Making sense of business failure: a social psychological perspective on financial and legal judgments in the context of insolvency

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5 Hindsight Bias in Judging Directors' Liability and The Role of Free Will Beliefs[1]

ABSTRACT

Following a corporate disaster such as bankruptcy, people in general and damaged parties in particular want to know what happened and whether the company's directors are to blame. The accurate assessment of directors' liability can be jeopardized by having to make judgment in hindsight with full knowledge of the adverse outcome. Our study provides a first investigation of whether professional legal investigators such as judges and lawyers are affected by hindsight bias when evaluating directors' conduct in a bankruptcy case. Additionally, to advance our understanding of the conditions under which hindsight bias is more or less likely, we examine whether free will beliefs predict susceptibility to hindsight bias in this context. In two studies (total N = 1,729), we demonstrate that legal professionals tend to judge a director's actions more negatively and perceive a bankruptcy as more foreseeable in hindsight than in foresight. Moreover, these effects are significantly stronger for those who endorse the notion that humans have free will. Potential explanations for this finding are put forward and implications for both theory and practice are discussed.

5.1 INTRODUCTION

Following a disastrous event, there is often public outcry over who is to blame. Think for example of the sinking of the MS Estonia cruise ferry in 1994, the Deepwater Horizon oil spill in the Gulf of Mexico in 2010, or the Ponte Marandi bridge collapse in Genoa (Italy) in 2018, to just name a few. In such cases, people want to know what caused the event and whether there is someone to blame and to hold legally liable for the consequences. In this regard, corporate "disasters" are not much different. After the Enron bankruptcy in 2001, the collapse of Lehman Brothers in 2008, and more recently the Volkswagen emissions scandal, the public and authorities demanded a thorough investigation and that those to blame would be held accountable. Also in less high-

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profile cases of corporate and SME bankruptcies or misconduct cases do the local communities or creditors typically appeal for a thorough investigation into the causes of the adverse events. In some jurisdictions, an investigation into the causes of a company's failure are even mandatory.

In such investigations, attention often centres on the role of the company's directors to determine whether there has been a breach of fiduciary duties, wrongful trading (or even fraudulent trading), or business misjudgments.[2] If such wrongful conduct is indeed proven, creditors can hold directors liable for damages and thus (partly) reclaim their losses. Investigations into a director's conduct are normally carried out by professionals who have a legal or financial background (or both), such as lawyers, trustees, insolvency practitioners, liquidators, or forensic accountants, possibly in conjunction with an investigating judge/magistrate in an inquisitorial system.

When investigating an adverse event, it is imperative that these legal professionals assess a directors' actions in relation to an adverse event in an objective and reliable manner. Accurate and unbiased assessments are important for general reasons such as predictability of the relevant legislation (i.e., legal certainty) and resultant trust in legal systems, but also because being held liable for a company's downfall can have detrimental effects on a director's personal well-being (Jenkins et al., 2014; Kesteren et al., 2017; Ucbasaran et al., 2013). Additionally, from a professional point of view, reputations are at risk and former directors can be held personally liable for all creditor claims on the bankrupt estate, which in some cases far exceed insurance coverage and can therefore lead to dire personal financial consequences. Hence, an accurate assessment of a director's conduct in relation to an adverse event is paramount.

However, there is good reason to believe that accurately assessing a director's conduct in relation to a corporate mishap can be jeopardized by the fact that such assessments are made in hindsight when the investigators and legal decision makers are already aware of the adverse outcome. Judgments made in hindsight are notoriously susceptible to hindsight bias, which is the phenomenon of perceiving past events as more foreseeable and/or inevitable than was realistically the case prior to the event's unfolding (Fischhoff, 1975). Additionally, when judging in hindsight, people tend to let the consequences of a certain decision or action unjustifiably affect their judgments regarding the quality of that action or decision, such that those actions are perceived more negatively after a negative outcome than after a positive outcome (i.e., outcome bias; Baron & Hershey, 1988). As a result of hindsight bias and outcome bias, decisions made by a director that seemed reasonable at the time,

2 There are several differences across jurisdictions regarding the degrees of freedom that directors typically get (for a comparison of the legislation across jurisdictions, see INSOL International, 2017), but a universality across legal systems is that for a director to be held liable, negligence and a causal link with the damages needs to be established.

might in case of a bad outcome (e.g., company going bankrupt) be perceived as negligence.

That being said, it currently remains an open question whether legal professionals who investigate and evaluate a director's conduct are indeed affected by hindsight bias and outcome bias. The primary goal of this research is to address this question, as we posit that previous research on hindsight bias does not fully allow for extrapolation to the current context of directors' liability cases. An additional, more explorative goal of the current paper is to investigate the relationship between legal professionals' beliefs regarding free will and their susceptibility to hindsight bias and outcome bias. We believe investigating this relationship might help improve our understanding of the drivers behind these biases.

5.1.1 Hindsight Bias

The first empirical evidence for hindsight bias was provided by Baruch Fischhoff who originally dubbed it as "creeping determinism", pointing to the idea that once actualized, events appear as though they had to happen, given the seemingly logical and linear causal chain leading up to the event's occurrence (Fischhoff, 1975; Fischhoff & Beyth, 1975; for reviews of the hindsight bias literature, see Christensen-Szalanski & Willham, 1991; Guilbault, Bryant, Brockway, & Posavac, 2004; Hawkins & Hastie, 1990; Roese & Vohs, 2012). Recent research has suggested that hindsight bias is not a unified concept and is rather best regarded as an umbrella term for three separate, albeit related, biases, each with different causal mechanisms (e.g., Blank, Nestler, von Collani, & Fischer, 2008; Kelman, Fallas, & Folger, 1998; Nestler, Blank, & Egloff, 2010; Roese & Vohs, 2012). Specifically, hindsight bias can refer to (1) a distorted memory of previous events or judgments, (2) subjective beliefs of an event's inevitability ("it had to happen"), or (3) subjective beliefs of an event's foreseeability ("I knew it would happen"). For the law, the most relevant component of hindsight bias is that in foreseeability judgments. A defendant or tortfeasor (e.g., corporate director) can be held liable for negligence when it can reasonably be assumed that the negative consequences of his or her actions were foreseeable. Given the close link between the perceived inevitability and foreseeability of events, this paper will henceforward focus on these two components of hindsight bias.

The causes of hindsight bias can be found in cognitive (i.e., sense-making), meta-cognitive (i.e., fluency in sense-making), and motivational processes (Roese & Vohs, 2012). In contrast to many other cognitive biases that operate largely in an automatic and unconscious fashion, hindsight bias relies for an important part on conscious deliberation and sense-making processes. Specifically, an event appears to have been more inevitable and foreseeable when it is easier to make sense of (Blank & Nestler, 2007; Hawkins & Hastie, 1990;

Wilson & Gilbert, 2008) or when the causal chain leading up to the event is easily identifiable and straightforward (Trabasso & van den Broek, 1985; Wasserman, Lempert, & Hastie, 1991; Yopchick & Kim, 2012). Whereas hindsight bias in inevitability judgments relies predominantly on such cognitive processes, hindsight bias in perceived foreseeability can also result from meta-cognitive and motivational processes. Specifically, when one reflects on how a certain course of events could ultimately have turned out differently and one experiences difficulties conceiving such counterfactuals, this meta-cognitive experience is used to infer that the actual outcome must have been the most likely one and that this outcome was therefore foreseeable (Sanna & Schwarz, 2007). With regard to motivational processes, people who have a stronger need for control or closure are generally more motivated to perceive the world in a predictable and orderly fashion and are therefore likely to be motivated to retrospectively judge events as having been foreseeable (Musch, 2003; Musch & Wagner, 2007; Tykocinski, 2001).

5.1.2 Hindsight Bias in Legal Judgments

Evidence suggests that hindsight bias can indeed manifest itself in the courtroom (for reviews of hindsight bias in legal decision making, see Giroux, Coburn, Harley, Connolly, & Bernstein, 2016; Harley, 2007). For example, in a seminal paper, Kamin and Rachlinski (1995) demonstrated among a sample of prospective jurors that precautionary measures to prevent damage from a possible flooding appear insufficient in hindsight, whereas in foresight (i.e., when the participants in the study were unaware a flooding occurred) these measures were deemed largely appropriate (for similar findings, see Casper, Benedict, & Kelly, 1988; Hastie, Schkade, & Payne, 1999; LaBine & LaBine, 1996; Lowe & Reckers, 1994). Furthermore, a meta-analysis suggests that there appears to be no difference between experts and non-experts with regard to hindsight bias (Guilbault et al., 2004, see also Arkes, Wortmann, Saville, & Harkness, 1981; Blendon et al., 2002; Caplan, Posner, & Cheney, 1991). Indeed, it appears that hindsight bias is not limited to mock jurors and can affect professional judges as well (Anderson, Jennings, Lowe, & Reckers, 1997; Anderson et al., 1993; Guthrie, Rachlinski, & Wistrich, 2001, 2007; Jennings, Lowe, & Reckers, 1998; Oeberst & Goeckenjan, 2016).

Despite this evidence of hindsight bias affecting legal decision making, we believe the question whether professional legal investigators will succumb to hindsight bias when conducting investigations into directors' conduct warrants further investigation, for several reasons. First, it is unclear to what extent previous research on hindsight bias can be generalized to the current context of directors' liability, as research investigating hindsight bias among legal professionals is scarce, generally suffers from low statistical power, and has shown mixed results. That is, in contrast to the literature discussed so far,

some studies did not find any effects of outcome information on legal professionals' judgments. For example, Wistrich, Guthrie, and Rachlinski (2005) observed that judges were able to ignore inadmissible outcome information when assessing probable cause for a police search (see also Rachlinski, Guthrie, & Wistrich, 2011). Moreover, Hastie and Viscusi (1998) found that judges were less affected by hindsight bias than mock jurors. Such studies cast doubt on the notion that being in the possession of outcome information actually causes a problem for legal decision making. We therefore believe that the small but growing body of research on hindsight bias in legal decision making could benefit from further, high-powered research.

