

MANAGING FAILURE: HOW ANTICIPATORY AND REACTIVE STRATEGIES INTERRELATE

by

COLE EVAN SHORT

(Under the Direction of Michael Pfarrer)

ABSTRACT

Impression management describes the strategies a firm implements to manage evaluator perceptions, an important dimension of firm survival and success. Scholarship to date has considered how firms manage impressions before and after negative events, but considerations of how and why firms use these strategies developed independently. By synthesizing arguments from anticipatory and reactive impression management, I develop and test a novel theoretical framework that treats a firm's impression management strategies as path-dependent. I also assess the relative effectiveness of these impression management pairings on firm stock responses, which represent the collective evaluations of firm outsiders. Finally, I investigate the role of anticipatory strategy effectiveness on each pairing to further examine the influence of stock market responses on decision making. I test these relationships in a sample of late-stage clinical trial terminations by public U.S. pharmaceutical firms. Together, these contributions illuminate how firm impression management decisions are more nuanced than previous research suggests and that different pairings of strategies carry significant implications for firm performance.

INDEX WORDS: Strategic Management, Organizational Impression Management, Corporate Communication, Clinical Trials, Pharmaceutical Industry.

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COLE EVAN SHORT

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M.A., Boston University, 2015

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COLE EVAN SHORT

Major Professor: Michael Pfarrer

Committee: Scott Graffin
John Busenbark

Electronic Version Approved:

Suzanne Barbour
Dean of the Graduate School
The University of Georgia
May 2019

DEDICATION

This dissertation is dedicated to my wife, Kristin. Thank you for your love, for holding fast to what matters most in life, and for supporting me as I pursue my dreams.

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CHAPTER 1: INTRODUCTION

Management scholars have a growing interest in understanding how a firm implements strategies to shape the impressions of its external evaluators—actors outside the firm who observe and react to its actions (e.g., Bundy & Pfarrer, 2015; Busenbark, Lange, & Certo, 2017; Elsbach, 2003; Graffin, Carpenter, & Boivie 2011; Graffin, Haleblan, & Kiley, 2016; Vergne, 2012; Zavyalova, Pfarrer, Reger, & Shapiro, 2012). Managers recognize that evaluator impressions can affect social and financial outcomes and therefore manage these impressions to achieve performance goals, foster relationships, and improve their firms' chances of survival (e.g., Zavyalova et al., 2012; Vergne, 2012). Research on impression management describes two primary tactics to management evaluator impressions: anticipatory impression management (AIM) and reactive impression management (RIM). AIM details strategies used to shape perceptions with *anticipatorily* revealed information leading up to expected events (e.g., Graffin et al., 2011, 2016; Busenbark et al., 2017; Elsbach, Sutton, & Principe, 1998), whereas RIM details strategies used to shape perceptions by *reactively* revealing information after events (e.g., Ingram, Yue, & Rao, 2010; McDonnell & King, 2013; Zavyalova et al., 2012).

Despite their similar goals, the emergent AIM literature remains isolated from work on RIM, with little understanding of how firms engage in impression management both *anticipatorily and* *reactively*. This separation is surprising in two ways: First, empirical evidence supports the effectiveness of AIM *or* RIM (e.g., Graffin et al., 2016; Zavyalova et al., 2012), which supports the possibility that firms may benefit from utilizing both these strategies. Second, AIM and RIM have a common purpose—to influence perceptions in a manner that favors the firm (Elsbach, 2003)—suggesting that firms engaging in AIM may be similarly motivated to

engage in RIM. These commonalities notwithstanding, it is not yet clear how firms may use AIM and RIM in tandem. Additionally, given the prevalence of these tactics, more work is needed to understand how managers determine and select AIM and RIM strategies as well as their combined influence on firm performance. Whereas the effects of external evaluator impressions on both positive and negative firm outcomes is well known (e.g., Staw, McKechnie, & Puffer, 1983; Elsbach et al., 1998; Zavyalova et al., 2012), a paucity of conceptual and empirical inquiry persists around the potential interconnectedness of firm impression management, as well as its causes and effects.

Thus, while work on organizational impression management enjoys increasing academic popularity, researchers in the field are faced with the challenge of understanding when and why firms anticipatorily and reactively manage events in disparate ways and what the combined effects of these strategies may be. Research to date on RIM focuses on understanding why accommodative or defensive responses may be more or less effective for firms (e.g., Bundy & Pfarrer, 2015; Arndt & Bigelow, 2000; Marcus & Goodman, 1991), suggesting that evaluator-, event-, and firm-related characteristics dictate the potential benefit or harm of a firm's impression management strategies. However, this recent work establishes the need to further theorize and test the strategic rationale behind specific firm reactions. Similarly, research on AIM has largely focused on the introduction of novel tactics and the immediate effectiveness of these tactics with minimal consideration of how these strategies may determine or influence a firm's downstream decision making and performance.

In this paper, I seek to advance present conceptual and empirical understanding of anticipatory and reactive tactics by positioning these strategies as part of an overarching path-dependent impression management process. To do so, I use conceptual and empirical insights from literature on organizational impression management (e.g., Marcus & Goodman, 1991;

Elsbach, 2003; Graffin et al., 2011, 2016; Zavyalova et al., 2012; McDonnell & King, 2013; Bundy & Pfarrer, 2015) and organizational decision making (e.g., Mishina, Block, & Mannor, 2012; Sydow, Schreyögg, & Koch, 2009; Mahoney, 2000) to demonstrate how a firm's anticipatory and reactive strategies interrelate. From this, I leverage a novel dataset of terminated, late-stage clinical trials, to consider how the AIM strategies of offsetting, amplification, and anticipatory reticence influence the selection of accommodative or defensive RIM strategies. I next consider the relative performance benefits of different AIM–RIM pairings in my chosen context, enabling a more complete view of the impact of different organizational impression management (OIM) approaches. I conclude by considering the role of AIM effectiveness on the path-dependence of anticipatory and reactive firm strategies.

I intend to make three primary contributions to the impression management literature. First, I unify research on anticipatory and reactive strategies by highlighting their theoretical and empirical interdependence. In developing this theoretical perspective, I apply this framework to a set of specific anticipatory and reactive pairings and test the relationship between these strategies. I then conceptualize and test stock market responses to different impression management combinations, providing evidence for more versus less effective impression management processes firms follow. Lastly, I test the role of AIM effectiveness as a moderating influence on the implementation of holistic impression management. These extensions help build and test a detailed framework of firm impression management, from a firm's identification of a perceptual threat through how its reactive management is received by external evaluators. Taken together, these contributions provide insights to scholars and managers about how impression management before and after events interrelates and why certain strategic combinations may be more beneficial than others.

To carry out this research, my study is structured as follows. Chapter 2 provides a review of the organizational impression management literature, first describing the importance of managing external impressions before tracing the origins of impression management inquiries at the firm-level. I then review specific anticipatory and reactive impression management strategies introduced in the literature. In Chapter 3, I describe the concept of path dependence from the decision-making literature and make a case for its relevance to organizational impression management. Chapter 4 describes my chosen research context and presents each of my specific hypotheses based on research and theory discussed in the previous three chapters. Chapter 5 provides a detailed description of the methodologies used to provide results presented in this dissertation. This chapter also describes the methodological steps I follow in conducting primary and supplemental tests for each hypothesis. The dissertation concludes with a final chapter, Chapter 6, discussing the broader implications of my work for scholars and practitioners interested in this domain of research.

