

3 **FACTS, FRAMING AND FALLACIES IN THE TORT OF NEGLIGENCE**

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Numerous legal judgments, from determining whether a tort defendant failed to take reasonable care to whether a corporate office committed securities fraud by knowingly making false statements, require that a judge or jury ignore what they have learned in hindsight.

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3.1 **LEGAL JUDGMENT AND THE CONTROL OF ITS QUALITY**

In private law, the task of the legal decision maker is to conclude on a conflict between parties and the procedural rules are there to guarantee a well-structured and fair trial. In tort law an injured party seeks compensation from the person or the organization that committed a wrong. This demands the methodic investigation of what has happened, how that caused damages. Often experts are needed to give their opinion on the case. In order for the judge to fully appreciate and apply all the outlandish information sound legal judgment entails an understanding from the legal decision maker of the interaction between the law and knowledge from other domains.

Judgment is the crucial and concluding step in this complex judicatory process. This decision making is a cognitive process with the emotions from the parties at the background. Next, it is also important to realize that conflicts will always arise in social interactions. All this implies that we should be intrigued by what we can learn from studying these phenomena in order to understand them better, the realms of cognitive and social psychology, as was discussed in chapter 1.

We are confronted here with the chicanery of decision making under uncertainty. This is not a problem that rests exclusively within the legal domain. For example doctors may also come to the wrong diagnosis or choose the inappropriate therapy, CEOs may choose the wrong business strategy, pilots may take an incorrect decision and all this may have disastrous consequences. What can we do to minimize the chance of wrongdoing or even blundering? To start with: We must judge them properly.

For reliable rulings the emphasis will have to be on the examination and optimization of the processes: legal problem solving with information gathering, interpretation and inference. For the proper determination and implementation of these processes

within a legal context, more is required than substantive and procedural rules alone. The quest for reliable knowledge, proper thinking and deciding is essential and requires different competences. So, in scrutinizing legal judgment we are confronted with a double normativity, a duplicate 'ought'-ness: we have to incorporate epistemology, the study of the grounds of our knowledge, into legal practice. In this chapter I will dwell more practically on this non-legal dimension of how to acquire reliable knowledge and how to make proper use of it within this particular legal-professional context. How can insights from social and cognitive psychology together with the epistemological notions help us to improve legal judgment? In this chapter I will discuss the reconstruction of past traumatic events with emphasis on examination of the context as one of the major constraints of human decision making. The sufferers from a mishap want a causal explanation and the problems encountered by this venture will be discussed using an analysis of two different tort cases.

3.2 JUDGING PAST EVENTS: THE PROBLEM OF RECONSTRUCTION

Both historians and magistrates are looking at the past, not only to describe but also to understand what has happened and to draw conclusions. After these enquiries, we may understand the past, form an opinion about it, learn from it and perhaps make better decisions in the future. But experiences in both domains show us that different examiners looking back at the same event may come to different conclusions. For historians this may offer them an interesting spectrum of views or an evolution in time of historical insight. But in a legal procedure it is unbearable for the parties involved that his or her fate may depend on who is on the bench. One of the principles of a fair trial is uniformity in the application of the law. However sameness still is no guarantee for rightness. Is it possible to understand why different members of the same discipline may come to different conclusions? Do we have a solution for this problem?

Those who suffered a mishap want an unassailable answer to the question why this set of unfortunate circumstances befell them, they want no less than a proper causal explanation. The legal philosopher Larry Laudan reinforced that once we state that the basic purpose of a trial is the determination of the truth, we have to commit ourselves to what he called 'legal epistemology'.¹ When we follow this line of thought, we are confronted with the pursuit for reliable knowledge. Can we effectively and above all objectively reconstruct the developmental course of the chain of past events? A skeptical attitude is essential for this venture or in the words of the famous French writer and philosopher Michel de Montaigne his lifelong guiding question: 'que sais-je?' ('what do I know?'). Basically we have three seemingly simple but fundamental

¹ L. Laudan, *Truth, Error, and criminal law. An essay in legal epistemology*, Cambridge University Press 2006.

questions to answer: what do I know, what should I know and what can I know? But where to start?

3.3 **IT IS THE CONTEXT, STUPID!**

In tort law, the starting point of a trial always is a nasty event resulting in damages. A tort is a wrong, which entitles the injured party to claim compensation from the person who committed it.² Different types of tort exist but in this chapter we will concentrate on the tort of negligence where damages are inflicted through someone's careless action. Most tort cases are about negligence. To bring a claim to a successful end, the victim must show that the tortfeasor owed a duty of care to him or her and acted in a negligent way thereby causing harm.³ But the tort of negligence has a special difficulty. Negligence is defined by a standard of reasonable care under the given circumstances. It is much too simple to say that the juror has only two successive tasks: fact-finding and applying the law to these facts. The legal norm of reasonable care is a blanket norm. For the negligence decision, a norm creation is needed, an act of discretionary norm creation by the finder of fact.⁴ For this purpose, we have to fully appreciate somebody's conduct within a situational context.

