Crisis? What Crisis? Exploring the Cognitive Constraints on Boards of Directors in Times of Uncertainty

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Crisis? What Crisis?
Exploring the Cognitive Constraints on Boards of Directors in Times of Uncertainty
Short title: **The Board of Directors in Crisis**

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Abstract

Board-level decision-makers often fail to understand that a crisis is imminent and to proactively interpret environmental stimuli through their cognitive schemas. Directors have a selective perception of the environment, resulting in a filtered and narrowed vision of a crisis; this explains why boards often lack proactivity in crisis detection and response. This study draws on qualitative data from interviews with directors, chairs and CEOs of medium-large companies that were in crisis at the time of the interview or had recently tackled a crisis. We identify three main categories of factors that can hinder directors' cognitive schemas: individual, collective and hybrid constraints. Our research contributes to the cognitive model in a context of uncertainty, exploring the mechanisms underpinning board passivity during a crisis. This study has implications for both boards of directors, who should re-design the ways in which directors respond during crisis situations, and the policymakers who support this process.

Keywords: board of directors, crisis, uncertainty, cognitive model, cognitive schemas, constraints.

Highlights

- The board of directors often acts passively during a crisis and does not proactively interpret the seeds of a crisis before it escalates.
- Directors may face individual, collective and hybrid constraints, which hinder the cognitive schemas that allow them to make sense of a crisis.
- Individual constraints include overconfidence, a lack of relevant expertise and a lack of independence.
- Collective constraints comprise groupthink, underestimation of the seeds of a crisis, short-termism and postponing decisions.
- Hybrid constraints include directors' low commitment, emotional responses and a lack of critical information.

1. Introduction

'*There cannot be a crisis next week. My schedule is already full.*' (Henry Kissinger)

Existing research shows that the board of directors should take control during periods of crisis (Lorsch & MacIver, 1989; Mintzberg, 1983). However, boards of directors often fail to deal appropriately with a crisis (Withers, Corley, & Hillman, 2012; Fernandez & Mazza, 2014). The board seems to be designed to fail (Boivie, Bednar, Aguilera, & Andrus, 2017) because it cannot always detect a crisis before it escalates.

A crisis is any emotionally charged situation characterised by uncertainty and complexity (Maitland & Sammartino, 2015) that, once it becomes public, attracts negative reactions from stakeholders; hence, it has the potential to threaten the survival of a company (James & Wooten, 2005). It represents a fundamental test of directors and their cognitive responses to challenges (Antonacopoulou & Sheaffer, 2014). Many companies have recently been struck by a crisis without a prompt response from directors. For example, around 24,000 companies went bankrupt in the US in 2018, along with around 16,000 in the UK and over 4,000 in Belgium (Dun & Bradstreet, 2019). Crises are characterised by complex situations, uncertain conditions and multiple interpretations (Mischel, 1977). Directors' cognitive schemas play a fundamental role in shaping their perceptions of crises (Mitchell, Shepherd, & Sharfman, 2011; Sharfman & Dean Jr., 1991).

Cognition is fundamental to crisis perception as it affects how directors solve challenges and tackle a crisis (Antes & Mumford, 2012). Extant studies (Musteen, 2016; Narayanan, Zane, & Kemmerer, 2011) highlight the importance of strategic cognition and cognitive schemas because these help directors to make decisions and interpret uncertain situations. Cognitive schemas are lenses, based on beliefs and prior knowledge, through which decision-makers interpret data (Forbes & Milliken, 1999; Combe, Rudd, Leeflang, & Greenley, 2012).[1] Therefore, the success or failure of a board to interpret the signs of a crisis relies on the cognitive boundaries that directors experience (Kücher & Feldbauer-Durstmüller, 2019; Samdanis & Lee, 2019). It becomes paramount to understand what these cognitive boundaries or constraints are because, as Chatterjee and Harrison (2001) point out, during a crisis directors experience different behaviour than in non-crisis circumstances.

Strategic cognition literature suggests that directors' cognitive schemas act as a curtain between the real environment and their perceptions of the environment (Finkelstein et al., 2009; Hambrick & Mason, 1984; Samdanis & Lee, 2019). Directors only tend to pay attention to a few aspects of the environment. This so-called selective interpretation of the environment (Hambrick & Mason, 1984) is due to cognitive constraints that can affect directors' cognitive schemas.

Such a selective perception of the environment and cognitive constraints result in a filtered and narrowed vision when interpreting information (Mumford, Todd, Higgs, & McIntosh, 2017), and reduces the chance that directors will take decisions to avoid a crisis (Lorsch, 1995). Existing research (Boivie et al., 2017; Stern, 2003) points out that boards tend to be passive and lack pro-activity or even reactivity in the identification of a crisis (Fernández & Mazza, 2014). Boards sometimes fail to understand that a crisis is imminent (Kash & Darling, 1998) because they do not proactively interpret environmental stimuli through their cognitive schemas (Reger & Palmer, 1996). This leads to a failure in early detection of a crisis (Mellahi, 2005; Williams, Gruber, Sutcliffe, Shepherd, & Zhao, 2017). Crisis awareness is the starting

[1] A number of synonymous and alternative terms for 'cognitive schemas' have been used in the management and strategic cognition literature. For instance, 'cognitive models' (Hodgkinson, 1997), 'cognitive thinking' (Wooten & James, 2008), and 'mental models' (Chermack, 2003) are employed to describe the underpinning thinking process (Hodgkinson & Sparrow, 2002). These concepts are also referred to as 'cognitive maps' (Weick & Bougon, 1986). Debate continues around these terms that, although used as alternatives, have subtle differences and, therefore, should be not employed as synonyms (Hodgkinson & Sparrow, 2002). It is, however, largely agreed in the management and strategic cognition literature that such terms can be used as alternatives (Combe & Carrington, 2015; Narayanan et al., 2011). This research adopts the term cognitive schemas in line with the mainstream strategic cognition literature (Finkelstein et al., 2009).

point for the process of crisis detection, and directors' cognitive schemas (Weick, 1989) play a vital role in triggering this process.

A number of studies look at how directors' cognitive schemas help them to make decisions (Narayanan et al., 2011; Wrona, Ladwig, & Gunnesch, 2013) and to tackle uncertain situations (Mumford, Friedrich, Caughron, & Byrne, 2007). However, research has not yet revealed the reasons why boards tend to be passive in tackling a crisis, despite previous studies pointing out that directors' cognitive schemas help them to tackle uncertain situations (Brown, Buchholtz, Butts, & Ward, 2019; Samdanis & Lee, 2019). Therefore, it remains unclear why the board tends to be passive in tackling a crisis or what the cognitive constraints are that hinder directors' cognitive schemas and lead to a passive board of directors. Understanding why directors lack awareness or remain passive in crisis detection is paramount because this paralysis leads to crisis escalation with detrimental effects for the entire organisation.

The extant literature (Hillman, Nicholson, & Shropshire, 2008; Pugliese, Nicholson, & Bezemer, 2015) focuses predominantly on a 'steady and stable' context and neglects how boards act during a crisis. Additionally, most studies (Ahrens, Filatotchev, & Thomsen, 2011; Erkens, Hung, & Matos, 2012; McNulty, Florackis, & Ormrod, 2013) take a positive (and sometimes normative) perspective on how boards act during crises, especially during financial crises. Research on boards of directors finds inconclusive and mixed results on whether directors' characteristics affect financial crisis resolution (Abatecola, Farina, & Gordini, 2013). It therefore remains unclear why boards sometimes fail to recognise that a crisis is imminent, and why directors' cognitive schemas are often not triggered during a crisis. This research seeks to gain a more nuanced understanding of why boards often lack pro-activity in crisis detection and response.

In this study, we gained exceptional access to companies that were in crisis during the interviews or had solved a crisis situation in the last four years. Semi-structured interviews were conducted with chairs of boards, independent directors and executive directors. During the data analysis process, the cognitive constraints and the role of cognitive schemas emerged from the data, and a literature review was retrospectively undertaken on directors' cognitive schemas.

This research makes four important contributions. First, we contribute to the research on boards of directors during financial crises (Dowell, Shackell, & Stuart, 2011; van Essen, Engelen, & Carney, 2013) by demonstrating that directors, regardless of their roles within a company, suffer from individual, collective and hybrid constraints that limit their understanding of the signs of a crisis. Second, we expand current research on boards of directors, which predominately focuses on the steady and stable context (Torchia, Calabrò, & Morner, 2015; Daily & Dalton, 1998). We do so by demonstrating how the boardroom acts during times of uncertainty by taking the unique perspective of directors who have recently gone through a crisis. Third, we contribute to crisis management studies (Amankwah-Amoah, 2016; Kücher & Feldbauer-Durstmüller, 2019) by integrating strategic cognition theory (Forbes & Milliken, 1999). As such, our research finds that directors' cognitive constraints restrict their generation of ideas and solutions. As a consequence, directors' cognitive schemas are not triggered, which disables their capacity to give meaning to the seeds of a crisis (Finkelstein et al., 2009; Samdanis & Lee, 2019). Finally, for boards of directors, we provide evidence why directors tend not to proactively react to the seeds of a crisis. Policymakers should support the board to detect, survive and learn from a crisis.

