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Hindsight bias and outcome bias in judging directors' liability and the role of free will beliefs

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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 judge in hindsight with full knowledge of the adverse outcome. The present study investigates whether professional legal investigators such as judges and lawyers are affected by hindsight bias and outcome bias when evaluating directors' conduct in a bankruptcy case. Additionally, to advance our understanding of the mechanisms underlying these biases, we also examine whether free will beliefs can predict susceptibility to hindsight bias and outcome 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 bankruptcy as more foreseeable in hindsight than in foresight and that these effects are significantly stronger for those who endorse the notion that humans have free will. This contribution is particularly timely considering the many companies that are currently going bankrupt or are facing bankruptcy amidst the COVID-19 pandemic.

1 | INTRODUCTION

After a disastrous event, public outcry often follows 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, just to name a few. In such cases, people want to know what caused the event and whether there is someone to blame and to be held 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 (as well as the authorities) demanded thorough investigations and that those to blame were held accountable. Also in less high-profile cases of business failure do the local communities or creditors typically appeal for a thorough investigation into the causes of the event. In some jurisdictions, an investigation into the causes of a company's failure is even mandatory.

In such investigations, attention often centers on the role of the company's directors to for example determine whether there has

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been a breach of fiduciary duties, wrongful trading, or gross business misjudgments.[1] If such wrongful conduct is, indeed, proven, directors can be held liable for damages, and creditors 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 inquisitorial systems).

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 liability for all creditor claims on the bankrupt estate in some cases far exceed insurance coverage and can, therefore, lead to dire financial circumstances in the private sphere. 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 the accurate assessment of a director's conduct and its 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 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 these 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, might in case of a bad outcome (e.g., company going bankrupt) be perceived as negligent.

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 current paper's primary goal 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.

[1]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.

1.1 | Hindsight bias in legal judgments

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 et al., 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 et al., 2008; Kelman et al., 1998; Nestler et al., 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.

The causes of hindsight bias in perceived foreseeability 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 other cognitive biases that operate largely in an automatic and unconscious fashion, hindsight bias relies on an important part in 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 et al., 1991; Yopchick & Kim, 2012). 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 might 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).

Evidence suggests that hindsight bias can manifest itself in the courtroom (for reviews of hindsight bias in legal decision making, see Giroux et al., 2016; Harley, 2007). In their seminal paper, Kamin and Rachlinski (1995) demonstrated among a sample of prospective jurors that precautionary measures to prevent damage from

possible flooding appear insufficient in hindsight, whereas in foresight (i.e., when the participants in the study were unaware flooding occurred) these measures were deemed largely appropriate (for similar findings, see Casper et al., 1988; Hastie et al., 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 Blendon et al., 2002; Caplan et al., 1991). Indeed, it appears that hindsight bias is not limited to mock jurors and can affect professional judges as well (Anderson et al., 1993, 1997; Guthrie, Rachlinski, & Wistrich, 2001, 2007; Jennings et al., 1998; Oeberst & Goeckenjan, 2016).

Despite this evidence of hindsight bias affecting legal decision making, we believe the question of 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 et al. (2005) observed that judges were able to ignore inadmissible outcome information when assessing probable cause for a police search (see also Rachlinski et al., 2011). Moreover, Hastie and Viscusi (1998) found that judges were less affected by hindsight bias than mock jurors. We, therefore, believe the small but growing body of research on hindsight bias in legal decision making could benefit from further, high-powered research.

Second, the 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. 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 so as to allow for evidence-based policies and legislation.

Al in all, 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.*

1.2 | Outcome bias in legal judgments

In addition to affecting judgments of foreseeability, judgments made in hindsight might also affect judgments of decision quality. 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 (Bazerman & Sezer, 2016; Gino et al., 2009; Lipshitz & Barak, 1995; Mazzocco et al., 2004; Robbennolt, 2000). Although very similar to hindsight bias in that outcome information unjustifiably affects the evaluation of events in the past, a bias in evaluations of decision quality constitutes outcome bias rather than hindsight bias.