Second, research on hindsight bias among legal professionals so far has focused solely on judges. However, in the current context of directors' liability, other legal professionals such as trustees, insolvency lawyers, and insolvency practitioners play a more prominent role as they most often lead the investigations into directors' conduct. Moreover, whereas judges are typically generalists dealing with a range of different cases in different legal domains, the legal professionals investigating directors' conduct in liability investigations are specialists in the sense that a significant portion of their work focuses on investigations into insolvent businesses and other corporate mishaps that might result in personal liability for directors and officers. We deem it worthwhile, therefore, to investigate whether this specific group of legal professionals is affected by hindsight bias.

Finally, applied research is needed to inform public policy and legislation that aim to address the risk of hindsight bias in directors' liability cases. In the United States for example, the business judgment rule limits the liability of directors and officers for decisions that turned out badly, as courts recognize that "after the fact litigation is a most imperfect device" and "a reasoned decision may seem a wild hunch viewed years later against a background of perfect knowledge" (Rachlinski, 1998, p. 621; see also Arkes & Schipani, 1994). In Europe, where new legislation is being developed to harmonize insolvency laws across its member states (e.g., European Commission, 2016; Fletcher & Wessels, 2012), discussions concerning the potential effects of hindsight bias are taking place. In several cases heard by the Dutch Enterprise Court, the defense even accused the court of being affected by hindsight bias. However, as of yet no research has directly tested whether legal professionals' evaluations of directors' actions are indeed susceptible to hindsight bias. Hence, recent developments in the area of insolvency law in Europe as well as existing regulations across the globe ask for thorough research to enable evidence-based policies and legislation.

Overall, we consider it worthwhile to investigate whether legal professionals who investigate directors' conduct in light of a potential liability claim are in fact susceptible to hindsight bias. We therefore aim to test the following hypothesis:

Hypothesis 1: Professional legal investigators' ex-post judgments of the foreseeability of a corporate bankruptcy are higher than their ex-ante foreseeability judgments.

5.1.3 Outcome Bias in Legal Judgments

In addition to affecting judgments of foreseeability, judgments made in hindsight might also affect judgments of decision quality. Indeed, when people evaluate others' actions while knowing its consequences, it is common that the consequences are factored into the evaluation of the actions. As a result, the same action is evaluated more negatively when it results in a negative outcome than when a positive outcome ensues (e.g., Bazerman & Sezer, 2016; Gino, Moore, & Bazerman, 2009; König-Kersting, Pollmann, Potters, & Trautmann, 2017; Lipshitz & Barak, 1995; Mazzocco, Alicke, & Davis, 2004; Mertins, Salbador, & Long, 2013; Robbennolt, 2000). Although very similar to hindsight bias in that outcome information unjustifiably affects the evaluation of events of the past, strictly speaking such a bias in evaluations of decision quality constitutes outcome bias rather than hindsight bias. Even though in the current research we focus on judgments made in hindsight versus judgments made in foresight (i.e., absent of outcome information), which conceptually mimics hindsight bias more closely, we will nonetheless distinguish between the two in the remainder of this paper.

In a recent study investigating outcome bias in legal decision making, judges were asked to determine whether a defendant (a town's mayor) intentionally harmed the environment, which was a side effect of ordering the construction of a new highway connection. The participating judges either learned that the animals in the local environment were only temporarily disturbed (mild outcome) or that the animals would die (severe outcome). Judges in the latter condition believed more strongly that the town's mayor intentionally harmed the environment than judges in the mild outcome condition did (Kneer & Bourgeois-Gironde, 2017). Hence, outcome information can distort legally relevant judgments even of those who have received extensive training to not let irrelevant factors affect their judgment (see also Anderson et al., 1997; Charron & Lowe, 2008). It therefore follows that professional legal investigators who are tasked with evaluating a director's conduct and its relation to incurred damages by the company's shareholders or creditors might also succumb to the bias' influence. For example, when a strategic decision made by a director ends badly, they might erroneously conclude the decision was a poor one even though other factors might have contributed more strongly to the unfortunate outcome. In fact, the unwanted consequences might have happened *despite* rather than *because of* the director's actions.

Even though outcome bias in professional legal investigators' judgments might manifest in multiple areas, in this chapter we focus on the two most

relevant elements (in addition to foreseeability). First, we test whether the strategic decisions made by a director are perceived more negatively in hindsight than in foresight, as this might lead investigators to believe the director made a gross business misjudgment or even breached fiduciary duties towards shareholders and creditors. Second, we test whether ultimately the investigators believe more strongly that a director is legally responsible when they know the business went bankrupt (i.e., hindsight judgment) compared to when they are still ignorant of the company's fate (i.e., foresight judgments). We formulated the following two hypotheses:

Hypothesis 2a: Professional legal investigators' ex-post evaluations of the quality of a director's actions are more negative than their ex-ante judgments.

Hypothesis 2b: Professional legal investigators' ex-post attributions of a director's legal responsibility are higher than their ex-ante attributions.

5.1.4 Moral Judgments, Free Will Beliefs and Judging in Hindsight

Even though the discovery of hindsight bias was already made four decades ago, research is still trying to fully understand its underlying mechanisms. We posit that research on individual differences in hindsight bias might help achieve this goal. Prior research has identified individual differences in hindsight bias related to intelligence, presentational concerns, and the need for control and closure (Musch, 2003; Musch & Wagner, 2007; Tykocinski, 2001). However, similar to the research on hindsight bias in legal decision making in general, the research on individual differences in hindsight bias is relatively scarce, shows mixed results, and generally suffers from low statistical power (Musch & Wagner, 2007). Therefore, a second, more exploratory goal of this study is to build on this line of research by investigating whether individual differences in the desire to blame and punish wrongdoers can predict professional legal investigators' susceptibility to outcome bias and hindsight bias.

Traditionally, it was believed that attributions of blame and punishment are the end product of a careful consideration of relevant factors, such as whether an individual intentionally brought about an adverse outcome, whether the outcome was foreseeable, and whether the individual had the capacity and obligation to prevent the outcome (e.g., Malle, Guglielmo, & Monroe, 2014). However, evidence is accumulating for an alternative position suggesting that blame processes can actually operate in the opposite direction. That is, initial moral judgments and blame intuitions can affect subsequent sense-making processes such that these are biased to be consistent with the initial judgment. Such motivated cognition processes entail that one engages in biased sense-making and information processing with the aim to arrive at a desired conclusion, all the while being under the illusion of acting objectively

(e.g., Hughes & Zaki, 2015; Kunda, 1990; Nadler & Mueller, 2017; Sood & Darley, 2012).

A classic example of moral judgments driving perceptions of important constituents of blame is that provided by Alicke (1992), who conducted several experiments that demonstrated that people assign a stronger causal role to an individual who was involved in a traffic accident when that individual was speeding to hide a stash of cocaine than when that individual was speeding to hide an anniversary gift for his parents. People's moral judgments of the person's motive for speeding had a direct effect on the perceived causal role of the person in the accident. Alicke's blame-validation account of moral judgments is in line with Haidt's (2001) social intuitionist approach to moral judgment, which also highlights the influence that initial moral reactions have on subsequent judgments. Indeed, ample empirical evidence exists to support the notion that initial moral reactions can drive subsequent perceptions of for example intentionality, causal control, legal responsibility, and foreseeability (e.g., Alicke, 2000; Ask & Pina, 2011; Knobe, 2005; Nadler & McDonnell, 2012; for reviews, see Ditto, Pizarro, & Tannenbaum, 2009; Feigenson & Park, 2006; Salerno & Bottoms, 2009; Sood, 2013).

We therefore put forward the possibility that once legal professionals are made aware of a company's downfall and collateral damage, their initial moral reactions might activate blame-validation and motivated reasoning processes, leading them to judge the director's role in the downfall in such a way that it is coherent with their initial moral reactions. In other words, it may be legal professionals' motivation to blame and punish that drives hindsight bias, such that they post-bankruptcy judge a director's strategic plans more negatively, the bankruptcy as more foreseeable, and the director as more responsible for the bankruptcy compared with when the legal professionals are unaware of the company's downfall. If hindsight bias can indeed stem from blame-validation processes, it follows that people with a stronger tendency to moralize ambiguous events and condemn and punish wrongdoing should display a stronger hindsight bias. We can therefore expect an association between people's punitive inclinations (i.e., their motivation to blame and punish) and their susceptibility to hindsight bias.

A useful proxy of people's punitive inclinations is their belief in free will. People with stronger free will beliefs appear to (1) be more intolerant of unethical behaviour, (2) be more punitive, and (3) show greater support for severe criminal punishment and retributive punishment (e.g., Carey & Paulhus, 2013; Clark, Baumeister, & Ditto, 2017; Krueger, Hoffman, Walter, & Grafman, 2014; Martin, Rigoni, & Vohs, 2017; Monroe, Dillon, & Malle, 2014; Savani, Stephens, & Markus, 2011; Shariff et al., 2014; Stroessner & Green, 1990). Indeed, it seems that free will beliefs are closely tied to people's innate needs to hold others morally responsible for their actions and to condemn and punish wrongdoers (Clark et al., 2014). Therefore, if people's punitive desires can

indeed cause hindsight bias to manifest, a relation between free will beliefs and hindsight bias should be observed.

In hindsight, legal professionals who believe more strongly in free will might show higher ratings of foreseeability, evaluate a director's actions more negatively, and attribute more legal responsibility to the director, compared to legal professionals who show less commitment to the notion of free will, due to the former's stronger punitive predispositions. In foresight, when people are still ignorant of any adverse consequences, the need to punish would not yet come into play and therefore no differences in these judgments would be expected based on free will beliefs. If anything, one could argue that in the absence of an adverse outcome, those believing more strongly in free will are expected to evaluate someone's actions more favourably and be less inclined to expect adverse outcomes to occur, as research has identified a whole range of positive attitudes and life outcomes for those believing more strongly in free will (e.g., Crescioni, Baumeister, Ainsworth, Ent, & Lambert, 2016; Feldman, Chandrashekar, & Wong, 2016; Feldman, Farh, & Wong, 2018; C. Li, Wang, Zhao, Kong, & Li, 2017; J. Li, Zhao, Lin, Chen, & Wang, 2018; MacKenzie, Vohs, & Baumeister, 2014; Moynihan, Igou, & van Tilburg, 2017; Protzko, Ouimette, & Schooler, 2016; Rigoni, Kühn, Gaudino, Sartori, & Brass, 2012; Stillman et al., 2010).