CHAPTER 2: LITERATURE REVIEW

A growing body of work evidences how a firm's impression management strategies impact a number of important organizational outcomes (e.g., Graffin et al., 2016; McDonnell & King, 2013; Zavyalova et al., 2012). However, inquiry to date has investigated the effectiveness of anticipatory and reactive strategies in isolation, with little consideration for potential path dependence in the impression management underlying firm decisions. Indeed, Graffin and colleagues (2016: 248) note how research in this domain can benefit from exploring “the joint relationships between anticipatory and reactive impression management in more detail.”

To develop theory on the potential relationship between anticipatory and reactive impression management, we must first understand the state of impression management scholarship at the organizational level. To do so, I highlight why it is beneficial for firms to strategically manage external impressions, describe the importance of information asymmetry in this process, and provide a review of major theoretical developments in this domain. Given these developments, I then describe specific strategies introduced in the literature, beginning with the anticipatory and ending with the reactive. I conclude each section of this review with a synthesis of the relevant literature. This review is the starting point from which I then theorize and test a novel framework interrelating anticipatory and reactive impression management.

Organizational Impression Management

Managing external impressions. How external evaluators—actors outside of the firm who observe and react to its actions—view the firm and their impressions of it can influence important outcomes such as social approval, financial performance, and survival (e.g., Bundy & Pfarrer, 2015; King & Soule, 2007; Elsbach, 2003; Deephouse, 2000; Fombrun, 1996). Thus, it

benefits a firm to be “aware of and concerned with the risk of being perceived” in an unfavorable way (Carlos & Lewis, 2018: 156; Washburn & Bromiley, 2014). This awareness and concern, when considered within a strategic management paradigm, can prompt plans of action that favorably shape external impressions and improve a firm’s competitive position (Deephouse & Suchman, 2008).

Negative events can introduce circumstances where an awareness and concern for maintaining positive external impressions is particularly critical. If poorly managed, negative events can cause potentially damaging outcomes such as leadership changes (Arthaud-Day, Certo, Dalton, & Dalton, 2006), heightened evaluator scrutiny (Karpoff, Lee, & Martin, 2008), and changes in future performance (Lamin & Zaheer, 2012). Negative events introduce complications that managers are apt to handle if they wish to protect their firm’s social and financial standing. Impression management typically focuses on actions and communications that manage perceptions around negative events, paving a way for evaluative repair and less negative outcomes.

The impression management literature suggests that firms manage external impressions in two primary ways—anticipatory impression management (AIM) and reactive impression management (RIM). AIM describes the strategies firms carry out leading up to an event’s disclosure, and RIM describes the strategies firms pursue following an event’s disclosure. Conceptual and empirical research in this domain focuses primarily on a firm’s reactive management of events, with research on AIM emerging more recently (e.g., Elsbach et al., 1998; Graffin et al., 2011, 2016; Busenbark et al., 2017). These research streams have focused on the management of impressions by organizations surrounding publicized negative events, such as product recalls, negative earnings surprises, and corporate scandals.

The role of information asymmetry. Before tracing the development of the OIM literature, it is helpful to highlight how information asymmetry between firm insiders and external evaluators enables managers to shape perceptions (e.g., Busenbark et al., 2017; Cohen & Dean, 2005; Healy & Palepu, 2001). Information asymmetry refers to an instance where one agent involved in an economic transaction possesses greater knowledge than another party, providing it with strategic flexibility to shape negotiations (Stigler, 1961). This imbalance of information impacts how managers select strategies and the degree to which outsiders may be influenced by firm actions and communications. For firms wishing to shape perceptions with impression management, information asymmetry enables managers to release information to make their firms appear more or less positive to external evaluators who lack the same degree of insider knowledge (Washburn & Bromiley, 2014).

Elsbach (2003: 3) commented on the use of firm disclosures in impression management, noting how the “official nature of annual reports” enhances the believability of a firm’s impression management. Similarly, Graffin and colleagues (2016) demonstrated that positive, material firm press releases corresponded with significantly less negative stock returns around merger and acquisition announcements. This research evidences how audiences outside the firm are influenced by firm actions and communications and incorporate information from firm disclosures into their overall evaluation of a firm’s market position. The influence of these strategies continues to be explored in recent work which indicates that these disclosures can influence the opinions of evaluators such as security analysts (e.g., Busenbark et al., 2017).

Information asymmetry, however, grants firms limited flexibility to shape evaluator perceptions. For example, releasing sensitive information can place firms at a distinct competitive disadvantage. Busenbark and colleagues (2017: 11) underscored the costs associated with information disclosure, noting that “if managers disclose too much information they incur

proprietary costs, meaning that the firm suffers performance losses because competitors have access to proprietary information.” And yet, if managers intend to shape evaluator perceptions, their actions and communications must be material—significant enough to alter perceptions of their firms’ market value. Because external evaluators have requisite knowledge about the firm, their claims must also be believable—not severely misaligned with external expectations. Thus, in order to benefit from information asymmetry, firms must manage impressions with these limitations in mind.

Early perspectives on organizational impression management. Work on impression management in organizations finds its beginning in Erving Goffman’s work that described dramaturgical analysis at the individual level (Goffman, 1959). This perspective involved viewing social interactions through the metaphor of theatrical presentation. Goffman considered “the way in which the individual in ordinary work situations presents himself and his activity to others, the ways in which he guides and controls the impression they form of him, and the kinds of things he may and may not do while sustaining his performance before them” (Goffman, 1959: xi). What followed over the ensuing decades was increasing, yet varied interest in impression management strategies and motivations at the individual level (for reviews, please see Bolino, Long, & Turnley, 2016; Bolino, Kacmar, Turnley, & Gilstrap, 2008; Gardner & Martinko, 1988). It was not until the 1980s, however, that dedicated research on impression management at the organizational level would begin.

Organizational impression management (OIM) may be defined as “any action purposefully designed and carried out to influence an audience’s perceptions of an organization” (Elsbach et al., 1998: 68). This literature evidences how a firm may use impression management strategies in a variety of firm communications to promote a desired corporate image. The earliest work on OIM focused on tactics designed to improve a firm’s overall image and legitimacy

among its external evaluators (e.g., Elsbach & Sutton, 1992; Elsbach, 1994)—a perception that its actions “are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (Suchman, 1995: 574). For example, Bettman and Weitz (1983) demonstrated that organizations actively managed their competence and legitimacy through the presentation of official firm disclosures. Another early OIM study by Staw and colleagues (1983) demonstrated how self-serving attributions in corporate annual reports, such as justifications of organizational performance, led to improvements in future performance.

