

REGULATING RISK
THROUGH PRIVATE LAW

Edited by
Matthew Dyson



intersentia

Cambridge – Antwerp – Portland

Intersentia Ltd
Sheraton House | Castle Park
Cambridge | CB3 0AX | United Kingdom
Tel.: +44 1223 370 170 | Fax: +44 1223 370 169
Email: mail@intersentia.co.uk
www.intersentia.com | www.intersentia.co.uk

Distribution for the UK and Ireland:
NBN International
Airport Business Centre, 10 Thornbury Road
Plymouth, PL6 7PP
United Kingdom
Tel.: +44 1752 202 301 | Fax: +44 1752 202 331
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Intersentia Publishing nv
Groenstraat 31
2640 Mortsel
Belgium
Tel.: +32 3 680 15 50 | Fax: +32 3 658 71 21
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USA
Tel.: +1 800 944 6190 (toll free) | Fax: +1 503 280 8832
Email: info@isbs.com

Regulating Risk through Private Law

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PREFACE

This project came about as a way to probe 'risk', an apparent but not well-understood aspect of private law, and as a chance to work with some outstanding scholars from around the world. The fulfilment of those twin purposes has been a joy, and one that appears already to be inspiring further works and collaborations which promise yet more reward. The funding was provided by the Cambridge Humanities Research Grant Scheme and from the Hollond Fund, Trinity College, for which I am exceedingly grateful. Trinity also provided the setting for my last academic conference before leaving Cambridge after 15 years, to move to Oxford, and a better send-off would be hard to devise.

I am incredibly grateful to the contributors for producing such fascinating insights and making the process so enjoyable and rewarding. Beyond those represented in the book, several other scholars and legal systems were involved in drafting the project, but there was not the opportunity or space to involve them in the book. In particular, other scholars from Cambridge and Canada attended the workshop and scholars from the USA and Germany were involved in planning the project. Particular thanks are due to Jason Neyers, Nick McBride and Nelson Rosenvald for their discussions on the project, and to Maria Paz Gatica for her assistance with the text. I am also grateful to Reinhard Zimmermann, Jenny Steele, Rebecca Moffat, Ann-Christin Maak-Scherpe and Sarah Worthington for their counsel and support.

said that the victim who voluntarily assumes a risk is consenting to it. Consent is thus a device by which the victim determines which risks may trigger liability and which may not, both in tort and in crime.¹⁴⁴ In *Crazy Garden Elixir* (case 8), Spanish courts would likely regard the claimant as having had enough information to be able to decide to consent and thus preclude the defendant's liability. Within criminal law, the idea that the victim who creates a risk has to bear the negative consequences of it has been very influential. For instance, it is part of the rationale for the state of necessity defence (art. 20.4.3 CP), which is precluded whenever the victim provoked the danger.¹⁴⁵ Obviously, consent has its limits, and the legislature may restrict the individual's ability to dispose of some goods – including her own – on the basis of the state's obligation to protect them.¹⁴⁶ From a tort law perspective, assumption of risk usually precludes liability in cases where the victim took part in a sporting activity on a voluntary basis knowing that it involved a risk or trespassed onto another's land.¹⁴⁷ If there is assumption of risk by the victim, it is also no longer possible to apply the 'theory of risk' – for instance, by reversing the burden of proof of fault – to hold the defendant liable.¹⁴⁸

6.4. CONCLUSION

As has been seen, risk is a central concept in Spanish tort law that has played and still plays a central role within the debate on the foundations of liability, as opposed to fault. Nevertheless, it has seldom been the object of a thorough analysis, either in case law or legal scholarship. Apart from that, the evolution of the doctrine of risk within Spanish tort law might be compared with a tide. Since the early twentieth century, the doctrine of risk has been continually gaining ground, starting with a few provisions in the Civil Code and legislative activism, in particular in the field of work accidents, followed by several other spheres of risk. In general, the advance of strict liability in connection with the idea of risk may thus be linked to the creation of new risks, due to the emergence of new kinds of work in an industrial setting – in contrast to traditional craftsmanship and agricultural work, where the humans directly used natural physical forces – and the use of new technologies. But the tide has turned in the last years, with risk-reasoning ebbing away and fault re-gaining its lost prominence.

¹⁴¹ See F Pantaleón Prieto, above n. 90, 1573 and 1584, and M Corcoy Bidasolo, above n. 16, 100.
¹⁴⁵ See J Ropero Carrasco, *La provocación del estado de necesidad en Derecho penal* (Comares, Granada 2002), 46.

¹⁴⁶ See JC Hortal Ibarra, above n. 40, 133; M Corcoy Bidasolo, above n. 16, 121–122; and M Bonet Esteve, *La víctima del delito* (McGraw-Hill, Madrid 1999), 190–192.

¹⁴⁷ See P Salvador Coderech and A Fernández Crenude, above n. 91, 17; see also M Medina Alcoz, *La asunción del riesgo por parte de la víctima* (Dykinson, Madrid 2004), 101 and 235.

¹⁴⁸ See I. Díez-Picazo, above n. 11, 29.

CHAPTER 7

HOW DUTCH TORT LAW RESPONDS TO RISKS

Ivo GIESEN, Elbert DE JONG and Marlou OVERHEUL

7.1. Introduction	166
7.2. Conceptualisation of Risk and Uncertainty	167
7.2.1. Lack of Conceptualisation in Rulings	167
7.2.2. The Concept of Risk	167
7.2.3. The Concept of Scientific Uncertainty	168
7.3. Assigning Responsibility for Risks Retrospectively versus Prospectively	169
7.3.1. Introduction	169
7.3.2. Evidentiary Pitfalls by Retrospectively Standard Setting	169
7.3.3. Enforcing Responsibilities through Injunctions	171
7.4. Theory and Principles Behind Responsibilities for Risks	171
7.4.1. Justification for Liability for Risks	171
7.4.2. Prevention and Precaution	174
7.5. Liability for Risks and Uncertainties	176
7.5.1. Introduction	176
7.5.2. Legal Bases	176
7.5.3. Determining the Acceptability of Risks	176
7.5.3.1. <i>Kalderliik</i> Formula	176
7.5.3.2. Setting Standards of Care by Balancing Factors	177
7.5.4. Factors Related to the Risk	178
7.5.4.1. Introduction	178
7.5.4.2. Level of Generic (Un)certainty	178
7.5.4.3. Foreseeability of the Harm	179
7.5.4.4. Characteristics of the Effects	180
7.5.5. Required Level of Knowledge	180
7.5.6. Care	181
7.5.7. Relationship between the Tortfeasor and the Victim	183
7.5.8. Liability for Endangerment	183
7.5.8.1. Anxiety Claims	183
7.5.8.2. Medical Devices	184

7.6. Defences Related to Risk and Uncertainty	185
7.6.1. Assumption of Risk and Contributory Negligence	185
7.6.2. Development Risk Defence	186
7.6.3. Societal Acceptance of Risks	188
7.6.4. Defences Related to Insurability	188
7.7. Proof and Procedure	189
7.8. Developments within Liability Law	191
7.8.1. Tort Law's Response to Risk	191
7.8.2. Future Interaction between Law and Risk	192
7.9. Conclusion	193

7.1. INTRODUCTION

An important part of analysing Dutch tort law has been devoted to the way the law should and does deal with situations characterised by (technological or health) risk. Important focal points in the case law include the line of cases decided by the Dutch Supreme Court (*Hoge Raad*) concerning asbestos (prescription, duty of care, causation),¹ the *DES* case² (on alternative causation), and the District Court case³ dealing with the possible liability of the tobacco industry for the harms of smoking; however, the (lower) courts trying to handle litigation concerning workmen's diseases probably due to, for example, lead paint poisoning could also be alluded to.⁴ Perhaps the most famous recent example is the *Urgenda* case⁵ on climate change litigation.

The concept of risk has therefore been an important trigger for judicial developments and thus in legal practice in the field of liability law (as tort is called in the Netherlands). Given that state of play, this chapter aims to advance our understanding of how liability in Dutch law does, and how it should, relate to risks. In doing so, we especially focus on how the tort law system can and/or should deal with new, until recently unknown risks (think of nanotechnology, new toxic substances and the like), looking at these risks from the current state of the law. Thus we seek to show how risk should be understood and constructed, how the Dutch legal system responds to risk and what legal techniques it uses to reduce risk.

¹ HR 25 June 1993, ECLI:NL:PHR:1993:AD1907, NJ 1993/686 (Cijssouw I); HR 2 October 1998, ECLI:NL:HRZCZ721, NJ 1999/683, comm. JHM Vranken (Cijssouw II); and HR 31 March 2006, ECLI:NL:PHR:2006:AU6092, NJ 2011/250, comm. TFE Tjong Tjin Tai (Karamuus/NeJaliti).

² HR 9 October 1992, ECLI:NL:HR:1992:ZC0706, NJ 1994/535, comm. CJH Brunner (DES).
Rb. Amsterdam 17 December 2008, ECLI:NL:RBAMS:2008:BG7225.

³ HR 7 June 2013, ECLI:NL:HR:2013:HZ1721, NJ 2014/99, comm. T Hartlief (*Lensink/Ritama*).

⁴ Rb. The Hague 24 June 2015, ECLI:NL:RBDHA:2015:7145.

7.2. CONCEPTUALISATION OF RISK AND UNCERTAINTY

7.2.1. LACK OF CONCEPTUALISATION IN RULINGS

In their rulings, courts do not explicitly refer to definitions of risk and uncertainty, nor do they seem to be relying on established concepts of risk. For their part, Dutch scholars have only recently started to *delineate the concepts of risk and uncertainty*,⁶ relating them to liability law and highlighting the implicit links between risk and uncertainty on the one hand and case law and the distribution of responsibility for risks on the other hand.