The way our lives continuously unfold derives from how we make our decisions. Tort cases may result from actions or inactions based on choices. But how does this overall process of decision making occur? In this activity the context plays a key roll, the set of interrelated conditions in which something exists or occurs. What we perceive is influenced by the surrounding environment, but also by a variety of other elements such as previous experiences, emotions, anticipations, weariness and many other factors. When we review an affair can we reproduce the exact original context in which the disaster took place? It is essential to realize that we can achieve no more than an approximation.⁵

But given the importance of contextual factors, we must do our best to discover as much as we can about the original situation.

If contextual factors have such significant influence on any decision making, this also pertains to legal judgment. These elements may creep in unintentionally but it is also conceivable that lawyers try to induce judges to make judgments in favour of their position. The fundamental lesson from social psychology how to control judgment is

2 J.C.P. Goldberg & B.C. Zipursky, 'Torts as wrongs', *Texas Law Review* 2010, Vol. 88(5), pp. 917-986.

3 D.G. Owen, 'The five elements of negligence', *Hofstra Law Review* 2007, Vol. 35(4), pp. 1671-1687 and J. Oberdiek, 'Philosophical issues in tort law', *Philosophy Compass* 2008, Vol. 3-4, pp. 734-748.

4 K.S. Abrahams, 'The trouble with negligence', *Vanderbilt Law Review* 2001, Vol. 53(1), pp. 1187-1223.

5 P. Croskerry, 'Context is everything or how could I have been that stupid?', *Healthcare Quarterly* 2009, Vol. 12, e171-e177.

that it is often easier to get people to make the decisions that you want by changing the object of judgment than by trying to change their judgment of the object.⁶ In the tort of negligence it is the tortfeasor who is the object of judgment and the trial is framed by the unwanted disastrous outcome. Therefore, the presentation of the conflict will guide, or better perhaps: confine, further investigations and inferences. We will now focus on the context of the legal procedure.

3.4 AFTER THE ACCIDENT: THE VICTIM'S REACTIONS

Let me start with a historic tort case, presented here as a short story, and then analyze how the victims have responded.

Case 1. Jim is a tram driver, who is known to be speeding often. One day, in the town where Jim is working, the weather conditions are grim. A gust of wind topples a tree, which smashes a passing tram – of course driven by Jim. No one is killed, but several passengers were injured. One of them is suing Jim, stating that if Jim had not been speeding, the tram would not have been on the accident spot and nobody would have been hurt.⁷

From the victims perspective there are several characteristic fundamental psychological patterns of reaction when examining past tragedy such as this one. In essence, all these responses regard somebody's demeanour and are consequently social perceptions:

1. The *fundamental surprise* states that for the casualty the occurrence of the calamity is unexpected, it is a complete astonishment – and a very unpleasant one. The trusted view of a fair world is abruptly shattered.⁸
2. The *just world hypothesis* sets out that people have a demand to believe that their environment is a just and orderly place where people usually get what they deserve. We all have a duty of care to maintain this just world. The well-known legal character of the reasonable person should exert all his or hers efforts to keep the world in order (duty of care). So when this just world belief is shattered it must be somebody's fault, such things do not happen erratically and somebody must be held responsible.⁹

6 J.J. Rachlinsky, C. Guthrie & A.J. Wistrich, *Context effects in judicial decision making*, SSRN-paper.

7 *Berry v. Borough of Sugar Notch* (1899) 43 Atl. 240 (Pa.).

8 Z. Lanir, *Fundamental surprise*, Eugene, OR, Decision research 1986 and W. Wagenaar & J. Groeneweg, 'Accidents at sea: multiple causes and impossible consequences', *International Journal of Man-Machine Studies* 1987, Vol. 27, pp. 587-598

9 M.J. Lerner & D.T. Miller, 'Just world research and the attribution process: looking back and ahead', *Psychological Bulletin* 1977, Vol. 85, pp. 1030-1051 and M.J. Lerner, *The belief in a just world: a fundamental delusion*, New York: Plenum 1980.

