a particular exposure with the experience of a group that is not. He further explains that where RR exceeds 2, the statistical likelihood is that the particular exposure was the cause of the disease.[7] In short, he regards the 'doubles the risk' test as the legal equivalent of the epidemiological principle that RR>2 = causation. There are two major flaws in his reasoning in this respect. The first relates to his mistaken belief that epidemi-

4 [2006] UKHL 20.

5 *Sienkiewicz v Greif* [2009] EWCA Civ 1159 at para. 23.

6 [2011] UKSC 10 at para. 4.

7 Ibid at para. 82.

ology is concerned solely with naked statistics and the second concerns a fundamental misunderstanding of the relevance of the epidemiological concept of RR.

It is evident from his speech that Lord Phillips equates epidemiology with the bare calculation of incidence or prevalence rates. Describing epidemiology as 'statistical analysis',[8] he explains that it involves 'the study of the occurrence and distribution of events (such as disease) over human populations' and that it 'seeks to determine whether statistical associations between these events and the supposed determinants can be demonstrated.'[9] This much is true. However he then proceeds to claim, wrongly, that epidemiology is not concerned with the further question of whether these statistical associations demonstrate an underlying biological causal relationship. This statement belies a total lack of understanding of the science of epidemiology.[10]

Perhaps even more importantly, epidemiologists do not base any conclusions about causation on RR results alone, and they certainly do not treat a result of RR>2 as adequate proof of causation. In fact, RR>2 holds no intrinsic value at all in epidemiology. Furthermore, the RR calculation is just one of a number of different measurements of disease occurrence used by epidemiologists.[11]

In applying a RR>2 rule, the UK courts appear to have taken their lead from their US counterparts. According to a study carried out by Carruth and Goldstein, the question of whether a RR>2 rule should apply to epidemiological evidence first surfaced in the US in 1982.[12] Following the seminal decision of the US Supreme Court in *Daubert v Merrell Dow Pharmaceuticals*[13] on the admissibility of epidemiological evidence to establish a causal connection between Bendectin and birth defects, debate as to the relevance of the RR>2 rule has intensified. Views (and judicial practices) differ across US states as to whether the rule should operate as a minimum threshold for the admissibility of epidemiological evidence and/or whether it should apply as a test for causation.[14] For present purposes, the most important point to note is that in US law the rule is only ever applied to epidemiological evidence.

In UK law, the first application of the 'doubles the risk' test may be traced back to the pharmaceutical products' liability case of *XYZ v Schering*.[15] This multi-party action was brought by a group of women who alleged that they had developed various cardiovascular injuries after ingesting certain brands of oral contraceptives. To establish liability under the Consumer Protection Act 1987, the women were required, inter alia, to prove that the contraceptives carried a true excess risk of harm that was more than twice that carried by a relevant alternative product. They were unable to do so and the claim failed on this basis. The important point to note about the use of the 'doubles the risk' test in this instance is that was applied to actual epidemiological data about relevant incidence rates. Moreover, it was not used to establish causation as such, but rather to determine whether the products were 'defective' for the purposes of the 1987 Act. While the notion of defect contains a causal element, in that it requires some kind of link to be shown between proper use of the product and the harm in question,[16] this link is much weaker than that which applies to the legal requirement of causation. Thus even if they had been able to get past the hurdle of showing a doubling of the risk of the harm, they would only have succeeded in establishing that they ought to have been warned about the risk of harm before deciding whether to take the contraceptives. They would still have had to separately show a necessary connection on the balance of probabilities between the defect and the harm in question.[17]

Unfortunately, XZY has subsequently been interpreted by UK courts as establishing that a 'doubling of the risk' test may be used to establish causation in any case involving probabilistic evidence. This has

8 Ibid at para. 11.

9 Ibid at para. 80.

10 For a more detailed discussion of this issue, see C McIvor, 'Debunking some judicial myths about epidemiology and its relevance to UK tort law', Medical Law Review 2013; doi: 10.1093/medlaw/fwt017.

11 See, for example, Kenneth J. Rothman, *Epidemiology: An Introduction,* (Oxford: Oxford University Press, 2002), at pp. 24–56.

12 Russellyn S. Carruth and Bernard D. Goldstein, "Relative Risk Greater than Two in Proof of Causation in Toxic Tort Litigation", 41 Jurimetrics (2001) pp. 195 *et sqq*., at p. 199.

13 509 US 579 (1993).

14 See, generally, Carruth and Goldstein, "Relative Risk", *supra* n11 and M Geistfeld, "Scientific Uncertainty and Causation in Tort Law", 54 Vanderbilt Law Review (2001) pp. 1011 *et sqq*. For a critical appraisal of the RR>2 rule, see Alex Broadbent, "Epidemiological Evidence in Proof of Specific Causation", 17 Legal Theory (2011), pp. 237 *et sqq*.

15 [2002] EWHC 1420 (QB).

16 Under s. 3(1) of the 1987 Act, there is a defect if 'the safety of the product is not such as persons generally would be entitled to expect.'

17 See ibid, s. 2(1).

led to decisions about causation being based on random calculations of arbitrarily chosen, and crudely quantified, risk factors. One particularly notable example is provided by *Novartis v Cookson*,[18] where the figures used for the calculation were the product of a clinician's personal guesswork. *Novartis* involved harm in the form of bladder cancer and two possible causes: (1) occupational exposure to carcinogenic dyes and (ii) the victim's own smoking habit. The victim's case against his employer rested heavily on the evidence of a consultant urologist that the occupational exposure was the main contributing factor in the disease. In testimony, when asked to express this opinion in terms of percentages, the urologist estimated the occupational exposure at between 70–75 % and the smoking at 20–25 %. Accepting this evidence without querying the basis on which the estimates had been made, the Court of Appeal concluded that the doubles the risk test had been satisfied and that causation was duly established.

Space precludes a more detailed discussion of the many problems associated with a doubling of the risk test for causation.[19] Suffice to say however that while the US approach is misguided in so far as it misconceives the epidemiological significance of RR>2, the UK approach of applying the test to any form of statistical evidence is entirely bereft of scientific validity. Fortunately, the Supreme Court in *Sienkiewicz* cast significant doubt on the legal value of the doubles the risk approach as a test for causation. While its reservations in this respect relate more to its general scepticism of epidemiological methods than to concerns about the test in and of itself,[20] the adoption of any kind of negative stance on the issue is to be welcomed in so far as it will discourage use of the test.

18 [2007] EWCA Civ 1261.

19 See, further, Claire McIvor, "The Doubles the Risk Test for Causation and Other Related Judicial Myths about Epidemiology", in Erica Chamberlain, Jason Neyers and Stephen Pitel (eds.), *Challenging Orthodoxy in Tort Law* (Oxford: Hart Publishing, forthcoming 2013).

20 See for example, the comments of Lord Phillips at paras. 82–93 and 96–103.