7.2.2. THE CONCEPT OF RISK

In Ancient Greek, the term *rhiza* (which means 'cliff') denoted the 'hazards of sailing too near to the cliffs: contrary winds, turbulent downdraughts and swirling tides.' In Dutch, the term *risico* first appeared in 1525 and denoted the possibility of harm to trade and merchandise.⁷ Nowadays, risk has a more general meaning and its use stems from the fact that our understanding of the future is limited on the one hand, but that on the other hand we know future events might cause harm. Conceptualising risk is thus concerned with understanding, predicting and thus seeking to manage, the uncertain future. As regards the concept of risk as a source of danger, a risk can be understood as a 'causal prediction' between actions or natural events in the present and their possible negative effects in the future.⁸ From a legal perspective, the formulation of a risk can be seen as a first and fundamental step in the formulation and assignment of legal responsibilities. By thinking in respect of risks, possible future effects are expressed in order to *decide* in the present about the appropriate way to deal with these effects. In other words, a possibility to rationally intervene in the causal chain of the future is being created and thus a possibility to reduce the likelihood that the effect(s) will occur. Central to this possibility is the normative and legal idea that the (impact of the) negative effects, by means of precautionary measures, can and should be avoided or mitigated.

With respect to *knowledge and proof about risks*, a distinction can be made between an 'experience-based prediction' and a 'projection-based prediction':

⁶ ACHT Franken, 'Het voorzorgsbeginsel in het aansprakelijkheidsrecht' (2010) 5 *AVeS (Aansprakelijkheid, Verzekering & Schade)* 185; ER de Jong, *Voorzorgverplichtingen* (Boom Juridische Uitgevers, The Hague 2016), 19–34, with further references.

⁷ T Aven, 'The Risk Concept – Historical and Recent Development Trends' (2012) 99 *Reliability Engineering and System Safety* 34, 34–35.

⁸ ER de Jong, above n. 6, Ch. 2, for further references.

First of all, knowledge about a risk can be based on experience in the past. Here *proof concerning a risk is retrospective*, as we have already experienced the negative effects of our behaviour; due to the fact that car accidents occur on a daily basis, we know that driving a car poses some risks. Secondly, knowledge about a risk can be based on projection. In this situation, a risk has not yet materialised and most of the time the scientific insights into such risks are uncertain and/or unclear. *Proof concerning a risk is prospective* in this situation. Here knowledge deficits about a risk raise several legal difficulties, for instance regarding the (lack of knowledge about) cost-effective risk management systems (see section 7.5.6) and causation issues (see section 7.7).

Scientific knowledge and insights are important sources of information for examining the nature and existence of a risk and therefore, for instance, for the formulation of standards of care for risk-taking. However, sociological and psychological processes, such as world views, social norms, biases and heuristics, influence the *perception of risk* and the perceived need to take precautions. Ultimately, such factors might lead to a discrepancy between how actors perceive a risk and that risk as defined by natural scientists. As a consequence, the effectiveness of precautionary measures, especially warnings about risks, is particularly difficult to optimise.⁹ For example, in the context of employers' liability it has been pointed out that workers might underestimate risks that are created by day-to-day activities, which might lead to an increased level of negligence by workers with respect to these risks. The Dutch Supreme Court apparently took this into account and ruled in *Bayar/Wijnen* that, with respect to daily risk in the workplace, measures that have a direct risk reduction effect should be given priority above warnings.¹⁰

7.2.3. THE CONCEPT OF SCIENTIFIC UNCERTAINTY

When conceptualising risk, its meaning and the challenges it poses for liability law, the concept of scientific uncertainty also has to be addressed. Here the distinction between *generic causation uncertainty* and *specific causation uncertainty* is useful.¹¹ Generic causation uncertainty relates to the existence of a risk as such. In this situation, it is uncertain whether an act was capable of causing harm at all. For example, in the context of nanoparticles, there are indications but also scientific uncertainties about the existence of risks. In the situation of specific causation uncertainty, the question is whether, and to what extent, a specific harm has been caused by a specific act. Think of uncertainty

⁹ WH van Boom, *Structurale fouten in het aansprakelijkheidsrecht* (Boom Juridische Uitgevers, The Hague 2003); I Giesen, *Handic with Care!* (Boom Juridische Uitgevers, The Hague 2005); and S Pape, *Warnings and Product Liability* (Heaven Publishing, The Hague 2009).

¹⁰ HR 11 November 2005, ECLI:NL:HR:2005:AU3313 (*Bayar/Wijnen*).

¹¹ ACHT Franken, above n. 6, 185–200.

as to what extent a victim's lung cancer has been caused by exposure to asbestos particles or by smoking.

Both types of uncertainty interact with legal concepts, such as the standard of care (section 7.5.4.2), defences (section 7.6) and causation requirements (section 7.7).

7.3. ASSIGNING RESPONSIBILITY FOR RISKS RETROSPECTIVELY VERSUS PROSPECTIVELY

7.3.1. INTRODUCTION

A key difference in perspective is that risk is about predicting the future in order to deal with a potential negative future in the present, yet law typically imposes liability looking back to past actions. While academics have been discussing the implications of this difference,¹² courts have been addressing this *difference between the prospective and retrospective perspective* in two ways.

7.3.2. EVIDENTIARY PITFALLS BY RETROSPECTIVELY STANDARD SETTING

Dutch law, in the Civil Code (CC)¹³ and in cases interpreting it, is clear: a defendant acts wrongfully if he invades another's subjective right, breaches a statutory duty or does not act in accordance with what by unwritten law is to be regarded as proper social conduct. The applicable norms are those existing at the time of the conduct complained of,¹⁴ and hence the lawfulness of behaviour must be decided *ex ante*, without the benefit of hindsight. This presents pitfalls for judges, especially when specific written norms are lacking. In particular, judges might be tempted to accept stricter standards than actually would have been applicable *ex ante*, which might lead to unforeseeable and (therefore) unjustified and uninsurable liabilities.

First, critics argue that, due to the influence of the hindsight bias, and the tendency of judges to give victim-friendly rulings when severe harm has occurred, judges impose more stringent responsibilities on tortfeasors retrospectively than they actually would have accepted at the time of the

¹² WH van Boom and JM Barendrecht, 'Gedrag van toen, normen van nu?' in I Ibrand, ME Franke, EM Hoogervorst, ISJ Houben, L Reurich and MH Wissink (eds.), *Tijd en onzekerheid* (Gouda Quint, Deventer 2000), 45–58.

¹³ Article 6:162, para. 2.

¹⁴ HR 25 June 1993, ECLI:NL:HR:1993:AD1907, NJ 1993/686, comm. PA Stein (*Cijsouw I*); HR 2 October 1998, ECLI:NL:HRZC2721, NJ 1999/683, comm. JBM Vranken (*Cijsouw II*).

conduct alleged to have taken place.¹⁵ This *discrepancy between retrospectively and prospectively formulated responsibilities* could especially be present when there is a long period between the conduct complained of and the occurrence of harm. Over such a long period, societal opinions about the acceptability of a risk might change, especially if the scientific insights into a risk advance.¹⁶ In addition to this, scientifically uncertain indications of the existence of a risk that were available at the time of the behaviour complained of might ex post be considered as certainties and clear indications about the existence of a risk.¹⁷

In order to cope with this pitfall, Van Boom introduced the concept of 'positive ruling' and argues that judges should, on the basis of the knowledge and insights available at the time of the risky behaviour, substantiate a wrongfulness verdict by stating which specific precautionary measures the tortfeasor should have taken at that time.¹⁸ If a judge cannot point to such measures, he should refrain from holding the defendant liable. Ten years later, the Supreme Court accepted this idea of positive ruling in an employer's liability case, *Lansink/Ritsma*.¹⁹ In this case, scientific knowledge at the time gave only general indications of the existence of a health risk as a consequence of exposure to a toxic substance handled at work. The Supreme Court held that, given the vague indications available at the time, the Court of Appeal had to explain its verdict of wrongfulness by referring to the specific measure Lansink should have taken.

Second, retrospectively assigned responsibilities for risks might lead to stricter standards where evidence has degraded, particularly where events were in the distant past.²⁰ Dependent on the *division of the burden of proof regarding the risks*, it might be difficult for a claimant to prove wrongfulness or for a defendant to prove that his behaviour was not wrongful. An example is *Van Buuren/Heesbeen*, a case which dealt with the liability of an employer for exposing one of his employees to asbestos from 1965 to 1967. Under the Dutch employer's liability system, the employer has to prove that he did not violate his duty of care. The employer sought to argue that, given the scientific insights about the risks of the level and duration of exposure to asbestos particles in the relevant period and the relatively low level of exposure to asbestos particles in his company, there were no reasons to take precautionary measures, since he was allowed to believe that the level of exposure was safe. The Supreme Court granted this defence. It also held that the standard of proof should be no higher than normal.²¹

¹⁵ B.M. Franken, *Mr. C. Assers Handreiking tot de beoefening van het Nederlands Burgerlijk Recht. Algemeen deel*****, Een synthese (Kluwer, Deventer 2014), 81.

¹⁶ *Ibid.*, 81.

¹⁷ S. Licrman, *Voorzorg, preventie en aansprakelijkheid* (Intersentia, Antwerp 2004), 127.

¹⁸ *WH van Boom*, above n. 9.

¹⁹ HR 7 June 2013, ECLI:NL:HR:2013:BZ1721, *NJ* 2014/99, comm. T Hartlief (*Lansink/Ritsma*).

²⁰ *WH van Boom and JM Barendrecht*, above n. 12.

²¹ HR 17 February 2006, ECLI:NL:HR:AU6927, *RvdW* 2006/204 (*Van Buuren/Heesbeen*), no. 4.8.

7.3.3. ENFORCING RESPONSIBILITIES THROUGH INJUNCTIONS

In practical terms, a *prospective* approach to tort liability and risk can be aligned in claims for injunctions before harm, or the full harm, has materialised. This is particularly attractive to those Dutch scholars who argue that private law should, in addition to distributing compensation for harm, prevent the occurrence of severe harm.²² In this context they argue that proceedings for injunctive relief should be commenced in order to assign and enforce responsibilities for risk so as to prevent damage. The Dutch chapter in Part II (partly) addresses this development (Ch. 16).