3. The *fundamental attribution error* is born.¹⁰ In our example it surely must be Jim's fault. The focus is on a personal cause; information about the situation of the misfortune is ignored. People commonly underestimate the degree to which behaviour is externally caused. The observations are focused on people who stand out against situational backgrounds ('behaviour engulfs the field'). Perceptions are enhanced towards personal control and predictability.¹¹ If it were a persons handling of a situation that was faulty, an alternative action would have saved the situation.
4. This is counterfactual thinking and it may give rise to the *counterfactual fallacy*.¹² Jim did not control the situation properly and hence it could have turned out differently if only he had not been speeding. Counterfactual thinking can enhance perceptions of control and in retrospect we might have done something different to avoid the incident. I will further clarify this subject under paragraph 3.5.
5. This case is also an example of the *conjunction fallacy*: the accident is a compound occurrence and the conjunction of two events – speeding and the tumbling of a tree – are judged as more probable to occur than its constituent events alone.¹³ However, probability theory teaches us that the combination of two events can never be more probable than either of those two happenings individually.
6. Finally we have the problem of *judgment in hindsight*. It is a well-known phenomenon in cognitive psychology that adjudication has to be made in hindsight and is hence prone to either *hindsight bias*, a post outcome amplification of the *a priori* predictability of the mishap, or *outcome bias*, the assumption that people must have been uncaring while performing their task.¹⁴

The psychological reactions of the injured party are those of frustration and anger and the victim blames the tortfeasor for the harm afflicted. The keyword is *indignation*; a term defined from the complex of emotions, beliefs and response tendencies.¹⁵ This indignation results from intuitive moral conviction of the tortfeasors action or inaction and this is consequently expressed as anger. Now a conflict is born. The victim, who is trying to find a causal explanation, is doing so in an emotion-driven but unstructured way, designated by the psychologist Fritz Heider as a 'naïve scientist'.¹⁶

10 E. Jones, 'The rocky road from acts to dispositions', *American Psychologist*, Vol. 34, pp. 107-117.

11 H.R. Riggio & A.L. Garcia, 'The power of situations: Jonestown and the fundamental attribution error', *Teaching of Psychology* 2009, 36, pp. 108-112.

12 D.R. Mandell et al. (eds.), *The psychology of counterfactual thinking*, UK: Routledge 2005.

13 A. Tversky & D. Kahneman, 'Extensional versus intuitive reasoning: the conjunction fallacy in probability judgment', *Psychological Review* 1983, Vol. 90(4), pp. 293-315.

14 J. Baron & J.C. Hershey, 'Outcome bias in decision evaluation', *Journal of Personality and Social Psychology* 1988, Vol. 54 pp. 569-579.

15 D. Kahneman & C.R. Sunstein, 'Cognitive psychology of moral intuitions', *Neurobiology and human values* 2005, pp. 91-105

16 B.M. Malle, 'Fritz Heider's legacy. Celebrated insights, many of them misunderstood', *Social Psychology* 2008, Vol. 39(3), pp. 163-173.

The perceptual experience is guiding the sufferer's fact-finding, interpretation and inference. From the victims point of view there is only one interpretation and the accident is henceforth encased in wilful wrongdoing and presented as such. However, others could describe the same reality differently. Each distinctive narration will evoke a different psychological reaction, a process called *framing*. The power of framing is to flip a person into one way of perceiving rather than another. It can produce different responses to what is logically the same problem.¹⁷ Framing effects arise because statements that are extensionally equivalent may nevertheless evoke different associations and different emotional responses.¹⁸ The essence of this negative framing in tort is that it restricts the problem to personal wrongdoing and will thus deflect decision making in the direction of personal wrongdoing away from the context and it may in consequence result in a judgment error.¹⁹ From the perspective of quality control and fair trial it is therefore important to realize that due to a shift in the decision makers' reference points a change in preferences may arise.²⁰

If we are striving to find the best possible causal explanation to obtain a righteous verdict, we must oblige ourselves to develop a proper methodology that prevents us from biased and fallacious conclusions. In order to find a causal explanation, we ask why-questions. First, I will explore the more general problem how to determine whether we have formulated proper answers to our why-questions and then focus more specifically on the puzzle of causal explanation within a legal context using a case of presumed medical negligence.

3.5 WHY WE ASK WHY-QUESTIONS AND WHAT DO THEY GIVE US?

Judgment tasks are central to the approach how we understand and experience our world, either personally or professionally. For this comprehension, the answers to our why-questions, we generate possibilities, we form and test hypotheses about the world we meet. We have to rely on particular strategies to formulate and test each of these hypotheses and this may either help us getting things clear or lead us up the wrong road.