2. Literature Review

2.1 What is a crisis?

An established body of research defines an organisational crisis as a process (Pearson &

Clair 1998; Sayegh, Anthony, & Perrewé, 2004).[2] This implies that a crisis does not suddenly occur (Kash & Darling, 1998); the situation develops through different stages (Lukason & Laitinen, 2019) and cycles (Fernández & Mazza, 2014) over a period of time (Trahms, Ndofor, & Sirmon, 2013; Weitzel & Jonsson, 1989). Although a crisis may be a process that unfolds over time rather than happening suddenly, directors still face time pressures and have to make quick decisions. When directors realise that a smouldering crisis is escalating, fear of collapse and failure emerges, leading to the drive to find immediate solutions (Williams et al., 2017). In these situations, time pressures and accelerating decisions become critical factors (Bakker & Shepherd, 2016). This process-based view provides a dynamic perspective on a crisis, which suggests that it is impossible to encapsulate it as a single triggering event; rather, a crisis is a long process from unknown paths to known scenarios (Coombs, 2014; Pearson & Clair, 1998).[3]

As Lorsch and MacIver (1989) suggest, a crisis may occur when combinations of internal and external events affect a company (MacDougall, Ritchie, Yalden, & Bradley, 2016; Sheng & Lan, 2019). External causes are mainly linked to environmental uncertainty and contextual conditions (Lorsch & MacIver, 1989). Internal causes are mainly related to environmental maladaptation, typically bad decisions, or conflicts and misbehaviours in the boardroom (Cyert & March, 1963). Previous research states that external and internal causes are not necessarily sequentially intertwined (Booth, 2015). This is the case when an industry collapses and the inability of top management to cope with this challenge leads to a crisis. On the other hand,

[2] The literature on organisational crises is fragmented, especially with regard to a lack of agreement on the definition of a crisis (James & Wooten, 2005; Pearson & Clair, 1998; Williams, Gruber, Sutcliffe, Shepherd, & Zhao, 2017; Wooten & James, 2008). There are two main conceptualisations of a crisis: crisis as an event (Carmeli & Schaubroeck, 2008) and crisis as a process (Mitroff & Pearson, 1993). A crisis as an event is a situation (Pauchant & Douville, 1993) or a sudden event (James & Wooten, 2005) that harms the organisation and its stakeholders (Shrivastava, Mitroff, Miller, & Miclani, 1988), such as a terrorist attack, natural disaster or plant explosion. This conceptualisation reinforces a linear and static view of a crisis because it is not concerned with drawing relationships between different events that have occurred over a period of time; rather, it considers a crisis as a single event that negatively affects the functioning of a company (Brown, 1979; Lorsch & MacIver, 1989).

[3] Previous studies on smouldering crises identify key stages (Booth, 2015; Williams et al., 2017). It is noted that, although the literature does not agree on the number of stages, it is possible to single out the following phases: detection, preparation, containment/damage control, business recovery, and learning and reflecting (James & Wooten, 2005). The present research conducts an in-depth analysis of the first key stage, i.e. detection.

organisations may face either internally or externally driven crises without any particular sequential relationship between the two (Morrow, Sirmon, Hitt, & Holcomb, 2007).

In line with previous research, our study focuses on crisis as a process because it provides researchers with more extensive opportunities to investigate the general inability of directors to detect a crisis in time to prevent it (Lukason & Laitinen, 2019). It also gives the opportunity to analyse the cognitive complexity that occurs during a crisis (Lorsch & MacIver, 1989). Therefore, considering crisis as a process offers the possibility of gaining insights into the thinking or cognitive processes of key individuals during a crisis (Booth, 2015).

2.2 Directors' cognitive schemas and board passivity

Drawing upon the strategic cognitive literature (Finkelstein et al., 2009), the recognition and the perception that a crisis is approaching (Sheaffer & Mano-Negrin, 2003) is the first step towards making sense of ambiguity and uncertainty (Weick, 1995). Crises are filtered by cognitive schemas or lenses (Weick, 1989), and the perception of the crisis may vary from one board member to another (Trahms et al., 2013). Cognitive schemas refer to the mental models of directors that consist of causal beliefs for understanding and responding to the crisis (Combe & Carrington, 2015; Weick, 1995).

The directors' cognitive thinking can be represented by their cognitive schemas (Finkelstein et al., 2009; Brown et al., 2019; Haleblian & Rajagopalan, 2006), which comprise two cognitive lenses: (1) cognitive structures – how knowledge and beliefs are arranged in directors' minds (Narayanan et al., 2011); and (2) cognitive processes – how directors' minds actually work (Hambrick, Geletkanycz, & Fredrickson, 1993). Cognitive structures and cognitive processes are intertwined because they enable directors to make sense of and interpret environmental stimuli. Directors rely on their existing cognitive structures when they are actively involved in cognitive (i.e. decision-making) processes; on the other hand, these structures are also the result of former cognitive processes (Wrona et al., 2013).

The cognitive structures and processes of directors act as a curtain between the real environment and the directors' perception of the environment (Hambrick & Mason, 1984). Directors' perceptions are characterised by the so-called selective interpretation of the environment (Hambrick & Mason, 1984): they will only pay attention to a few stimuli – those that are more familiar. The seminal work of Forbes and Milliken (1999) proposes a model linking board effectiveness with directors' cognitive schemas. As Chatterjee and Harrison (2001) point out, the boardroom may suffer from cognitive constraints or barriers (Boivie et al., 2017), resulting in the board failing to tackle a crisis effectively.

Directors, as individuals or a group, may suffer from individual, collective or hybrid constraints (Bundy, Pfarrer, Short, & Coombs, 2017) that can interfere with or limit the functioning of their cognitive schemas (Mumford et al., 2017). Individual constraints refer to the individual beliefs and limitations that shape the cognitive schemas of single actors (Narayanan et al., 2011). The formation of individual constraints is influenced by a single actor's interpretation of stimuli, their experience, and generally by elements of the 'lifeworld' such as personality and culture (Kirsch, 1996; Ortmann & Seidl, 2010). Such individual-level cognition constraints influence individual directors' cognitive schemas, and therefore their solution evaluation and the adoption of different perspectives (Bonnardel, 2006). Collective constraints refer to the limitations of a group of individuals (like the board) that can emerge as a result of social interactions (Lamont & Molnár, 2002; Wrona et al., 2013). Wrona et al. (2013) point out that research regards collective constraints as a mere aggregation of individual constraints such as functional background, diversity and age. This is problematic because collective constraints stem from a complex network of relationships between actors (Caughron & Mumford, 2008). Actors in a group discuss their own beliefs and share opinions and interpretations of events. Therefore, they might face collective limitations or constraints that prevent them from taking actions or agreeing on a given matter, or they may make decisions that are not necessarily beneficial for the company. Hybrid constraints refer to those cognitive limitations that can characterise both single individuals (a director) and a group of actors (the board) (Mumford et al., 2007). This is echoed by Medeiros et al. (2017), who posit that constraints do not operate in isolation, i.e. it is expected that constraints interact with each other. Such constraints restrict the generation and evaluation of alternative actions (Medeiros et al., 2014), resulting in the selective perception of the environment (Hinojosa et al., 2017).

These constraints and directors' selective perception of the environment lead to a limited vision of a crisis (Antonacopoulou & Sheaffer, 2014). As such, directors' interpretation of how to solve a crisis is narrowed, which, in turn, reduces the likelihood that directors will take strategic decisions to tackle a crisis (Bundy et al., 2017). As a result, the board remains passive (Mellahi, 2005; Nag, 2015), waiting for the crisis to escalate (Lorsch, 1995). Board passivity refers to situations where directors do not challenge their colleagues (Li et al., 2018; Zajac & Westphal, 1996), make decisions, or take action (Mellahi, 2005). They fail to act on threatening information presented by management (Muñoz-Izquierdo, Segovia-Vargas, Camacho-Miñano, & Pascual-Ezama, 2019; Platt & Platt, 2012). Board passivity can, therefore, lead to paralysis, where directors discount the signs of an incipient crisis (MacDougall et al., 2016). Existing research (Platt & Platt, 2012) and corporate scandals show how a board can be passive or '*flat-out oblivious to what goes on around them*' (Nadler, 2004, p. 102).

Studies on the European financial crisis (Conyon, Judge, & Useem, 2011; Dowell et al., 2011; van Essen et al., 2013) found that some board characteristics could be detrimental to tackling the crisis, such as board independence, board size, CEO power and CEO duality (Daily & Dalton, 1998). However, Abatecola et al. (2013), through a systematic literature review, point out that board characteristics often explain the resolution of the financial crisis. Other studies (Amankwah-Amoah, 2016; Mellahi, 2005) depart from board characteristics to analyse board dynamics and processes during a crisis. Studies on cognitive strategy emphasise the need to analyse the cognition side of directors during a crisis (Lorsch & MacIver, 1989). McNulty et al. (2013) develop this further by analysing the impact of cognitive conflicts on board task performance during the 2008–2009 financial crisis. Their research complements Lorsch and MacIver's study (1989), where boards characterised by high-effort norms manage better during depressed periods of crisis. In the same vein, other research (Mellahi, 2005; Samdanis & Lee, 2019) concludes that directors and executives can suffer from some cognitive limitations during a crisis.

Previous studies (Boivie et al., 2017; Booth, 2015; Lorsch & MacIver, 1989) demonstrate that directors have a more passive approach to a crisis because they do not detect the signs of a crisis, resulting in a delay in tackling it (Muñoz-Izquierdo et al., 2019). As Kücher and Feldbauer-Durstmüller (2019) point out in their literature review, one of the causes of the late detection of a crisis lies in psychological or cognitive factors. If cognitive structures and processes are not triggered, it is highly problematic because directors are not able to make sense of the signs of a crisis (Combe & Carrington, 2015). This will contribute to the crisis rapidly escalating into a wider crisis for the entire organisation (Mitroff, 2004) with potentially disastrous consequences.

Directors, through their cognitive schemas (cognitive structures and processes), are unable to interpret and give meaning to the signs of a crisis (Finkelstein et al., 2009; Mumford et al., 2015). Directors may not perceive a crisis as such, which means that their cognitive structures and processes are not triggered (Frigo, 2009) leading to a lack of crisis sensemaking (Combe & Carrington, 2015) and a failure to interpret environmental stimuli. As a consequence, directors tend to remain passive and do not actively intervene when the signs of a crisis become apparent (Platt & Platt, 2012). However, it remains unclear why cognitive structures and processes are not triggered in directors' minds during a crisis, and what the factors are that prevent directors' cognitive structures and processes from being activated. Therefore, this research seeks to gain a more nuanced understanding of why boards often lack proactivity in crisis detection and response. Particularly, we investigate the cognitive constraints that prevent directors from proactively tackling a crisis, whether these cognitive constraints are different depending on the type of crisis, and the outcome of the crisis and the directors' role.