So, in *lung injunction* (case 9), C might seek an injunction if that same company announces that it is going to proceed to the next development phase, which will make the bronchitis worse. Under article 3:296 CC, a person can be ordered to do or not to do something in order to restrain (the threat of) unlawful behaviour. Therefore, the question will be whether the companies' behaviour will qualify as (a threat of) unlawful behaviour. Here it is relevant that the Supreme Court accepts high standards of care between an operator and the persons in its proximity.²³ Second, the specific measure that is sought is of importance. An injunction for implementing an air extraction system is more likely to be successful than an order to stop the building development. Under article 6:168 CC, the court may disallow an action for an injunction to restrain unlawful conduct on the grounds that such conduct should be tolerated for compelling reasons of public interest. The right to claim for damages, however, remains untouched.

7.4. THEORY AND PRINCIPLES BEHIND RESPONSIBILITIES FOR RISKS

7.4.1. JUSTIFICATION FOR LIABILITY FOR RISKS

Like in many Western legal systems, in the Netherlands fault and strict liability are the main forms of liability. The exact meaning of the term strict liability is however still unclear. In general, strict liability seems to encompass all those liabilities that can be established without proving fault and/or

²² *WH van Boom, Efficacious Enforcement in Contract and Tort* (Boom Juridische Uitgevers, The Hague 2006); AChH Franken, above n. 6; ALM Keirse, 'De schadevoorkomingsplicht' in

E. Engelhard, J. Giesen, CBP Mahé and M.Y. Schaub (eds.), *Handhaving van en door privaatrecht* (Boom Juridische Uitgevers, The Hague 2009); J. Spier, 'Uncertainties and the State of the Art: a Legal Nightmare' (2011) 4 *Journal of Risk Research* 501.

²³ See further section 7.5.7.

wrongful behaviour. In practice, almost all non-contractual liabilities to a greater or lesser degree encompass elements of wrongfulness and/or intention that need to be proven in order to establish liability. For these reasons, some of the most influential Dutch scholars do not find a narrow distinction between fault and strict liability – and its terminology – very useful.²⁴

For clarification purposes, strict liability could – and will hereafter – be understood as the absence of some of the legal barriers (for example, wrongfulness, subjective fault and causation) for a claimant to establish liability and hence to shift the legal risks of a specific (risky) activity, object or person to the defendant. In Dutch law this kind of liability is called a ‘qualitative liability’ (*kwalitatieve aansprakelijkheid*) and relates to the legal ‘quality’ (*hoedanigheid*) of the tortfeasor, such as:

- vicarious liability of an employer (art. 6:170 CC);
- the possessor of a defective item (art. 6:173 CC);
- the possessor of a defective building or construction (art. 6:174 CC);
- the possessor of dangerous substances (art. 6:175 CC);
- pollution caused by the operator of a refuse dump (art. 6:176 CC);
- liability for the operator of mining activities (art. 6:177 CC); and
- product liability (art. 6:186 CC).

The essence of a qualitative liability is the link between the quality of the defendant and the risks that come with the persons, objects or animals for which the defendant is responsible. For instance, in *employee truck driver* (case 3) the claim *can* be targeted directly towards E (art. 6:162 CC) and D. Under the vicarious liability rule of article 6:170 CC:

‘the person in whose service a subordinate fulfils his duties shall be liable for damage caused to a third person by the fault of such subordinate if the risk of the fault is increased by the order to perform such duties and the person by whom he was employed had control through such juridical relationship over the conduct constituting the fault’

If these conditions are fulfilled, which seems likely in the case at hand, C does not have to prove negligence on the part of the employer, D. D has a right of recourse against E, but:

‘if the subordinate and the person by whom he was employed are both liable for the damage, the subordinate need not contribute to the damages in their mutual relationship unless the damage results from his intent or deliberate recklessness. The circumstances

²⁴ JH Nieuwenhuijs, ‘De tuinman en de dood. Het misleidend karakter van schuld en risico als condities van het aansprakelijkheidsrecht’ (1989) 4 *RdM Themis* 193; AS Hankamp and CH Sieburgh, *Mr. C. Assers Handleiding tot de beoefening van het Nederlands Burgerlijk Recht. Deel 6, De verbintenissen uit de wet, Deel IV** (Kluwer, Deventer 2015), 27–30.

of the case and the nature of their relationship may produce a result different from that provided in the preceding sentence.’

In the case at hand, one is inclined to accept deliberate recklessness, but the threshold for this degree of fault has been set extremely high by the Dutch Supreme Court.²⁵

In *brakeless lorry* (case 4), article 185 of the *Wegenverkeerswet* (Road Traffic Act) 1994 imposes strict liability on the owner or keeper of the lorry for the harm caused to persons or things that were not carried by the lorry. The defendant will not be liable if he shows the harm was caused by force majeure or that the accident was caused by someone for whom he is not liable. If the victim is younger than 14, a defence of contributory fault is not available and the defendant is liable in full, unless the child acted intentionally or with deliberate recklessness.²⁶ In cases where the victim is at least 14 years old and also a pedestrian or cyclist, damages will never be reduced below 50% unless he or she acted intentionally or with subjective recklessness.²⁷ Other rules on liability (for example, art. 6:162 CC) remain applicable, and can found a claim if the claimant wishes. Thus if C was a passenger and the driver was not the owner or keeper of the vehicle, article 6:162 CC is relevant for determining whether C can successfully claim damages. If the lorry was a vehicle on water, book 8 CC contains fault-based regimes for collisions on sea and on inland maritime waters.²⁸ These regimes differ on some points. Article 6:162 CC is applicable as a backup provision.

Also with respect to *out-of-control go-kart* (case 2), a qualitative liability might also apply. Article 6:173 CC provides that the possessor of a movable thing may be liable for the harm it causes when (1) it is known to constitute a great or special danger for persons or (2) if it does not meet any safety standards which have been set for it. There is some difficulty in interpreting this provision. This is particularly because the article then includes a proviso. There will be no liability if there had been no liability under the general standard of article 6:162 CC, assuming that the possessor knew of the danger at the time it arose.²⁹

Although there are several differences between fault based liabilities and qualitative liabilities, in the context of liability for risk and uncertainty the major and most importance difference relates to the required level of knowledge about a risk in assessing wrongfulness. Under ‘qualitative’ liabilities, the level of

²⁵ HR 16 May 2003, ECLI:NL:HR:2003:AF7000, *JAR* 2013/147.

²⁶ HR 1 June 1990, ECLI:NL:HR:1990:AB7631, comm. CJH Brunner (*Ingrid Kolkman*).

²⁷ HR 28 February 1992, ECLI:NL:HR:1992:ZC0526, *NJ* 1993/566, comm. CJH Brunner (*Iza/Vreemk*); HR 24 December 1993, ECLI:NL:HR:1993:ZC1196, *NJ* 1995/236, comm. CJH Brunner (*Auja Kelleniers*).

²⁸ Most likely this regime also applies to recreational boats.

²⁹ Of course, C could also sue the producer of the kart.

scientific/generally available knowledge is decisive and *not* the level of actual knowledge the actor had. That makes these types of liability more akin to a form of outcome responsibility. In relation to these 'qualitative' liabilities, the development risk defence is especially relevant (section 7.6.3).

In addition to fault, several justifications have been offered for the different ('qualitative') liabilities (that are strict in nature), such as:³⁰

- the (inherent) dangerousness of a specific activity, person, animal or object for other persons;
- the theory of guarantee, which states that one has to guarantee his fellow human beings a certain level of safety;³¹
- the availability of compensation and insurance; and
- the benefit principle, which holds that the actor who receives the benefits of a certain activity, person or object should also bear its negative consequences.

As Hartkamp and Sieburgh notice,³² these justifications fail to give a comprehensive and overarching justification for the existence of non-contractual liabilities in various situations of risk. According to them, non-contractual liability is justified on the basis of fairness, and the above-mentioned justifications should be seen as considerations to determine the obligation to pay compensation in an equitable fashion in a specific situation. Dutch courts do not, however, allude to these concepts, if only because they need not do so as doctrinal clarity is not any courts' primary ambition.

7.4.2. PREVENTION AND PRECAUTION

Some Dutch legal scholars argue that the main objective of tort law is, or at least should be, the *prevention of harm* instead of compensation of harm. According to Van Boom, due to the *retrospective* feature of liability law, the enforcement of the substantive norms of tort law is ineffective. He, and also Keirse,³³ argue that in order to effectuate the substantive norms of tort law, and in order to achieve their underlying goals, we should be concerned not only with retrospectively sanctioning wrongful behaviour, but also with the prevention of wrongdoing that constituted the duty to compensate the harm. In other words, tort law is an instrument to promote desirable social ends that are enshrined in the substantive norms of tort law, such as the prevention of specific harm.

³⁰ AS Hartkamp and CH Sieburgh, above n. 24, 27–30; CJM Klaassen, *Risico-aansprakelijkheid* (Thesis, KU Nijmegen, 1991).

³¹ GHA Schut, *Rechtelijke verantwoordelijkheid en wettelijke aansprakelijkheid* (NV Ungeversmaatschappij WJF Tjeenk Willink, Zwolle 1963).

³² AS Hartkamp and CH Sieburgh, above n. 24, 30.

³³ ALM Keirse, above n. 22.

The *precautionary principle*, which relates to situations of uncertain risks, is a genus of the idea of prevention. There is no generally accepted definition of the principle, but it can be understood by making a distinction between the negative and the positive element of the principle. Under the negative element, a lack of full scientific certainty about a risk is no valid reason for postponing (cost-effective) measures to manage these risks.³⁴ In its report entitled *Uncertain Safety*, the Dutch Scientific Council for Government Policies added a positive element to this definition and stated that the 'vulnerability of people, society and the natural environment demands a proactive approach to uncertain risks'.³⁵ According to the Council, the vulnerability of people and the planet is a justification for accepting responsibilities for those involved in the creation of risks (and uncertainties).