As the previous arguments suggests that believing more strongly in free will should be associated with an increase in hindsight bias and outcome bias, we formulated the following hypothesis.

Hypothesis 3: Free will beliefs are positively associated with hindsight bias and outcome bias.

5.1.5 The Current Research

To summarize, we aim to (1) to investigate whether legal professionals tasked with investigating directors' conduct following a corporate mishap are affected by hindsight bias, and (2) to provide a first test of the potential relationship between people's punitiveness (as measured by their belief in free will) and hindsight bias.

For this study, we use an ecologically valid sample of judges, lawyers, and other (legal) professionals who conduct bankruptcy investigations. By doing so, we aim to add to the literature in three important ways. First and foremost, we provide a first test of whether professional legal investigators are affected by hindsight bias when investigating a director's conduct in relation to a corporate mishap. Second, we contribute to the small but growing body of research investigating hindsight bias in legal judgments among professionals (rather than lay people), which thus far has shown mixed results (e.g., Anderson et al., 1997; Hastie & Viscusi, 1998; Oeberst & Goeckenjan, 2016).

Third, by bringing together the literature on hindsight bias and free will beliefs, we provide the first study that investigates whether blame processes can drive hindsight bias and thus whether personally held beliefs regarding relatively abstract concepts, such as whether or not humans have free will, can predict susceptibility to hindsight bias.

We hypothesize that when legal professionals have to evaluate the foreseeability of a bankruptcy as well as a director's actions while knowing the company went bankrupt (i.e., when judging in hindsight), they will perceive the bankruptcy as more foreseeable and judge the director's actions more negatively than when they make their judgments while still ignorant of a company's bankruptcy (i.e., when judging in foresight). Furthermore, we hypothesize that such biases will be more pronounced for professionals who believe more strongly in free will than for those who adhere less to the notion of free will.

We test these hypotheses in two experiments. In both studies, participants were presented with a hypothetical bankruptcy case and were asked to give their opinion on the role the director played in the company's bankruptcy. Using a typical hypothetical hindsight bias research design (Pohl, 2007), half of the participants received the case with no outcome (i.e., participants remain unaware the company went bankrupt) and the other half received the same case but now including the outcome (i.e., the company going bankrupt). Study 2 was largely identical to Study 1 with the addition of a positive outcome condition in which participants learned that the company was saved from bankruptcy. The main purposes of this second study were to (1) replicate and examine the robustness of the findings of Study 1, (2) test our hypotheses with a more complete and robust research design in which a 'no outcome' condition is compared with both a negative outcome condition and a positive outcome condition, and (3) shed light on potential alternative mechanisms through which the moderating role of free will beliefs in hindsight and outcome bias can be explained (i.e., mechanisms other than motivated cognition due to participants' need to punish).

5.2 Study 1

5.2.1 Method

5.2.1.1 Participants

We aimed to conduct a highly powered study and determined, using G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009), that we needed 619 participants to have a power of .85 to detect a small effect (f^2 = .02; Cohen, 1988). In the end 727 professionals (553 males; 76.1%) specialized in the areas of insolvency law, business restructuring and/or recovery participated in our online survey.

Participants were members of INSOL Europe, which is the European organization of professionals who specialize in insolvency, business restructuring, and recovery. Participants were approached via e-mail with an invitation to participate in our study. The e-mail contained the link to the online survey that was built using Qualtrics (2018) online survey software. The participants' e-mail addresses were obtained from INSOL Europe's online membership directory. Additionally, a link to the online survey as well as a request to participate was included in one of INSOL Europe's newsletters that was distributed to its members via e-mail.

Of all participants, 393 reported to work as an insolvency lawyer, 144 as insolvency practitioners, 75 as turnaround consultant/managers, 68 as trustees, 49 as judges, 48 as bankers (of which 32 reported to have a legal background), 38 as academics in the legal field and 15 chose 'other'.[3] 86.7% reported to investigate/decide over directors' liability in their work. The average age was 47.9 (SD = 10.4) and participants had on average 21.4 years of working experience in their profession. Thirty-seven different European nationalities are represented in the sample. The five countries with the greatest number of participants are the United Kingdom (34.8%), Germany (9.4%), Romania (8.9%), Ireland (5.4%) and Italy (5.0%). Please see Appendix 5.1 for a complete overview of the participants' nationalities.

5.2.1.2 Design and procedure

Participants were randomly assigned to either the No outcome condition or the Negative outcome condition, which determined the version of the case they would later receive. For both conditions, instructions stated that the purpose of the study was to investigate judgment and decision making processes within the context of insolvency procedures. After the instructions, participants were asked demographic questions concerning their sex, age, nationality, profession, experience in their profession and whether they have to investigate or decide over (director) liability issues as part of their job. Next, participants were presented with a brief questionnaire to measure their belief in free will, after which they were presented with a business case. After the case, participants were asked questions regarding the three main variables of interest: (1) decision quality, (2) foreseeability, and (3) the CEO's legal responsibility. Finally, several exploratory questions were presented to the participants,[4] after which participants were debriefed, asked for feedback,

3 Participants were allowed to select more than one option, hence why the sum is larger than the number of participants.

4 For exploratory reasons, participants were asked (1) whether they thought that having knowledge of the outcome of the case should (or should have, in the Negative outcome condition) affect[ed] their judgments of the turnaround plan, foreseeability of the bankruptcy and the CEO's role in the case, and (2) whether they thought that having knowledge of the outcome of the case would affect (or "affected", in the Negative outcome condition)

and informed they could leave their e-mail addresses so we could communicate the results.

5.2.1.3 Material and measurements

Free will beliefs

Participants' belief in free will was measured using the Free Will Subscale of the Free Will Inventory (FWI; Nadelhoffer, Shepard, Nahmias, Sripada, & Ross, 2014). The scale consists of five items (Cronbach's $\alpha = .80$) and includes items such as "How people's lives unfold is completely up to them" and "People always have the ability to do otherwise." Participants indicated to what extent they agreed with each statement on a 7-point Likert scale, ranging from (1) *strongly disagree* to (7) *strongly agree* ($M = 4.42$, $SD = 1.15$).

In addition to the Free Will Subscale, the FWI also includes a Determinism and a Dualism/Anti-Reductionism sub-scale. As these sub-scales do not correspond to the core construct being investigated, they were omitted from the survey in the interest of brevity.

Business case

The base case (i.e., without outcome information and therefore identical for both conditions; 403 words in length) described a publicly listed company (Automotive Parts Group; APG) that was in financial difficulties and therefore hired a new CEO ("Cees van Gelder") to turn the tide. In order to do so, the CEO designed a turnaround plan which stated the actions he thought needed to be taken to avoid bankruptcy and resume profitability. The new CEO's turnaround plan was met with scepticism by the shareholders due to the high risks involved. For participants in the No outcome condition, the case stopped here and they remained unaware of how it ended. Participants in the Negative outcome condition received the exact same case, but with an additional paragraph (63 words) describing the company went bankrupt. Additionally, to emphasize the calamitous nature of the bankruptcy, this paragraph also stated that the company's employees were left without a job, that several of the company's suppliers also went bankrupt because they depended on the company and that many small shareholders saw their assets evaporate. Please see Appendix 5.2 for the full case used in Study 1.

Decision quality

Participants' evaluation of the CEO's turnaround plan (i.e., decision quality) was measured by asking participants to judge the CEO's turnaround plan on a 11-point scale, with 1 labeled as *very bad* and 11 labeled as *very good*. Prior

their judgments of the turnaround plan, the foreseeability of the bankruptcy and the CEO's role in the case. The results of these questions can be found in Appendix 5.3 and will not be discussed further in this main text.

to analyses, the values were recoded for ease of interpretation, such that a higher number reflects a more negative evaluation of the turnaround plan.

Foreseeability
Foreseeability was operationalized by measuring the perceived likelihood of bankruptcy. Participants in the No outcome condition were asked how likely they considered it to be that the CEO's turnaround plan would result in a bankruptcy, expressed in a percentage between 0 and 100%. In the Negative outcome condition, the same question was asked but here participants were instructed to ignore the information they had regarding the company's bankruptcy, and to indicate the likelihood of bankruptcy at the time the turnaround plan was presented and the outcome of the case was still unknown. Ignoring outcome information when assessing someone's actions mimics what legal decision makers have to do, since the fact that the company went bankrupt should not affect judgments about the CEO's actions pre-bankruptcy.

Legal responsibility
The CEO's legal responsibility for the company going bankrupt was measured using the following four items, which aimed to capture elements relevant to legal responsibility: (1) "Cees van Gelder acted negligently and he is accountable for APG's bankruptcy," (2) "Cees van Gelder should be held liable for APG's bankruptcy," (3) "Cees van Gelder is responsible for APG's bankruptcy," and (4) "Cees van Gelder is the cause of APG's bankruptcy". Participants answered on a 7-point Likert scale the extent to which they agreed or disagreed (1 = *strongly disagree*, 7 = *strongly agree*) with the statements (Cronbach's α = .85). In the No outcome condition (i.e., in foresight), participants were asked what part they believed the CEO would have played in the company's downfall, if it indeed went bankrupt. In the Negative outcome condition (i.e., in hindsight) no such conditional statement was necessary as in the case presented to participants in this condition the company indeed went bankrupt.

Before being debriefed, participants were asked whether they were familiar with the phenomenon called hindsight bias and if so, to describe this bias in their own words.

5.2.2 Results

5.2.2.1 Data Preparation and Analysis Plan

It was important that participants read the case properly in order to register and be aware of the moral aspects of the case. Therefore, participants who did not spend sufficient time reading the case were excluded from the analyses. The required reading time was based on three standard deviations above the average reading speed for reading the case (M = 228 words per minute, SD

= 30; Trauzettel-Klosinski & Dietz, 2012). Based on this criterion (76.6 seconds as the cut-off in the No outcome condition and 88.5 seconds in the Negative outcome condition) 94 participants (12.9% of the total sample) were excluded from analyses, resulting in a final sample size of 633 participants, providing a statistical power of .86 to detect a small effect.[5]

The data were analysed in a stepwise approach, such that we first tested whether there was a difference between the two conditions on the three variables of interest (i.e., decision quality, foreseeability, legal responsibility) as this is a direct test of hindsight bias and outcome bias. Next, we tested whether free will beliefs moderate the difference between the two conditions on these variables as this allowed us to examine whether free will beliefs can predict susceptibility to hindsight bias and outcome bias.