In a recent study investigating outcome bias in legal decision making, judges were found to perceive a particular individual to have acted more intentionally when that person's actions resulted in a severely bad outcome versus a moderately bad outcome (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 the present paper we focus on the two most relevant elements. 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 toward 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.*

1.3 | Punitiveness, 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. Thus far, research on individual differences in hindsight bias is relatively scarce, shows mixed results, and generally suffers from (very) low statistical power (Musch & Wagner, 2007). The same applies to the literature on outcome bias in that little research has been devoted to understanding the underlying mechanisms and no reliable individual differences have been identified. Thus far, factors that have been found to cause outcome bias are failing to sufficiently take into account the decision quality itself (Baron & Hershey, 1988), the process that led to the decision (Brockner & Wiesenfeld, 1996), or an agent's intentions (Sezer et al., 2016). Therefore, a second, more exploratory goal of this study is to investigate individual differences in hindsight bias and outcome bias with the aim of improving our understanding of these biases. Specifically, we investigate whether the desire to blame and punish wrongdoers can predict professional legal investigators' susceptibility to hindsight bias and outcome bias.

Traditionally, it was believed that attributions of blame and punishment are the end product of careful consideration of relevant factors, such as whether an individual intentionally brought about an adverse outcome and whether the outcome was foreseeable (e.g., Malle et al., 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 punitive inclinations 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 thedesired conclusion, all the while being under the illusion of acting objectively (e.g., 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. 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 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 et al., 2009; Feigenson & Park, 2006; 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 reaction. In other words, it may be legal professionals' motivation to blame and punish that drives hindsight bias and outcome bias, such that they judge a director's strategic plans more negatively, the bankruptcy as more foreseeable, and the director to be more responsible for the bankruptcy compared with when they are unaware of the company's downfall. If hindsight bias and outcome bias can, indeed, stem from blame-validation processes, it follows that people with a stronger tendency to moralize events and condemn and punish wrongdoing should display a stronger 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 and outcome 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 behavior, (2) be more punitive, and (3) show greater support for severe criminal punishment and retributive punishment (Carey & Paulhus, 2013; Martin et al., 2017; Savani et al., 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 than those who show less commitment to the notion of free will, due to the former's stronger punitive predispositions. Based on this line of reasoning, we formulated the following hypothesis.

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

1.4 | The present studies

To summarize, the current research aims (1) to investigate whether legal professionals tasked with investigating directors' conduct following a corporate mishap are affected by hindsight bias and outcome 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 these biases.

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

We test our hypotheses in two experiments. In both studies, participants were presented with a hypothetical bankruptcy case. 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 (1) to replicate and examine the robustness of the findings of Study 1, and (2) to 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).

2 | STUDY 1

2.1 | Method

2.1.1 | Participants

We aimed to conduct a highly powered study and determined, using G*Power 3.1 (Faul et al., 2009), that we needed 619 participants to have a power of 0.85 to detect a small effect ($f^2 = 0.02$; 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.

Of all participants, 393 reported to work as an insolvency lawyer, 144 as insolvency practitioner, 75 as turnaround consultant/manager, 68 as trustee, 49 as judge, 48 as banker (of which 32 reported to have a legal background), 38 as academic in the legal field and 15 chose "other.".[2] 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 three countries with the greatest number of participants are the United Kingdom (34.8%), Germany (9.4%), and Romania (8.9%). Please see Section 1 of the supplementary materials online for a complete overview of the participants' nationalities.

2.1.2 | Design and procedure

Participants were randomly assigned to either the No outcome condition or the Negative outcome condition. Participants were first 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,[3] after which participants were debriefed.

2.1.3 | Materials and measurements

Free will beliefs

Participants' belief in free will was measured using the Free Will Subscale of the Free Will Inventory (FWI; Nadelhoffer et al., 2014). The scale consists of five items (Cronbach's $\alpha = 0.80$) 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

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

[3]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) 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 Section 3 of the supplemental material online.

TABLE 1 Descriptive statistics and significance tests for the univariate analyses of Study 1

Dependent variables	No outcome ($N = 318$)		Outcome ($N = 315$)		F (1, 631)	p	η_p^2
	M	(SD)	M	(SD)			
Decision quality	4.83	(2.04)	6.19	(2.07)	69.06	<.001	0.10
Foreseeability	48.47	(17.60)	52.08	(16.14)	6.91	.009	0.01
Legal responsibility	2.39	(0.95)	2.82	(1.10)	26.59	<.001	0.04

Likert scale, ranging from (1) *strongly disagree* to (7) *strongly agree* ($M = 4.42$, $SD = 1.15$).