The principle is broadly accepted and applied in international law, European law, international human rights law and Dutch national environmental and health policy plans.³⁶ In tort law, the principle is relevant to the acceptance and the formulation of responsibilities for uncertain risks (section 7.5.4.2). It also justifies the idea that tort law serves to achieve the timely management of uncertain risks, instead of merely reparation of damages suffered, and hence seeks to make more use of ex ante enforcement mechanisms, such as injunctions.

It is open to debate whether the principle serves as a foundation for strict liability for unknown and uncertain risks.³⁷ Under such a scheme, the uncertain risk-taker will be liable for the *outcomes of his risky behaviour*, irrespective of the scientific uncertainty about a risk. Strict liability in this context is 'the sanction for having engaged in an activity despite being scientifically uncertain about its potential dangers'.³⁸ On the one hand, one could argue that operators should not be allowed to (fully) transfer the research costs to governments, knowledge institutes and, ultimately, taxpayers. In theory, the threat of strict liability makes it possible to prevent this externalisation of costs and could provide actors with a financial incentive to take the necessary precautions.³⁹ On the other, however, this effect is undermined by several factors that are especially present in the case of uncertainties and risks, such as causation uncertainties and the long tail of a risk. When there is a long time lapse between an activity and its negative effects, liability claims might only follow after the harmful

³⁴ E.g. Principle 15 of the Rio Declaration on Environment and Development.

³⁵ Dutch Scientific Council for Government Policy, *Uncertain Safety* (Amsterdam University Press, Amsterdam 2009), 15.

³⁶ ER de Jong, above n. 6; *Parliamentary Papers II* 2008/09, 28089, 23; *Parliamentary Papers II* 2008/09, 29338, 80, 1; *Parliamentary Papers II* 2012/13, 29338, 124, 1; *Parliamentary Papers II* 2013/14, 28663, 55, 11–12.

³⁷ *Parliamentary Papers II* 2008/09, 28089, 23, 15.

³⁸ H Cousy, 'Risks and Uncertainties in the Law of Tort' in H Koziol and JC Steiniger (eds.), *Tort & Insurance Law, European Tort Law* (Springer, Vienna/New York 2006), 2, 19.

³⁹ MG Faure, L Visser and J Weber, 'Liability for Unknown Risks – A Law and Economics Perspective' (2016) 2 *Journal of European Tort Law* 198.

activity took place and thus, from a precautionary perspective, come too late.⁴⁰ In addition, accepting strict liability for unknown/uncertain risks might be at odds with some traditional justifications for strict liability, such as the inherent dangerousness of an activity, thing or person⁴¹ (which is unknown or uncertain) or the availability of insurance (uncertainties about the existence of a risk might lead to insurability issues).

7.5. LIABILITY FOR RISKS AND UNCERTAINTIES

7.5.1. INTRODUCTION

In this section, the current thinking on the *allocation of risks through tort law*, and fault liability in particular, will be discussed. We will deal with the standard of care in relation to risks and uncertainties (section 7.5.2) and the several factors that need to be balanced in assessing wrongfulness (sections 7.5.3–7.5.7). Thereafter, we will deal with a related, but rather specific topic concerning risks: that is, the question of whether liability for endangerment has any basis in Dutch tort law (section 7.5.8).

7.5.2. LEGAL BASES

Case law is the most important source for the examination of whether there is liability for a risk or uncertainty. For several reasons, statutes which contain responsibilities for risks are not specific enough or are simply absent. Hence, above all, the general negligence rule of unwritten law has been accepted as a source of responsibility for risk-taking in many different situations. Fault liability is therefore the most important *source of liability for risks* and in Dutch law the concept of risk generally does not function as a mechanism of outcome responsibility.

7.5.3. DETERMINING THE ACCEPTABILITY OF RISKS

7.5.3.1. Kelderluik Formula

As a general rule of Dutch unwritten law, actors have a duty to take into account, and potentially act on behalf of, the interests of another.⁴² The extent and nature of this obligation varies by situation. The basis for the process for *examining*

wrongful risk-taking on the basis of unwritten law is laid down in the leading judgment, *Kelderluik*,⁴³ which seems to have been inspired by the Learned Hand Formula accepted in a similar form in other Western legal systems.⁴⁴ It provides an overarching formula for determining wrongfulness in relation to risk-taking and, generally, *no distinctive legal theories* apply to the idea of risk. Although the *Kelderluik* formula is primarily designed under the general negligence rule of article 6:162 CC in the context of daily life risks and accidents,⁴⁵ its application is not limited to such risks.⁴⁶ The Supreme Court has held variations on the *Kelderluik* judgment to be applicable to a wide variety of risk situations, such as workplace accidents,⁴⁷ toxic torts in the workplace,⁴⁸ product liability⁴⁹ and governmental liability.⁵⁰

7.5.3.2. Setting Standards of Care by Balancing Factors

The formula provides the general *argumentation structure* that commonly appears in the assessment of risk-taking and includes viewpoints which give a reference point for the examination of whether an operator took more risk than reasonably acceptable. In doing so, the formula provides the judge with guidance as to which characteristics of a risk should be given weight in this consideration. This list of relevant circumstances is non-exhaustive and varies according to, *inter alia*, the characteristics of the risk involved, the nature of the parties involved and their underlying legal relationship. As a consequence, the formula provides judges with *flexibility* in order to make an assessment tailored to a specific risk situation.⁵¹ However, on the basis of established case law

⁴³ HR 5 November 1965, ECLI:NL:HR:1965:AB7079, NJ 1966/136, comm. GJ Scholten (*Kelderluik*); CC van Dam, *Aansprakelijkheidsrecht* (Boom Juridische Uitgevers, The Hague 2000), 175.

⁴⁴ See also the principles of European Tort Law Principles, art. 4:102; DB Dobbs, *The Law of Torts* (West, St. Paul, Minnesota 2000), 145.

⁴⁵ HR 5 November 1965, ECLI:NL:HR:1965:AB7079, NJ 1966/136, comm. GJ Scholten (*Kelderluik*).

⁴⁶ Also see T. Hartlief, 'Zorgplichten in het onrechtmatigedaadsrecht. Uitlegging en begrenzing' in SCJ Kortmann, CJH Jansen, G van Solinge and NED Faber (eds.), *Ondervernaming en 10 jaar nieuw burgerlijk recht* (Kluwer, Deventer 2002), 484.

⁴⁷ HR 11 November 2005, ECLI:NL:HR:2005:AU313, NJ 2008/460 (*Bayar/ Wijnen*).

⁴⁸ HR 25 June 1993, ECLI:NL:HR:1993:AD1907, NJ 1993/686, comm. PA Stein (*Cijsouw II*); HR

2 October 1998, ECLI:NL:HR:2000:ZC2721, NJ 1999/683, comm. JBM Vranken (*Cijsouw II*); HR

17 February 2006, ECLI:NL:HR:2006:AU6927, NJ 2007/285, comm. CJH Brunner (*Heesbeen/ Van Buuren*); and HR 31 March 2006, ECLI:NL:PHR:2006:AU6092, NJ 2011/250, comm.

TFE Tjong Tjin Tai (*Nofalit/Kiranaus*).

⁴⁹ E.g. HR 30 June 1989, ECLI:NL:HR:1996:ZC2141, NJ 1990/652, comm. CJH Brunner

(*Halicion*); HR 25 November 2005, ECLI:NL:HR:2005:AT8782, NJ 2009/103, comm. I Giesen

(*Eternit/Horsting*).

⁵⁰ HR 9 July 2010, ECLI:NL:HR:2010:BL3262, NJ 2015/343, comm. T Hartlief (*Vuurwerkkramp*

Enschede); HR 17 December 2010, ECLI:NL:HR:2010:BN6236, NJ 2012/155, comm.

T Hartlief (*Wilnis*).

⁵¹ AG Spier in HR 9 July 2010, ECLI:NL:PHR:2010:3262, RvdW 2010/898 (*Enschede*

vuurwerkkramp), sub 9.10.2.

applying the criteria, some general rules can be identified (e.g. 'more precaution is required when the risk is more severe').⁵² In applying (variations on) the formula, a judge has to switch between these general rules, on the one hand, and the application of these viewpoints and rules to the characteristics of a specific risk situation, on the other.

The application of these viewpoints differs according to the legal relationship in which they are applied. For instance, the standard of care for an employer in relation to his employees is high.⁵³ In addition to this, governmental liability is a particular category, especially in relation to typical governmental tasks. In examining wrongfulness, much importance is then attached to the cost of the precautions and the budget a governmental body has available to realise its policy objectives.⁵⁴

7.5.4. FACTORS RELATED TO THE RISK

7.5.4.1. Introduction

Below, we will discuss the relevant factors in the context of risk and the general rules that pertain to these viewpoints as they have been developed in Dutch case law and literature.

7.5.4.2. Level of Generic (Un)certainly

First of all, the level of *generic (un)certainly about a risk* is of importance. As a general rule, an actor is not in breach of a duty of care if the risk is/was scientifically unknown and unknowable at the time, in the light of the generally recognised and prevailing best scientific knowledge concerning the risky behaviour.⁵⁵

In this context the *precautionary principle* is important. Although the Dutch Supreme Court has not given an explicit ruling on the relevance of the

⁵² GE van Maanen and SD Lindenberg, 'Aansprakelijkheid voor eigen gedrag op grond van art. 6:162' in J Spier (ed.), *Verbindenissen uit de wet en Schuldvergoeding* (Wolters Kluwer, Deventer 2015), 23–89; T Hartlief, 'Een dijkdoorbraak in het aansprakelijkheidsrecht: over schuld- en risicoaansprakelijkheid en de bijzondere positie van de overheid' in T Barkhuysen, W den Ouden and MKG Tjepkema (eds.), *Conclant compenseren? Over overheidsaansprakelijkheid en rechtspraak* (Deventer, Kluwer 2012), 201, 217.

⁵³ E.g. HR 11 November 2011, ECLI:NL:HR:2011:BR5223, NJ 2011/598, comm. T Hartlief (*De Rooyse Wissel*).