3. Methodology

An approach based on qualitative data is opportune for gaining new insights into a phenomenon that is not fully explored (Gioia, Corley, & Hamilton, 2012). Analysing a crisis typically means looking at a series of events and actions that take place over a long period of time. In-depth semi-structured interviews allow the researcher/interviewer to reconstruct the story together with the informant, as well as to double-check the reliability of the information by digging deeper into certain aspects mentioned by the interviewee. Semi-structured interviews encompass often-used descriptors of the qualitative methodology, such as 'flexible' and 'exploratory' (Graebner, Martin, & Roundy, 2012), which is in line with our research purpose.

Given the limited knowledge that exists on how boards act in times of crisis, this exploratory research adopts a blend of deductive and inductive approaches (Graebner et al., 2012). During the data analysis process, the role of cognitive schemas emerged (Eisenhardt, Graebner, & Sonenshein, 2016) and an *ex post* literature review on directors' cognitive schemas was conducted.

3.1 Informant selection and the Belgian corporate governance context

The informants were selected based on a mix of judgment and convenience sampling (Creswell, 2013), given the challenge presented by the need to interview directors of medium-large companies that were in a crisis during the interview or had solved a crisis in the last four years.[4] During our data collection, the directors were experiencing the last stage of crisis, i.e. learning and reflecting (James & Wooten, 2005). Therefore, directors were finalising their assessment of the causes and consequences of the crisis and what they had learnt. It follows that directors, even if they were formally still in the crisis process, were able to provide a relatively balanced view of the factors that prevented them from detecting the early signs of the crisis.

The selection criteria of informants included medium-large organisations that had faced an extreme threat to their survival that led to the company's disfunction, i.e. a crisis (Mitroff & Pearson, 1993; Williams et al., 2017), where directors acted passively and failed to understand that a crisis was imminent. Over fifty directors and top executives were contacted to verify whether they had encountered a crisis and whether or not they would be willing to participate in this research. Table 1 provides relevant information on the 27 informants who agreed to be involved in this research. The informants work as independent directors, chairs or executives of medium-large Belgian companies across a broad range of industries, such as manufacturing, insurance, food, health and luxury products. None of these 27 informants had actively worked with the researchers before; thus, any bias in the data collection and analysis was avoided.

Belgian corporate governance structure is similar to that of other European countries (Levrau, 2017). With regard to shareholder composition, Belgian companies have concentrated ownership, where the largest shareholder possesses on average 45% of share capital and the stake of the second-largest shareholder is on average 11% (Deloitte, n.d). The composition of boards of directors includes both executive and non-executive members. In line with other European countries (Merendino & Melville, 2019), the size of the board of directors is, on average, 10, where at least half of the board must be non-executives as per the new Belgian

[4] We chose four years as the cut-off time because this is generally regarded as a mid-term timeframe (Gold, Thorpe, & Mumford, 2016); therefore, the risk that informants would not remember the details and valuable information of the crisis was minimised.

Corporate Governance Code (2019). The Code also recommends not appointing directors that have more than five directorships (De Vlaminck & Sarens, 2015). Similar to other European countries, Belgian companies typically adopt CEO non-duality in their leadership structure, i.e. the role of the chair and the CEO is usually separate.

INSERT TABLE 1 ABOUT HERE

3.2 Data collection

We developed an interview protocol (see Appendix A) containing guiding questions, which was flexible enough to allow the researchers to delve deeper into issues that emerged during each semi-structured interview. The interview guide was developed based upon our research objectives and our analysis of previous literature on boards of directors in crisis. Therefore, precise theoretical constructs were not determined in advance; this is in line with the exploratory and qualitative nature of the study (Graebner et al., 2012). The literature review on cognitive schemas was carried out during the data analysis once the themes related to directors' cognition emerged.

The interviews were conducted between September 2015 and September 2016, and each interview lasted between 60 and 120 minutes. During the interviews, informants were asked to provide their perspective on both individual directors and the board as a team. Therefore, we were able to understand the barriers at the individual and collective levels. This is in line with previous research (Boso, Adeleye, Donbesuur, & Gyensare, 2019; Merendino et al., 2018) where individual directors of different companies were interviewed and the researchers were able to abstract findings at both an individual and collective level. We took several steps to enhance the reliability of the data collected. First, all interviews were recorded and transcribed immediately upon completion. The transcribed interviews ran to almost 250 pages of single-spaced text. Second, complete anonymity was guaranteed as per the ethics guidelines of the authors' institutions. Third, interviewees had the opportunity to verify the accuracy of the transcript and make changes, if they deemed this necessary, before the analysis (Patton, 2002). Finally, data collection generated numerous field notes containing a wide variety of impressions, comments and anecdotes written by the interviewers during or immediately after the interviews. These field notes provided an overall impression of the emerging concepts even before starting the data analysis.

We minimised the limitations and biases of memory and recall of the details that occurred during the crises by selecting informants who had recently experienced a crisis or were still in the later stages of one. Collecting data after a crisis or when it is in its later stages is extremely advantageous. Directors are able to provide a broad, comprehensive and in-depth view of how they knew they were in the midst of a crisis and the reasons why they acted passively. In fact, if data collection were conducted during the earlier stages of a crisis, the risk would be that directors would not have a clear and balanced view of the crisis they were going through. We must add that, as previous research points out (Merendino et al., 2018), interviewing directors is not unproblematic given their busy schedules and reluctance to share sensitive information. Furthermore, interviewing 27 directors of medium-large companies that had experienced a crisis was an even more strenuous task, considering the highly sensitive, private and confidential information that was disclosed to the researchers.

3.3 Data analysis

This research applied Gioia et al.'s (2012) approach, where first order concepts, second order themes and aggregate dimensions were identified throughout the data analysis. In our first stage of data analysis, we conducted open coding, where the transcripts were read in order to identify the first relevant categories (Gibbs, 2007; Miles & Huberman, 1994). The data was analysed using the software package Dedoose by assigning open codes to the interviews to break the data apart and delineate concepts relating to the blocks of raw data (Corbin & Strauss, 2008). In the second phase of data analysis, these open codes were categorised into more abstract codes, commonly defined as axial codes (Strauss & Corbin, 1998). As new insights emerged from this iterative process, additional interviews were conducted, which led to an enrichment of our explanations. We decided to conduct additional interviews after the first round of coding in order to strengthen and validate our preliminary findings. No further interviews were conducted after the second round as it was judged that a saturation point had been reached and no additional insights were emerging from the data (Strauss, 1987). All these features support the reliability of our results (Miles, Huberman, & Saldana, 2014). Following Eisenhardt et al.'s (2016) suggestions, we referred to the existing literature in order to continuously refine our inductively derived theoretical insights. The researchers reviewed the results to identify any discrepancies in the findings until an acceptable level of reliability was achieved (Hodson, 1999; Hruschka et al., 2004).

Intercoder reliability (Krippendorff, 2004) and intercoder agreement (Campbell, Quincy, Osserman, & Pedersen, 2013) were maximised by the two researchers, who independently coded the data to verify redundancies, reveal discrepancies, check coding reliability and identify any new insights. In line with Campbell et al.'s (2013) suggestions, we assessed intercoder reliability on a sample of five interview transcripts, which is in line with the 10% threshold of the set of interviews suggested by Hodson (1999). Each researcher created a codebook, which included the list of aggregate dimensions, themes and the first order concepts, their explanations and quotes for each. As per Campbell et al.'s (2013) guidelines, a codebook is an important tool for improving reliability because it allows researchers to understand whether coders have coded the same data the same way. After each researcher assessed the sample of transcripts and designed their own codebook, we met together to discuss the emerging themes and to perform intercoder agreement assessments. Based on Robinson's (1957) measure of agreement, intercoder agreement on the number of codable assertions in the sample text was less than 95%. Disagreements between coders serve as a basis for discussion and strengthening the codebook or data structure, and therefore improve the rigour and reliability of the data analysis (Gioia, Price, Hamilton, & Thomas, 2010). We decided to separately code another sample of five interviews to refine the codebook and to reach a higher level of intercoder agreement of at least 95%.

During this process, the role of cognitive schemas emerged, and we therefore revisited the existing literature. In order to ensure reliability, discussions between the researchers and the refinement of the codebook continued until we reached 95.5% intercoder agreement. Once a high level of agreement with the codebook was achieved, as corroborated by extant studies, other senior scholars and professionals revised our data structure. In order to assure a high degree of rigour and robustness (Denzin & Lincoln, 2011), over the period of 2016 to 2018, our data analysis was shared with different senior academics and practitioners (chiefly, executives and independent directors) during meetings, events and conferences to refine our data analysis.

Finally, the analysis generated three main aggregate dimensions: individual constraints, collective constraints and hybrid constraints. Individual constraints include overconfidence, lacking relevant expertise and lacking independence. Collective constraints concern groupthink, underestimation, short-termism and postponing decisions. Hybrid constraints include a low level of commitment, emotional responses and lacking critical information. Figure 1 shows our first order concepts, second order themes and aggregate dimensions, as per Gioia et al. (2012). The researchers identified 105 quotations for the first aggregate dimension individual constraints, 219 quotations for the second aggregate dimension collective constraints, and 104 quotations for the third aggregate dimension hybrid constraints. Appendix B shows in more detail the number of and further quotations for each aggregate dimension and second order theme.