17 G. Claxton, *Hare brain, tortoise mind*, London: Fourth Estate 1997, p. 54.

18 C. Sunstein, 'Some effects of moral indignation on law', *Vermont Law Review* 2009, pp. 405-433.

19 J. Jou, J. Shanteau & R.J. Harris, 'An information processing view of framing effects: the role of causal schemas in decision making', *Mem Cognit.* 1996, Vol. 24(1), pp. 1-15.

20 R.A. LeBoeuf & E. Shafir, 'Deep Thoughts and Shallow Frames: On the Susceptibility to Framing Effects', *Journal of Behavioral Decision Making* 2003, 16, pp. 77-92.

3.5.1 *Hypothesis Formulation and Testing: How Far Do We Go and How Hard Do We Look?*

Whenever we seek an explanation, we may come up with divergent clarifications. Ideally we construct all possible conjectures and gather all the relevant information; then we have to objectively decide which one is the best. We must have enough faith in our conjectures but also we must limit ourselves for practical purposes. ‘We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances’ is the advice given by Sir Isaac Newton.²¹ In this advice we meet some of the desirable qualities of an explanation: it must be both simple and probable.²²

How good are we in weighing opposite views? As it turns out in real-life practice, we are not in the business of a well-balanced search for evidence. From the very first moment, we have an unconscious favourite view and subsequently utilize a one-sided approach to hypothesis testing, the positive-test strategy: we prefer to confirm rather than to falsify our suppositions.²³ This strategy implies that we are apt to perform a biased memory search and seek biased evidence in the outside world.²⁴ We too often refrain from asking truly diagnostic questions. In *bona fide* problem solving it is essential to have a proper problem identification and definition.²⁵ We must be fully aware of these problems when we are in the process of explanation-based judgment.

3.5.2 *Explanation-Based Judgment*

If parties are unable to resolve their divergence, the matter will have to be resolved by a court. Then, for the legal juror typical why-questions abound: ‘What happened?’ ‘Why did it happen?’ and ‘Why is the tortfeasor responsible or not?’. All these issues have to be answered, but the most pertinent of these is the enquiry into the causation of the misadventure. Most legal decisions in tort trials use a general model of *explanation-based judgment*.^{26 27}

21 Sir Isaac Newton, *Philosophiæ Naturalis Principia Mathematica*, Book III. *Rules of reasoning in philosophy*, 1687.

22 T. Lombrozo, ‘Simplicity and probability in causal explanation’, *Cognitive Psychology* 2007, Vol. 55, pp. 232-257.

23 J. Klayman & Y-W. Ha, ‘Confirmation, disconfirmation, and information in hypothesis testing’, *Psychological Review* 1987, Vol. 94(2) pp. 211-228.

24 Z. Kunda, *Social Cognition*, MIT Press 1998, chapter 4 (p. 111).

25 R.J. Sternberg, *Cognitive Psychology*, Wadsworth Cengage Learning 2009, pp. 430-431

26 R. Hoekstra & J. Breuker, ‘Commonsense causal explanation in a legal domain’, *Artificial Intelligence and Law* 2007, Vol. 15, pp. 281-299.

27 R. Hastie, ‘The role of “stories” in civil jury judgments’, *Michigan Journal of Law*, 1999 Vol. 32(1), pp. 1-13.

3.5.3 Inference to the Best Explanation

If we are searching for the best possible explanation, we have to formulate criteria for this process of selection. What does the explanation give us? Does it provide true understanding? According to Lipton, three general features of explanation will test this:²⁸

- a. There is a distinction between knowing that a phenomenon occurs and understanding why it does. Knowing that something is the case and naming it is not enough. Understanding 'why' will require a lot more than knowing 'that'.
- b. Are the explanations provided by themselves explained? This feature is also called the why regress. How far can we go back, how deep do we really have to dig and where does it lead to?
- c. The possibility of explaining a phenomenon in cases where the phenomenon itself provides an essential part of the reason for believing that the explanation is correct. This is the phenomenon of self-evidencing explanations, the problem of circularity.

These attributes bring together the reason conception of understanding. But we can think of other elements we have to test before we can accept an explanation. Does the explanation fit in a broader scientific view? Is it in line with current schools of thought? Does our understanding of the particular phenomenon fit within a greater collection of similar events? Is the expounding done coherently? But most important is the causal conception of our understanding. But if causation is used to explicate explanation, it too needs further clarification. And we cannot discuss an explanation out of context.²⁹

The enquiries of what has happened will often be formulated in the form of a narrative story and we must therefore realize the importance of the way this story is constructed and how the answers on all why-questions are embedded because of that.³⁰ This will depend heavily on the trial-position of the enquirer (victim, tortfeasor, legal decision maker or expert) and on the setting (in or outside the legal arena). For the fighting parties, the psychology of conflict will prevail, which will bias their interpretations. However, where objectivity is the key word, the legal decision maker insight in factors from cognitive and social psychology and their influence on judgment must have supremacy. After considering the general demands for answering

28 P. Lipton, 'What good is an explanation?', in: J. Cornwell (ed.), *Explanations. Styles of explanations in science* Oxford University Press 2004, pp. 1-22.