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 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 skepticism 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 an additional paragraph (63 words) describing the company went bankrupt, emphasizing the calamitous nature of the bankruptcy by stating the company's employees were left without a job, that several of the company's suppliers went bankrupt because they depended on the company, and that many small shareholders saw their assets evaporate. Section 2 of the supplementary material online contains 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 an 11-point scale, with 1 labeled as *very bad* and 11 labeled as *very good*. Prior to analyses, the values were recorded 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 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 indicate the likelihood of bankruptcy at the time the turnaround plan was presented and the outcome of the case was still unknown.

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 for 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 $\alpha = 0.85$). In the No outcome condition (i.e., in foresight), participants were asked about the CEO's legal responsibility for the company's downfall, if it, indeed, went bankrupt.

2.2 | Results

2.2.1 | Data preparation and analysis plan

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 s as the cut-off in the No outcome condition and 88.5 s 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 0.86 to detect a small effect.[4]

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 1. The multivariate test was significant, F (3, 629) = 24.93, $p < .001$, $\eta_p^2 = 0.11$, 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

[4]The median time spent reading the case was 165.4 s for the No outcome condition and 178.6 for the Negative outcome condition. The median time spent on the entire survey was 780.0 s for the No outcome condition and 823.0 in the Negative outcome condition.

also attributed more responsibility to the CEO in hindsight than in foresight (confirming H2b).

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 the 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, $\Delta R^2 = 0.01$, $\Delta F\,(1, 629) = 6.56$, $p = .01$, $b = 0.36$, $t(629) = 2.56$, $p = .01$, and legal responsibility, $\Delta R^2 = 0.01$, $\Delta F\,(1, 629) = 5.57$, $p = .02$, $b = 0.17$, $t(639) = 2.36$, $p = .02$.

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, $b = 1.79$, $t(629) = 7.75$, $p < .001$, $d = 0.62$, than for those with weaker free will beliefs, $b = 0.95$, $t(629) = 4.13$, $p < .001$, $d = 0.33$.

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, $b = 0.61$, $t(629) = 5.28$, $p < .001$, $d = 0.42$, than for those with weaker free will beliefs, for whom there was no statistically significant effect, $b = 0.22$, $t(629) = 1.94$, $p = .05$, $d = 0.15$.

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, $b = 1.64$, $t(629) = 1.37$, $p = .17$. Table 2 for the statistics of the moderation and simple slopes analyses. Figure 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.

2.3 | Discussion

Study 1 demonstrated that professional legal investigators are susceptible to hindsight bias when judging the foreseeability of bankruptcy as well as to outcome bias when judging a director's actions and legal responsibility for the bankruptcy. Moreover, 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 ($d = 0.20$; Cohen, 1988), especially compared to previous studies as indicated by two meta-analyses that found average effect sizes of $d = 0.39$ (Guilbault et al., 2004) and $d = 0.35$ (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. The second study, therefore, adopted the

TABLE 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)

	−1 *SD* FWB			+1 *SD* FWB				
	***b* (SE)**	***t***	**95% CI**	***b* (SE)**	***t***	**95% CI**	**Int. (SE)**	***t***
Decision quality	0.95 (0.23)	4.13***	0.50, 1.40	1.79 (0.23)	7.75***	1.34, 2.24	0.36 (0.14)	2.56*
	Model: $R^2 = 0.110$, $F\,(3, 629) = 25.97$, $p < .001$							
Foreseeability	1.77 (1.95)	0.90	−2.07, 5.60	5.54 (1.95)	2.84**	1.71, 9.37	1.64 (1.20)	1.37
	Model: $R^2 = 0.014$, $F\,(3, 629) = 2.99$, $p = .03$							
Legal responsibility	0.22 (0.12)	1.94	−0.00, 0.45	0.61 (0.12)	5.28***	0.38, 0.84	0.17 (0.07)	2.36*
	Model: $R^2 = 0.052$, $F\,(3, 629) = 11.45$, $p < .001$							

Note: "Int. (SE)" represents the regression weights and standard errors for the interaction effect (Outcome Condition × FWB) and 'Model' shows the statistics for the complete model including the interaction term.

*$p < .05$; **$p < .01$; ***$p < .001$.