INSERT FIGURE 1 ABOUT HERE

4. Findings and Discussion

Our results are explained by the cognitive model (Finkelstein et al., 2009) in a context of uncertainty where directors pay attention to only a few environmental stimuli (Milliken, 1987). The cognitive model refers to the cognitive thinking of directors and how their minds process beliefs, knowledge and assumptions (Forbes & Milliken, 1999). Our research seeks to understand why the board acts passively during a crisis, in particular in response to the following questions: Why are cognitive structures and processes not triggered in directors' minds during a crisis? What are the factors that impede directors' cognitive structures and processes from being activated?

Previous research has proven that constraints interact with, and influence cognitive processes involved in, design thinking (Mumford et al., 2017). A stream of literature holds that cognitive constraints limit decision-making and, therefore, the resolution of a crisis (Samdanis & Lee, 2019). On the other hand, other scholars maintain that cognitive constraints favour creative thinking and the resolution of problems (Medeiros et al., 2014). Our data shows that, in line with the first stream of research (Finkelstein et al., 2009), such cognitive constraints can hinder cognitive processes, resulting in paralysis in the boardroom.

> *When you're in the build-up of the crisis, the question is, as a board, how can you see that there is a crisis coming? And that's not easy. The directors simply cannot see it.* (Informant 26)

Directors do not perceive the seeds of a crisis and remain locked into mental models (Combe & Carrington, 2015) that are not suitable for understanding and reacting to the new situation. In the next paragraphs, based upon the interviews, we set out three categories of factors that we find can hinder the activation of directors' cognitive schemas, i.e. individual constraints, collective constraints and hybrid constraints, where constraints are boundaries that shape individuals' behaviours and their cognitive schemas (Bless & Fiedler, 2004). Figure 2 summarises our results by showing the cognitive barriers that executive and independent directors experience during internal and external crises.

INSERT FIGURE 2 ABOUT HERE

We found that directors' cognitive schemas, which should help directors to tackle uncertain situations (Mumford et al., 2007), are not triggered due to these cognitive barriers. Directors experience a restriction of the generation of ideas and solutions, i.e. they cannot make sense of the crisis signs (sensemaking). Sensemaking is a cognitive phenomenon where both individual directors and the boardroom as a whole strive to give plausible meanings to the ambiguity and uncertainty of a crisis (Maitlis & Sonenshein, 2010). As a result of this failure in sensemaking, directors are not able to scan, interpret and assess the seeds of a crisis (Samdanis & Lee, 2019) and board passivity ultimately unfolds. We also found that directors manage to overcome barriers by, for instance, changing the board composition, hiring an external consultant, or setting up a crisis committee. In these cases, directors' cognitive schemas are triggered, enabling the generation of solutions and alternatives. Therefore, they can make sense of crisis signals, find alternatives and create solutions to understand the crisis, and thus better enable the organisation to survive the crisis.

4.1 Individual constraints

We found three main individual constraints that hinder individuals' cognitive processes and structures and therefore the recognition of a crisis: overconfidence, a lack of relevant expertise and a lack of independence.

Overconfidence. Overconfidence or hubris refers to the '*tendency to overestimate the accuracy and precision of one's judgments and predictions*' (Almondoz & Tilcsik, 2016, p. 1127). Overconfidence amongst directors is a common pattern that characterised our informants. As one director confirmed, '*there was this group of two or three older and wiser board members* *that were involved in the negotiations […]. It was a show of confidence from the older members and the young generation could not intervene much'* (Informant 13). This suggests that overconfident directors might be detrimental to the detection and resolution of a crisis because given their high level of confidence they tend to overestimate their own experience, capabilities and predictions. One director clearly recognised this:

> *The main problem was the megalomaniac ideas of the president of that time. He wanted to grow [the business] without the company having enough finance. He [the chair] didn't even listen to the issues raised by the board*. (Informant 2)

Therefore, overconfidence can undermine effective decision-making to solve a crisis because it may contribute to a less accurate and an overly optimistic assessment of the outcomes of decisions. Directors' cognitive processes are not properly activated because their overconfidence does not allow them to correctly perceive a crisis as a threat. Overconfident directors tend to ignore potential problems and overlook crisis planning and crisis vision formation, both of which are cognitive processes (Shipman & Mumford, 2011) that are not perceived to be pivotal.

Lack of appropriate expertise. We found evidence that the board wasted time before switching to action. The informants came up with evidence that board passivity was due to a lack of appropriate expertise and knowledge on the part of the directors.

> *We could have taken a more important role; perhaps we should have taken over the permanent office or found skilful people from management in the meantime. In the boardroom, directors are outsiders and are not always able to take on the role or prepared to solve a crisis.* (Informant 23)

Pre-existing knowledge is the starting point from which new knowledge and information are sought and interpreted through cognitive schemas (Finkelstein et al., 2009). The combination of increased complexity and a paucity of knowledge can lead to a severe delay in decision-making, resulting in a paralysis of the board in tackling the crisis. Most of the directors had only superficial knowledge of the industry, which made it almost impossible to see the disruptive changes coming up. One director (Informant 12) complained about the fact that his board spent most of the time 'freewheeling' about the future of the company, not seeing the reality:

> *I think they were quite happy to be on our board, very respectful, also realising that they did not have a particularly strong knowledge of the business, so they were quiet [...]. So, I think that certainly also had an impact on the attitude, the reaction of the board.* (Informant 12)

Another director (Informant 16) confirmed that '*the paucity of knowledge of my board*' was one of the reasons for a significant delay in the detection of the crisis. Because of a lack of knowledge and experience in crisis resolution, directors are not cognitively equipped to perceive the seeds of the crisis; they do not have the necessary cognitive background to identify and understand such signals.

Lack of independence. We found that a lack of independent thinking in strategic decision-making between directors was one of the main reasons why the board remained passive and reacted slowly to crises. A lack of formal independence refers to the inability of directors '*to make strategic decisions consistent with the concerns and evaluations of a broader set of stakeholders*' (Rindova, 1999, p. 966). Some directors were independent on paper but not in practice: their personal interests turned out to be more important than the interests of the company. For instance, a board populated with politicians did not dare to take strategic decisions because of their own personal interests (their popularity or concerns about their re-election).

> *The Lord Mayor of [a Belgian city] was president of the board and he had to take very tough decisions to restructure the company. It was absolutely impossible because he had to find his own electors. The board was totally unable to take any decisions except to ask for subsidies each year to survive*. (Informant 4)

The lack of independent thought is due to the fact that independent directors have 'artificial' interests in the company although they are independent by law. They will tend to avoid facts and circumstances relating to the crisis, resulting in board passivity with potentially disastrous consequences for the board and the organisation as a whole.

Some independents were relatively young and more occupied with their personal career than the interests of the company. The main goal of their board mandate was to create personal visibility rather than detecting the seeds of the crisis. When directors were active during board meetings, it was mainly ego-driven and was not always constructive or in the interests of the company, leading to a failure to recognise the upcoming crisis. One director admitted:

> *I call them the kangaroo directors because they make a point of coming on board with one company, trying to be visible […] They are really ego-driven […] so that they join another board, maybe a bigger board, and continue to move up the director ladder; they were not really interested in the company and its crisis*. (Informant 11)

A lack of independence means that even when directors are able to recognise and interpret the seeds of a crisis, they do not react because of their personal interests (Brown et al., 2019). As directors may consider their personal interests to be more important than the company's interests (Leblanc, 2016), their cognitive processes encourage them to ignore environmental stimuli. Directors' lack of independence means that their cognitive processes are not activated; in turn, sensemaking and interpretation of environmental stimuli are not enabled.

4.2 Collective constraints

We found that the following collective constraints can compromise directors' cognitive structures and processes during a crisis: groupthink, underestimation, short-termism and postponing decisions.

Groupthink. We found clear evidence of groupthink and conflict avoidance behaviours within boards, whereby the board did not really have a critical attitude towards the CEO. Conflict avoidance and the lack of a critical attitude towards the CEO are part of groupthink (Janis, 1972) and are collectively defined as cognitive biases (Torchia et al., 2015), which result in inefficient and ineffective behaviour from directors when tackling a crisis. Too much sympathy from the board towards the CEO creates a kind of strategic blindness to the seeds of a crisis.

> *There was a protectionism, so it's not always easy to get out of the emotions. There is such a connivance and such a strong leadership, and no one dares to ask*

> *questions. They [the directors] are even blind to the situation. [...] There is no anticipation in thinking.* (Informant 24)

A director confirmed that his board tried to compromise and to create a harmonious and friendly climate leading to conflict avoidance between directors:

> *It's always difficult because the climate within the board is always friendly, unless the chief executive officer becomes very bad or unless after two or three years the results are still bad and we don't see any positive evolution, but the climate is always very positive, very friendly*. (Informant 4).

By striving to create a harmonious and friendly boardroom, directors rarely express their disagreements during meetings, leading to board passivity in crisis detection. Even when directors have a sufficient level of knowledge, they may act passively because of groupthink, a lack of critical attitude or conflict avoidance (*scilicet*, cognitive biases, Torchia et al., 2015) that compromise their cognitive structures. Directors will not raise any crisis issues because they may be concerned about the negative impact on their relationships with their peers and management (e.g. the CEO).

A director confirmed that '*it was often necessary not to bypass the CEO; we can't destroy his credibility and put the company at risk*' (Informant 20). Conflict avoidance can cause serious harm in the boardroom, especially during a crisis, because directors who attempt to please their peers or superiors do not seek alternative solutions, not wishing to damage the internal 'teamness' of the board (Hambrick, Humphrey, & Gupta, 2015). Directors are not able to have a personalised interpretation of reality (cognitive structure) when groupthink, conflict avoidance and a lack of a critical attitude do not allow stimuli to be arranged and connected (Finkelstein et al., 2006). Directors' cognitive structures are influenced by the relationships they have within the boardroom, which may lead to a biased interpretation of these stimuli (Park, Westphal, & Stern, 2011).