⁵⁴ J Spier, 'Gedachten over een vastgelopen stelsel' (2014) 6 *AVG&S* 33–38; HR 17 December 2010, ECLI:NL:HR:2010:BN6236, NJ 2012/155, comm. T Hartlief (*Wilnis*); HR 30 November 2012, ECLI:NL:HR:2012:BX7487, NJ 2012/689; *THR* 2013/72, comm. ER de Jong (*Dordisc Paalro*).

⁵⁵ CC van Dam, *Aansprakelijkheidsrecht* (Boom Juridische Uitgevers, The Hague 2000), 256–258; ER de Jong, above n. 6, Ch. 7.

precautionary principle in tort law, in literature it is accepted that the principle has relevance under Dutch tort law. First of all, the principle is broadly accepted and applied in Dutch national physical safety policy plans and by civil society (e.g. NGOs and the unions). Therefore, it could be argued that the principle is generally accepted as a guiding principle for dealing with uncertainty and risk. Secondly, in the context of asbestos litigation, the Dutch Supreme Court repeatedly ruled that, even when specific public regulations are lacking or are inadequate, on the basis of unwritten law operators are under an obligation to take measures in order to prevent asbestos-related diseases. In order to determine whether and which preventive measures have to be taken, a judge has to look into, *inter alia*, the level of certainty about the risks and the nature and severity of these risks. Although asbestos risks were *known risks* at the time of the risky behaviour, the wording of these rulings indicates that a duty to act proactively also applies to the situation of an uncertain risk.⁵⁶ Lastly, situations of uncertain risk bear such a resemblance to the doctrine of *gevaarzetting* (hazardous negligence) that the rules that have been developed under this doctrine principally also apply to situations of uncertain risks.⁵⁷ This means that an actor has to show proper circumspection with respect to the interests of others and, more specifically, to protect others against an unreasonable possibility of harm, even if this possibility is scientifically uncertain.

The case law of the Supreme Court in the context of asbestos litigation and soil pollution shows that the available scientific insights should be sufficiently precise and tailored to the specific risk situation of the operator (e.g. the relevant level, duration and intensity of the potential exposure to a risk) in order to be constitutive of a precautionary duty.⁵⁸

7.5.4.3. Foreseeability of the Harm

Closely related to the foregoing is the *foreseeability* of the way a risk materialises and the effects such materialisation could have. The required degree of foreseeability is assessed using a technique called generalisation, which has been accepted in relation to several severe health risks.⁵⁹ The core of this technique is that in examining the wrongfulness of risky behaviour, one abstracts from

⁵⁶ R van der Wiel, 'Looking for trouble. Aansprakelijkheid voor onzekere gevaren' in AAM Keirse, EM Orsouw and BTM van der Wiel, *Nieuwe risico's, nieuwe claimgebieden* (Sdu Uitgevers, The Hague 2007), 58.

⁵⁷ F Spier, above n. 22, 501, 504.

⁵⁸ HR 17 February 2006, ECLI:NL:HR:AU6927, *RvdV* 2006/204 (*Van Binnem/Heesbeen*); HR 30 September 1994, ECLI:NL:HR:1994:ZC1460, NJ 1996/196, comm. CJH Brunner (*Staat/Sichel*).

⁵⁹ HR 8 January 1982, ECLI:NL:HR:1982:AG4306, NJ 1982/614, comm. CJH Brunner (*Natronloog*); CC van Dam, above n. 55, 182–185; KJO Jansen, *Informatieplichten. Over kennis en verantwoordelijkheid in contractenrecht en buitencantractueel aansprakelijkheidsrecht* (Kluwer, Deventer 2012), 370.

specific uncertain or unknown effects of a risk. As a general rule, in order to establish a duty of care, it is not necessary that it was foreseeable that the conduct would cause the *concrete* materialisation of an effect. For instance in *Cijsouw I*,⁶⁰ an employee contracted mesothelioma after exposure to asbestos and held his employer liable for the damage. At the time of the conduct complained of, it was unknown that asbestos could cause mesothelioma; however, it was known that exposure to asbestos could cause asbestosis. The Supreme Court held that in examining whether there is a duty of care, the judge has to consider whether any other harmful effects of exposure to a specific dust (in this case asbestos) are already known. Moreover, it held that although the effect of mesothelioma was indeed unknown, the employer was in breach of his duty of care, since it was known that exposure to asbestos particles poses a severe health risk (asbestosis).

7.5.4. Characteristics of the Effects

Next, the nature, extent and severity of the effects are of importance: the need for precautions increases as the nature of the effects become more severe. The severity of the damage concerns the impairment of the injured party's interests, and also the size of the group of victims whose interests are at stake.⁶¹ With some types of damages, for example a (severe) injury, wrongfulness will be assessed faster than with other types. Injury is a severe type of damage, which therefore also increases the extent of the required care.

7.5.5. REQUIRED LEVEL OF KNOWLEDGE

Under fault-based liability regimes, liability is only accepted if the operator has or should have knowledge about the risk. In order to examine this level of knowledge, a judge will assess what knowledge a person belonging to the same societal group as the defendant would have about the risks. Moreover, one has to determine what information about the risk is available (for instance, information from the operator's employees, consultants, scientific articles, the media, knowledge institutions or other companies) and whether an actor is or should be familiar with this information. In this regard, the degree to which the information has been disseminated, its level of accessibility and, above all, the expertise expected from the operator are relevant.⁶² With respect to less

specialised companies, the level of knowledge within the branch is decisive. They are not required to know about the latest scientific insights into the potential risks, although such a company should at least keep abreast of reports by the government and branch organisations about potential risks. On the other hand, large and highly specialised companies are required to be familiar with the latest scientific discoveries and insights into the relevant risks.⁶³

7.5.6. CARE

The factor of care allows us to determine how much precaution is needed. Care can be divided into the nature and value of the conduct, and the cost, availability and effectiveness of precautionary measures.

With activities which are typical for modern industrialised society, and thus often involve (severe) risks, the slightest likelihood of an accident is sufficient for finding wrongfulness.⁶⁴ For other activities, wrongfulness is less easily assessed, for example in domestic settings,⁶⁵ in cases of interaction with nature,⁶⁶ or in sports and games.

In the context of risk and uncertainty, one might think especially of the following precautionary measures:

- research, that is, reducing uncertainties about a risk;⁶⁷
- monitoring of a risk;
- information management (see section 7.5.5);
- physical safety measures that have a direct risk reduction effect, for example, preventing exposure; and
- physical safety measures that have an indirect risk reduction effect, e.g. a warning.

Scientific uncertainty concerning the effectiveness of a precautionary measure is especially important for determining the standard of care: judges are reluctant to reach a verdict that obliges an actor to take precautionary measures when the effectiveness of the measures cannot be proven.⁶⁸

⁶³ ER de Jong, above n. 6, 148–151 with further references.

⁶⁴ CC van Dam, above n. 55, 191.

⁶⁵ HR 2 May 2000, ECLI:NL:HR:2000:AA5784, NJ 2001/300 (Verhuizende zusjes).

⁶⁶ HR 22 April 1994, ECLI:NL:HR:1994:ZC1347, NJ 1994/624 (Taxisstruik).

⁶⁷ HR 10 October 1999, ECLI:NL:HR:1999:ZC2994, NJ 2000/159, comm. AR Bloembergen (Koolhuus/Rockwool); HR 6 April 1990, ECLI:NL:HR:1990:AB9376, NJ 1990/573, comm. PA Stein (Janssen/Nyfolbis); HR 25 June 1993, ECLI:NL:HR:1993:AD1907, NJ 1993/686, comm. PA Stein (Cijsouw I).

⁶⁸ ER de Jong, above n. 6, Ch. 7.

⁶⁰ HR 2 October 1998, ECLI:NL:HR:ZC2721, NJ 1999/683, comm. JBM Vranken (Cijsouw II); HR 25 June 1993, ECLI:NL:HR:1993:AD1907, NJ 1993/686, comm. PA Stein (Cijsouw I).

⁶¹ CC van Dam, above n. 55, 179–181.

⁶² Ibid. 915; RPJL Tjittes, *Toerekening van kennis (Kluwer, Deventer 2001)*, 45–48; and KJO Jansen, *Informatieplichten. Over kennis en verantwoordelijkheid in contractenrecht en buitencantractueel aansprakelijkheidrecht* (Kluwer, Deventer 2012), 372.

When it is clear that the other party is not familiar with the risk or underestimates it, he or she should be warned or informed.⁶⁹ Thus, for instance, whether the claimant in *Crazy Garden Elixir* (case 8) can establish liability depends on the level of knowledge about the risks that is expected on the part of the victim and of the defendant (section 7.5.5). If the defendant has or ought to have knowledge about the risks, he should have informed the victim about these risks. If the risks are generally known, however, such a duty does not exist, as the victim himself is expected to be aware of the risks. Striking in this regard is the case of Miss Horsting, who was exposed to asbestos in 1971.⁷⁰ When it was discovered about 30 years later that she was suffering from mesothelioma, Horsting accused the company Eternit of erroneously not warning her of the health risks of the asbestos cement sheets that were provided by Horsting and used at her brother's house. The Supreme Court held that Eternit had to warn the public in its proximity about the risks of asbestos.

Whether a warning will ultimately be a sufficient precautionary measure depends on the expected effectiveness of the warning.⁷¹ It is, however, doubtful that a warning would be effective if there is uncertainty about (the existence of) a risk. Studies show that as the degree of uncertainty about a risk and the complexity of information about that risk increases, people's risk perception and their views on the required action varies more widely. As a consequence, the expected effectiveness of a warning is harder to establish.⁷² A warning against risks might not suffice in this context, and preference is given to other safety measures. On the other hand, however, one should bear in mind that judges are also reluctant to accept a duty to implement measures whose effectiveness of which has not yet been proven.