OIM has since been studied in a variety of contexts, including justifications for CEO pay (Porac, Wade, & Pollock, 1999), structural changes in organizations (Arndt & Bigelow, 2000), and other corporate governance and industry-related phenomena (e.g., Graffin et al., 2011, 2016; Zavyalova et al., 2012; Westphal & Graebner, 2010; Bansal & Clelland, 2004). This research illustrates a variety of strategies that a firm can use to influence external evaluators and implies that a firm’s top management actively attempts to influence impressions. One early work providing an inside look into the pharmaceutical industry described the incentives managers had to communicate different realities to external evaluators versus firm insiders: “Managers... have a clear interest in presenting... diffused responsibility to outsiders, yet one of clearly defined responsibility to insiders” (Braithwaite, 1984: 138–139).

Attempts at organizing the literature. Early stages of this literature investigated various tactics without any clear taxonomy defined by scholars. In this respect, early work in OIM lacked a fundamental characteristic of science: “the description and classification of natural and social phenomena” (Mohamed, Gardner, & Paolillo, 1999: 127; Bacharach, 1989). To move toward a solution to this problem, an early taxonomy of OIM was introduced by Mohamed and colleagues in 1999. Adapting insights from the micro-impression management literature (e.g., Schlenker, 1980; Giacalone & Rosenfeld, 1989, 1991), these authors presented impression

management strategies as either direct or indirect, and assertive or defensive. Direct impression management tactics referred to those used to elevate external impressions of the firm (e.g., apologies and restitution), whereas indirect tactics referred to those used to distance the firm from a negative event or other parties associated with it (e.g., downplaying the negativity of an event) (Mohamed et al., 1999). This taxonomy represented one step toward uniting early perspectives in impression management.

Elsbach (2003) soon introduced an adapted framework for OIM, defining it based on the timing, goals, and tactics of firm strategies. Her work categorized firm verbal accounts into five groups: defensive accounts, accommodating accounts, accounts referring to norms, accounts including imagery, and anticipatory accounts. The arguments presented in Elsbach (2003) strengthened the theoretical foundation of OIM, viewing it as a set of strategies designed to influence overall impressions. Unclear labeling of strategies persisted, however, and conceptual and empirical difficulties remained. Reflecting on this, one review of the literature explained: “It appears that the labels given to IM tactics tend to outnumber the range and diversity of actual or distinct behaviors described” (Bolino et al, 2008: 1100). Nonetheless, Elsbach’s framework and the effort of others helped add precision and clarity to a disorganized and developing literature.

Other work revisited and further developed these important early perspectives, conceptually clarifying OIM in a manner that allowed for more systematic tests of specific strategies (e.g., Bundy & Pfarrer, 2015; Bundy, Pfarrer, Short, & Coombs, 2017; Marcus & Goodman, 1991; Post, 1978). Building on this wealth of prior work, many recent OIM studies treat firm responses to damaging events as a means to protect a firm’s social approval—defined as “evaluators’ general affinity” toward the firm (Bundy & Pfarrer, 2015: 345; Titus, Parker, & Bass, 2018; Zavyalova et al., 2012). Such advancement helped resolve difficulties encountered in previous OIM frameworks. For example, Mohamed and colleagues’ (1999) work allowed for

overlap between firm response strategies, implying that the categories they define may not be a definitive means to distinguish which OIM strategy a specific firm had chosen to follow.

Likewise, Elsbach's (2003) framework made conceptual distinctions between potentially overlapping categories such as accounts including imagery and defensive or accommodative accounts, making tests of single OIM strategies more difficult.

In sum, research on OIM has developed much beyond its original foundations to consider the prevalence and effectiveness of various strategies. This rich and varied stream of research provides evidence for how impression management can lead to positive outcomes for firms. I use the following section to provide a representative look at the present state of the OIM literature, first by describing recent work on anticipatory strategies before turning my attention to work on reactive strategies. This review of the literature first follows anticipatory impression management (AIM)—an emergent subset of OIM that is used in anticipation of future events. In reviewing both anticipatory and reactive strategies, I lay the foundation from which I develop a framework for viewing OIM as a path-dependent process.

Anticipatory Impression Management

While scholars have been engaged in research on OIM strategies for more than three decades, heightened investigation into the management of anticipated events is a more recent phenomenon. Work on AIM is burgeoning, however, and recent tactics such as foreshadowing, strategic noise, and impression offsetting (e.g., Busenbark et al., 2017; Graffin et al., 2011, 2016) have been shown to influence important organizational outcomes. Despite AIM's recently popularity, it was not until more than a decade had passed since Elsbach and colleagues' (1998) study before scholarly focus on AIM resurfaced in the literature. This is surprising for at least two reasons: First, in many respects, firms have more strategic flexibility in an anticipatory context; at this stage, evaluator perceptions are malleable and not yet anchored by any salient

event. Second, tactics used to project desirable images are less obvious in this context; it is difficult to identify whether a firm is intentionally managing a negative event if the event has not happened yet. These reasons support the idea that when a damaging event can be anticipated, anticipatory strategies may be valuable options for a firm to consider.

To test a range of strategies that were expected in my empirical context, I focused on tactics that involved the disclosure of unrelated information to anticipatorily manage negative events. The purpose of this approach was to represent as many AIM–RIM combinations as possible while identifying a single context where it would be feasible to test these strategies alongside each other. Prior research notes how firms are likely to “engage in a range of impression management activities” in anticipation of negative events (Graffin et al., 2016: 248). In testing these strategies, I do not form predictions for a subset of AIM tactics mentioned in the literature, such as foreshadowing (Busenbark et al., 2017), strategic noise (Graffin et al., 2011), and stealing thunder (e.g., Arpan & Pompper, 2003; Arpan & Roskos-Ewoldson, 2005; Williams, Bourgeois, & Croyle, 1993).¹

In the following section, I trace the development of the AIM literature for tactics that involve the release of unrelated information leading up to negative events, describing the mechanisms and key assumptions of these strategies. In doing so, I evidence how work in this domain has both benefitted and complicated our understanding of impression management.

Origins of anticipatory impression management. Research on anticipatory impression management finds its beginnings in Elsbach and colleagues (1998) qualitative study of hospital billing, in which they developed a grounded theory of AIM as a mechanism to distract audiences

¹ A key benefit of a foreshadowing strategy is how it enables managers to adjust an intended strategy based on initial responses to hinted information (Busenbark et al., 2017). This strategy was not expected in the context of failed clinical trials, as firms are unable to legally manipulate the results of these studies. Strategic noise was not formally tested, as this strategy is implemented when “directors are uncertain as to how stakeholders may react” (Graffin et al., 2011: 749). The unambiguous negativity of failed phase 3 trials is described in detail later in this manuscript. Lastly, it was infeasible to test stealing thunder in this context, as it was not possible to assess whether firms were aware of imminent disclosure by third parties.

and manage reactions to information once it was revealed. This work described how a firm may engage in preemptive action to “motivate audiences” to view its processes more favorably (Elsbach, 2003: 3). This research introduced the concept of anticipatory obfuscation, a mechanism of impression management that preceded evaluator reactions and was used to minimize direct scrutiny of anticipated events (Elsbach et al., 1998). This mechanism was grounded in the firm’s “ability and need to anticipate possible futures” (Higgins & Snyder, 1989: 77) and laid the groundwork for future AIM discoveries linking specific strategies to altered evaluator perceptions toward future events (Arndt & Bigelow, 2000; Graffin et al., 2011, 2016).