Underestimation of the seeds of the crisis. An underestimation of the seeds of the crisis is related to a low effective response to environmental stimuli (Rindova, 1999). In this vein, one director admitted, '*It was only one person who stood up but he has never really been followed* *because once again the results were still positive'* (Informant 5). The board understated the issues, expecting a stabilisation of the situation in the short run. Another director reiterated that '*they [the directors] typically underestimate the seeds of the crisis[…], probably because there was not an expressed strategy'* (Informant 10). This reveals that directors' limited perception of an upcoming crisis is due to an underestimation of its signs, which in turn fails to trigger their cognitive schemas. Directors are not able to build meaningful frameworks that could then lead to creative and innovative solutions (Gold et al., 2016). Because of this lack of correct appraisal of the seeds of a crisis, boards of directors tend to remain passive (Mellahi, 2005) and fail to make any strategic decisions until the crisis escalates.

Postponing decisions. Because directors underestimate the complexity and tenacity of crises, they repeatedly postpone important decisions, even when the seeds of a crisis gradually become more evident.

> *The board sees the figures when it realises that something is not going well. The board is looking for answers about what to do. But if the board feels that the CEO cannot give the answers, they postpone all the decisions. They cannot decide.* (Informant 9)

The boards also preferred to retain the old business model and postpone decisions to make big strategic changes. They preferred to wait, with the result that the crisis escalated and decisions then had to be made under considerable stress. However, one director wanted to act more proactively:

> *The other attitude of the directors is a 'let's wait and see' approach. I mean, we will see in two years if that decision had been necessary […] I was very reluctant about this 'let's wait and see' approach.* (Informant 15)

This suggests that delaying decisions can be common in the boardroom throughout a crisis, representing a lack of activity on the part of directors. The main consequence is that directors and managers adopt the 'old ways of thinking', or try to maintain the status quo (Hambrick et al., 1993). Directors tend to procrastinate, failing to gather more information or to evaluate alternative solutions, because their cognitive schemas are not triggered. This delay is a form of error identified as contributing to board passivity or inertia (Combe & Carrington, 2015) because directors are incapable of using their knowledge, beliefs and assumptions to interpret the signs of a crisis.

Short-termism. Short-termism is an individual constraint because a single director is likely to shift their temporal focus towards the short term and tend towards conservatism (Flin, 1996), especially during periods of great uncertainty. We found evidence that boards mainly focused on the short term because they tend to make decisions to boost immediate results. By doing so, they continue to overestimate their abilities and chances of success. One director stated, '*really the situation was quite tense and at that time, of course, we had to react and it wasn't the board but it was the management that reacted, making significant decisions, short-term decisions, to conserve cash'* (Informant 4). Therefore, the board was only taking marginal and incremental actions to survive when the first indications of the crisis became clear. Another director makes the point by rhetorically asking, '*How can you make sure that the board keeps thinking long term and does not kill the company by thinking really short term and not thinking long term?'* (Informant 1). This reveals that a crisis can be accentuated by the short-termism of directors or managers who feel under pressure to solve a crisis with short-term outcomes. Because of their short-termism, directors are unable to develop meaningful frameworks for understanding how to solve a crisis (Guiette & Vandenbempt, 2013). As a consequence, cognitive structure and processes that should allow directors to interpret stimuli are not triggered.

4.3 Hybrid constraints

We identified three main constraints that limit the activation of directors' cognitive structures and processes: a low level of commitment, the emotional response of shareholders and a lack of critical information.

Low level of commitment of the board towards the company. Commitment is a relational process that develops as a function of individuals' perceived relational environment (Burke &

Segrin, 2014). Despite the fact that the board's commitment to a company is surely a vital factor to minimise the effects of a crisis, we found clear evidence that some directors were not really committed to their boards. Both management and the market authorities were well aware of the upcoming crisis; however, the board remained blind because of directors' busy agendas and a low prioritisation of the crisis.

> *The other thing is the agenda of those guys because they used to skip boards [meetings] because they are far too busy with other boards, other meetings and whatever….* (Informant 5)

A low level of commitment represents a cognitive constraint as it may occur in a situation where some individuals in a group choose to sit back and let others do the work, i.e. social loafing (Boivie et al., 2017). Less committed directors are likely to present a barrier when the board seeks to interpret and assess the seeds of a crisis. Lorsch and MacIver (1989) point out that time commitment is a challenge that prevents directors from tackling a crisis. We found that it is not only a time commitment that constrains directors, but also a lack of engagement in the thinking process to solve a crisis.

> *They [the independent directors] are just there doing nothing. I think it's very easy for them to be on the side-line. […] I am absolutely* up for debates, *but they stayed on the side-line without playing the game. And of course, sometimes it was one or two or three that stayed aside.* (Informant 8)

As a consequence, because of such a low commitment to the board, directors do not invest the time and effort to develop a sufficient level of knowledge about a crisis. They may gather some information from other directors but because of their low commitment they do not prepare themselves sufficiently for board meetings, which makes them, cognitively speaking, not able to make value-adding contributions to prevent or solve a crisis. As a consequence of a low level of commitment, cognitive schemas are not triggered.

Emotional response of the main shareholders. Shareholders typically do not have a good understanding of how the company and industry work. Therefore, the presence of majority shareholders on the board may also create blindness to upcoming crises. We found that it is extremely challenging for directors to convince colleagues who represent main shareholders.

> *I told them, sell [name of a subsidiary] and again, the two main shareholders on the board with the loud voices, they said no. They said, this is going to be the cash cow. […]They did not want to do that and you know what happened? [Name of the subsidiary] went bankrupt. So, all the people were saying it and seeing it except the two shareholders who thought they would make a fortune by sitting on it and keeping it.* (Informant 7)

The convictions of these majority shareholders, as well as their financial stake in the company, may lead to an emotional response that reduces the capacity of the board to recognise the signs of an upcoming crisis. This behaviour could be defined as a commitment to the status quo (Hambrick et al., 1993). Their emotional connection to the company, which had once been very successful, makes them blind to the reality. One director confirmed that '*the dominant shareholder was too stubborn, not willing to see the reality despite the declining revenues, because of a too close emotional connection with the company*' (Informant 8). Taking strategic decisions means that majority shareholders should let go of the past (Karabag, 2019) and accept that decisions taken previously were not the right ones. Additionally, the chair, who should play a prominent and coordinating role between the directors, shareholders and executives (Bottenberg et al., 2017), does not necessarily act as such during a crisis. For instance, as long as the results did not become too negative and the majority shareholders were satisfied, the chair did not ask for major strategic action to tackle the crisis, despite the fact that some independent directors had raised some questions:

> *It was one or two people [independent directors] who stood up but they have never really been followed because once again the results were still positive.* (Informant 5)

Therefore, dominant majority shareholders on the board can make it difficult for independent directors to voice their concerns, especially during a crisis. Emotional convictions can create biased interpretations of the stimuli, and this can explain why directors tend to stick to old business models and previously taken decisions. It follows that the emotional response of shareholders (Raelin & Bondy, 2013) can interfere with the directors' inferences or cognitive structures, resulting in a passive and unresponsive board.

Lack of critical information. We found evidence that a lack of critical information is another reason for board passivity or a delay in crisis detection. This refers to a paucity of clarity and the accuracy of information shared with directors. One director confirmed that during the crisis, 'the board was never fully informed about what was going on in the company' (Informant 7). With only partial information, it is extremely difficult for independent directors to understand, assess and tackle the seeds of a crisis. We found evidence that information provided to boards was filtered and manipulated by the CEO to disguise problems:

> *In 2008, the project starts escalating… in the first stage, the information provided to the board, even the financial statements, was manipulated to hide this. Moreover, the bottom-up information flows were blocked by the CEO. Operational people had to shut up. […] He made the board blind by showing them useless details to prevent them from seeing the real message that was hidden in the information.* (Informant 16)

In order to avoid difficult questions from the board, the CEO manipulated the information that was presented to the independent directors. Executives did not have access to the board to 'blow the whistle', as they were blocked by the CEO. One director clearly summarised the concept of a lack of key information flowing between management and the board: '*As soon as the mission of the CEO is well-specified and the objectives are decided, the contact with us [independent directors] becomes more distant'* (Informant 21). The board does not perceive the environmental uncertainty as threatening and so their response to the crisis is low. As a result, directors draw the wrong conclusions about the crisis (Antonacopoulou & Sheaffer, 2014), which increases uncertainty and decreases the likelihood of crisis detection.

We conducted additional analysis in order to get a more nuanced understanding of the cognitive constraints and why boards often lack proactivity in crisis detection. We investigated whether the cognitive constraints were different depending on the type of crisis (internal versus external), the outcome of the crisis (success versus failure), and the directors' role (executives versus independents versus chairs).

4.4 Internal and external crises and cognitive constraints

It emerged from our data that overconfidence, emotions and postponing decisions are accentuated in internal crises because, as Benoit (2004) points out, directors tend to adopt the denial strategy.

> *We had the first denial approach at the beginning, to stay in our own comfort zone. We focused on the scale of acquiring other firms, opening new branches, but still using the same business model [...]. It's typically after a while that they end up realising that this does not work but we were too certain that our business model would have worked out.* (Informant 2)

An internally driven crisis is chiefly caused by the directors themselves; therefore, they initially tend to deny or minimise their faults by being overconfident, emotionally responding, and therefore delaying strategic decisions. Directors typically do not want to admit they have taken the wrong decisions. Based on our data, there is no difference between internally and externally driven crises in terms of the cognitive constraints that inhibit directors from taking action when faced with those events. This is an interesting result because it suggests that, although the extant literature differentiates between internal and external causes of crises (Lorsch & MacIver, 1989), directors tend to experience the same individual, hybrid and collective constraints regardless of the source of the crisis. Therefore, the cognitive barriers that prevent early detection of a crisis remain unchanged.