5.2.2.2 Hindsight Bias and Outcome Bias

A Multivariate Analysis of Variance (MANOVA) was conducted to test for differences between the No outcome and Negative outcome conditions on the three dependent variables. Results are presented in Table 5.1. The multivariate test was significant, $F(3, 629) = 24.93$, $p < .001$, $\eta_p^2 = .11$, and the subsequent univariate tests indicated a significant difference between the two conditions for all three variables. The foreseeability was deemed higher in hindsight than in foresight (confirming H1), the decision quality was rated more negatively in hindsight than in foresight (confirming H2a), and the participants also attributed more responsibility to the CEO in hindsight than in foresight (confirming H2b). These findings suggest that professional legal investigators' judgments can indeed be affected by hindsight bias and outcome bias biases.

Table 5.1. Descriptive statistics and significance tests for the univariate analyses of Study 1.

	No outcome (N = 318)		Outcome (N = 315)				
Dependent Variables	*M*	*(SD)*	*M*	*(SD)*	*F*(1, 631)	*p*	η_p^2
Decision quality	4.83	(2.04)	6.19	(2.07)	69.06	<.001	.10
Foreseeability	48.47	(17.60)	52.08	(16.14)	6.91	.009	.01
Legal responsibility	2.39	(.95)	2.82	(1.10)	26.59	<.001	.04

5 The median time spent reading the case was 165.4 seconds for the No outcome condition and 178.6 for the Negative outcome condition. The median time spent on the entire survey was 780.0 seconds for the No outcome condition and 823.0 in the Negative outcome condition.

5.2.2.3 Free Will Beliefs Moderating Hindsight Bias and Outcome Bias

To investigate the moderating role of free will beliefs (FWB), we used Hayes' PROCESS (2013) for our moderation analyses (10,000 bootstrap samples). For the predictor variable Outcome Condition, the No outcome condition was coded as 0 and the Negative outcome condition as 1. Significant interaction effects between Outcome Condition and FWB were found for the dependent variables decision quality, $\Delta R^2 = .01$, $\Delta F(1, 629) = 6.56$, $p = .01$, b = .36, $t(629) = 2.56$, $p = .01$, and legal responsibility, $\Delta R^2 = .01$, $\Delta F(1, 629) = 5.57$, $p = .02$, b = .17, $t(639) = 2.36$, $p = .02$.

Probing the interaction effects with simple slopes analyses revealed that for decision quality, the difference between the No outcome and Negative outcome condition was significant for both those with weaker free will beliefs (-1 *SD*) and those with stronger free will beliefs (+1 *SD*). However, the difference was almost twice as large for those with stronger free will beliefs, b = 1.79, $t(629) = 7.75$, $p < .001$, $d = .62$, than for those with weaker free will beliefs, b = .95, $t(629) = 4.13$, $p < .001$, $d = .33$. This means that all participants judged the quality of the turnaround plan more negatively in hindsight than in foresight and that the difference between the two conditions was significantly larger for the group of participants who believe more strongly in free will.

For judgments of the CEO's legal responsibility, the difference between the two outcome conditions was almost three times as large for those with stronger free will beliefs, b = .61, $t(629) = 5.28$, $p < .001$, $d = .42$, than for those with weaker free will beliefs, for whom there was no statistically significant effect, b = .22, $t(629) = 1.94$, $p = .05$, $d = .15$.

Even though the same pattern was observed for the likelihood judgments (i.e., significant hindsight bias for the group with a stronger belief in free will but not for the group with weaker free will beliefs), the interaction between Outcome Condition and free will beliefs did not reach statistical significance here, b = 1.64, $t(629) = 1.37$, $p = .17$. Please see Table 5.2 for the statistics of the moderation and simple slopes analyses. Figure 5.1 offers a visual representation of the moderating effect of free will beliefs for the bias in judgments of decision quality and the CEO's legal responsibility.

Table 5.2. Unstandardized regression weights for the effects of Condition on the dependent variables for participants with a relatively weak belief in free will (1 *SD* below the mean of the FWI; -1 *SD* FWB) and participants with a relatively strong belief in free will (1 *SD* above the mean of the FWI; +1 *SD* FWB). "Int. (SE)" represents the regression weights and standard errors for the interaction effect (Outcome Condition x FWB) and 'Model' shows the statistics for the complete model including the interaction term. * $p < .05$, ** $p < .01$, *** $p < .001$.

	-1 *SD* FWB			+1 *SD* FWB				
	b (SE)	t	95% CI	b (SE)	t	95% CI	Int. (SE)	t
Decision	.95 (.23)	4.13***	.50, 1.40	1.79 (.23)	7.75***	1.34, 2.24	.36 (.14)	2.56*
Quality	Model: $R^2 = .110$, $F(3, 629) = 25.97$, $p < .001$							
Foreseeability	1.77 (1.95)	.90	-2.07, 5.60	5.54 (1.95)	2.84**	1.71, 9.37	1.64 (1.20)	1.37
	Model: $R^2 = .014$, $F(3, 629) = 2.99$, $p = .03$							
Legal responsibility	.22 (.12)	1.94	-.00, .45	.61 (.12)	5.28***	.38, .84	.17 (.07)	2.36*
	Model: $R^2 = .052$, $F(3, 629) = 11.45$, $p < .001$							

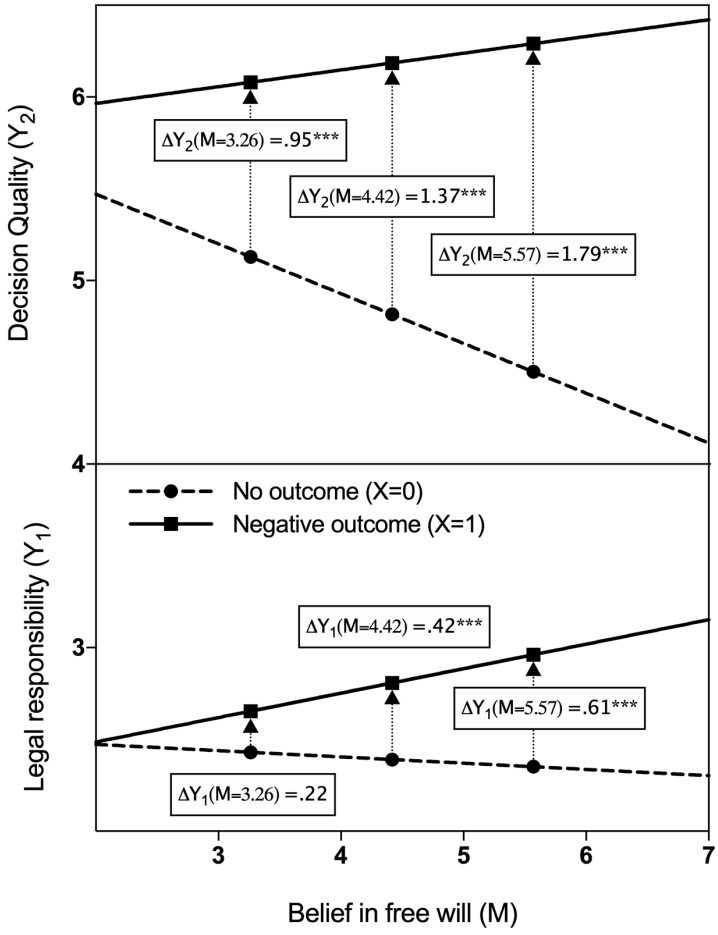

Figure 5.1. Differences between the No outcome and Negative outcome condition (ΔY) for both legal responsibility (Y_1) and decision quality (Y_2) at different levels of the moderator (M), i.e., for those with relatively low free will beliefs (M = 3.26), average free will beliefs (M = 4.42) and high free will beliefs (M = 5.57). *** $p < .001$.

5.2.3 Discussion

Study 1 demonstrated that professional legal investigators are susceptible to hindsight bias when judging the foreseeability of a bankruptcy as well as to outcome bias when judging a director's actions and legal responsibility for the bankruptcy. More importantly, the degree to which these professionals believe humans have free will appears to predict their susceptibility to outcome bias, such that those with stronger free will beliefs demonstrate a larger bias.

This was true for the evaluation of the turnaround plan (i.e., decision quality) and the legal responsibility of the CEO, but not for judgments of the foreseeability of the bankruptcy, for which free will beliefs did not moderate the effect, although the observed pattern was in the hypothesized direction.

It remains unclear whether the relatively small bias in foreseeability judgments in Study 1 is due to our sample of professionals being less susceptible to hindsight bias or due to the methods used. Specifically, whereas we only asked how likely it was that the company would go bankrupt on a scale from 0 to 100%, previous studies typically presented several possible outcomes and asked participants to rate the likelihood of each in terms of a percentage, with the sum having to be 100%. This might explain why the hindsight bias was relatively small in our study (d = .20; Cohen, 1988), especially compared to previous studies as indicated by two meta-analyses that found average effect sizes of d = .39 (Guilbault et al., 2004) and d = .35 (Christensen-Szalanski & Willham, 1991). It might also be a reason for why the interaction between free will beliefs and hindsight bias in foreseeability judgments did not reach statistical significance. An important goal of the second study was therefore to adopt the more commonly used method for measuring hindsight bias in foreseeability judgments, by providing participants with multiple scenarios instead of only one.

A second goal of Study 2 was to test the relationship between free will beliefs and hindsight and outcome bias in a more complete and robust design by including a condition in which the case ends positively. Specifically, Study 2 compared a No outcome condition with both a Negative outcome condition and a Positive outcome condition. This allows us to investigate whether free will beliefs can predict hindsight biases in general, or whether this relationship depends on the valence of the outcome. It could for example be that those with stronger free will beliefs are overall more affected by outcome information in their judgments, independent of the valence of the outcome. If this is the case, we should also observe a moderating role of free will beliefs in case the scenario in Study 2 ends positively. In contrast, if we would find that free will beliefs do *not* moderate outcome effects in case of a positive ending, this would be in line with our proposed notion that those with stronger free will beliefs are more susceptible to hindsight and outcome bias because of heightened punitive inclinations. After all, the need to blame or punish does not come into play when a positive outcome ensued. Hence, adding the Positive outcome condition allowed us to shed more light on the proposed mechanism underlying the relationship between free will beliefs and hindsight bias.