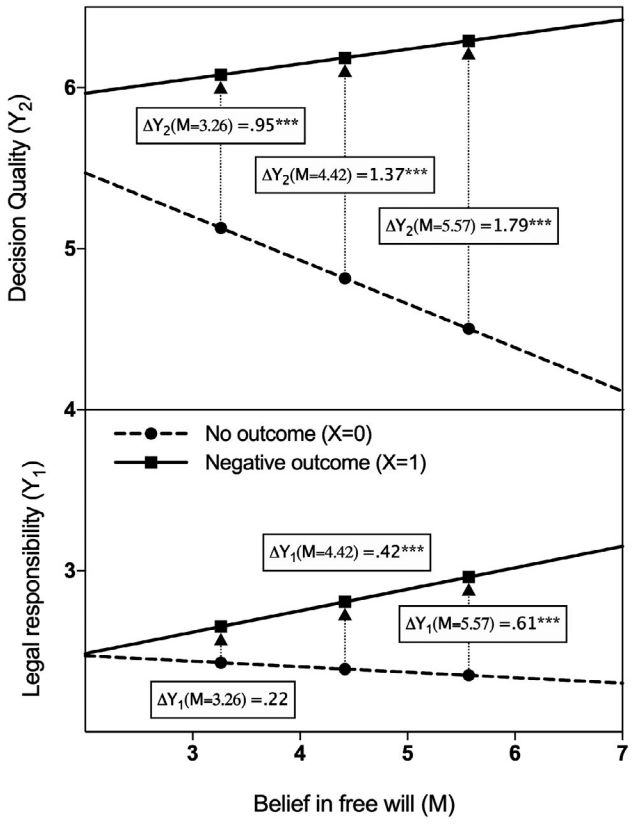

FIGURE 1 Differences between the No outcome and Negative outcome condition (ΔY) for both legal responsibility (Y_1) and decision quality (Y_2) at different levels of the moderator (M), i.e., for those with relatively low free will beliefs ($M = 3.26$), average free will beliefs ($M = 4.42$) and high free will beliefs ($M = 5.57$). ***$p <$ .001

more commonly used method for measuring hindsight bias in foreseeability judgments, by providing participants with multiple scenarios instead of only one.

An important goal of the second study was to test the robustness of the 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, while adopting a different way of measuring foreseeability judgments, as discussed.

The 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, allowing us to investigate whether free will beliefs can predict hindsight biases in general, or whether this relationship depends on the valence of the outcome. Specifically, Study 2 compared a No outcome condition with both a Negative outcome condition and a Positive outcome condition. 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.

3 | STUDY 2

3.1 | Method

3.1.1 | Participants and design

We aimed to achieve the same power as in Study 1 of 0.85 to detect a small effect ($f^2 = 0.02$; 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, 1,002 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 worldwide 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. 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 of 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) lawyer, 210 (21%) as an accountant (of which 87.6% indicated to investigate and/or decide over directors' liability), 112 as turnaround consultant/manager (11.2%), 109 as trustee (10.9%), 45 as insolvency practitioner (4.5%), 45 as a banker (4.5%; of which 28 reported to investigate/decide over directors' liability), 35 as academic in the legal field (3.5%), 28 indicated "other," and 24 reported to work as a judge (2.4%). Fifty-four different nationalities are represented in the sample, with the majority of the respondents coming from Australia (20.4%), the United Kingdom (14.5%), and Canada (10.9%). Please see Section 4 of the supplemental material online for a complete overview of the participants' nationalities.

Participants were randomly assigned to one of the 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).

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 $\alpha = 0.83$) as in Study 1 ($M = 4.56$, $SD = 1.26$).[5]

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).[6] Please see Section 5 of the supplemental material online 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 $\alpha = 0.69$, which indicates sufficient internal validity for theory-testing purposes; see Nunnally & Bernstein, 1994) and three questions to measure their benevolence toward the CEO (in case of a positive outcome; Cronbach's $\alpha = 0.74$). Benevolence toward the CEO was measured in Study 2 after the positive outcome to provide a counterpart to the legal responsibility measure after the 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 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 toward 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.[7]

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.[8]

Foreseeability

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 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

[5]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.

[6]The base case was 432 words in length, the paragraph describing the negative ending contained 96 words, and the positive ending consisted of 92 words.