4.5 Successful and unsuccessful companies and cognitive constraints

Previous research suggests that constraints can generate creative solutions to problems (Medeiros et al., 2014). However, such creative solutions can assist in resolving a crisis only if the constraints are taken into account (Narayanan et al., 2011). We found that directors of successful companies who recognised their cognitive constraints managed to reframe the problem and find alternative solutions to overcome such barriers and tackle the crisis. Successful companies establish a crisis committee or change the board composition.

> *We did not hire a consultant to make a post mortem analysis of the crisis or to solve it. But there has been a new general manager and a new chair, who helped our company to solve the crisis... there was in fact a strategy review going on.* (Informant 13)

Those successful companies that hired an external consultant also set up a crisis committee to help the board to overcome their cognitive constraints:

> *We appointed an external consultant whose competence was not necessarily industry related. He has more general management experience and crisis management expertise. We set up a committee with the new consultant specifically for the crisis. This committee is made of the chair of the board and another two non-executives. It took three years to restore the company and [name of the consultant] helped us to exit the crisis by re-analysing what has happened and what prevented us from understanding it.* (Informant 24)

The external consultants and new directors appointed had expertise in crisis resolution and tended to remain in the company after the crisis. This suggests that the board felt the need to establish a permanent role, either a directorship or a committee, to act as '*a fire department that goes out when there is something going wrong and can forecast when there is something wrong coming up*' (Informant 1).

4.6 Directors' roles and cognitive constraints

Our data does not show any substantial difference between executives, independent directors and chairs in relation to cognitive constraints. Regardless of the directors' roles, they generally experience the same cognitive constraints in detecting the seeds of a crisis. For instance, we found that independent directors tend to criticise CEOs' overconfidence, and CEOs are likely to condemn the detrimental overconfidence of the chair and/or independent directors. This is an important point because the mainstream research (Finkelstein et al., 2009) notes that mainly CEOs are overconfident. Revealing that the chair and independent directors can also be overconfident means that the focus on overconfidence needs to shift from executives to the entire board.

On the other hand, our data (Appendix B) shows that independent directors and chairs are more likely to point out, and criticise, emotional behaviour by (especially majority) shareholders. This is in line with Lorsch (1995), who argues that independent directors and chairs must represent all stakeholders' interests in the boardroom. This hybrid constraint, i.e. emotional behaviours, results in a distraction for the non-executives and chairs; they are deflected from dealing with a crisis and instead have an unhealthy focus on the emotional behaviour of the shareholders. This leads to adverse effects on the board's coordination in crisis detection (Hambrick et al., 2015).

Interestingly, we found that executives are most likely to criticise the chair of the board for postponing decisions and independent directors lament delayed decisions from executives. '*The CEO condemned the chair for delaying critical decisions because [name of the chair] deemed crisis discussions to be extravagant or not pertinent to board meetings*' (Informant 24). The chairs and independent directors could not perceive the seeds of the crisis, resulting in its escalation across the organisation. On the other hand, some independent directors lamented that executives postponed some crisis decisions because the latter believed that the situation was under control and that '*the CEO has a plan, and everything will be fixed soon*' (Informant 9). Overall, regardless of the role the directors hold, cognitive constraints may affect the cognitive schemas of all board members and therefore their ability to make sense of the seeds of a crisis.

5. Conclusions and Implications

This research sought to understand why boards lack proactivity in crisis detection. We conducted in-depth semi-structured interviews with CEOs, independent directors and chairs across a range of industries. We identified three main constraints that can hinder directors' cognitive schemas, preventing them from giving meaning to and interpreting environmental stimuli (Combe et al., 2012; Narayanan et al., 2011): individual constraints, collective constraints and other limitations that can be both individual and collective (i.e. hybrid).

This research makes three main contributions. First, we challenge the traditional analysis of board of directors' characteristics during crises. We do so by demonstrating that individual, collective and hybrid constraints act as a curtain between environmental stimuli and the directors' perceptions (Hambrick & Mason, 1984) during an organisational crisis. Therefore, the results of previous research (Conyon et al., 2011; Dowell et al., 2011; van Essen et al., 2013) can be better interpreted when considering that directors tend to be passive during a crisis because of cognitive constraints that may be experienced at the individual and/or collective level. Such barriers create blind spots, which allow crises to escalate and prevent the board from being active in crisis resolution. Directors cannot see the seeds of the upcoming crisis because they do not have the necessary cognitive background to identify and understand the signals. As a consequence, their sensemaking is not enabled as they seek to resolve a crisis. Our results expand on previous research on board characteristics during a crisis because we found that directors' roles (e.g. CEO, chair, independent director) do not influence the types of cognitive constraint they may experience during a crisis. This is fundamental because previous research tends to neglect the fact that directors may criticise their peers rather than themselves. Therefore, overconfidence is not only a constraint affecting CEOs, as per Finkelstein et al. (2019), but also independent directors and chairs. Independent directors and chairs, more than executives, found the emotional behaviour of (majority) shareholders detrimental. Such a hybrid constraint leads to a distraction or a blind spot for independent directors and chairs when dealing with a crisis because of their efforts to coordinate the rest of the board and shareholders (Greer & Dannals, 2017).

Second, most previous empirical studies on boards of directors focus on a steady and stable context (Abatecola et al., 2014; Shropshire, 2010; Torchia et al., 2015) or the 2008–2009 financial crisis and its impact on performance (Abatecola et al., 2013), neglecting how the board acts in any crisis and hence in a state of uncertainty (Maitland & Sammartino, 2015). Understanding why boards remain passive and lack proactivity in detecting an organisational crisis is paramount. It allows us to uncover those board characteristics that are not necessarily common during a financial crisis or in non-crisis contexts. Our research contributes to this debate by explaining that it is important to analyse the effects of internal and external crises on the board as well as on organisational performance. Our data suggests that there is not much difference between internal and external causes of a crisis. We found, however, a subtly different pattern for overconfidence, emotions and postponing decisions, which occurs more frequently for internally derived crises. This is due to the denial strategy that directors tend to adopt in this context. The board does not recognise the seeds of the crisis because of the directors' commitment to the status quo (Hambrick et al., 1993). This creates conditions in which the crisis can grow and escalate and be exacerbated by short-termism and a low level of knowledge, as well as cognitive biases.

Third, this study contributes to crisis management literature (Fernández & Mazza, 2014; MacDougall et al., 2016; Sheaffer & Mano-Negrin, 2003). While previous research seeks to understand the lifecycle of a crisis (Barton, 2001; Mitroff, 1996), the corporate decision-making process during a crisis (Fernández & Mazza, 2014), and directors' sensemaking and their cognitive schemas (Combe & Carrington, 2015; Mumford et al., 2007), the reasons why a board suffers from passivity were still opaque. Our findings extend crisis management studies by combining it with the literature on strategic cognition (Brown et al., 2019; Finkelstein et al., 2009; Samdanis & Lee, 2019). As such, our research finds that individual, collective and hybrid cognitive constraints restrict the generation of ideas and solutions. Therefore, directors experience limited vision and a selective perception of the environment, leading to passive behaviour in tackling the crisis. We expand the crisis management literature (Amankwah-

Amoah, 2016) by arguing that directors tend to be passive during a crisis because their cognitive structures and processes are not triggered due to the three constraints that can prevent them from actively intervening. As a consequence, their sensemaking to solve a crisis is not enabled. On the other hand, consistent with our theoretical framework, our results indicate that companies that were successful in responding to a crisis hired experts in crisis recognition and resolution. This is pivotal because these experts, either consultants or non-executive directors, become fundamental in helping the board to overcome cognitive constraints by making directors aware of the seeds of a crisis before it escalates across the entire organisation.

This research also has important implications for practice, especially for boards of directors and policymakers. In order to navigate successfully through crises, boards should develop crisis protocols; that is, guidelines on how to detect and deal with crises. The chair should promote training sessions for the board on how to tackle a firm's crisis. We acknowledge that directors sometimes do not have the resources (e.g. time and skills) to implement crisis guidelines. In that case, it would be advisable to collaborate with external institutions (e.g. universities or consulting companies) to help the board to shape a crisis protocol. Directors should also give more attention to behavioural competencies when selecting directors; this could reduce the chances of selecting a director who is too strongly driven by their own ego or personal interests. A solution could be to split the monitoring role from the strategic role, which is in line with the approach of two-tier boards (Merendino & Melville, 2019). Majority shareholders can then be represented on the monitoring board, while independent experts are in the majority on the strategic board.

Policymakers should support directors to survive and learn from crises. Instead of a crisis being viewed as a failure on the part of the board, policymakers should help directors to become more resilient and manage the complexity of a crisis so as to minimise adverse spillovers. Given that crises provide a unique opportunity for directors to show that they add value in the boardroom (Dowell et al., 2011), we encourage policymakers to develop clear guidelines for boards of directors on how to prevent and tackle a crisis, as the current corporate governance codes seem to be designed for stable boardrooms.

While our research has some limitations, we note that there are a number of areas that could be examined in future research inquiries. Being a qualitative study, we first recognise that the generalisability of our results (Eisenhardt et al., 2016) is limited and given the nature of the sample (Musteen, 2016), critics might suggest that our results may be organisation-specific. However, our study provides substantive insights revolving around the cognitive dimensions of boards at times of uncertainty. In particular, our findings present a strong and original emphasis concerning the personal characteristics and group dynamics of the board during a crisis. Moreover, the cognitive constraints we elucidate in our findings can be found in many different contexts (Conyon et al., 2011; Samdanis & Lee, 2019). Therefore, and in line with the underpinning consensus of Lincoln and Guba (1985), we claim that most of our findings constitute a substantive contribution to many boards of directors who have experienced a crisis or who may seek to prevent one. In extending our findings and related theoretical frameworks (Kücher & Feldbauer-Durstmüller, 2019; Samdanis & Lee, 2019), future research could further investigate how specific organisational and board characteristics have an impact on the cognitive barriers that we have presented. For instance, future research could endeavour to deepen our understanding of how some board-specific factors, such as power, politics (Gold et al., 2016), and leadership style (Trahms et al., 2013), impact upon cognitive barriers at times of uncertainty.