Since Elsbach and colleagues’ (1998) initial test of anticipatory obfuscation in organizations, more recent empirical studies have suggested that interpretations of events may be influenced by various preemptive information strategies. For example, Graffin and colleagues (2011) demonstrated that the release of additional, unrelated information alongside a focal event led to more positive stock market reactions to CEO successions—a major firm event that is fraught with uncertainty. Likewise, more recent studies demonstrated how additional positive information can offset negative events (e.g., Graffin et al., 2016), additional negative information can lead to favorable future outcomes for firms (e.g., Kirschenheiter & Melumad, 2002; Titus et al., 2018), and early information disclosure can reduce negative evaluator perceptions (e.g., Busenbark et al., 2017). These studies examined the responses of specific observers, such as security analysts (e.g., Busenbark et al., 2017; Washburn & Bromiley, 2014; Westphal & Clement, 2008), as well as the general public (e.g., Titus et al., 2018; Graffin et al., 2016; Kirschenheiter & Melumad, 2002).

AIM strategies differ from RIM strategies in that they focus on firm-level activities that “are undertaken in anticipation of, or contemporaneously with, an event that organizational leaders believe may be perceived as [negative]” (Graffin et al., 2016: 234). Per Graffin and

colleagues (2016), AIM follows a three-step process that involves (1) firm managers learning of an event that will impact evaluator perceptions, (2) the carrying out of AIM strategies prior to or alongside an event, and (3) evaluators reacting to the anticipatorily managed event. I conceptualize a firm’s AIM strategy as a managerial decision to introduce or withhold additional information before a focal event expected to impact external perceptions. Strategies that involve disclosing additional positive or negative information are those that either offset (e.g., Graffin et al., 2016) or amplify (e.g., Elliot & Shaw, 1988; Kirschenheiter & Melumad, 2002; Titus et al., 2018) events. In the following section, I briefly review the AIM strategies of offsetting and amplification before introducing a third strategy to the literature, anticipatory reticence. Table 1 summarizes each of the AIM strategies described below.

Table 1: Anticipatory Impression Management Strategies (AIM)

AIM Type	Definition	Purpose
Offsetting	The release of positive, unrelated information leading up to the disclosure of a focal event	To weaken the impact of a negative event and position the firm to accept responsibility for it
Amplification	The release of negative, unrelated information leading up to the disclosure of a focal event	To avoid prolonged evaluator scrutiny by releasing all negative information at once
Anticipatory Reticence	The withholding of confounding information leading up to the disclosure of a focal event	To avoid disrupting a negative event to reactively strengthen evaluator relationships

Offsetting. The first strategy, *offsetting*, involves the intentional release of information “to positively influence external perceptions of the organization” by buffering a negative event with additional, positive information (Graffin et al., 2016: 233). Offsetting was first conceptualized by Graffin and colleagues (2016) in the context of firm acquisitions, a firm event that often evokes negative reactions around its announcement (Haleblian, Devers, McNamara, Carpenter, & Davison, 2009). This strategy is designed to reduce negative impressions by

creating an information environment where evaluators are influenced by unrelated positive information as they learn of a negative event.

Specifically, offsetting simultaneously buffers a negative event and increases information asymmetry around it through the use of additional positive disclosures. This differs from typical treatments of information asymmetry which focus on proprietary costs incurred through the disclosure of information and the relative advantages of reticence (Busenbark et al., 2017; Cohen & Dean, 2005). When offsetting is used, the combination of disclosures made by the firm makes it more difficult for external evaluators to discern the specific effect of a disclosed event on firm performance (Graffin et al., 2011). As such, offsetting carries two benefits: a buffering effect toward a negative event and causal complexity toward its impact on performance.

In their sample, Graffin and colleagues (2016) showed that firms released on average 482% more positive, material disclosures leading up to acquisition announcements. They also found that, on average, offsetting reduced the negativity of stock reactions to acquisition announcements by an average of 40%, representing \$246 million in market capitalization. In theorizing on AIM that offsets, I employ Graffin and colleagues' (2016) definition of impression offsetting that describes a specific information disclosure strategy a firm may follow.²

Amplification. The second strategy, *amplification*, involves the release of additional negative information leading up to an anticipated negative event. This tactic challenges traditional theoretical perspectives in crisis and impression management that suggest that firms benefit most by positioning themselves in the “best possible light” and avoiding activities that generate scrutiny or heighten negative impressions (Elsbach et al., 1998: 68; Staw, Sandelands, & Dutton, 1981; Zavyalova et al., 2012). Past literature describes two strategies that have the potential to instead *amplify* negative perceptions. These include big bath accounting (e.g., Elliott

² Offsetting press releases had a clear influence on market reactions to disclosures in my sample. The average stock response for an offset clinical trial termination was -4.9% versus -24.7% for terminations that were not offset.

& Shaw, 1988; Kirschenheiter & Melumad, 2002) and scrutiny bundling (Titus et al., 2018). I briefly review each of these before turning my attention to a third strategy, anticipatory reticence.

Big bath accounting, introduced by Elliott and Shaw (1988), refers to a strategy in the accounting literature that involves a firm underreporting earnings in the near-term in order to report more favorable future earnings. While a rich stream of research described firm motivations behind smoothing earnings (e.g., higher reported earnings led to increases in firm value and less executive turnover), little attention had been paid to circumstances when a deliberate underreporting of earnings may be beneficial. Kirschenheiter and Melumad (2002) advanced our understanding of this strategy to suggest when a firm may choose to manipulate its earnings to foster positive impressions later on. They demonstrated that, in anticipation of sufficiently bad news, a firm will have an incentive to underreport its earnings “by the maximum amount possible” to benefit in later periods (Kirschenheiter & Melumad, 2002: 762).³

Recent scholarship refined the notion of big bath accounting to consider a broader set of potential strategies and a firm’s information disclosure strategy more generally. Graffin and colleagues (2016) referred to big bath accounting as a strategy that overstated “the negativity of the event by releasing other negative announcements prior to or contemporaneously with it” (235). While this definition was no longer limited to the reporting of a firm’s earnings, its theoretical purpose remained unchanged and aptly applied to the AIM literature: Increasing near-term negative impressions can benefit a firm later on by setting it up for future success. In theorizing on AIM amplification strategies, I use Graffin and colleagues’ (2016) definition of big bath accounting. This definition represents a beneficial extension that supplies initial theory on a firm’s broader information disclosure strategy for an anticipated event.

³ A significant contribution of Kirschenheiter and Melumad (2002) was how they incorporated evaluator responses in later periods into their mathematical models and computed the effect of earnings disclosure strategies beyond immediate market responses.