A final goal of the second study was to test the robustness of our findings in Study 1. Specifically, we aimed to replicate the observed hindsight bias and the moderating role of free will beliefs in a new international sample of legal professionals.

5.3 STUDY 2

5.3.1 Method

5.3.1.1 Participants and Design

We aimed to achieve the same power as in Study 1 of .85 to detect a small effect ($f^2 = .02$; Cohen, 1988), which meant we needed around 310 participants per condition. With three conditions (No outcome, Negative outcome, Positive outcome) this amounted to 930 participants. In the end, 1002 legal professionals worldwide specialized in the areas of insolvency law, business restructuring and/or recovery participated in Study 2. Participants were members of INSOL International, which is a world-wide federation of national associations of professionals who specialize in turnaround and insolvency. Participants were approached via e-mail with an invitation to participate in our study. The participants' e-mail addresses were obtained from INSOL International's online membership directory. Importantly, none of the participants of Study 2 had taken part in Study 1.

The participants' average age was 46.82 (*SD* = 11.8) and 766 (76.4%) were male. Participants had an average of 20.6 years working experience in their profession (*SD* = 11.2) and 82.6% reported to investigate/decide over (director) liability in their work. Five-hundred and nineteen respondents (51.8%) reported to work as (insolvency) lawyers, 210 (21%) as accountants (of which 87.6% indicated to investigate and/or decide over directors' liability), 112 as turnaround consultant/managers (11.2%), 109 as trustees (10.9%), 45 as insolvency practitioners (4.5%), 45 as bankers (4.5%; of which 28 reported to investigate/decide over directors' liability), 35 as academics in the legal field (3.5%), 28 indicated 'other', and 24 reported to work as judges (2.4%). Fifty-four different nationalities are represented in the sample, with the majority of the respondents coming from Australia (20.4%), United Kingdom (14.5%), Canada (10.9%), South Africa (10.1%), and the USA (7.1%). Please see Appendix 5.4 for a complete overview of the participants' nationalities.

Participants were randomly assigned to one of three conditions: (1) No outcome, (2) Negative outcome, and (3) Positive outcome. In all three conditions, participants were presented with the same base case, but in the two outcome conditions a paragraph was added to the case describing either a negative ending (Negative outcome condition) or a positive ending (Positive outcome condition).

5.3.1.2 Procedure, Materials and Measurements

Free will beliefs
At the start of the survey, participants received the same instructions and free will scale (Cronbach's α = .83) as in Study 1 (M = 4.56, SD = 1.26).[7]

Business case
Participants were presented with the same case as in Study 1, apart from a few minor alterations (e.g., the company's revenue, degree of cost-cutting listed in the CEO's turnaround plan, and layout of the case). The base case was 432 words in length. In the two outcome conditions a paragraph was added to the case describing either a negative ending (Negative outcome condition; 96 words) or a positive ending (Positive outcome condition; 92 words). Please see Appendix 5.5 for the full case as well as the two outcome paragraphs.

Decision quality
After the case, all participants rated the quality of the turnaround plan (i.e., decision quality) on a 7-point Likert scale, ranging from (1) *very bad* to (7) *very good*. Prior to analyses, the scale was recoded such that a higher value reflects a more negative rating.

Legal responsibility and benevolence
Our renewed design with both a Positive outcome and Negative Outcome condition requires two distinct outcomes, namely legal responsibility and benevolence. Participants were asked three questions to judge the CEO's legal responsibility (in case of a negative outcome; Cronbach's α = .69, which indicates sufficient internal validity for theory-testing purposes; see Nunnally & Bernstein, 1994) and three questions to measure their benevolence towards the CEO (in case of a positive outcome; Cronbach's α = .74). Benevolence towards the CEO was measured in Study 2 after a positive outcome to provide a counterpart to the liability judgments that were measured after a negative outcome.

To measure legal responsibility, participants were asked to indicate on a 7-point Likert scale the extent to which they agreed with three statements: (1) "[If this is how the case would end,] I believe Cees van Gelder should be held liable for APG's bankruptcy," (2) "[If this is how the case would end,] I believe Cees van Gelder deserves to be blamed for failing to save APG from bankruptcy," and (3) "[If this is how the case would end,] I believe Cees van Gelder's actions are a direct cause of APG's bankruptcy." This three-item scale differed from the four-item scale used in Study 1 for two reasons. First, the

7 After the free will scale, participants were asked about their last night's sleep using five items. These questions were incorporated as part of a separate study and the details of these questions and the results are available upon request.

item used in Study 1 that measured perceived negligence was omitted as some overlap existed with the foreseeability and decision quality measures. That is, acting negligently means failing to act in a reasonable way to prevent foreseeable harms, which combines decision quality and foreseeability. Second, the item measuring responsibility was omitted as responsibility has multiple dimensions (e.g., role responsibility, causal responsibility; Shaver, 1985) and it is uncertain which type of responsibility respondents had in mind when answering this question. The question pertaining to the degree of blame participants felt the CEO deserved was added to the scale in Study 2.

The items measuring benevolence towards the CEO were: (1) "[If this is how the case would end,] the CEO deserves praise for saving the company from bankruptcy," (2) "[If this is how the case would end,] the CEO should win the industry awards for saving the company from bankruptcy," and (3) "[If this is how the case would end,] the CEO's actions are a direct cause of the company's successful turnaround." The order of the questions was randomized.[8]

The text in brackets was only presented to participants in the No outcome condition, as to them the outcome of the case was still unknown. In this condition, the paragraph describing the outcome contingent on the question set (i.e., the negative scenario for the legal responsibility question set and the positive outcome for the benevolence question set) was presented above the question set; hence the phrase "if this is how the case would end." Participants were sequentially presented with both questions sets (i.e., measuring legal responsibility and benevolence) and the order was counterbalanced across participants.[9]

Foreseeability

After the legal responsibility and benevolence questions, the perceived foreseeability of the bankruptcy was measured in two different ways. First, participants were presented with three scenarios describing potential endings to the case: (1) the positive outcome, (2) the negative outcome, and (3) a neutral outcome in which the company did not go bankrupt, but the problems were

8 Each set also contained a fourth statement that was identical for both sets: "[If this is how the case would end,] I believe Cees van Gelder intentionally tried to save APG from bankruptcy". Initially, this item was meant to test whether outcome information also affects judgments of intentionality in this context. However, we realize this item was phrased somewhat oddly as it is difficult to unintentionally try to achieve a certain outcome. Therefore, this item was excluded from the analyses and will not be discussed further.

9 The same was the case for participants in the Positive outcome condition and Negative outcome condition. That is, after they answered the question set contingent on the condition they were assigned to, they were presented with the opposite outcome and asked how they would judge the CEO's role in the case if the case ended as described in the opposite outcome. This was done for exploratory reasons to investigate potential contrasting effects. The results will not be reported here. Only the answers to the questions pertaining to the outcome presented in the case are considered in the analyses.

far from solved and the company's future was still highly insecure. The position of the positive and negative scenario in the list was counterbalanced across participants, such that for half of the participants the positive scenario was listed first and the negative scenario third, and for the other half this order was reversed (the neutral scenario was always presented in the middle). For each scenario, participants were asked to indicate on a 7-point Likert scale how likely they believed that particular scenario to be (1 = *very unlikely*, 7 = *very likely*). Second, on the next screen participants were asked to answer the same question but this time to express the likelihood of each scenario in terms of a percentage (from 0 to 100%), with the sum of the three percentages equalling 100%. Including two likelihood measures (Likert scale and percentages) allows for a more robust test of the hypothesis, as well as alleviate the shortcoming of the percentages measure, which implies interdependency of the percentages allocated to each of the three scenarios as the sum of these three had to be 100%.

Before being debriefed, participants were asked whether English was their native language and, if not, to what extent they agreed or disagreed with the following statement: "I understood the case and the questions completely and experienced no difficulties in answering the questions." Participants answered on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree) and the mean score was 6.41 (median = 7.00).[9]

5.3.2 Results

5.3.2.1 Data Preparation and Analysis Plan

Similar to Study 1, participants who did not spend sufficient time reading the case were excluded from the analyses. We again based the inclusion criterion on 3 standard deviations above the average reading speed. The exclusion criteria were therefore set to 81.5 seconds for the No outcome condition, 98.9 seconds for the Positive outcome condition, and 99.6 seconds for the Negative outcome condition. This resulted in the exclusion of 166 participants (16.6% of the total sample), leaving a final sample size of 836 participants. The cut-off values differed per condition since the length of the case also differed slightly per condition.[10]

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9 Participants were again asked to what extent they believed the outcome of the case should and would affect their judgments (in the No outcome condition) or should and did affect their judgment (in the Positive and Negative outcome conditions). The analyses of these questions can be found in Appendix 5.6.

10 Median duration of time spent reading the business case was 181.0 seconds for participants in the No outcome condition, 200.4 seconds for the Positive outcome condition, and 212.6 seconds for the Negative outcome condition. Median duration of time spent on entire survey

To test whether the order in which the scenarios and subsequent questions were presented in the No outcome condition affected the answers to these questions, a MANOVA was conducted with the scenario order (negative first – positive second vs. positive first – negative second) as between-subjects factor and the scores for legal responsibility and benevolence as dependent variables. Results showed no significant effect for question order, $F(2, 274) = 1.88$, $p = .16$, $\eta_p^2 = .01$. Consequently, the data were collapsed across this factor. The same stepwise approach for the analyses as in Study 1 was adopted.