According to Van Dam, wrongfulness is not easily found if the risk was generally known.⁷³ An illustration can be found in a liability claim of an ex-smoker against the tobacco industry on the basis of the general negligence rule of article 6:162 CC. In this case, the District Court of Amsterdam dismissed the liability of the tobacco producer⁷⁴ on the ground that at the time the victim started smoking (1963) the health risks of smoking were common knowledge, since they were widely reported in newspapers and scientific reports. The court held that an average consumer would be familiar with the health risks of tobacco smoke and one could thus not conclude that cigarettes did not provide the safety

⁶⁹ CC van Dam, above n. 55, 213.

⁷⁰ IJR 25 November 2005, ECLI:NL:HR:2005:AT8782, NJ 2009/103, comm. I Giesen (*Eternit/Horsting*).

⁷¹ IJR 28 May 2004, ECLI:NL:HR:2004:AO4224, NJ 2005/10, comm. C/H Brummer (*Jelkloet*).

⁷² ACHH Franken, above n. 6, 193–194. See in general I Giesen, above n. 9, and S Pape, above n. 9.

⁷³ CC van Dam, above n. 55, 211.

⁷⁴ Rb. Amsterdam 17 December 2008, ECLI:NL:RBAMS:2008:BG7225.

which persons are entitled to expect. It is, however, questionable whether the fact that a risk is generally known releases the risk creator from obligations other than providing warnings, such as the improvement of the product itself.

7.5.7. RELATIONSHIP BETWEEN THE TORTFEASOR AND THE VICTIM

When applying the general negligence rule, the relationship between the tortfeasor and the victim is of relevance, especially the level of 'proximity' (although Dutch tort law does not use the concept of 'proximity' as it is known in common law jurisdictions, the idea is similar) and interdependence between the tortfeasor and the victim. This dependency might be characterised in respect of information asymmetries about a risk and a lack of financial or practical means on the part of the person subject to that risk. In *Eternit/Horsting*, the Supreme Court held that a producer of asbestos has to take safety measures for the people who are in direct proximity to the producer.⁷⁵ And in *Hertel/Van der Lugt*, an employee who suffered from an asbestos-related disease did not sue his employer (because it had gone bankrupt) but instead sued the party who was directly responsible for his exposure to asbestos particles. Although the employer's liability scheme was not applicable here, the Supreme Court accepted a similar standard of care for the third party (Hertel), because of the direct proximity between the parties and the dependence of Van der Lugt on Hertel.

With respect to the 'quality' (*hoevanigheid*) of the injured party, it is commonly accepted that actors should anticipate the reasonable chance of others acting inattentively, carelessly or imprudently. The due care that should be exercised requires one to consider the possibility that potential victims act with inappropriate care and inattention. It varies, however, from victim to victim as to what extent inattentive and imprudent behaviour might reasonably be expected.⁷⁶

7.5.8. LIABILITY FOR ENDANGERMENT

7.5.8.1. Anxiety Claims

A special category of negligence-based cases related to risks are those in which anxiety claims are lodged. In such cases, a person claims damages for psychological damage which is caused by fear, where that fear in turn was caused

⁷⁵ The European rules of product liability did not apply in this case.

⁷⁶ HR 22 March 1991, ECLI:NL:HR:1991:ZC0181, NJ 1991/420 (*Roeffjen/Thijssen*).

by the wrongful act of the party liable.⁷⁷ Anxiety claims have been presented to courts concerning an asbestos-related disease (mesothelioma, lung cancer), HIV infection and health damages caused by soil pollution.⁷⁸ At the lower court level, this type of claim has met with varying success. Recently, the possibility of an anxiety claim in relation to earthquakes resulting from gas drilling activities has been presented in doctrine.⁷⁹ The Supreme Court, however, has not been called to express a substantive opinion on this type of claims yet.⁸⁰ Therefore, it is unclear whether they are allowed at all under Dutch tort law and, if so, what the exact requirements for such claims are. Hence, in *first exposure chemical* (case 6) it is unclear whether the employee can claim damages *before* he has been exposed for the second time and thus suffered actionable loss. He might be able to claim compensation for the healthcare costs that he incurred in order to deal with the effects of the first exposure, or he might be able to seek an injunction if there are clear indications that a second exposure will take place.

7.5.8.2. Medical Devices

Turning to the way Dutch law should handle the damages that might ensue from the use of defective medical devices, two joint preliminary procedures of the European Court of Justice on the interpretation of the Directive on Product Liability (Directive 85/374/EEC) are important to notice.⁸¹ These cases involved the costs of the removal of two types of 'medical devices': pacemakers and defibrillators. These medical devices both belonged to a series of products with a high security risk, namely that they might prematurely fall out without prior warning, thus causing possible heart failure. It was uncertain, however, whether the specific units worn by the claimants also had this high risk of prematurely falling out. The European Court of Justice ruled that despite this uncertainty, these units might still be 'defective', and that the costs of replacing them could fall under the term 'damage' in the sense of the Directive. This judgment stretches the meaning of the terms 'defective' and 'damage' in the Directive and thus also in the Dutch Civil Code (arts. 6:186 and 6:190 CC). Producers might be liable for *potential defects* and hence might have an obligation to *proactively prevent* defects from occurring, which is in line with the precautionary principle.

⁷⁷ EC Gijsselaar, R Rijnhout and JM Emaus, 'Gasboringen in Groningen en de aansprakelijkheid van de NAM' [2015] *Ars Aequi* 801, 806; SD Lindenbergh, *GS Schadevergoeding* (Kluwer, Deventer 2013), 2.8.2.3.

⁷⁸ Rb. Leeuwarden 21 January 1993, *TvGR* 1996, p. 26, Rb. Utrecht 29 June 1999, ECLI:NL:RBUTR:1999:AH7952, *KG* 1999/912; Hof Den Bosch 6 May 2008, ECLI:NL:GHSHE:2008:BD5666.

⁷⁹ EC Gijsselaar, R Rijnhout and JM Emaus, above n. 77, 806.

⁸⁰ The Supreme Court had a chance in HR 6 April 2001, ECLI:NL:HR:2001:AB1252 to express its opinion, but rejected this case on procedural grounds.

⁸¹ Cases C-503/13 and C-504/13, *Boston Scientific Medicijnrechtzaak*, ECLI:EU:C:2015:148.

In addition to this, in doctrine it is argued that this influence does not just concern the Dutch implementation of the Directive, but that it also extends to the application of alternative principles to liability for defective medical devices, for instance under article 6:162 CC.⁸²

7.6. DEFENCES RELATED TO RISK AND UNCERTAINTY

7.6.1. ASSUMPTION OF RISK AND CONTRIBUTORY NEGLIGENCE

When a defendant has acted wrongfully, he can invoke several defences as a *justification for risk-taking*, which are addressed below.

In Dutch law, the legal concept of assumption of risk has not been formally accepted.⁸³ In the past, this defence was used in cases where the damage could be traced back to circumstances which were the responsibility of the injured party, especially where the injured party had put himself into a situation to which certain dangers or risks are attached (for example, competing in a football game). The Supreme Court has however explicitly denied the existence of such a *distinct defence*. According to the Court, there is no need to recognise this defence, as its effect is already incorporated in other legal concepts, such as the defendant being obliged to take due care according to generally accepted standards, and contributory negligence (art. 6:101 CC).⁸⁴

Obtaining consent can also be a *justification for risk-taking*. For instance, in *2% risk information* (case 1) the doctor has to inform the patient about the risks of a surgery (arts. 7:748 CC and 7:450 CC). In order to establish liability, the patient has to prove (a) that he was not informed of the risk where this was the doctor's duty, and (b) that he would not have had consented to the surgery if he had been informed properly about its risks. In examining these standards, one has to take into account, *inter alia*, the likelihood of the occurrence of the complication, the (development of the) patient's health had he not had the surgery, the availability of other less risky treatment methods, and the chances of success of such treatment.⁸⁵

⁸² P Verbruggen and B van Leeuwen, 'Aansprakelijkheid voor gebrekkige medische hulpmiddelen' (2015) 45 *NTBR (Nederlands Tijdschrift voor Burgerlijk Recht)* 308–318.

⁸³ HR 28 June 1991, ECLI:NL:HR:1991:ZC03000, *NJ* 1992/622 (*Dekker/Van der Heide*); AS Harikamp and CH Sieburgh, above n. 24, 125.

⁸⁴ HR 28 June 1991, ECLI:NL:HR:1991:ZC03000, *NJ* 1992/622 (*Dekker/Van der Heide*).

⁸⁵ HR 23 November 2001, ECLI:NL:HR:2001:AB2737, *NJ* 2002/386, comm. JBM Vranken (*Jongenlid*). See for criticism on the burden of proof regime in informed consent cases.

¹ Giesen and KL Maes, 'Omgaan met bewijsnood bij de vaststelling van het causaal verband in geval van verzuimde informatieplichten' (2014) 27 *NTBR*.

7.6.2. DEVELOPMENT RISK DEFENCE

Dutch tort law contains several variations on the development risk defence. A person can escape liability if the risk was not known and/or unknowable given the state of scientific and technical knowledge at the time of the risk-taking within the following claims:

- the negligence rule (art. 6:162 CC) (see section 7.5.4.2);
- the possessor of a defective item (art. 6:173 CC);
- the possessor of a defective building or construction (art. 6:174 CC);
- the possessor of dangerous substances (art. 6:175 CC);
- the operator of a refuse dump (art. 6:176 CC);
- the operator of mining activities (art. 6:177 CC);
- product liability (art. 6:186 CC, the only formal expression of it in the text of the Civil Code); and
- employer's liability (art. 7:658 CC).

There are only three situations where the defence has been successfully invoked: blood transfusions of HIV-infected blood, breast implants and a dike breach. Although case law on the defence is thus scarce, due to technological developments and uncertainties about the risks of such developments (self-driving cars,⁸⁶ nanotechnology and biotechnology), we might expect that the defence will gain more relevance in the future.