A second limitation is that this research did not analyse the use of specific crisis management tools (such as risk committees and risk registers), given that our focus was on crisis detection and not on how the crisis was managed once it was detected. Future research could focus in more detail on the board's role in crisis resolution. Some of our informants briefly discussed this at the end of the interview, suggesting that the role of the board becomes more operational in the phase of crisis resolution. Future research could unpack how directors' cognitive capabilities (Boso et al., 2019) play a role in the resolution of a crisis, as cognitive capabilities are critical success factors that affect how decisions are taken and implemented (Finkelstein et al., 2009).

While our research reveals novel insights into cognitive constraints by retrospectively interviewing single informants at one specific moment in time (cross-sectional), future research could adopt a longitudinal approach, whereby the board's behaviour is observed over a longer period of time (van Essen et al., 2013). This is especially interesting for crises that build up over time. In-depth case studies, including board observations and interviews with multiple informants within the same company to analyse *in vivo* cognitive dynamics at board level, might be more appropriate. Future research could also focus on directors who are in the midst of a crisis by collecting data through questionnaires as opposed to interviews *ex post facto*; by doing so, biases from retrospectively recalling the crisis could be minimised.

Finally, another limitation of this study lies in the definition of crisis that our inquiry adopts. In line with the widely accepted position noted in the literature (Coombs, 2014; Lukason & Laitinen, 2019), this study defines crisis as a process that builds over a period of time rather than something identifiable as a more sudden event. Additionally, while our research shows that internal and external types of crises are not necessarily sequentially intertwined, directors may experience an internal crisis due to an external time of uncertainty (Lorsch & MacIver, 1989). Future studies could therefore seek to establish how cognitive constraints change if an external crisis leads to an internal one, or if an internal crisis leads to a crisis within other related businesses, such as in the supply chain. Researchers could also deliberately interrogate organisations that have experienced crises as abrupt and sudden events, such as the unforeseeable death of the CEO, a plant explosion, a terrorist attack, or a pandemic, and seek to establish whether the same cognitive constraints occur (Samdanis & Lee, 2019). Indeed, the recent Covid-19 pandemic provides an immediate context in which to pursue such a challenge.

Our findings suggest that directors will inevitably face cognitive constraints that prevent them from tackling a crisis. However, research could also investigate whether boards weakened by a combination of the constraints described in this study become increasingly marginalised and overruled by management (Rindova, 1999), and/or whether boards are more or less likely to play a very active role in surviving the storm within these circumstances (Mumford et al., 2017).

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TABLES

Table 1: Background information of cases and interviewees

Company	Interviewee	Type of crisis	Outcome
Informant 1: Book publishing company	Chair	External: fundamental changes in the industry (digitalisation of book publishing) having a negative impact on turnover.	The company survived and changed its business model.
Informant 2: Hydraulics company	Chair	External: market turbulence and uncertainty.	The company was ultimately taken over.
Informant 3: Bank and insurance company	Independent director	External: the financial crisis of 2008. Internal: the board could not reach an agreement with the executives.	After one and a half years, the bank was back on track and changed its name. Two years later, the bank was profitable again.
Informant 4: Steel company	CEO	External: the collapse of the steel market leading to a major restructuring of the steel industry.	After three years, the restructuring was completed and the company became profitable again.
Informant 5: Construction company	Chair	Internal: the main shareholders were on the board; the CEO and some directors did not agree with the company's new strategy.	The crisis is in the last stage, i.e. learning and reflecting.
Informant 6: Consulting firm	Independent director	Internal: for several years, there was a conflict between the three major shareholders and between the shareholders and the CEO.	The crisis is in the last stage, i.e. learning and reflecting.
Informant 7: Photo finishing company	Independent director	Internal: CEO megalomania as well as an excessive misuse of company resources. External: disruptive changes in the industry making their business model obsolete.	After ten years, the company paid back all its loans and became profitable thanks to a new business model.
Informant 8: Luxury goods production	CEO	Internal: conflicts between management and the dominant shareholder about the change of the business model. External: digitalisation of the marketing and sales channels in the industry creating the need to change their business model.	The crisis was resolved, a new business model was implemented, and the company became profitable again.
Informant 9: Bank and insurance company	Independent director	External: the financial crisis. Internal: directors were unable to reach an agreement.	The bank collapsed, was rescued by the government, and was immediately taken over by another bank.
Informant 10: Utilities company	CEO	External: the decline of the gas and electricity market, as well as regulatory pressure to keep prices low.	The company survived the crisis and became successful.
Informant 11: Supermarket chain	CEO	Internal: an extremely large acquisition financed with a lot of debt. External: a competitor announced an accounting scandal that also impacted the stock price of this company.	The company eventually tackled the crisis and continued with their existing business model.
Informant 12: Supermarket chain	CEO	External: due to the financial crisis, customers spent less in supermarkets, which had an important impact on the revenues of one of their largest subsidiaries. Internal: the CEO of the subsidiary was not able to take the necessary measures.	The CEO was replaced.

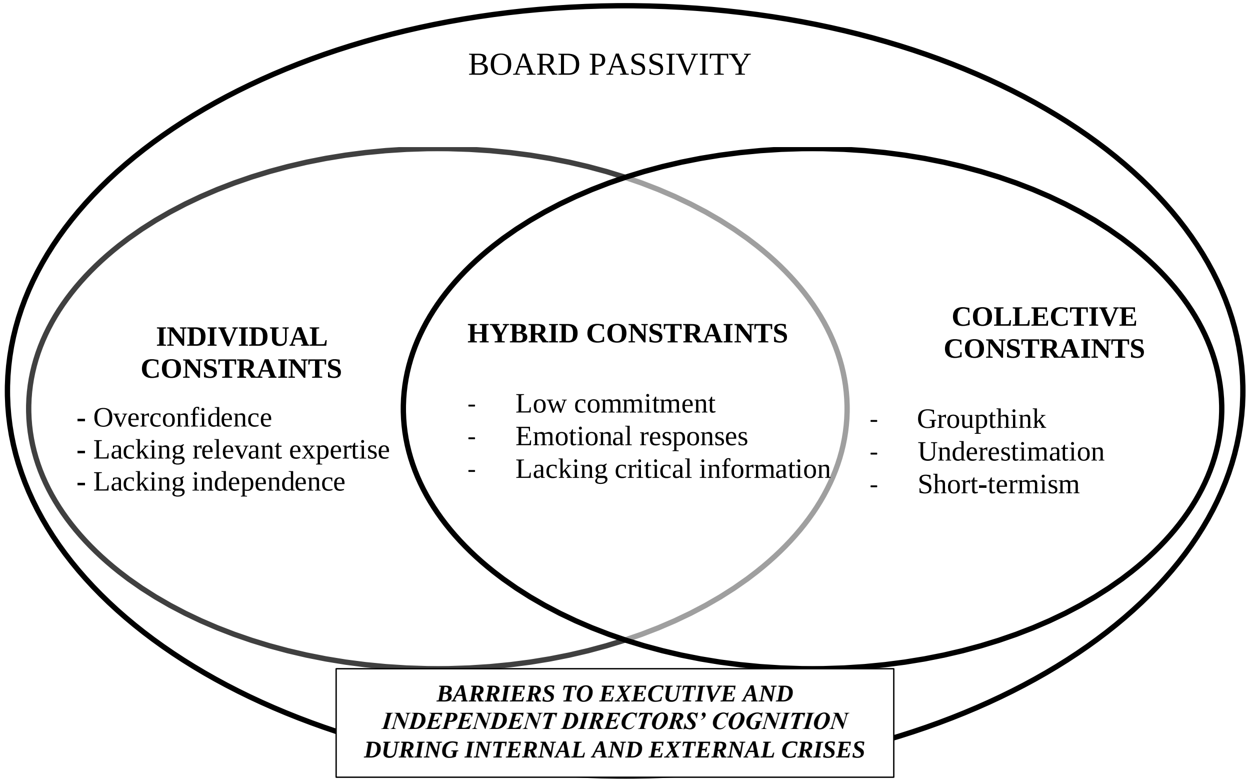
Informant 13: Hospital	Chair	Internal: disagreements about the future financing of the hospital.	The board agreed to the financing and survived.
Informant 14: Bank	CEO	External: the beginning of the financial crisis. Internal: disagreements between management and the largest shareholder about the strategy to follow.	The bank survived the crisis and successfully implemented a new strategic plan.
Informant 15: Food production company	CEO	External: important changes in regulation, which has increased competition. Internal: an outdated business model.	The company survived and implemented a new business model.
Informant 16: Financial clearing services company	CFO	Internal: escalating ambitious IT project in combination with struggles between top managers and bad management.	The company survived the crisis and the escalating IT project was stopped.
Informant 17: Bank	CEO	External: the financial crisis. Internal: misalignment between reference shareholders about which strategy to follow.	The bank resolved the crisis and successfully implemented a new strategy.
Informant 18: Parent company in the manufacturing sector	Independent director	Internal: a company acquisition that did not work; the board did not promptly intervene.	The company did not solve the crisis. Following acquisition by another company, there was a reshuffle of the entire board and management.
Informant 19: Hospital	Independent director	Internal: negotiation issues between hospitals that sought to merge.	The hospital changed the board composition and established an *ad hoc* crisis committee.
Informant 20: Private health clinic	Independent director	Internal: the management was not able to agree on which investments the hospital needed.	New executives were hired.
Informant 21: Manufacturing firm	CEO	1. External/Internal: the loss of two major customers, whom the board did not promptly replace with new customers. 2. External: Banks did not allow any more credit and required immediate payment of outstanding debts.	1. New investments and new shares to win back the two major customers. 2. Bankruptcy.
Informant 22: Energy company	CEO	Internal: independent directors did not take any decisions or position with respect to the CEO's proposals on how to solve investment issues.	New directors and an external advisor were appointed.
Informant 23: Hospital	Independent director	External/Internal: the media raised concerns about the managerial style and flaws of the hospital.	The board of directors managed to address the concerns.
Informant 24: Technology products firm	Independent director	Internal: the need for funding for a joint venture.	The board of directors and a crisis committee managed to restructure the company.
Informant 25: Manufacturing firm	Chair and independent director	Internal: as the company grew, quarrels between the designer, Chief Commercial Officer and CEO escalated.	The designer was encouraged to leave the company.
Informant 26: Fashion/clothing company	Independent directors	Internal: a director who was a shareholder wanted to centralise corporate decision-making.	The director resigned.
Informant 27: Manufacturing firm	CEO	Internal: fraud by one of the regional managers.	The CEO fired the manager.