Another strategy, scrutiny bundling, was introduced by Titus and colleagues (2018) in their empirical study analyzing the upstream petroleum industry. While not bound to an anticipatory context, the underlying mechanism of scrutiny bundling was one that amplified threats in a firm's information environment and extended the logic underlying big bath accounting. These authors were interested in examining how a firm could benefit from engaging in scrutiny-hazarding action, referred to as scrutiny bundling, in the wake of social disapproval—measured as negative media coverage (Titus et al., 2018). They demonstrated that a firm may engage in additional behaviors that draw scrutiny to prevent protracted negativity and “to exploit stakeholders' limited capacity to attend and proportionally respond to temporally clustered and repeated events” (Titus et al., 2018: 4; Barnett, 2014; Miller, 1956). In this way, the negativity of social disapproval allowed firms to engage in additional negative actions since the damage of negative evaluations was already incurred. Titus and colleagues (2018) also theorized that a firm was more likely to engage in scrutiny bundling when “it cannot deviate or distract from status quo activities, such as when these activities are strategically indispensable” (Titus et al., 2018: 4). In sum, work on these strategies presented additional evidence for the potential benefit of amplifying a negative event through additional negative actions or communications.

Anticipatory reticence. While only discussed in a reactive context, a third strategy, reticence, can be adapted to an anticipatory context.⁴ I introduce and define reticence leading up to event disclosure as *anticipatory reticence*, and formally define it as a firm's decision to withhold information leading up to the occurrence of an event. Broadly, a firm is expected to pursue this strategy if it is strategically advantageous to avoid disrupting interpretations of an anticipated event, or if it would be costly to disrupt. For example, an anticipated event may be sufficiently negative to weaken any buffer a firm may consider using (e.g., offsetting

⁴ It is worthwhile to note that managers may wish to communicate with external audiences but simply not know what to say and therefore remain silent. This type of reticence—while undesirable—is still intentional. I describe past work on reticence in the OIM literature when I review each RIM strategy later in this manuscript.

information). As such, a firm may choose to be silent in order to disclose this information at a later date when it will be more salient in the eyes of its evaluators. This circumstance illustrates an important tradeoff a firm will make as it decides between short-term loss and fostering positive impressions in the future. One example of anticipatory reticence in my sample was the absence of preemptive communications leading up to the publicized termination of Metadoxine Extended Release (MDX), a drug developed to treat Martin-Bell syndrome, by Alcobra Ltd.

Current state of the AIM literature. In summary, the current state of the AIM literature provides us with an understanding of the strategies firms use leading up to focal events to foster positive impressions, either through intentional silence or the strategic disclosure of positive or negative information. Nevertheless, little is known concerning how a firm's anticipatory management of an event may impact its reactive management of it. To develop my theorizing and empirical tests of path dependence in impression management, I use the following section to review research on AIM's "partner," reactive impression management (RIM).

Reactive Impression Management

RIM refers to the strategic actions a firm implements to influence evaluators' impressions following negative events (Elsbach, 2003; Elsbach et al., 1998; Marcus & Goodman, 1991). Through impression management, a firm can influence these judgments to its benefit (Bundy & Pfarrer, 2015; Porac et al., 1999). For example, Zavyalova and colleagues (2012) demonstrated the positive effects of a firm's technical and ceremonial actions—behaviors that had the potential to address causes of wrongdoing (e.g., monitoring of manufacturing facilities) versus those that deflected evaluator attention (e.g., charitable donations)—on media tenor in the context of U.S. company toy recalls. Additionally, Ridge, Hill, and Ingram (2017) investigated the beneficial role of firm lobbying in influencing political action. Both studies highlighted strategies a firm can use to manage impressions following a publicized event. In considering these tactics, I

follow past theoretical and empirical research and view non-reticent RIM as existing on a response strategy continuum of accommodativeness—from fully defensive to fully accommodative (e.g., Bundy & Pfarrer, 2015; Bundy et al., 2017; Marcus & Goodman, 1991).

Given the possibility that a firm may not follow an accommodative or defensive response, I review—but do not formally test—a third RIM strategy of reactive reticence (e.g., Ferrin, Kim, Cooper, & Dirks, 2007; Carlos & Lewis, 2018). The focus of my theorizing is on how a firm’s AIM shapes the characteristics of a firm’s reactive communications and actions, and as such I do not formally predict when a firm may choose to be reactively reticent. Reactive silence was not expected to be highly prevalent in my context, and this was confirmed once all data were collected.⁵ I review accommodative, defensive, and reticent strategies below, which are summarized in Table 2.

Table 2: Reactive Impression Management Strategies (RIM)

RIM Type	Definition	Purpose
Accommodative	A firm’s response in which responsibility is accepted, the existence of a focal event is acknowledged, and actions are taken to remedy negative effects	To develop stakeholder trust through transparency
Defensive	A firm’s response in which responsibility is shifted, the existence of the focal event is downplayed, and actions are taken to counter claims of organizational responsibility	To avoid evaluative loss by downplaying an event
Reticent	A firm’s response in which a firm is silent or neither accepts nor denies responsibility	To avoid evaluative loss through silence

Accommodative responses. *Accommodative RIM* attempts to reactively repair the damages caused by a negative event by acknowledging a firm’s perceived association and responsibility for it (Bundy & Pfarrer, 2015; Pfarrer, DeCelles, Smith, & Taylor, 2008).

⁵ Only 21 of 259 trials involved firm responses of reactive reticence. In my methodology section, I discuss results associated with a supplemental test predicting reactive reticence.

Accommodative responses capture a range of firm actions, including formal apologies and strategic changes addressing evaluator concerns (e.g., Coombs, 2011; Mackey, Mackey, & Barney, 2007; Post, 1978). Prior work by Marcus and Goodman (1991: 282) investigated varying presentations of corporate policy, looking at when certain firms were likely to “appear accommodating and others defensive” (282). Their work demonstrated that investors reacted more positively to accommodative responses following corporate scandals. These effects have since been tied to other important stakeholder groups. One example of accommodative RIM in my sample was Xoma Corporation’s response to unfavorable clinical trial results:⁶

Over the past two weeks, in response to our disappointing EYEGUARD™-B results, we’ve made some hard decisions. We expect to dramatically and quickly reduce our exposure to expenses related to the remaining EYEGUARD clinical development program... these collective decisions will be accompanied by organizational changes.

Defensive responses. In contrast, *defensive RIM* describes strategies that attempt to avoid the damages caused by a negative event by reducing a firm’s perceived association and responsibility for it (Bundy & Pfarrer, 2015; Marcus & Goodman, 1991; Bundy et al., 2017). Prototypical examples of defensiveness include denials of responsibility, the downplaying of an event’s negativity, attacks toward accusers, or the shifting of blame toward others. One example of defensive RIM in my sample was Telik, Inc.’s response to the demonstrated inefficacy of its drug TELCYTA: “We continue to believe that TELCYTA is a novel agent that has potential to improve outcomes.”⁷

Defensive responses in Marcus and Goodman’s (1991) study of corporate responses following accidents and scandals were those in which managers “insisted that problems did not

⁶ Another recent example of an (eventual) accommodative response was that of Facebook CEO Mark Zuckerberg, who spoke on behalf of his firm during a joint hearing of the Senate Judiciary and Commerce committees concerning the suspected mishandling of user information (Zuckerberg, 2018): “We didn’t take a broad enough view of our responsibility, and that was a big mistake. And it was my mistake. And I’m sorry... It will take some time to work through all the changes we need to make across the company, but I’m committed to getting this right.”