29 H. Hällsten, 'What to ask of an explanation-theory', in: J. Persson and P. Ylikoski (eds.), *Rethinking Explanation*, Springer 2007, pp. 13-26.

30 R. Hastie, 'Conscious and nonconscious cognitive processes in jurors' decisions', in: C. Engel & W. Singer (eds.), *Decision making, the human mind*, Cambridge: MIT Press 2008.

why-questions, now is the time to explore the notion of causality when we seek a causal explanation of the event under enquiry.

3.6 CAUSALITY, CAUSATION AND CAUSAL EXPLANATION

It was the Scottish philosopher David Hume (1711-1776) who stated that causality is the cement of the universe. We do not merely passively observe what happens, we generally actively – and often automatically – want to know *why* it happened; we perceive and we then interpret. We infer a causal relation from a mere temporal sequence, the process of inductive reasoning. This may seem straightforward but does it surely provide us with the truth? In tort trials too, we see a sequence of events preceding a disastrous outcome and we spot a decisive step that is identified as *the* causal factor leading to the misfortune – and that crucial phase is always the activity of a person.

What qualifies an explanation as sufficiently causal within a legal context? Is it just a matter of methodical fact-finding and using common sense to interpret what we have found? And what moves us to give credence to an explanation? To understand even simple everyday situations and events, we need a huge amount of ‘common-sense’ background knowledge.³¹ How do we handle more special and complicated conditions such as cases of presumed negligence? In ordinary life once we have perceived a sequence of events, we almost automatically try to identify causal relations between these happenings. If we use the same self-propelling process for clarification of legal questions we must try to capture this customary process. In this way, we may come to very intelligent conclusions but we can also be dead wrong.

Causation is central to every scientific endeavour where we want to unravel the dependency between successive occurrences. Once we have successfully explained why something did happen in the past, we also may fruitfully forecast when something is bound to occur. That is the supposed mechanism underlying how we can learn from our mistakes, because the next time we will choose differently at some crucial point. But this view may be both idealistic and much too simple!

Let us first give a moment’s thought to the difference between the concept of causality and that of causation. Understanding the idea of causality and the implications rising from these insights belong to the realm of philosophy, the philosophy of science in particular. This debate on what causality is or isn’t is on going for centuries and will

31 R. Hoekstra & J. Breuker, ‘Commonsense causal explanation in a legal domain’, *Artificial Intelligence and Law* 2007 p. 281.

probably never end; it may even prove to be unsolvable.³² I mentioned the name of the Scottish philosopher David Hume earlier and he advanced that we cannot reliably infer causation from association, the famous – and notorious – *induction problem*. After we realize the huge problem of solving this ontological-philosophical conundrum of causality, we are next confronted with a very practical problem, that of proving legal causation.

The term ‘causation’ could in practice be explained as the occurrence of causality and now we must have sensible guidance to solve this puzzle. This might – in theory – be quite simple: for causation two criteria have to be met and these two must stick together like a horse and carriage.³³ First, we need to apply a *counterfactual test*. This counterfactual test demands that we ask whether something would have happened but for the presence (or absence) of a specified factor. Would the tram accident and subsequent injuries not have taken place if only Jim had not been speeding? According to the claimant this is definitely the case. But we could also think of others factors such as the condition of the roots or the trunk of the tree, the weather situation, the construction of the tram carriage, the route of the rails, etcetera. This counterfactual thinking is a vital link in the tort chain.

Second, we need to unravel a *generating mechanism*. This demands that we actually have a process that requires energy to convert one state to another. But did this presumed speeding really bring about the falling of the tree? Would the shrub not have been fallen on top of the tram if the driver was driving at the allowed rapidity? There is no such mechanism involved in this accident so it was a matter of sheer coincidence, not causation from the conduct of the driver.

The mere association of two separate observations and the presumption of a causal relation between them is not enough according to Hume’s induction problem. However, the track record of legal judgments shows cases of serious wrong sentencing because legal professionals omitted to take this essential principle that association is not equal to causation into account. An impressive example of this is the problem of birth-associated brain damages. Astronomical amounts have been paid for compensation of parents of these physically and/or mentally handicapped children, especially in the United States, UK and Australia. Many of these children were born after a troublesome delivery and the assumption was made that poor obstetrical care resulted in a prolonged delivery with a low oxygen supply of the child, which resulted in these brain damages. It is a mere association – and statistically a wrong one too!