5.3.2.2 Hindsight Bias and Outcome Bias

Legal responsibility was measured only following the negative outcome and benevolence only following the positive outcome. Decision quality was therefore the only outcome variable that was measured across all three conditions, allowing for a direct comparison between the three outcome conditions. An ANOVA with Outcome Condition as between-subjects variable and decision quality as the dependent variable returned a significant effect, $F(2, 833) = 173.54$, $p < .001$, $\eta_p^2 = .29$. Bonferroni-corrected post-hoc comparisons showed that all three conditions differed significantly from one another. Specifically, the quality of the CEO's turnaround plan was judged more negatively in the Negative outcome condition ($M = 4.46$) than in the No outcome condition ($M = 3.63$), $p < .001$, 95% CI [0.57, 1.08] and the Positive outcome condition ($M = 2.53$), $p < .001$, 95% CI [1.68, 2.18]. The mean difference between the No outcome condition and the Positive outcome condition was also significant, $p < .001$, 95% CI [0.86, 1.35]. Hence, participants were susceptible to outcome bias when evaluating the director's actions irrespective of the valence of the outcome, further supporting Hypothesis 2a.

To test for outcome effects in foreseeability, legal responsibility, and benevolence, two separate MANOVAs were conducted. The first compared the No outcome condition with the Negative outcome condition for both foreseeability measures and the legal responsibility measure, $F(3, 549) = 14.21$, $p < .001$, $\eta_p^2 = 07$. The second compared the No outcome condition with the Positive outcome condition for both foreseeability measures and the benevolence measure, $F(3, 556) = 12.32$, $p < .001$, $\eta_p^2 = .06$. Subsequent ANOVAs indicated that there was a significant effect of Outcome Condition (both for the positive and negative outcome) for both foreseeability measures, but not for legal responsibility or benevolence. Thus, participants were susceptible to hindsight bias in that they perceived both the positive and negative outcome scenarios to be more foreseeable in hindsight than in foresight, in support of Hypothesis 1. However, participants did not show an outcome bias when judging either legal responsibility (for the negative outcome) or benevolence (for the positive

was 1176.0 seconds for participants in the No outcome condition, 1153.0 for the Positive outcome condition, and 1216.5 for the Negative outcome condition.

outcome), contradicting Hypothesis 2b. See Table 5.3 for the descriptive statistics and significance tests for each variable.

Table 5.3. Descriptive statistics and significance tests for the univariate analyses of Study 2 testing for hindsight bias in the main variables of interest.

	No outcome (N = 277)		Positive outcome (N =283)		Negative outcome (N = 276)				
DVs	*M*	*(SD)*	*M*	*(SD)*	*M*	*(SD)*	*F*	*p*	η_p^2
Decision quality NEG	3.63	(1.30)			4.46	(1.25)	57.64	<.001	.095
Decision quality POS	3.63	(1.30)	2.53	(1.13)			78.47	<.001	.160
Foreseeability NEG	34.00	(15.66)			41.89	(16.63)	32.92	<.001	.056
Foreseeability POS	23.72	(15.06)	30.74	(14.93)			25.92	<.001	.063
Foreseeability NEG (Likert)	4.70	(1.20)			5.23	(1.04)	30.33	<.001	.052
Foreseeability POS (Likert)	3.79	(1.47)	4.43	(1.33)			29.47	<.001	.050
Benevolence	5.44	(.84)	5.53	(.93)			1.07	*n.s.*	.002
Legal responsibility	3.28	(1.15)			3.32	(1.17)	<1	*n.s.*	.001

5.3.2.3 Free Will Beliefs Moderating Hindsight Bias and Outcome Bias

We again used Hayes' PROCESS (10,000 bootstrap samples) to investigate the relationship between free will beliefs and the two biases. Separate analyses were run comparing the No outcome condition with the Positive outcome condition and the No outcome condition with the Negative outcome condition, both with free will beliefs as the moderator.

Decision quality

Replicating Study 1, a significant moderation effect of free will beliefs was found for decision quality in case of a negative outcome, $\Delta R^2 = .01$, $F(1, 549) = 4.89$, $p = .027$, b = .19, $t(549) = 2.21$, $p = .027$, such that a stronger belief in free will was associated with a larger hindsight bias. The difference between the No outcome and Negative outcome condition was again almost twice as large for those with stronger free will beliefs, b = 1.07, $t(549) = 6.96$, $p < .001$, $d = .59$, than for those with weaker free will beliefs, b = .59, $t(549) = 3.83$, $p < .001$, $d = .33$. This means that all participants judged the quality of the turnaround plan more negatively in hindsight than in foresight, but the difference between the two conditions was significantly larger for the group of participants who believe more strongly in free will. Importantly, this moderation effect did not exist for decision quality in case of a positive outcome, $\Delta R^2 < .001$, $F < 1$. See Figure 5.2 for a visual presentation of the relationship between free will beliefs and hindsight bias for decision quality for both the negative and positive outcome.

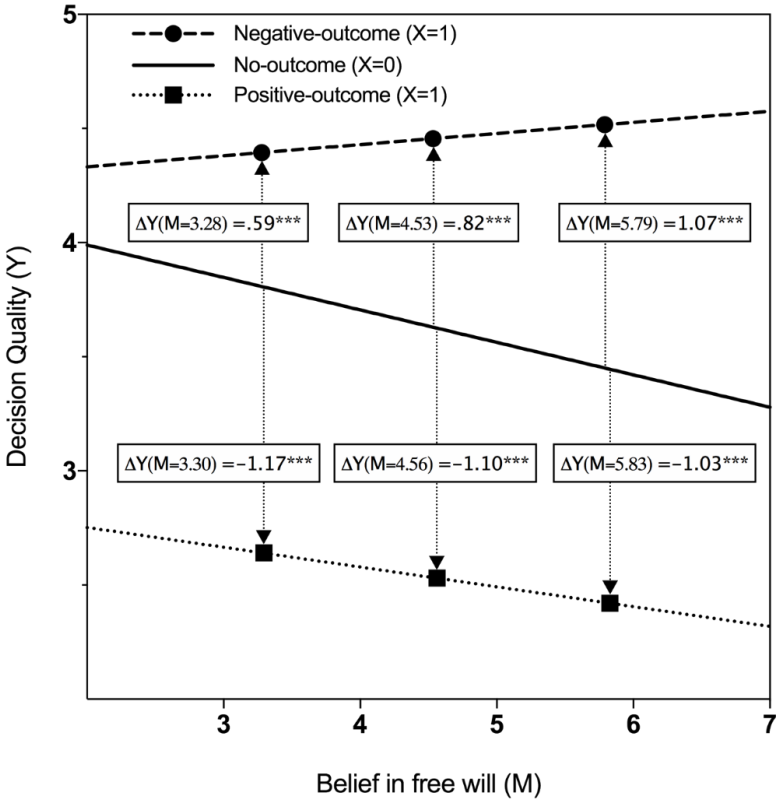

Figure 5.2. Differences between the No outcome, Negative outcome, and Positive outcome condition (ΔY) for decision Quality (Y) at different levels of the moderator (M). Specifically, for those with relatively low free will beliefs (M = 3.30), average free will beliefs (M = 4.56) and high free will beliefs (M = 5.83).

Foreseeability

In contrast to Study 1, the interaction effect between free will beliefs and Outcome Condition on foreseeability did reach statistical significance in Study 2 in case of a negative outcome, both when measured in percentages, ΔR^2 = .02, $F(1, 549) = 10.16$, $p = .002$, b = 3.46, $t(549) = 3.19$, $p = .002$, and when measured using the Likert scale, $\Delta R^2 = .01$, $F(1, 549) = 4.86$, $p = .028$, b = 0.17, $t(549) = 2.20$, $p = .028$. Regarding the percentage measure of foreseeability, participants with stronger free will beliefs demonstrated a more than three times larger hindsight bias, b = 12.24, $t(549) = 6.35$, $p < .001$, $d = .51$, than those with a relatively weak belief in free will, for whom there was no statistically significant effect, b = 3.54, $t(549) = 1.84$, $p = .067$, $d = .16$. For the Likert scale measure of foreseeability, participants with stronger free will beliefs demonstrated a more than twice as large hindsight bias, b = 0.73, $t(549) = 5.46$, $p < .001$, $d = .46$, than those with a relatively weak belief in free will, b = 0.31, $t(549) = 2.34$, $p = .020$, $d = .20$.

Importantly, free will beliefs did not moderate the hindsight bias for foreseeability in case of a positive outcome when measured in percentages, $\Delta R^2 = .001$, $F < 1$, nor when using the Likert scale measure, $\Delta R^2 < .001$, $F < 1$. See Figure 5.3 and Figure 5.4 for a visual representation of the relationship between free will beliefs and hindsight bias for the foreseeability judgments of both the positive and negative outcome and Table 5.4 for the statistics of the moderation and simple slopes analyses.

Legal responsibility and benevolence

No significant interactions between free will beliefs and Outcome Condition were found for legal responsibility, $\Delta R^2 = .004$, $F = 1.98$, $p = .16$, or benevolence, $\Delta R^2 < .001$, $F < 1$.

Table 5.4. Unstandardized regression weights (i.e., ΔY) for the effects of Outcome Condition (No outcome vs. Positive- or Negative outcome) on the dependent variables for participants with low free will beliefs (1 *SD* below the mean) and high free will beliefs (1 *SD* above the mean). 'Int. (SE)' represents the regression weight and standard error for the interaction effects (Outcome Condition x FWB) and 'Model' shows the statistics for the complete model including the interaction term.