⁷ TELCYTA’s termination was unambiguously negative, as the three-day CAR around the termination announcement was -49.23%.

exist” and “tried to alleviate doubts about their and the firm’s ability to generate future revenues” (291). Likewise, in their study on hospital annual reports, Arndt and Bigelow (2000) described how excuses, justifications, disclaimers, and concealment were common forms of defensive impression management. In their influential volume on the use of excuses in negotiation, Snyder, Higgins, and Stucky (1983: 3–4) described three conditions necessary for excuse-making to take place: “First, an actor must do something that is attributable to it. Second, this action must be negative, and the actor must desire to be less associated with it. Third, there must be an observer that the actor cares to have think a certain way about themselves.” Through excuses, they argue, an actor can lessen the negative implications of an event and maintain “a positive image for oneself and others.” While general prescriptions in the crisis and impression management literatures recommend accommodative responses, these studies show there can be a place for the strategic use of defensive responses (Bundy & Pfarrer, 2015; Marcus & Goodman, 1991; for a review, please see Bundy et al., 2017).⁸

In Marcus and Goodman’s (1991) empirical study, they demonstrated how investors reacted more positively to defensive responses following airplane crashes, oil spills, and gas explosions, as these events were viewed as unexpected and not intentionally caused by the firm. A recent study by Harrison, Boivie, Sharp, and Gentry (2018) demonstrated how directors with elite education and employment credentials used defensive responses as a reputation maintenance strategy following negative media coverage. A recent example of defensive RIM was that of Turing Pharmaceuticals CEO Martin Shkreli, who stated the following in response to widespread criticism for raising the price of the anti-parasitic drug Daraprim by over 5,000% (Sidahmed, 2016):⁹

⁸ In my methodology section, I present and discuss results that illustrate how accommodative responses—if not preceded with AIM—can lead to even more negative evaluator reactions than defensiveness.

⁹ Another example of defensiveness was Tesla Inc.’s vigorous defense of its Autopilot system following claims that it caused a fatal crash (Hull & Naughton, 2018): “The crash happened on a clear day with several hundred feet of

To me the drug was woefully underpriced. It is not a question of ‘Is this fair?’ or ‘What did you pay for it?’ or ‘When was it invented?’ It should be more expensive in many ways... My whole life has been one theme, of self-sacrifice for my investors. I did it for my shareholders’ benefit because that’s my job.

Reticent responses. A third strategy, *reactive reticence*, describes a firm’s decision to neither accept nor deny responsibility for an event, and frequently involves a failure to disclose additional information or a refusal to comment (Ferrin et al., 2007; Decker, 2012; Carlos & Lewis, 2018). This strategy, despite its prevalence in business press and politics (e.g., the Glomar response; refusing to neither confirm nor deny), has received scant attention in the management literature and even less attention in research focused on organization level phenomena (cf. Bundy & Pfarrer, 2015). Likewise, past work, predominantly at the individual level, suggests that reticent strategies may be strategically disadvantageous (Bies, 2009; Morrison & Milliken, 2000). For example, Ferrin and colleagues (2007: 893) investigated reticence among corporate leaders through two lab studies, assessing the impact of “silence in response to allegations brought by the media and/or by neither admitting nor denying formal charges.” Their findings revealed that reticence was less effective than apology, because apology assumes firm culpability and “conveys a strong signal of redemption,” an important means for developing evaluator relationships (Ferrin et al., 2007: 895).

In a recent study, Carlos and Lewis (2018) investigated why firms may avoid disclosing information about prominent certifications to avoid perceptions of hypocrisy, referring to this impression management strategy as a firm’s attempt to be “strategically silent” (131). As an impression management strategy, reactive reticence may protect a firm by withholding statements that would be criticized by external evaluators or direct scrutiny back to a specific evaluative threat. With investigations into contexts where reticence may be strategic for firms,

visibility ahead, which means that the only way for the accident to have occurred is if Mr. Huang was not paying attention... The fundamental premise of both moral and legal liability is a broken promise, and there was none here.”

theoretical perspectives on silence continue to advance. Traditional views that treat silence as disadvantageous for the firm are changing (e.g., Morrison & Milliken, 2000; Bies, 2009; Stouten, Trip, Bies, & De Cremer, 2019).

Current state of the RIM literature. In summary, the current state of the RIM literature provides us with an understanding of the strategies firms use after negative events to reduce their impact on impressions. Work in this domain largely focuses on accommodative or defensive responses or their derivatives, which can be viewed as existing on “a response strategy continuum” of fully defensive to fully accommodative (Bundy & Pfarrer, 2015: 352; Coombs, 2007b). These strategies offer avenues for the firm to foster favorable impressions through developing evaluator trust through transparency or preventing loss through disassociation (Bundy & Pfarrer, 2015; Elsbach, 2003; Marcus & Goodman, 1991). In the next section, I integrate conceptual and empirical findings from the decision-making literature to help explain how AIM and RIM interrelate, laying the conceptual groundwork for testing path dependence in organizational impression management.

CHAPTER 3: THEORY DEVELOPMENT

The previous review on OIM reflects the commonalities between anticipatory and reactive impression management strategies, indicating that each set of strategies bears a common purpose of fostering positive impressions among external evaluators. However, despite this shared goal, the question of how anticipatory and reactive strategies interrelate and influence firm outcomes remains unexamined. Building on my review of this literature, I propose that it is beneficial for scholars to conceptualize a firm's impression management as path-dependent. The purpose of the following section is to ground my explanation of how a firm's RIM strategies are shaped by the AIM strategies it chooses to pursue. To do so, I integrate the concept of path dependence from the organizational decision-making literature into extant work on OIM to develop a testable framework that explains how these sets of tactics interrelate.

Path Dependence in Organizational Impression Management

Past OIM research has focused on predicting perceptual outcomes based on specific impression management strategies, anticipatory or reactive. Examples of this include the use of offsetting to anticipatorily manage perceptions toward acquisitions (Graffin et al., 2016), or technical and ceremonial actions following recalls in the toy industry (Zavyalova et al., 2012). Extending this research, I argue that understanding the relationship between AIM and RIM requires viewing a firm's set of impression management strategies as path-dependent.

The concept of path dependence—which is an explanatory mechanism for how the strategic decisions a firm makes are influenced by the decisions it has made in the past—provides a vantage point by which AIM and RIM can be depicted as an interconnected and contingent set of firm strategies (Cornelissen, 2017; Mishina et al., 2012; Langley, 1999; Van de

Ven, 1992).¹⁰ This characterization of path dependence is not destiny, however. In the context of my theorizing, impression management processes do not “refer to a state of determinacy” (Sydow et al., 2009: 692) but rather serve to influence managers as they select which succession of actions to follow to manage impressions (McDonnell & King, 2013). Likewise, the strategic processes managers develop, in turn, serve as a baseline strategy that they intend to follow to manage impressions.