32 See H. Beebe, C. Hitchcock & P. Menzies (eds.), *The Oxford Handbook of causation*, Oxford University Press 2009.

33 S. Sloman, *Causal Models*, Oxford University Press 2005, p. 24.

These legal actions have become very expensive for insurers and described as the ‘childbirth litigation industry’.³⁴ Critical statistical examination however showed that no hard association existed between difficult labour and neurological brain damage; most children born under such conditions were normal and many brain-damaged children had no history of difficult parturition. Furthermore, examination of the pathobiology of this problem has shown that problematic parturition and neurological damage in most cases have the same cause, a group of maternal and infantile factors that combined together produce this very unwanted outcome.³⁵ The examination and identification of a generic mechanism proved to be decisive. Nevertheless, the counterfactual test was confusing in this case.

3.7 COUNTERFACTUAL THINKING, CAUSAL SELECTION

As already stated, when things do turn out abominable, we automatically engage in trying to find out how things happened and how they could have been avoided; these thoughts may even haunt us. We virtually mutate the historical scenario at a specific point and in this new storyline things turn out differently. This response can be seen as an attempt to causally understand what has happened. These counterfactuals that we bring about may increase our emotional responses (emotional amplification) but above all can influence our understanding of the accident to the point of distortion.³⁶

The psychologist Roese distinguishes between two kinds of factors.³⁷ First, there are the factors that will *activate* this type of reasoning. Kahneman and Miller investigated how the sense of ‘normality’ of an event was experienced.³⁸ They demonstrated that after an unhappy event a norm is evoked that reflects prior expectancies about it, which differ from the actual outcome and this will generate counterfactual thinking. The seriousness of the event determines how emotional the victim’s responses are.

The second class of factors will influence the *content* of what will be mutated. Given the legal background, this is a very crucial point because jurors are explicitly asked to do such counterfactual reasoning: establishing causation demands this type of ‘but-

34 I. Blumenthal, ‘Cerebral palsy – medicolegal aspects’, *Journal of the Royal Society of Medicine* 2001, Vol. 94(12), pp. 624-627.

35 K.B. Nelson, ‘Causative factors in cerebral palsy’, *Clinical Obstetrics and Gynecology* 2008, Vol. 51(4) pp. 749-762.

36 D.R. Mandel, ‘Counterfactuals, emotions, and context’, *Cognition and Emotion* 2003, Vol. 17(1), pp. 139-159.

37 B.A. Spellman & A. Kincannon, ‘The relation between counterfactual (“but for”) and causal reasoning: experimental findings and implications for jurors’ decisions’, *Law and Contemporary Problems* 2001, Vol. 64(4), pp. 241-264.

38 D. Kahneman & D.T. Miller, ‘Norm theory: comparing reality to its alternatives’, *Psychological Review* 1986, Vol. 93(2), pp. 136-153.

for' thinking. Since the requirant is driven to seek causal explanations for why and how things could happen, he or she is confronted with various factors or events that could be named as a cause. So, there is the problem of causal selection. How does the victim sort one cause out for the purpose of blame?³⁹ So, it will be quite important which event will be mutated and how and it is the plaintiff who sets the counterfactual agenda.

Generally, studies of how counterfactual thinking operates suggest the following:⁴⁰

- Earlier events in a story are more mutable than later ones.
- Exceptional or unusual events will be mutated more often than normal or usual ones.
- Events having to do with the focus of the story will be mutated more often than those that do not.
- Personally controllable events will be mutated more often than uncontrollable ones.
- Events perceived as immoral will be mutated often more than moral events.
- The injured party does not perform an exhaustive search for all conceivable counterfactuals.

Since this counterfactual thinking is intended to establish causal attributions and hence will affect liability judgments we must ask: do mutability and causality relate to the same questions? Can we state that what is mutable is equal to what is causal? The focus of counterfactual reasoning is on preventive actions and the focus of causal reasoning is on how an event actually occurred, but they are based on the same information.⁴¹

Causal relations imply certain counterfactuals, but the critical point is that a causal relation does not imply that events are just related in time to each other, but there is also the necessity of some generating mechanism, as we just saw.⁴²

To summarize the above text, we have seen that the victim is driven by moral indignation and that leads to a determined view on what has happened and who is to blame. This judgment may be wrong, incomplete or biased but it is the starting point for the lawsuit. The problem is hence framed into wilful wrongdoing and the

39 D.A. Lagnado & S. Channon, 'Judgments of cause and blame: the effects of intentionality and foreseeability', *Cognition*, 2008, Vol. 108, pp. 754-770.