Whether the defence provides a *justification for risk-taking* will depend on the conditions for invoking it. A first question is whether the failure to detect the risk was due to the financial decisions of the company. A second question is what level of uncertainty, if any, must be attached to the scientific knowledge and insights about the existence of a risk in order for the risk to legally qualify as undiscovered and undiscoverable.⁸⁷ In addition to this, uncertainty about the effectiveness of the available research methods raises questions about the scope of the defence. Must defendants constantly improve their methodologies in order to invoke the defence? This ambiguity ensues from a rather static view of the process of scientific knowledge-gathering that underpins the (wording of the) defence: either the risks are known and the defence cannot be invoked (known knowns), or the risks are unknown (unknown unknowns) and it can be invoked. Uncertain risks, however, fall between these two. In reality, the identification and characterisation of risks is a non-linear and incremental process and is not something that can be achieved overnight.

⁸⁶ TFE Tjong Tjin Lai and S Boesten, 'Aansprakelijkheid, zelfrijdende auto's en andere zelfbesturende objecten' (2016) 10 *NJB (Nederlands Juristentijdschrift)* 656.
⁸⁷ FJ Conroy, above n. 37, 23; J Spier, above n. 22, 503.

Within the context of product liability, a lack of practical or financial means for doing research does not constitute an affirmative development risk defence.⁸⁸ Remarkably, in the single Dutch case in which the defence has been applied, it was not applied correctly.⁸⁹ In that case, an Amsterdam hospital escaped liability for the transfusion of HIV-infected blood products since it was *practically* impossible and financially irresponsible for the hospital to try to detect HIV infections in blood products.⁹⁰ However, the techniques for identifying the presence of HIV were available.

In its *Wilnis* judgment, the Supreme Court accepted a development risk defence in the context of (government) liability on the part of the possessor of a defective building or structure (art. 6:174 CC). Most likely this judgment will also be relevant for other 'qualitative' liabilities, such as liability for the possessor of a defective item (art. 6:173 CC). In 2003, a dike breach occurred in Wilnis, a small town between Amsterdam and Utrecht. However, in 2003, the cause of the failure – a lengthy drought – was not recognised as a potential cause of a dike breach. The Supreme Court held, *inter alia*, that the possessor of the dike, the Amstel Water Authority, could invoke the development risk defence. It held that when examining whether or not the dike did meet the standards as they were in 2003,⁹¹ one has to take into account *inter alia* the latest scientific and technical knowledge about failure factors and the budget a governmental body has available to realise its policy objectives (that is, the maintenance of thousands of kilometres of dikes).

On the basis of *Wilnis*, liability for *unknown* risks is excluded under article 6:174 CC (and probably also under art. 6:173 CC). Nonetheless, the ruling of the Supreme Court requires the possessor of a building or structure to investigate and identify risks, especially by keeping abreast of the latest scientific knowledge and insights about potential causes of dike breaches.⁹² This again raises the question of what level of (un)certainly must be attached to the scientific knowledge and insights about the existence of the risk in order to successfully invoke the defence. After referral, the The Hague Court of Appeal held that the water authority was not under the obligation to apply

⁸⁸ *Parliamentary Papers II* 1987/88, 19636, 6, 18–19.

⁸⁹ Also Rb. Arnhem 28 November 2012, ECLI:NL:RBARN:2012:RY6606, JA 2013/27.

⁹⁰ Rb. Amsterdam 3 February 1999, ECLI:NL:RBAMS:1999:AB8317, NJ 1999/621 (*Toelichting HIV besmet bloed*). WH van Boorn and CJM van Doorn, 'Productaansprakelijkheid en productveiligheid' in E.H. Hondius and G. Rijken (eds.), *Handboek Consumentenrecht* (Uitgeverij Paris, Zutphen 2006), 261, 268, footnote 27.

⁹¹ Under art. 6:174 CC one has to determine whether the structure or building did meet the standards which may be set for it.

⁹² EHP Brands and K Winterink, 'Onzekerheid en aansprakelijkheid voor schade door klimaatverandering. Welke rol speelt het voorzorgsbeginsel?' in N Teessing (ed.), *Naar aansprakelijkheid voor (de gevolgen van) klimaatverandering* (Boom Juridische Uitgevers, The Hague 2012), 111, 123.

research methods that had not been proven to be effective, nor to change its policies on the basis of scientific theories and models that were not validated or accepted within science.⁹³ The *research costs* are especially relevant in this context. Governmental liability ultimately might have to be borne by taxpayers and might lead to budget cuts in other policy areas, and hence might undermine other policy goals.⁹⁴ Therefore, Dutch courts are reluctant to impose liability on the government, a point discussed further in the Dutch Part II chapter (Ch. 16).

7.6.3. SOCIETAL ACCEPTANCE OF RISKS

On several occasions, defendants have advanced the defence that the risky behaviour was socially accepted, had been encouraged by the government or was commonly used in the relevant industry without taking the required precautions. This state-of-the-art defence is, however, not readily accepted. In its case law on asbestos risks, the Supreme Court has held that the lack of social attention to risks does not in itself render the risky behaviour lawful, especially where the risk was known in the scientific and industrial community.⁹⁵ In *Staat/Shell*,⁹⁶ in which the state claimed compensation from Shell for damage caused by soil pollution, the Supreme Court dismissed any liability on the part of Shell, among others things because at the time of the behaviour complained of the dumping of hazardous materials under the ground was socially accepted. In this context, it appeared to be decisive that at the time of the pollution, dumping of hazardous materials was not considered to be harmful. Some even considered the dumping of hazardous materials under the ground to be a safety measure. Secondly, at the time of the dumping the state *itself* allowed or facilitated the pollution being spread. Thus, in these cases the plaintiff was partly responsible, having failed to act in response to risks, whereas this has not been the case in the asbestos cases.

7.6.4. DEFENCES RELATED TO INSURABILITY

Insurers on some occasions have also raised the defence that accepting liability would lead to *insurability of uncertainties and risk*. In the *Hannock* case,⁹⁷ the Dutch Supreme Court took this defence into consideration, but used it

⁹³ Hof The Hague 17 April 2012, ECLI:NL:GHSGR:2012:BW1479, no. 4.

⁹⁴ J Spier, above n. 54; ER de Jong and T van der Linden, 'Rechtspreken met oog voor macro-effecten?' (2017) 1 *NTHR* 4–16.

⁹⁵ HR 2 October 1998, ECLI:NL:HRZC2712, NJ 1999/683, comm. JBM Vranken (Cijssouw II).

⁹⁶ HR 30 September 1994, ECLI:NL:HR:1994:ZC1460, NJ 1996/196, comm. CJH Brunner (Staat/Shell).

⁹⁷ HR 8 October 2010, ECLI:NL:HR:2010:BM6095, NJ 2011/465, comm. T Hartliet (Hannock).

to find against the insurers. It decided that the acceptance of an until-then undiscovered form of strict liability (in casu, the liability of a possessor of a dangerous immovable towards a co-possessor of that same immovable, under art. 6:174 CC) was acceptable, in part because the insurance industry's warning about the possible detrimental effect on the insurability of liability and the possible consequent rise of insurance premiums was not at all substantiated. When the same question arose as regards the liability for damage inflicted by a domesticated animal towards a co-owner of that animal (art. 6:179 CC), the Supreme Court decided to strike that possibility down and the insurance angle was considered again, but this time much more in the the insurer's favour.⁹⁸

7.7. PROOF AND PROCEDURE

Thinking of tort law in respect of 'risks', 'risk-taking' and 'dealing with scientific uncertainty' does not seem to have had a lot of influence on or consequences for Dutch rules on civil procedure or civil procedure as such, except for the handling of some issues within the law of evidence, most notably issues regarding the burden and standard of proof, issues we cannot deal with extensively in this chapter.⁹⁹ For the most part, the existing rules or 'theories' in respect of risk have thus not yet found a specific expression in Dutch procedural rules. These civil procedure rules are used on the same footing whether the issue is one of contractual (non-)performance, mistake, tort, and so on; thinking in respect of risks has not altered that.

Be that as it may, it is also safe to say that the Dutch legal rules on the handling of mass claims do seem to have been in part triggered by the need to find a way to handle large, societal risks in a legal setting. The well-known *DES* case¹⁰⁰ did in fact lead to the design and enactment of the *Wet Collective Afwikkeling Massaschade* (WCAM), the Law on the Collective Settlement of Mass Claims, which has become a rather popular route to follow since then, even in mass proceedings involving a large portion of foreign (non-Dutch) claimants.¹⁰¹

⁹⁸ HR 29 January 2016, ECLI:NL:HR:2016:162, NJ 2016/173, comm. T Hartliet.

⁹⁹ For details, see R Rijnhout and I Giesen, in M Infantino et al. (eds.), *Causation. Common Core Project* (forthcoming); I Giesen and E Engelhard, 'Medical liability in the Netherlands' in BA Koch (ed.), *Medical Liability in Europe* (De Gruyter, Berlin 2011); I Giesen, R Kool and F Kristen, 'The Dutch Crush on Compensating Victims' in M Dyson (ed.), *Comparing Tort & Crime* (Cambridge University Press, Cambridge 2015), 355–358; I Giesen, 'The Burden of Proof and Other Procedural Devices in Tort Law' in H Koziol and BS Steinger (eds.), *European Tort Law 2008* (Springer, Vienna 2009); I Giesen, *Bewijs en aansprakelijkheid* (Boom Juridische Uitgevers, The Hague 2001).

¹⁰⁰ See HR 9 October 1992, ECLI:NL:HR:1992:ZC0706, NJ 1994/286, comm. CJH Brunner (DES).

¹⁰¹ For details, see IN Tzankova, *Toegang tot het recht bij massaschade* (Kluwer, Deventer 2007); MWF Boosters, *Collective Redress and Private International Law in the European Union* (Thesis, Tilburg, 2015), 61–76.

a percentage of the claim being awarded.¹⁰⁸ Since the approval of this approach by the Supreme Court, it has been applied to cases of professional liability¹⁰⁹ and medical negligence.¹¹⁰ A key question still is under what circumstances the theory of loss of chance can or cannot be used to solve *conditio sine qua non* problems. It is still unclear how loss of a chance by 17% (case 7) will be dealt with; until now the doctrine has only been applied in situations where actual *harm* has occurred, but where the causal relationship between the unlawful behaviour and the harm was uncertain.