A path-dependent framework therefore lays the groundwork to combine insights on anticipatory and reactive strategies and to theorize which strategic pairings may be more likely—and effective. This perspective builds on theory in organizational decision making which argues that social judgments are shaped by past events, such that prior perceptions “influence what observers expect and notice, as well as how actions and statements will be interpreted” (Mishina et al., 2012: 463; Fiske & Taylor, 1991; Arthur, 1989; David, 1985). Just as a firm’s response strategy is influential in anchoring evaluators’ impressions (Bundy & Pfarrer, 2015), I extend this argument to account for how AIM influences evaluator responses to RIM, which in turn impacts which AIM and RIM pairings managers pursue and benefit the most from.

I argue that path dependence in impression management occurs due to the ability of a firm’s AIM to alter characteristics of the information environment around a negative event (Graffin et al., 2016), impacting the effectiveness of a firm’s reactive strategies. Stated plainly, my central contention is that a firm crafts its anticipatory and reactive strategies simultaneously, such that its managers consider how AIM and RIM interrelate to mitigate negative reactions and enhance impressions. As a result, I argue that AIM and RIM strategies are mutually dependent

¹⁰ Path dependence is a construct in several literatures, including evolutionary economics (Arthur, 1990), historical sociology (Mahoney, 2000), and strategic management (Sydow et al., 2009; Mishina et al., 2012). My focus aligns most closely with Mishina and colleagues (2012) who view path dependence as the influence of prior strategic decisions on future action.

and reinforced by one another. One pharmaceutical executive I spoke with highlighted the importance of formulating impression management strategies ahead of time:

We try to anticipate any potential future negative events in advance, estimate their likelihood and plan how to mitigate their impact. Management teams that do not do advanced scenario planning could inadvertently cause a greater negative shareholder response than is actually warranted by the event.

Advancing this idea, I propose that managers develop anticipatory and reactive strategies before events occur, and that AIM strategies anchor evaluators to interpret events in different ways—whether the event is offset, amplified, or preceded by reticence. This anchoring effect then has a downstream influence on a firm’s evaluators, limiting its scope of viable reactive responses (Sydow et al., 2009). Figure 1 provides a model summarizing this path-dependent view of impression management.

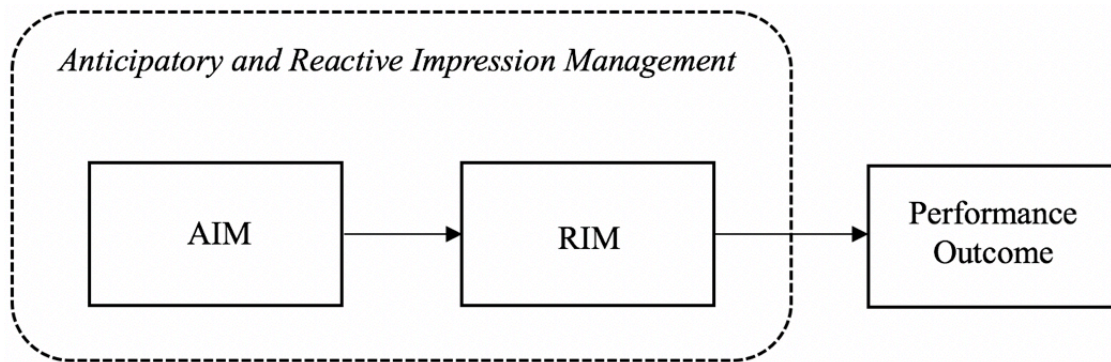


Figure 1: A Path-Dependent Model of Organizational Impression Management

Boundary Conditions

To offer parsimonious theorizing on the how anticipatory and reactive impression management interrelate, I establish a set of boundary conditions for this framework. First, it is necessary that an event be anticipated and have some probability of being eventually publicized. If an event is unanticipated, the firm lacks the ability to preemptively manage impressions

toward it. Likewise, if an event is unlikely to be observed by a firm's external evaluators, it diminishes the need to manage impressions around it (Snyder et al., 1983).

Second, it is assumed that a firm's managers have some informed suspicion that an event will lead to a negative response from its external evaluators. This means that the anticipated event will be sufficiently disruptive to warrant the use of impression management. This boundary condition leads this research to focus on specific anticipatory and reactive strategies that are pursued *because of* some impactful, anticipated event. Without the expectation of a sufficiently negative response, the firm lacks the incentive to develop a holistic impression management strategy to manage its effects (Rhee & Haunschild, 2006).

Third, it is important to note that a firm's external evaluators may have conflicting needs and demands (e.g., Kahn, Barton, & Fellows, 2013; James, Wooten, & Dushek, 2011; Fediuk, Coombs, & Botero, 2012). Throughout this study, I conceptualize a firm's external evaluators as actors outside the firm who observe and react to its actions. Evaluator reactions carry important implications for firms and—while varied—influence overall fluctuations in stock price. When formulating impression management strategies, it is assumed that managers consider what this overall response may be.

Fourth, to offer an empirical test of as many AIM–RIM combinations as possible, I adopt the approach introduced by Graffin and colleagues (2016), which focuses on a set of tactics that involve the disclosure of *unrelated* information leading up to the disclosures of known valence. This treatment of AIM assumes that a firm has access to information it can use to intentionally shape impressions toward an expected event. This perspective focuses on firm strategies that use additional, unrelated information available to the firm to manage evaluative threats.

CHAPTER 4: RESEARCH SETTING AND HYPOTHESES

Research Setting: Late-stage Clinical Trial Terminations

I have chosen to test anticipatory and reactive impression management strategies in the context of terminated, phase 3 clinical trials sponsored by public U.S. firms. According to the U.S. National Library of Medicine maintained by the National Institutes of Health (NIH), terminated clinical trials are trials that have “stopped early and will not start again” with participants that “are no longer being examined or treated” (U.S. National Library of Medicine, 2017). Clinical trials represent substantial investments that, if successful, can position a firm for considerable success.

It is a misconception that the development of medical treatments is so uncertain that late-stage trials are almost guaranteed to fail. This characterization is most accurate when considering the overall likelihood of regulatory approval from phase 1 (9.6%), but not when considering whether a late-stage trial will succeed (Biotechnology Innovation Organization, 2016). According to the largest published study of clinical drug development to date, the likelihood of success for a phase 3 trial across all conditions approached 60% over the 2006-2015 timeframe (BIO, 2016). Based on information from the NIH, Mahan (2014), Sertkaya, Wong, Jessup, and Beleche (2016), and BIO (2016), tables 3 and 4 describe each major phase of the clinical trial process.¹¹ I have chosen this context for several conceptual and empirical reasons which I describe in detail below.

¹¹ The figures provided in Table 4 are estimates, as clinical trial expenses vary considerably. While not included in the table, a small proportion of trials enter a fifth phase—a designation for community-based trials for approved treatments. As of 2017, the U.S. National Library of Medicine classified all trials beyond phase 3 as phase 4 trials. One pharmaceutical executive I spoke with commented how these figures are likely underestimated by tens of millions of dollars, as years of R&D and substantial up-front costs are necessary to initiate a late-stage trial.