[7]For exploratory purposes, 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". 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.

[8]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.

equaling 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 measure of the percentage, 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]

3.2 | Results

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 exclusion criterion on three standard deviations above the average reading speed. This resulted in the exclusion of 166 participants (16.6% of the total sample), leaving a final sample size of 836 participants.[10]

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, η_p^2 = 0.01. Consequently, the data were collapsed across this factor.

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 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, η_p^2 = 0.29. Bonferroni-corrected post hoc comparisons showed that 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, η_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, η_p^2 = 0.06. 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 outcome), contradicting Hypothesis 2b. Table 3 for the descriptive statistics and significance tests for each variable.

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, ΔR^2 = 0.01, F (1, 549) = 4.89, p = .027, b = 0.19, t(549) = 2.21, p = .027, such that a stronger belief in free will was associated with a larger outcome 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 = 0.59, than for those with weaker free will beliefs, b = 0.59, t(549) = 3.83, p < .001, d = 0.33. Importantly, this moderation effect did not exist for decision quality in case of a positive outcome, ΔR^2 < 0.001, F < 1. Please see Figure 2 for a

[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 Section 6 of the supplemental material online.

[10]Median duration of time spent reading the business case was 181.0 s for participants in the No outcome condition, 200.4 s for the Positive outcome condition, and 212.6 s for the Negative outcome condition. Median duration of time spent on the entire survey was 1,176.0 s for participants in the No outcome condition, 1,153.0 for the Positive outcome condition, and 1,216.5 for the Negative outcome condition.

TABLE 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	0.095
Decision quality POS	3.63	(1.30)	2.53	(1.13)			78.47	<.001	0.160
Foreseeability NEG	34.00	(15.66)			41.89	(16.63)	32.92	<.001	0.056
Foreseeability POS	23.72	(15.06)	30.74	(14.93)			25.92	<.001	0.063
Foreseeability NEG (Likert)	4.70	(1.20)			5.23	(1.04)	30.33	<.001	0.052
Foreseeability POS (Likert)	3.79	(1.47)	4.43	(1.33)			29.47	<.001	0.050
Benevolence	5.44	(0.84)	5.53	(0.93)			1.07	n.s.	0.002
Legal responsibility	3.28	(1.15)			3.32	(1.17)	<1	n.s.	0.001

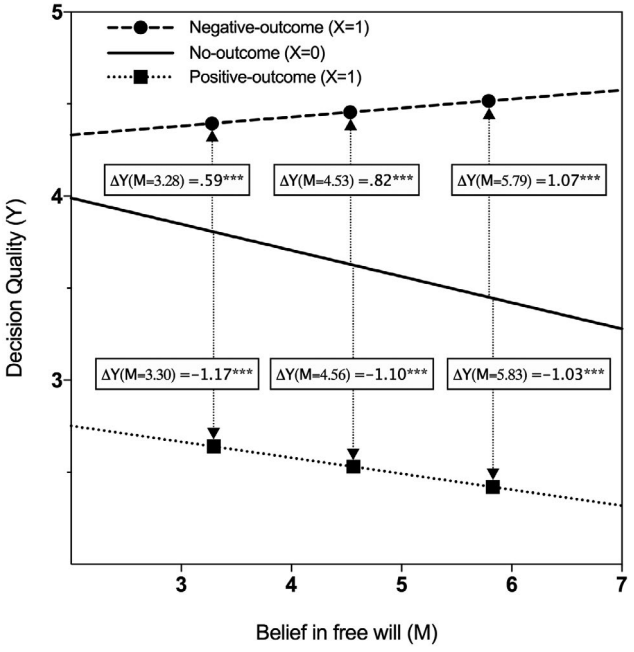

FIGURE 2 Differences between the No outcome, Negative outcome, and Positive outcome condition (ΔY) for Decision Quality (Y) at different levels of the moderator (M). Specifically, for those with relatively low free will beliefs ($M = 3.30$), average free will beliefs ($M = 4.56$) and high free will beliefs ($M = 5.83$)