The standard of proof – which might vary to some extent – refers to the extent or degree of certainty or probability that the evidence delivered by the litigants must generate in the mind of the Dutch civil judge when deciding an issue of fact. In principle, but with exceptions, the courts in the Netherlands are free to attach their own weight to different pieces of evidence. Whether a judge believes an eyewitness or expert is at his discretion; questions of proof thus ‘ask’ for a subjective judgment, one which is made objective, however, to some degree by the judge’s obligation to give reasons for his decision.

In this respect, it is also worth mentioning that the use of expert evidence might be a very important element in such proceedings because experts can and are used in Dutch courts to determine whether a risk was, could or should have been foreseen and whether there was in fact a causal connection between the act complained of and the ensuing damage. Of course, these experts are in high demand in these cases because the judge himself will lack the necessary knowledge to rule on these issues independently, but other than that, no specific ‘risk-related’ issues arise when it comes to the rules on and the use of expert witnesses (arts. 194–200 of the DCCP).¹¹¹

7.8. DEVELOPMENTS WITHIN LIABILITY LAW

7.8.1. TORT LAW’S RESPONSE TO RISK

The question whether the law’s attitude to risk over time has changed, and if so when and why, is not easy to answer without (developing) empirical tools for measuring legal changes. Nonetheless, there are a few points to be made and a few particular key moments to include in the analysis.

¹⁰⁸ IIR 24 October 1997, ECLI:NL:PHR:1997:AM1905, NJ 1998/257 (*Bijings/mr ff*); IIR 21 December 2012, ECLI:NL:HR:2012:BX7491, NJ 2013/237, comm. SD Lindenbergh (*Deloitte Belastingadviseurs/H&H Beheer/Deloitte*).

¹⁰⁹ E.g. IIR 21 December 2012, ECLI:NL:HR:2012:BX7491, NJ 2013/237, comm. SD Lindenbergh (*Deloitte Belastingadviseurs/H&H Beheer*).

¹¹⁰ E.g. IIR 23 December 2016, ECLI:NL:HR:2016:2987 (*retinal detachment*).

¹¹¹ For details, see G de Groot, *Het deskundigenadvies in de civiele procedure* (Wolters Kluwer, Deventer 2008).

The popularity of this instrument, which enables parties to ask a judge to assign general binding force to their collective settlement of a multitude of claims regarding the same unlawful act, might be increased by the recently proposed draft bill that makes it possible for claimants in a group action to launch a mass claim for compensation purposes only.¹⁰²

As regards the law of evidence, the issue of proof of causation is an important hurdle to overcome for plaintiffs in proceedings that hinge on issues of risks, since scientific uncertainty about risks is bound to lead to difficult questions as to (the finding of) a *conditio sine qua non* connection between the risk-related wrongdoing and the damage that ensued. In general, a plaintiff will bear the burden of having to prove – to the required standard of proof of ‘a reasonable degree of certainty’ – that there was indeed a causal connection between the wrongdoing and the damage complained of (art. 150 Dutch Code of Civil Procedure, DCCP). However, especially in the context of risk and scientific uncertainties, several exceptions to this rule have been accepted. The *DES* case,¹⁰³ for instance, provides the framework for dealing with *single exposure but multiple tortfeasors* (case 5). The plaintiffs in the *DES* case were daughters of the women who had bought and used a pharmaceutical product (*DES*) that caused cancer. However, these ‘*DES* daughters’ could not prove which manufacturers supplied which mothers with the products, and therefore they could not prove a *conditio sine qua non* between the damage and the wrongful act of the manufacturer, or rather one of the manufacturers. The Dutch Supreme Court decided that the *DES* daughters could claim damages in full from one manufacturer who could have caused all the damage to the plaintiffs.¹⁰⁴ The Supreme Court even decided that the defendant (who had acted wrongfully) was liable in full if there was a possibility that the plaintiff suffered damage because of taking *DES* that had been produced by another manufacturer who had not acted wrongfully.¹⁰⁵

A form of the loss of a chance doctrine is also helpful in dealing with issues of proof that arise from uncertainty over causation. In the literature, the theory of the loss of a chance is seen either as one way to ‘implement’ proportional liability,¹⁰⁶ of which *Karamus/Nefalit* is an example,¹⁰⁷ or as a causation instrument in its own right. The Supreme Court decided that, under certain conditions, a court is allowed to use the theory of the loss of a chance, leading to

¹⁰² See *Parliamentary Papers II* 2016/2017, 34608, nos. 1–4.

¹⁰³ HR 9 October 1992, ECLI:NL:HR:1992:ZC0706, NJ 1994/535, comm. C.J.H. Brunner (*DES*).

¹⁰⁴ The Supreme Court denied the theory of market share liability: IIR 9 October 1992, ECLI:NL:HR:1992:ZC0706, NJ 1994/535, comm. C.J.H. Brunner (*DES*), no. 3.8.

¹⁰⁵ IIR 9 October 1992, ECLI:NL:HR:1992:ZC0706, NJ 1994/535, comm. C.J.H. Brunner (*DES*), no. 3.7.6.

¹⁰⁶ A.J. Akkermans, *Proportionele aansprakelijkheid bij onzeker causaal verband* (WE) Tjeenk Willink, Deventer 1997), 431 and 444–446; T. Hartlief, ‘Proportionele aansprakelijkheid: een introductie’ in A.J. Akkermans, M.G. Faure and T. Hartlief (eds.), *Proportionele aansprakelijkheid* (Boom Juridische Uitgevers, The Hague 2000), 16–18.

¹⁰⁷ See the Dutch Part II chapter (Ch. 16).

relation to widespread risks and harms, such as the negative effects of gas drilling.

- The question as to how new technological developments should be incorporated into the (existing) legal framework and whether that framework should be reformulated.¹¹⁴
- The fact that tort law increasingly serves as a risk regulation mechanism. See the Dutch Part II chapter (Ch. 16).

7.9. CONCLUSION

As our starting proposition, we decided to focus in this contribution on how the Dutch tort law system can and/or should deal with new, until recently unknown risks (think of nanotechnology, new toxic substances and the like), looking at these risks from the current state of the law. Our chapter reaches three important conclusions.

First, no broad theories on the concept of risk or risk-taking have been developed in Dutch case law, nor in legislation, so what we see is a case-by-case-based reaction to questions regarding (new) risks and uncertainties. Ultimately, this reaction shaped the content and boundaries of standards of care, causation requirements and defences in the context of risks and uncertainty. Second, in doing so, the position of the victim was protected and enhanced. And third, perhaps not surprisingly,¹¹⁵ this approach reveals a pragmatic way of dealing with uncertainties and risks. For example, the WCAM mentioned in section 7.7.1 was introduced into Dutch law to make sure the victims of the DES drug would be duly compensated in a timely manner by the pharmaceutical industry, instead of at that time already abolishing the ban on claiming damages in a class action suit (see art. 3:305a para. 3 CC), which might have also upset a whole range of other industries and thus could have led to the legislative process dragging on indefinitely.

¹¹⁴ T. Hartlief, 'Technische vooruitgang in het aansprakelijkheidsrecht' (2016) 70 *NJB* 107; TFE Tjong Tjin Tai and S Boesten, above n. 83.

¹¹⁵ In the same vein, but for a different area of law, J Giesen, RSB Kool and FGH Kristen, above n. 99.

First and foremost, Dutch tort law, through judicial decisions, has always incorporated new and formerly unknown uncertainties and risks, in the sense that these risks were given a place, either by denying or allowing a claim, within the legal scheme that served as the backdrop against which to rule on the matter at hand. Judges had to do so basically because a refusal to rule on a matter is forbidden (art. 26 DCCP), and probably wanted to do so to provide legal protection for deserving plaintiffs. This attitude of 'taking on board' whatever was brought to the fore in a case has not changed. What has changed over time, by doing so, is of course the state of the law itself.

As evidence thereof, there is of course the asbestos story. The rise ('wonderful stuff') and fall ('deadly, poisonous substance') of the use of asbestos has led to many new developments and changes in Dutch tort law, including: newly formulated and widely drawn duties of care for employers, not only towards their employees but also towards third parties, such as members of their employees' household; adjusted rules on prescription; the introduction of proportional liability to combat *conditio sine qua non* challenges; and relieving the victims of the burden of proving the time the fatal asbestos crystal was inhaled.¹¹² A second landmark in this respect is the *DES* case, since that case led to a wide(r) conception of alternative causation (art. 6:99 CC) and, more importantly, an attitude of victim protection when it comes to the risks inherent in modern industrial society.

These developments seem to have been undertaken in a state of 'splendid isolation', in the sense that the highest court chose its own path, not following or clinging on to what was done outside the Netherlands (or maybe not knowing about solutions elsewhere). To give one important example, the Supreme Court explicitly considered, but rejected, the use of market share liability in its *DES* case, notwithstanding the acceptance thereof in parts of the United States and notwithstanding the fact that the Advocate General actually urged the Court to accept that doctrine instead of the route that the court did in fact decide to use.

7.8.2. FUTURE INTERACTION BETWEEN LAW AND RISK

For the future, three *developments* will play a significant role in how Dutch tort law will evolve *in relation to risks*:

- Recent changes in the law on collective actions has created the possibility of claiming damages in a collective action,¹¹³ which is especially relevant in

¹¹² HR 25 June 1993, [ECLI:NL:HR:1993:AD1907, *NJ* 1993/686, comm. P.A. Stein (*Cijsouw B.* On the foregoing, E de Kezel, *Asbest, gezondheid en veiligheid* (Intersentia, Antwerp/Cambridge 2013); RF Ruers, *Misicht en tegenmacht in de Nederlandse asbestregeling* (Boom Juridische Uitgevers, The Hague 2012).

¹¹³ *Parliamentary Papers II* 2016/2017, 34608, no. 2.