	-1 *SD* FWB			+1 *SD* FWB				
	b (SE)	*t*	95% CI	b (SE)	*t*	95% CI	Int. (SE)	*t*
Decision quality NEG	.59 (.15)	3.83**	.39, .89	1.07 (.15)	6.96***	.77, 1.37	.19 (.09)	2.21*
	Model: $R^2 = .105$, $F(3, 549) = 21.41$, $p < .001$							
Decision quality POS	-1.17 (.14)	-8.05***	-1.45, -.88	-1.03 (.18)	-7.08***	-1.31, -.74	-.06 (.10)	.68
	Model: $R^2 = .184$, $F(3, 556) = 41.71$, $p < .001$							
Foreseeability NEG	3.54 (1.93)	1.84	-.25, 7.33	12.24 (1.93)	6.35***	8.45, 16.03	3.46 (1.09)	3.19**
	Model: $R^2 = .074$, $F(3, 549) = 14.62$, $p < .001$							
Foreseeability POS	7.94 (1.78)	4.46***	4.44, 11.44	5.83 (1.78)	3.27**	2.33, 9.34	-.83 (1.00)	-.84
	Model: $R^2 = .069$, $F(3, 556) = 13.75$, $p < .001$							
Foreseeability NEG (Likert)	0.31 (0.13)	2.34*	0.50, 0.58	0.73 (0.13)	5.46***	0.47, 1.00	0.17 (0.08)	2.20*
	Model: $R^2 = .063$, $F(3, 549) = 12.21$, $p < .001$							
Foreseeability POS (Likert)	0.65 (0.17)	3.91***	0.33, 0.98	0.61 (0.17)	3.66***	0.28, 0.94	-.02 (0.09)	-.18
	Model: $R^2 = .062$, $F(3, 556) = 12.14$, $p < .001$							
Legal Responsibility	-.06 (.14)	-.42	-.34, .22	.22 (.14)	1.57	-.06, .50	.11 (.08)	1.41
	Model: $R^2 = .005$, $F(3, 549) = .96$, $p = .41$							
Benevolence	.05 (.11)	.43	-.16, .25	.12 (.11)	1.14	-.09, .33	.03 (.06)	.50
	Model: $R^2 = .006$, $F(3, 556) = 1.18$, $p = .31$							

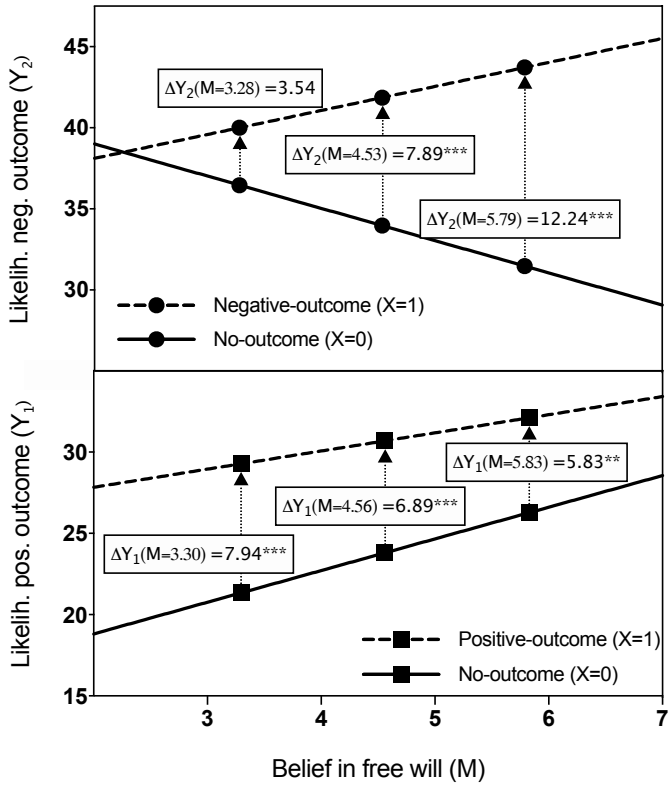

Figure 5.3. Differences between the No outcome and Positive outcome condition (ΔY_1) and between the No outcome condition and Negative outcome condition (ΔY_2) for the foreseeability (here operationalized as the likelihood) of the negative and positive scenarios, respectively, at different levels of the moderator (M).

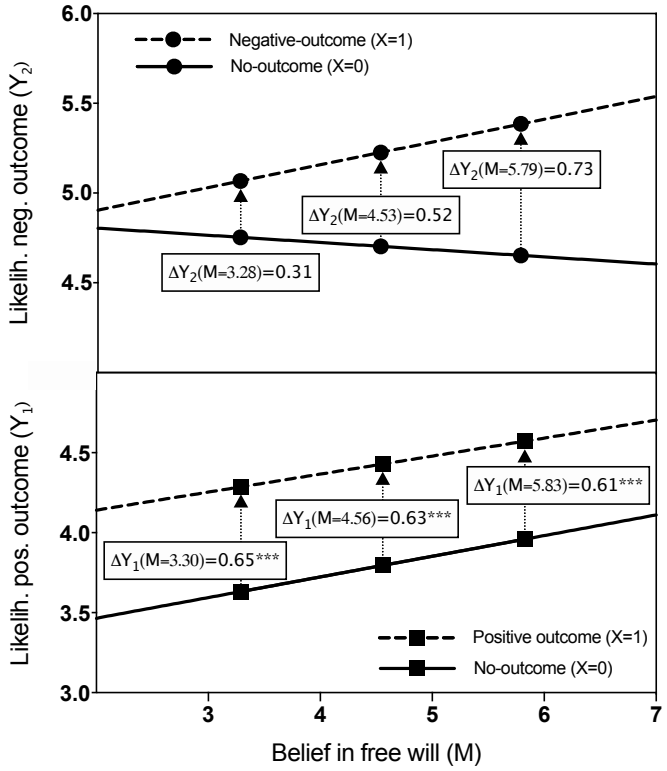

Figure 5.4. Differences between the No outcome and Positive outcome condition (ΔY_1) and between the No outcome condition and Negative outcome condition (ΔY_2) for the foreseeability (here operationalized as the likelihood) of the negative and positive scenarios at different levels of the moderator (M), expressed on a 7-point Likert scale.

5.3.3 Discussion

Study 2 successfully replicated Study 1 in that we again found a bias in the evaluation of the CEO's turnaround plan and the perceived foreseeability of the bankruptcy, providing further evidence that professional legal investigators in the context of directors' liability are affected by outcome information in their judgments. Additionally, the bias in the evaluation of the CEO's turnaround plan was again significantly larger for those with stronger free will beliefs than for those with weaker free will beliefs. Whereas in Study 1 we did not find a moderation effect for hindsight bias in foreseeability judgments, in Study 2 we did find such an effect for both measures of foreseeability. Hence, using a more common way of measuring hindsight bias (i.e., presenting several alternative scenarios), we found a more pronounced hindsight bias in Study 2 relative to Study 1 as well as a significant moderation

effect of free will beliefs. Indeed, the effect sizes for hindsight bias in foreseeability judgments in Study 2 (d = .49 for the percentages measure and d = .47 for the Likert-scale measure) were clearly larger than the effect size found in Study 1 (d = .20) and those found in two meta-analyses (d = .39 by Guilbault et al., 2004; d = .35 by Christensen-Szalanski & Willham, 1991).

Notably, whereas in Study 1 we found a hindsight bias in judgments of legal responsibility, no such effect was found in Study 2. An explanation might be found in the high level of detail in the information that was provided to participants in Study 2 regarding the outcome of the case. That is, hindsight bias is best tested when two groups are compared in which one group is completely ignorant of any outcome information and the other group is fully aware of all the details of a particular outcome, as was the case in Study 1. In Study 2, however, participants in both the No outcome and Negative outcome condition were presented with the complete bankruptcy scenario. The only difference between these conditions for the legal responsibility questions was that in the No outcome condition the scenario was presented as hypothetical and participants were asked how they would judge the legal responsibility of the CEO "if this is how the case would end."

Another reason why there might have been diverging findings between Study 1 and Study 2 regarding the hindsight bias in legal responsibility judgments is that the two scales measuring legal responsibility differed. The scale in Study 1 included an item measuring whether the participants believed the CEO acted negligently and that he therefore should be held accountable for the company's bankruptcy, which was omitted in Study 2 as there was some conceptual overlap with the decision quality and foreseeability measures. It is therefore possible that the bias for legal responsibility judgments in Study 1 was for an important part driven by the negligence measure.

Finally, descriptive statistics on legal responsibility indicated that participants in Study 2 attributed more legal responsibility for the bankruptcy to the director than participants in Study 1, both in foresight (M = 3.28 vs. 2.39) and in hindsight (M = 3.32 vs. 2.82). Legal responsibility attributions in the foresight condition of Study 2 were even higher than the hindsight attributions of Study 1. The difference in legal responsibility attributions between the two studies might be caused by slight differences in the business case used in both studies.[12]

Give the discussed differences between Study 1 and Study 2, it is unclear what exactly accounts for the inconsistent results of the outcome bias in legal responsibility attributions and the moderating role of free will beliefs. Com-

12 Specifically, whereas the case in Study 1 described that the director implemented a rigorous cost cutting program (e.g., 30% of staff laid off), the measures taken by the director were less rigorous in Study 2 (e.g., 15% of staff laid off). Additionally, the additional loans taken out by the director were larger (relative to total debt and turnover) in Study 2 than in Study 1.

bined, however, the results from Study 1 and Study 2 do suggest that free will beliefs can reliably predict susceptibility to outcome bias in post-insolvency evaluations of directors' conduct, as well as to hindsight bias in foreseeability judgments when these are measured using conventional methods.

5.4 General Discussion

We primarily aimed to investigate hindsight bias and outcome bias in legal judgments made by professional legal investigators in the context of directors' liability. A second more exploratory goal was whether free will beliefs can predict the degree to which such professionals are susceptible to these biases. Across two studies, we found that learning about a company's bankruptcy causes legal professionals to perceive the adverse outcome as more foreseeable and also to evaluate the company director's actions more negatively compared to when they are unaware the company went bankrupt. Additionally, we found that the degree to which legal professionals believe in free will predicts the extent to which they are affected by outcome information. Those with stronger free will beliefs demonstrate a larger outcome bias in evaluations of directors' conduct, as well as a larger hindsight bias in foreseeability judgments. We found mixed results regarding outcome bias in legal responsibility attributions, making it difficult to draw any definite conclusions.

In addition to replicating and thus testing the robustness of the findings of Study 1, an important goal of Study 2 was to examine the relationship between free will beliefs and the two biases in further detail by comparing the foresight condition with a hindsight condition in which the case had a positive ending. By doing so, we were able to shed further light on the mechanism underlying the moderating role of free will beliefs in hindsight bias and outcome bias. Considering the absence of any moderating role of free will beliefs in the case of a positive outcome, it seems that the relationship between free will beliefs and hindsight and outcome bias can indeed be explained by blame-validation and motivated reasoning processes. Due to their tendency to more strongly condemn wrongful behaviour and to be more punitive, those with stronger free will beliefs seem to have been (unconsciously) motivated to arrive at the conclusion that the bankruptcy was foreseeable (Study 1 and 2), that the CEO's turnaround plan was unsatisfactory (Study 1 and 2), and that the director should be held legally responsible (in Study 1).