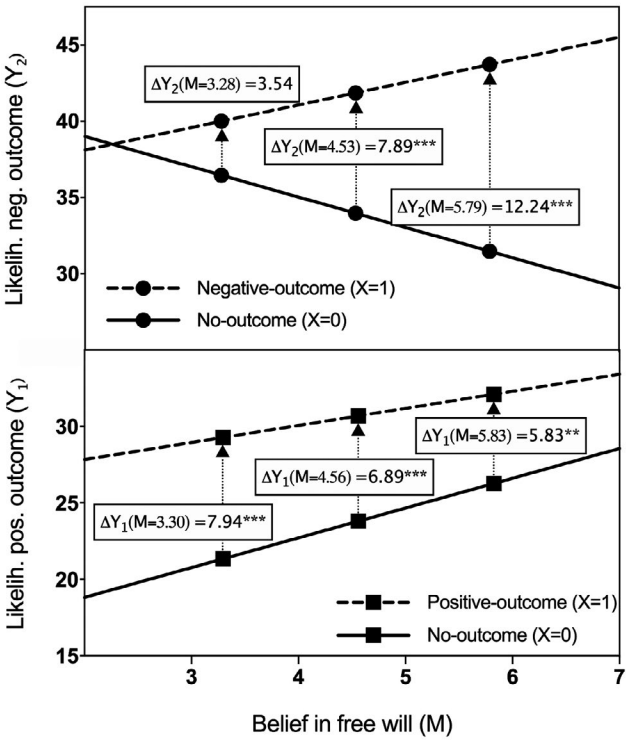

FIGURE 3 Differences between the No outcome and Positive outcome condition (ΔY_1) and between the No outcome condition and Negative outcome condition (ΔY_2) for the foreseeability (here operationalized as the likelihood) of the negative and positive scenarios, respectively, at different levels of the moderator (M)

visual presentation of the relationship between free will beliefs and hindsight bias for decision quality for both the negative and positive outcomes.

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, $\Delta R^2 = 0.02$, F (1, 549) = 10.16, $p = .002$, $b = 3.46$, $t(549) = 3.19$, $p = .002$, and when measured using the Likert scale, $\Delta R^2 = 0.01$, F (1, 549) = 4.86, $p = .028$, $b = 0.17$, $t(549) = 2.20$,

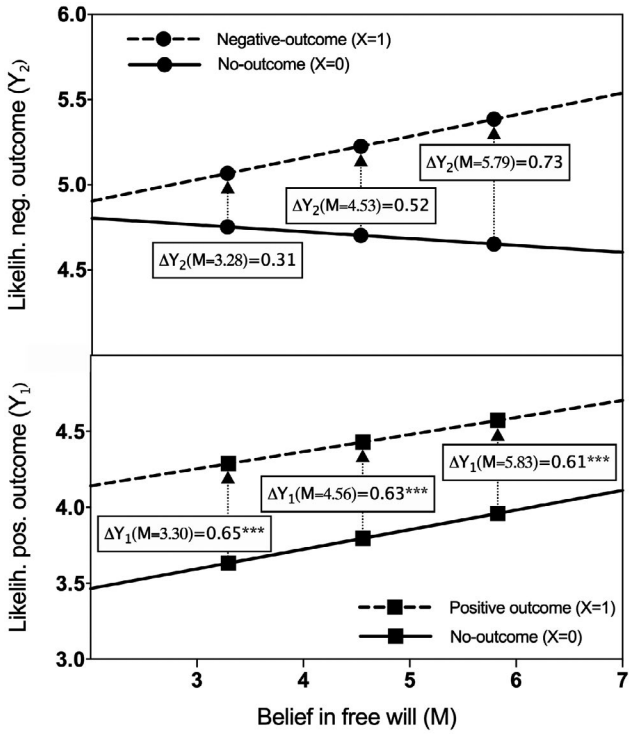

FIGURE 4 Differences between the No outcome and Positive outcome condition (ΔY_1) and between the No outcome condition and Negative outcome condition (ΔY_2) for the foreseeability (here operationalized as the likelihood) of the negative and positive scenarios at different levels of the moderator (M), expressed on a 7-point Likert scale

$p = .028$. Regarding the percentage measure of foreseeability, participants with stronger free will beliefs demonstrated a more than three times larger hindsight bias, $b = 12.24$, $t(549) = 6.35$, $p < .001$, $d = 0.51$, than those with a relatively weak belief in free will, for whom there was no statistically significant effect, $b = 3.54$, $t(549) = 1.84$, $p = .067$, $d = 0.16$. For the Likert scale measure of foreseeability, participants with stronger free will beliefs demonstrated a more than twice as large hindsight bias, $b = 0.73$, $t(549) = 5.46$, $p < .001$, $d = 0.46$, than those with a relatively weak belief in free will, $b = 0.31$, $t(549) = 2.34$, $p = .020$, $d = 0.20$.