FIGURES

Figure 1. Results from primary data

First order concepts	Second order themes	Aggregate dimensions
• Overestimation of directors' capabilities to solve a crisis • Older generation of directors show narcissistic behaviour in times of crisis • judgement of environmental signs	Overconfidence	**Individual constraints**
• Lack of knowledge of how to tackle a crisis or its signs • Combination of the increased complexity and a paucity of knowledge leads to a severe delay in decision-making • Lack of management skills as a reason for the long delay in detecting the crisis	Lacking relevant expertise	
• Directors are independent on paper but not in practice • Directors' personal interests turn out to be more important than the interests of the company • Difficult for independent directors to raise their voices when the board is dominated by the main shareholders(s)	Lacking independence	
• Conflict avoidance between directors • Striving to create a harmonious and friendly boardroom, directors rarely express their disagreements • Directors who attempt to please their peers or superiors do not seek alternative solutions to tackle the crisis	Groupthink (cognitive biases)	**Collective constraints**
• Directors want to boost short-term results • Short-term decisions for short-term outcomes • Taking marginal and incremental actions to survive	Short-termism	
• Important decisions are delayed • Sticking to the old business model rather than intervening with new solutions • Waiting until the crisis becomes major and then solving it under huge pressure	Postponing decision-making	
• A low level of effective responses to environmental stimuli • Understating issues, expecting a prompt stabilisation of uncertainty	Underestimation	
• The board is not fully informed about the seeds of the crisis • Manipulation of information from executives or from some directors of the board • Executives and independent directors do not inform each other in a clear, accessible and transparent way	Lack of critical information	**Hybrid constraints**
• Shareholder representatives act irrationally based on outdated business ideas • Emotional connection with the company makes directors blind to the reality • Dominant majority shareholders on the board makes it difficult for independent directors to voice their concerns during a crisis	Emotional response of shareholders	
• Directors are disinterested in the company • Directors' busy agenda means they are not devoted to solving a crisis	Low level of commitment of the board	

Figure 2. Factors that hinder directors' cognitive schemas



Appendix A: Interview Guide

Introduction

- Description of the project by the researchers.
- Could you please describe your previous and current role and expertise?
- Could you briefly describe what happened during the crisis that your company experienced?

1. Why was the board not able to recognise, in a proactive way, that a crisis was approaching?
- How could you see that the board was not aware of it? What were the main factors?
- Can you see important differences between the different companies where you had/have mandates? If yes, what could explain these differences?
2. How difficult was it to come to an agreement within the board when the company faced a crisis? Why?
3. *[Background questions: What kinds of (relational) dynamics were created within the board during the crisis? Who took the lead during the crisis? What if there is no consensus in the board? What are the consequences of this lack of consensus?*]
4. Who typically takes the lead in proposing actions to tackle the crisis? How?
5. What, typically, is the role of the board during a crisis?
6. Does the board monitor sufficiently? Is the board still awake or did it fall asleep again?

Appendix B: Additional Quotes

Individual constraints *(105 quotations)*	Overconfidence *(34 quotations)*	• 'The board was passive because it felt very confident. There was no pressure, no uneasiness and no nervousness coming from the board.' (Informant 11) • 'The crisis in our company was exacerbated by a lack of board activity. The directors just don't perform; they are pretty relaxed because they think that everything is going to be fine. But this wasn't the case.' (Informant 18) • 'It took a while to really understand if it was just a business cycle or a fundamental change or disruption in the distribution system of books. Everyone was sure that the decline in sales wasn't a real problem.' (Informant 1)
	Lacking relevant expertise *(41 quotations)*	• 'If you do not understand the industry that you are in, you are not going to be of any help.' (Informant 1) • 'You should have mixed competencies within a board. Because my board doesn't, I believe they didn't know that it [a particular operation] was so dangerous. So, they allowed the crisis to escalate.' (Informant 4) • 'I did not have the character for that. You have managers, the so-called crisis managers; it's a job for which I have a lot of respect because they are people who have a strong character, strong skills […] crisis managers are very few.' (Informant 21)
	Lacking independence *(30 quotations)*	• 'We are 13 on the board, but in fact, there are only two real active board members who own 60% of the company. So, all the others don't react, and you have three or four independents who say exactly the same things. So, the board is simply too large. The 13 members do not play their role because the main shareholder has all the say; on the other side, you have the independents who follow the shareholder.' (Informant 5) • 'I don't think the chair was a good mediator. The chair had a very clear opinion. It was the lady [owner] of the house [company], so it was tricky because she didn't have an objective view of the situation.' (Informant 8) • 'You cannot have independent directors who are only interested in making their point or in making their arguments. Sometimes they talk for purely selfish reasons because they want to show their colleagues that they are the cleverest. So, you need to play that game.' (Informant 2)
Collective constraints *(219 quotations)*	Groupthink *(50 quotations)*	• 'One day we had a discussion. We went around the table and one of the outside directors said, "Well of course as a good independent director I am going to go along with the family and with the CEO."' (Informant 11) • 'The directors don't want to be perceived as difficult. This is the reason why they sometimes hide themselves in the group. They don't want to come into conflict with each other, so they tend to think alike.' (Informant 10) • '…well in this kind of period you typically have a group effect that everyone looks at everyone and nobody dares to stand up. People tend to hide themselves […] In typical boards you will have one or two people who have, in a positive way, more value or more voice than the others. Of course, there is a tendency that whenever this person speaks out, others end up agreeing with this person. This is not necessarily good for a board, because everyone thinks alike. People should not be too different because otherwise, they don't have anything to talk about. However, they should be sufficiently different, so that you get diversity of opinion.' (Informant 1)
	Short-termism *(53 quotations)*	• 'It is hard to ask the board not only to think long term. You do not have the people on the board who can think long term about what is going to be the revolution.' (Informant 6) • 'In the build-up of the crisis, some directors asked, "Is there a crisis coming?" or "How can you see that there is a crisis coming up?" This is not easy, especially when the directors cannot see beyond the end of their nose.' (Informant 3) • 'The board was events-driven without a clear plan. The directors were just worried about tomorrow.' (Informant 24)

	Postponing decision-making *(57 quotations)*	• ‘At some point, you should take some critical decisions, but they [the board] just couldn’t.’ (Informant 7) • ‘We have a lack of decision-making from the board, and that's a big difference to the last 20, 30 years, so there's an absolute need to take decisions, to take on the views and to draw up the bigger view about what it is about in an objective approach.’ (Informant 8) • ‘They see it, they smell it, they feel it, but they don’t take any action on time, and the crisis becomes even bigger.’ (Informant 18)
	Underestimation *(49 quotations)*	• ‘Directors didn’t intervene too much because they assumed the executives were going to present good results at every meeting.’ (Informant 4) • ‘We underestimated what it would have been in five years. So now we should get rid of the manufacturing staff.’ (Informant 7)
Hybrid constraints (*104 quotations*)	Lack of critical information *(34 quotations)*	• ‘The management doesn’t want to change things because they have their way of doing it. Perhaps they don’t want to move on because transparency between directors is not good. The reporting was bad and weak.’ (Informant 9) • ‘The board and the management should be very transparent and inform each other in a very accessible way about the plans. But it did not always happen.’ (Informant 10) • ‘If they [the executives] gave the real market value to the board, they [the board] wouldn’t have been happy. So, they gave another value to misinform the board. This is what they did.’ (Informant 3)
	Emotional response of shareholders *(28 quotations)*	• ‘There are too many shareholders on the board; shareholders are incompetent people. They are no longer there for their money and it is money they have inherited.’ (Informant 22) • ‘The problem is that the shareholders hire people like them who do not contradict them. It is often a fake board of directors. The law obliges them to set them up, but they do not play their role.’ (Informant 25) • ‘The two main shareholders thought they would have made a fortune by sitting on the board and keeping the current situation. It was due to their emotions, and because the shareholders wanted to become too involved in the management of the company and in the decision-making, that the crisis spread out.’ (Informant 7)
	Low level of commitment of the board *(44 quotations)*	• ‘The board of directors did not intervene at all in the crisis. […] You must always worry about it [the crisis] and you must always be able to intervene in case of problems, and that's where you start your role. What happened here is that directors were not doing it because they are disinterested in the business. […] But you have a personal responsibility as an administrator. We have to make the crisis big so that the board takes the hand.’ (Informant 20) • ‘I haven’t seen a lot of situations, but you see situations where board members have less impact in a period of crisis. It will typically be three or four board members who carry the load, who are there and who look for things. All the others didn’t even understand that there was a crisis coming.’ (Informant 2) • ‘The CEO gives explanations and proposes solutions, which are typically focused on increasing the valuation of the firm via expensive acquisitions. There was one independent [director] especially who tended to accept, at this stage, what the CEO proposed. He sympathised maybe too much with the CEO.’ (Informant 20)