40 Roese & Spellman.

41 B.A. Spellman, A. Kincannon, & S. Stose, 'The relation between counterfactual and causal reasoning', in: D. R. Mandel, D. J. Hilton & P. Catellani (Eds.), *The psychology of counterfactual thinking*, London: Routledge Research 2005.

42 S. Sloman, *Causal Models*, Oxford University Press 2005, pp. 24 *et seq.*

disastrous outcome results from the tortfeasor's unique and enduring dispositions. Knowing this must inspire both the defendants lawyer and the jurors to seek and use a methodology to objectively investigate and judge a tragedy. Let us now apply these insights to the following case.

3.8 A CASE OF A MISSED DIAGNOSIS OF BREAST CANCER

The following case is situated in the context of increasing efforts for the early detection and treatment of cancer in population screening.

Case 2. A 53-year old woman participates for the first time in the Dutch program for population breast cancer screening. Her mammograms are classified as normal. Six months after her screening photos, she feels something lumpy in her left breast and she is referred by her GP to the department of surgery of the local hospital. There a diagnosis of breast cancer is made and she has to undergo cancer surgery. Examination of her resection specimen by the pathologist shows that she has a locally advanced tumor with an unfavourable prognosis particularly because of the many metastatic lymph nodes in her axilla. In spite of optimal local and systemic treatment she dies twenty months later of disseminated breast cancer. Given this late tumor stage her husband cannot believe that there were no abnormalities seen on her screening mammograms. He therefore files a claim against the breast cancer screening centre, stating that the responsible radiologists were negligent because they failed to detect abnormalities.

In the initial phase of the trial, the court appointed an expert radiologist who re-examined the mammograms of the deceased woman. He concludes that there are indeed minor abnormalities to be seen in the left breast, which if noticed would have resulted in complementary diagnostic examinations and probably the detection of the tumor. Based on this testimony, the court decides that the radiologists from the cancer-screening centre were indeed negligent.⁴³

In this short case presentation the husbands fundamental surprise and moral indignation are apparent. From a methodological perspective we are confronted with three potentially distorting elements. The first thing that strikes us in this case is the counterfactual thinking by the husband: 'If only the radiologist would have spotted the abnormalities, then chances of cure might have been better.' This hunch of neglect motivates him to start a legal action against the breast cancer-screening centre.

43 Court of Appeal Arnhem, 17 January 2006, LJN AU9962.

This demonstrates the fundamental attribution error where the personal fault is central, neglecting the situation.

So the second thing is that the domain-specific context of this particular type of radiological diagnosis is left out. We should examine this dramatic case from a broader perspective. What is the aim of cancer screening and what is it upshot? Was this an exceptional mishap or does missing a diagnosis in the setting of cancer screening occur more frequent than anticipated and if so: why? Finally the expert examination, the review of the radiographs with outcome knowledge, violates the demands for objective blinded re-examination. For the discussion of these elements, the problem of context and that of outcome bias, we will need to investigate what observational and experimental empirical investigations have learned us on these questions.

3.9 BREAST CANCER SCREENING: ONCE MORE – IT IS THE CONTEXT, STUPID!

The first question that arises is: what is the principle goal of cancer screening? This is the broad medical-scientific context. Cancer population screening is the cyclic diagnostic investigation⁴⁴ of men or women in search of a particular cancer, which has not yet manifested itself with either signs or symptoms. Underlying this preventive practice is the assumption that early cancer stands better curative chances when treated than advanced disease.

The initiative for this type of medical intervention is by definition taken by the government who invites people belonging to a certain age group to voluntarily participate in this screening project. This is not a personal action by an individual patient. These invited persons will be tested, *e.g.* undergoing mammography⁴⁵ for breast cancer screening, and this serves to discriminate them into one of the following groups: those with an abnormal test indicating the possibility of cancer who will need further work-up and those with a normal test result who will need no further investigations and who will be invited in the next screening round. The aim of screening is not to exclude the presence of the disease in question with certitude but only to select those persons who need further diagnostic assessment of the abnormality found to establish or refute breast cancer by the additional tests.

With proper disease book keeping cancer registries may tell us how many cancers were detected within the screened population group during a defined period (usu-

44 In the Netherlands, women between 50 and 75 years are screened every two years, but in some countries a yearly screening is usual and may start and stop at different ages.