Importantly, free will beliefs did not moderate the hindsight bias for foreseeability in case of a positive outcome when measured in percentages, $\Delta R^2 = 0.001$, $F < 1$, nor when using the Likert scale measure, $\Delta R^2 < 0.001$, $F < 1$. Please see Figures 3 and 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 outcomes and Table 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, $\Delta R^2 = 0.004$, $F = 1.98$, $p = .16$, or benevolence, $\Delta R^2 < 0.001$, $F < 1$.

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 ($d = 0.49$ for the percentages measure and $d = 0.47$ for the Likert-scale measure) were clearly larger than the effect size found in Study 1 ($d = 0.20$) and those found in two meta-analyses ($d = 0.39$ by Guilbault et al., 2004; $d = 0.35$ 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 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

TABLE 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)

	−1 *SD* FWB			+1 *SD* FWB				
	b (SE)	*t*	95% CI	*b* (SE)	*t*	95% CI	Int. (SE)	*t*
Decision quality NEG	0.59 (0.15)	3.83**	0.39, 0.89	1.07 (0.15)	6.96***	0.77, 1.37	0.19 (0.09)	2.21*
	Model: $R^2 = 0.105$, $F(3, 549) = 21.41$, $p < .001$							
Decision quality POS	−1.17 (0.14)	−8.05***	−1.45, −0.88	−1.03 (0.18)	−7.08***	−1.31, −0.74	−0.06 (0.10)	0.68
	Model: $R^2 = 0.184$, $F(3, 556) = 41.71$, $p < .001$							
Foreseeability NEG	3.54 (1.93)	1.84	−0.25, 7.33	12.24 (1.93)	6.35***	8.45, 16.03	3.46 (1.09)	3.19**
	Model: $R^2 = 0.074$, $F(3, 549) = 14.62$, $p < .001$							
Foreseeability POS	7.94 (1.78)	4.46***	4.44, 11.44	5.83 (1.78)	3.27**	2.33, 9.34	−0.83 (1.00)	−0.84
	Model: $R^2 = 0.069$, $F(3, 556) = 13.75$, $p < .001$							
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: $R^2 = 0.063$, $F(3, 549) = 12.21$, $p < .001$							
Foreseeability POS (Likert)	0.65 (0.17)	3.91***	0.33, 0.98	0.61 (0.17)	3.66***	0.28, 0.94	−0.02 (0.09)	−0.18
	Model: $R^2 = 0.062$, $F(3, 556) = 12.14$, $p < .001$							
Legal responsibility	−0.06 (0.14)	−0.42	−0.34, 0.22	0.22 (0.14)	1.57	−0.06, 0.50	0.11 (0.08)	1.41
	Model: $R^2 = 0.005$, $F(3, 549) = 0.96$, $p = .41$							
Benevolence	0.05 (0.11)	0.43	−0.16, 0.25	0.12 (0.11)	1.14	−0.09, 0.33	0.03 (0.06)	0.50
	Model: $R^2 = 0.006$, $F(3, 556) = 1.18$, $p = .31$							

Note: 'Int. (SE)' represents the regression weight and standard error for the interaction effects (Outcome Condition × FWB) and 'Model' shows the statistics for the complete model including the interaction term.

*$p < .05$; **$p < .01$; ***$p < .001$.

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.[11]

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. Combined, 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.

4 | GENERAL DISCUSSION

The present article 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, such that 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

[11]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.

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 behavior 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 (Studies 1 and 2), that the CEO's turnaround plan was unsatisfactory (Studies 1 and 2), and that the director should be held legally responsible (in Study 1).