5.4.1 Theoretical and Practical Implications

The findings of the current research are relevant for several reasons. First, we provide further evidence that hindsight bias can indeed affect legal professionals' judgments. Thus far, research investigating hindsight biases among

legal professionals has been relatively scarce and has shown mixed results. Some empirical evidence suggests that legal professionals' judgments can in fact be affected by outcome information (Anderson et al., 1997; Oeberst & Goeckenjan, 2016), but other studies suggest not (Hastie & Viscusi, 1998; Rachlinski et al., 2011; Wistrich et al., 2005). Our consistent finding (across two studies) that legal professionals are affected by outcome information when evaluating the foreseeability of a bankruptcy and the company director's actions further confirms the notion that merely being an expert in a particular field is insufficient to counter the influence of hindsight bias. Relatedly, and more important for legal practice, it raises the question what can be done to prevent hindsight bias in these cases. Despite the apparent difficulty of debiasing hindsight bias (e.g., Fischhoff, 1975; Hell, Gigerenzer, Gauggel, Mall, & Müller, 1988; Pohl & Hell, 1996; Sanna & Schwarz, 2003; Sanna, Schwarz, & Stocker, 2002; Smith & Greene, 2005), suggestions have been made regarding measures that courts could adopt in response to evidence of hindsight bias in legal decision making, such as trial bifurcation, raising the standard of proof, or not conducting cause investigations at all if a bankruptcy has limited societal impact or if there is no direct suspicion of irregularities in the first place (e.g., Rachlinski, 1998). Despite the importance of the issue at hand, we consider a discussion of ways to limit hindsight bias in the courtroom to be beyond the scope of the present paper. Nonetheless, we would urge academics and legal professionals to further pursue the challenge of identifying ways to limit or even prevent hindsight bias in legal decision making.

Second, we add to the literature on hindsight bias and outcome bias by demonstrating that abstract beliefs such as whether or not humans have free will can predict susceptibility to these biases. Thus far, the factors that have been identified as responsible for the motivational origins of hindsight bias are people's need for closure, need for control, and the need to maintain or enhance their self-esteem (Musch, 2003; Musch & Wagner, 2007; Tykocinski, 2001). The current research is the first to suggest (and provide preliminary evidence) that the motivational processes underlying hindsight and outcome bias can also stem from people's need to condemn and punish wrongdoing. That being said, the current research did not directly test punitive inclinations as underlying mechanism of hindsight and outcome bias but rather measured free will beliefs as a proxy. Hence, alternative explanations can be put forward for the observed moderation effect of free will beliefs. For example, beliefs regarding free will have been shown to affect causal reasoning processes, which are deemed essential for hindsight bias to occur. In a series of experiments, Genschow, Rigoni, and Brass (2017) found that a stronger belief in free will is associated with an increase in the correspondence bias, which is the automatic inclination to overemphasize internal over external factors when evaluating the causes of someone's actions (Gilbert & Malone, 1995; also known as the fundamental attribution error; e.g., Ross, 1977). Therefore, those with stronger free will beliefs might be more likely to conclude that directors are

to be held causally responsible (and therefore legally responsible) for a company's downfall. However, the correspondence bias cannot account for all of our findings, while the results of Study 2 lent additional support for punitive inclinations as a key mechanism.

Third, the current research extends the literature on free will beliefs by demonstrating its effects in a legal context. Specifically, we showed that legal professionals' beliefs in free will can predict variations in their legally relevant judgments in the context of directors' liability. Previous research mostly studied the effects of free will beliefs among the general public (e.g., Martin et al., 2017), people recruited through Amazon's Mechanical Turk (e.g., Crone & Levy, 2019; Earp, Everett, Nadelhoffer, Caruso, & Shariff, 2018; Harms, Liket, Protzko, & Schölmerich, 2017), or among undergraduate or high school students (e.g., Li et al., 2017). To the best of our knowledge, the present study is the first to investigate the relationship between free will beliefs and legally relevant judgments among a sample of legal professionals.

Finally, similar to previous research highlighting that situational factors such as emotional states can influence legal judgments (for reviews, see Feigenson, 2016; Feigenson & Park, 2006), our finding that (largely) situationally independent individual characteristics such as belief systems are associated with differences in legal judgments is concerning. Ideally, the outcome of a trial is unaffected by individual characteristics of the judge deciding over the matter. Likewise, in the case of directors' liability, it is undesirable that the chance of a claim against a director being put forward by a trustee, and possibly being granted by a judge, is affected by irrelevant traits of the legal professionals involved, such as their belief in free will. Therefore, the current finding that believing in free will is associated with a larger hindsight bias in legal judgments is a particularly noteworthy and potentially worrying finding. It is certainly worrying if the need to punish can indeed explain the current research findings, as this would imply that with increasingly adverse outcomes, legal professionals would judge increasingly harsh, possibly resulting in unjustified liability assigned to mostly blameless actors.

We therefore encourage future research to further investigate (1) whether people's punitive inclinations can indeed explain their susceptibility to hindsight bias, (2) the extent to which certain individual characteristics such as beliefs and political orientation can affect judgments made by legal professionals, (3) how large this potential problem actually is in real-world legal practice, and (4) what can be done to limit the potential effects of individual characteristics on legal judgments.

5.4.2 Limitations

The current research is not without its limitations and some issues remain that should be addressed carefully in research following the findings presented

here. First, the instructions provided to the participants prior to commencing with the survey might have affected the results. That is, participants were informed that the study focused on decision making in insolvency proceedings. Hence, rather than being completely naive about the stimulus materials, the instructions already primed participants to expect a bankruptcy case, which potentially makes the foresight condition not a 'true' foresight condition. Also, since the participants were experts in the field of insolvency and are often confronted with companies that are either in financial distress or already insolvent, a bankruptcy might be a very likely outcome to them. We acknowledge that the instructions used in this study as well as the idiosyncrasies of the current sample might have affected the results. However, it is unclear whether these factors resulted in an under- or overestimation of hindsight bias. Future research could test whether legal professionals not specialized in insolvency cases (or non-legal professionals for that matter) demonstrate a smaller or larger hindsight bias when tested in an experimental setting.

Even though we consider our large sample of legal professionals from across the globe to be a strength of the current research, the diversity in the participants' nationalities does pose a few challenges. For example, differences across countries exist in legislation concerning directors' liability and we are uncertain to what extent this might have affected participants' responses. Also, the case concerned a Dutch company with a director who had a typically Dutch name (i.e., Cees van Gelder). It might be that for some people this triggered certain stereotypes or other automatic inclinations towards Dutch directors. It would therefore be worthwhile to investigate whether the current findings can be replicated using different case materials. Likewise, a significant portion of respondents had to complete the survey as non-native English speakers. We are uncertain how this might have affected the results, but since research has identified differences based on whether the study materials were in participants' native language or not (e.g., Costa et al., 2019; Geipel, Hadjichristidis, & Surian, 2015; Hayakawa, Tannenbaum, Costa, Corey, & Keysar, 2017), we cannot rule out that the language of the study materials had any bearing on the observed effects.

A third limitation of the current study is that when doing experimental research, it is generally difficult to establish whether the findings can be generalized to, in this case, real-life court cases and how large of an effect it might have in such a real-world context. Even though biases in the current studies were relatively large, the moderating role of free will beliefs was relatively small. Therefore, also based on previous research, we can safely conclude that hindsight bias and outcome bias do in fact affect legal professionals but we should be cautious in claiming that these biases are aggravated for those with stronger free will beliefs. Having said that, it could well be that the effects we found are actually conservative compared to how they might unfold in real life.

Another issue concerns whether the observed findings can be extended beyond the domain of directors' liability in bankruptcy proceedings to for example breach of fiduciary duty tort suits, criminal charges against directors, or to cases that are more high profile with a considerable impact for society. One reason to think that our findings might not generalize to more severe cases (e.g., fraud, self-enrichment) is that past a certain threshold of severity of an offense, most people will probably experience a strong need to punish the offender, regardless of whether they believe in free will or not. For some, a director steering his company into bankruptcy is, morally speaking, not a very significant event, whereas others might moralize this situation more strongly. On the other hand, when one is presented with a case involving a director that knowingly committed fraud and by doing so financially ruined unknowing minority shareholders, or a criminal law case involving for example the murder of innocent children, these cases will probably for the majority of people elicit significant moral outrage and consequently the need to hold the offender responsible. Indeed, Krueger and colleagues (2014) have shown that when people are asked to punish an offender in a low-affect case (e.g., property theft), people believing more strongly in free will punish more harshly than those who were more sceptical of free will. When people were asked how harshly they would punish an offender in a high-affect case (e.g., murder), no difference based on free will beliefs was found. Hence, if it is indeed true that free will beliefs can predict the degree of hindsight bias due to a higher need to punish and resulting motivated cognition on behalf of those with stronger free will beliefs, it could be that in high-affect criminal law cases (or other more high-affect cases such as a high-profile bankruptcy case with severe consequences for society) the moderating role of free will beliefs would disappear.

5.4.3 Conclusion

We found that professional legal investigators succumb to hindsight bias and outcome bias when assessing a director's actions post-bankruptcy. We also found that those who believe more strongly in free will demonstrate larger hindsight bias when judging the foreseeability of the bankruptcy and larger outcome bias when evaluating the company director's actions. These findings raise the question what the implications are for legal practice. It is evident that hindsight bias should ideally be eliminated from the court, but so far debiasing strategies have failed to provide a base for accomplishing this difficult task. Our research shows that not all legal professionals are equally susceptible to hindsight bias and that personally held beliefs regarding legally relevant constructs such as free will can predict susceptibility to this bias. Hence, not only is it relevant whether or not a defendant acted out of free will in causing an adverse outcome, it appears that professional legal investiga-

tors' *belief* in free will also matters for legal judgments. We encourage future research to further investigate individual differences in hindsight bias, as this could provide valuable insights necessary to minimize human errors entering the courtroom.

The next chapter also investigates how certain legally irrelevant information might affect legally relevant judgments concerning for example the perceived likelihood of a company's failure, directors' intentions while operating in the vicinity of insolvency, as well as directors' blame for their companies' failure. The extra-legal information that is the focus of the next chapter concerns information pertaining to directors' moral character. Hence, the next chapter does not compare judgments in hindsight versus those made in foresight, but rather judgments made in hindsight for morally good directors versus morally bad directors.