45 Mammography is making X-rays of both breasts and examining these for abnormalities such as abnormal densities or calcifications.

ally several years) and when and how these cancers were detected. Such studies have shown that in a female population screened for breast cancer one out of three breast cancers is found *not* with the screening mammography but between screening rounds, hence they are called ‘interval cancers’. So this finding alone shows us that ‘missing’ breast cancer with mammography is far from incidental, it is instead very common and this phenomenon must be explained.

When it happens, is this invariably because of negligence? The ‘normal’ test result and the subsequent diagnosis of cancer suggest human error. But we must go behind this designation. The term ‘error’ is used inconsistently in relation to accidents and described in at least three different ways: error as the cause of failure, error as the failure itself and error as a process.⁴⁶ It is much more profitable to define the standards for this type of diagnostic activity and see if any deviation from this standard has occurred.

We must additionally realize that screening for disease in asymptomatic women is fundamentally different from investigating symptomatic women who present themselves with a breast lump. In the latter group, there are always three diagnostic tests applied: palpation (feeling the properties of the lump by the doctor), mammography and finally a needle aspiration or biopsy to obtain cells or tissue for examination. This combination is almost watertight. In the screening situation however there is no such safety net.

The other essential difference is this: the probability of finding disease in a healthy screening population is extremely low – like finding the proverbial needle in a haystack. It is like screening luggage in an airport for explosives or guns. The probability of identifying terrorist’s weaponry is minimal. It has been shown experimentally that in these situations of searching for rare abnormalities they are easily missed.⁴⁷ This may be a reasonable explanation of the phenomenon of many missed tumours in breast cancer screening. But what do we find if we re-examine the radiographs of women where the radiologist failed to catch these interval breast cancers? And what about an expert review in a legal setting?

3.10 REVIEW AFTER THE FACT: DO NOT FORGET TO BLIND!

Does it make a difference whether radiophotographs are reviewed, like in case 2, with outcome knowledge or blinded when they are examined as if they were ‘new’ with

46 D.D. Woods *et al.*, *Behind human error*, Ashgate Publishing Ltd 2011, pp. 235-236.

47 M.J. van Wert, T.S. Horowitz & J.M. Wolfe, ‘Even in correctable search, some types of rare targets are frequently missed’, *Attention, Perception, & Psychophysics* 2009, Vol. 71(3), pp. 541-553.

no additional outcome information? Empirical studies have shown that it makes all the difference! It has been demonstrated in several experiments that when mammography's of women with interval carcinomas are re-examined with blinding for the actual outcome, most are again reported as 'normal' whereas looking again at them with outcome knowledge many more abnormalities are reported.⁴⁸

Another experiment has revealed that lesions, which may be found on radiographs in hindsight with unblended meticulous re-examination are intrinsically undetectable using eye-tracking experiments in the blinded situation. When those photos are examined 'freshly' the following of the eye movements precise registration of those movements reveal that radiologists do not spot them, they are intrinsically undetectable.⁴⁹

These empirical studies demonstrate that in a legal context, blinded re-examination of radiographs is obligatory, for which a proper protocol should be designed. In clinical pathology a protocol for the re-examination of slides was described for an objective expert review.⁵⁰

So, when looking at this case from different perspectives a more detailed and objective verdict on the screening radiologists's behaviour would emerge that would differ essentially from the court's original verdict of negligence.

3.11 CONCLUSION

In this chapter we have pondered on the many ways we can go astray in legal fact-finding and judgment. Both cases, the trial of the poor tram driver and the case of the unlucky woman, have shown that there is more to tort law than just the strict and sage application of the five elements of negligence.

Especially the second case has shown the statement 'context is everything' to be very true. The insights from social psychology have clearly unmasked the potential motivated biases by the plaintiff. Cognitive psychology has unravelled pitfalls when searching and interpreting facts and the final step of decision making. Finally, empirical research of the particular medical domain gives us practical information per-

48 S. Hofvind *et al.*, 'Influence of review design on percentages of missed interval breast cancers: retrospective study of interval cancers in a population-based screening program', *Radiology* 2005, Vol. 237, pp. 436-444.

49 C.F. Nodine *et al.*, 'Blinded review of retrospectively visible unreported breast cancers: an eye-position analysis', *Radiology* 2001, Vol. 221, pp. 122-129.

50 R.W.M. Giard, 'When is the practice of pathology malpractice?', *J Clin Pathol.* 2010, Vol. 63(11), pp. 957-961.

taining to the legal problem. Managing the quality of our legal endeavours requests that we step back, reflect, examine, experiment and consult other disciplines. The catchword, as was stated in the first chapter, is methodology. This methodology is always interdisciplinary in nature but the legal scholarship will remain the foundation of practicing law.