4.1 | Theoretical and practical implications

The findings of the current research are relevant for several reasons. First, the current research provides further evidence that hindsight bias can, indeed, affect legal professionals' judgments in the context of directors' liability. Our consistent finding (across two studies) that legal professionals are affected by outcome information when evaluating the foreseeability of bankruptcy and the company director's actions further confirm 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 of what can be done to prevent hindsight bias in these cases. Despite the apparent difficulty of debiasing hindsight bias (e.g., Fischhoff, 1975; Hell et al., 1988; Pohl & Hell, 1996; Sanna & Schwarz, 2003; Sanna et al., 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 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. An important note to make here is that our experiments identified hindsight bias and outcome bias at the individual level and it is, therefore, uncertain to what extent these findings will ultimately affect legal decision making in a real-world context. That is, legal decisions are not made in isolation but are rather the end result of legal procedures in which multiple stakeholders take part (e.g., attorneys, prosecutors) and in which the final decision is a group decision made by a jury or (multiple) judges. Hence, it is possible that erroneous judgments of one or more individuals (especially those who have strong punitive inclinations) are ultimately counteracted in the process due to the input of other parties involved in the bankrupty case. Having said that, as we know, group processes (such as groupthink) can also aggravate biases and if a dominant person in a jury or the most senior judge has been affected by either hindsight bias or outcome bias, it stands to reason there is a high likelihood this will affect the final ruling.

Second, we add to the literature on antecedents of 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. 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 alarming. Ideally, the outcome of a trial is unaffected by the 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 and punitive inclinations. Therefore, the current finding that believing in free will is associated with a larger hindsight bias in legal judgments is 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. However, as mentioned before, legal decisions are not the result of an individual legal professional operating in isolation. It remains an open question, therefore, to what extent free will beliefs and punitive inclinations affect decision making in real-world cases.

Finally, we contribute to theory and research on the mechanisms underlying hindsight bias and outcome bias. 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.

Importantly, we did not directly test punitive inclinations as the underlying mechanism of hindsight and outcome bias but rather measured free will beliefs as a proxy. However, as alluded to in the introduction of this paper, there is ample evidence for the proximal association between free will beliefs and punitiveness and we, therefore, consider free will beliefs to be a useful and valid proxy for people's punitive inclinations. The results of Study 2 lent further support for the notion that punitive inclinations account for the moderating influence of free will beliefs. Here, we did not observe a moderating role of free will beliefs in case of a positive outcome, which refutes an alternative explanation that can be derived from the literature for the observed moderation effect of free will beliefs. That is, 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 et al. (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. That is, correspondence bias deals with causal attributions and—on a conceptual level—it can, therefore, have an indirect effect on attributions of legal responsibility (i.e., being causally responsible is a requirement for legal responsibility), but not on judgments of foreseeability or assessments of decision quality. Nonetheless, it would be a worthwhile endeavor for future research to develop a more direct measure of punitiveness for a more comprehensive understanding of the association between punitiveness and susceptibility to hindsight bias and outcome bias.

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

4.2 | Limitations

The current research is not without its limitations and certain issues remain that should be addressed carefully in research following the findings presented herein. First, even though we consider our large sample of legal professionals from across the globe to be a strength of the current research, the pluriformity 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. Unfortunately, in addition to being beyond the scope of the current research, our data set does not allow for analyses comparing participants from (groups of) different nationalities or jurisdictions, as splitting the sample into different groups would result in insufficient statistical power to detect the effects of interest. The same limitation applies to analyses comparing participants with different roles in legal procedures. While the samples of the two studies consisted of for example lawyers, judges, and insolvency practitioners, group-level analyses are not warranted because of sample size issues. As it is of relevance for legal practice to examine whether the observed effects are more or less pronounced for different groups, we recommend that future research takes into account the sampling requirements for drawing conclusions about differences across groups in the population.

Second, it would be worthwhile to investigate whether the current findings can be replicated using different case materials. That is, 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 toward Dutch directors.

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. As alluded to earlier, it could be that courtroom dynamics between the different parties might ultimately neutralize the biases observed in our research. At the same time, there is also the possibility that group dynamics aggravate the psychological processes underlying biased judgments.

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 the present findings might not generalize to more severe cases (e.g., fraud, self-enrichment) is that past a certain threshold of the 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. 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 punished harsher than those who were more skeptical of free will. When people were asked how harsh 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.

CONFLICT OF INTEREST

The authors have no conflicts of interest to disclosure.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in OSF at http://doi.org/10.17605/OSF.IO/CVS9R.

ETHICAL STATEMENT

The research has been conducted in accordance with the authors' institutions' ethics guidelines.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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