Table 3: Phases of the Clinical Trial Process (based on descriptions by the NIH)

Phase	Description
Early Phase 1 (or Phase 0)	A phase of clinical research conducted before phase 1 trials to investigate how or whether a drug affects the body. These trials involve limited human exposure to a drug under consideration and have no diagnostic or therapeutic goals. Examples of early phase 1 trials include screening studies and microdose studies.
Phase 1	A phase of clinical research that describes trials focused on the safety of a drug under consideration. These trials typically involve a smaller number of healthy volunteers. The goal of phase 1 trials is to determine a drug's most frequent and serious adverse events.
Phase 2	A phase of clinical research that describes trials used to gather preliminary data on drug efficacy in a target population (i.e., in people who have a certain condition or disease under consideration). In a phase 2 trial, participants receiving the drug may be compared to similar participants receiving an alternative treatment. This alternative treatment is typically an inactive substance (i.e., a placebo) or a different drug. Drug safety continues to be evaluated, and researchers are attentive to any short-term adverse events.
Phase 3	A phase of clinical research that focuses on gathering more information about a drug's safety and effectiveness by studying its effects within different populations and at different dosages. Phase 3 trials typically involve using a drug in combination with other drugs to assess its efficacy, and these trials involve more participants than prior phases.
Phase 4	A phase of clinical research that describes trials occurring after a drug has received market approval from the FDA. These trials include postmarketing requirements and commitment studies that the study sponsor is obligated to fulfill. Phase 4 trials typically focus on gathering more information about a drug's safety, effectiveness, or optimal use.

Table 4: Phases of the Clinical Trial Process (Continued)
 (based on Mahan (2014), Sertkaya et al. (2016), and the NIH)

Phase	General Purpose	Estimated Enrollment	Estimated Expense	Success Rate
Early Phase 1 (or Phase 0)	Safety	≤ 10 patients	Varies	N/A
Phase 1	Safety	≤ 100 patients	2.24 to 5.36 (million USD)	~63.2%
Phase 2	Safety and efficacy (sample from affected population)	≤ 300 patients	10.84 to 15.86 (million USD)	~31%
Phase 3	Safety and efficacy (assess treatments in larger sample)	$\leq 2,000$ patients	11.30 to 28.48 (million USD)	~58%
Phase 4	Long-term safety and efficacy	Varies	Varies	N/A

Late-stage terminations are typically negative. First, phase 3 trial terminations tend to be unambiguous examples of negative organizational events that warrant impression management. Clinical trials represent significant investments by firms seeking to bring a variety of medical treatments to market, with single trials representing multi-million-dollar investments. For example, an average phase 3 study within the 2004–2012 time-period in pain and anesthesia cost \$52.9 million (Sertkaya et al., 2016: 120). Trial development also represents a significant investment of a firm’s intellectual property. A common impetus for intra-industry acquisitions for firms engaged in clinical development is to gain ownership of clinically testable compounds and treatments, suggesting that trials relating to specific treatments may represent billions, rather than millions of dollars invested. The negativity of terminated phase 3 trials was also evidenced by data in my sample, which demonstrated a mean three-day (–1, +1) cumulative abnormal return (CAR) around each termination of –14.20%.¹²

¹² Several other specified CAR windows that included the day of each termination (e.g., –2, +2; –3, +3; –7, 0; –7, +2; 0, +1) were also negative and statistically significant ($p < 0.0001$).

Terminations impact a firm's future earnings potential. Second, phase 3 terminations are expected to influence a firm's investors because they signal a shift in a firm's future earnings potential. Firms initiate clinical trials to advance treatment options for pharmaceutical- and device-related medical technologies. While most treatments fail in the first two clinical phases, the probability of success increases substantially as a treatment advances into phase 3 (BIO, 2016; Sertkaya et al., 2016). Completed and successful late-stage clinical trials are a prerequisite to regulatory approval and the eventual marketing of revenue-generating products. The strength of a firm's clinical pipeline provides strong evidence to external evaluators that it will be able to generate favorable future returns. Thus, late-stage terminations challenge this expectation and reshape perceptions of a firm's future earnings potential.

Phase 3 as an ideal context for impression management. Third, terminations in phases 1 and 2 represent smaller investments and are not as clear signals of a firm's earnings potential. Trials in these early stages are far away from regulatory approval and do not impact firm valuations as directly as phase 3 trials. As such, I do not expect a firm to manage impressions as aggressively in the context of terminated phase 1 or phase 2 trials. One prominent financial analyst in this study's sample, who addressed the CEO of Alcon, Inc. in its Q3 2008 quarterly earnings conference call, prefaced a question with the following: "And you usually don't disclose until you're in phase 3 or really start talking about it much."

Likewise, the probability of failure decreases substantially beyond phase 3, providing fewer opportunities for impression management. Additionally, Phases 4 and 5 trials are frequently initiated after a treatment has already earned market approval. When asked about terminations in trials beyond phase 3, one pharmaceutical executive I contacted commented how terminations at this stage "are rare by comparison to phase 3 failures, since (the) drug has demonstrated safety in from P1 through P3 studies, which would be the primary cause of a P4

termination.” For these reasons, I focus my investigation of anticipatory and reactive strategies on trials terminated in phase 3 of the clinical development process.¹³

Terminations are anticipated events. Fourth, phase 3 trial terminations represent anticipated events, enabling a firm to outline its plan for anticipatory and reactive impression management before its disclosure. A firm engaged in the clinical trial process has continuous access to information about ongoing trials within its pipeline. While data and safety monitoring boards and other outside panels may recommend the early termination of a trial, this information is communicated to within-firm sources before a termination is disclosed to investors. Firms are granted this strategic flexibility even in cases of patient safety. For example, when faced with an increased heart attack risk related to their drug Vioxx, Merck & Co. waited several days before disclosing on September 30, 2004 that it halted its late-stage clinical trial several days earlier (Martinez, Mathews, Lublin, & Winslow, 2004):

On the morning of September 24, Raymond Gilmartin, chief executive of Merck & Co., got the call every pharmaceutical executive dreads. Peter Kim, Merck’s research chief, told him an outside panel overseeing a clinical trial of the company’s painkiller Vioxx had urged Merck the night before to halt the trial and immediately stop patients from taking the drug.

A growing context. The clinical trial context also represents a valuable opportunity to observe firm behavior in a sector that is experiencing rapid growth and investment. According to a comprehensive market research report published in August 2017, the value of the global clinical trials market was \$40 billion in 2016 and is expected to grow at a compound annual growth rate of 5.7% through 2025 (Grand View Research, 2017). As technology advances, sophisticated approaches to healthcare are an expected mainstay in the economy. Unfortunately, due to the pervasive use of medical terminology in this context, it is often overlooked by

¹³ The present focus on phase 3 terminations to identify impression management behavior was further supported by communications with two additional pharmaceutical executives presently involved in U.S. clinical trials at various phases. One chief medical officer commented that in phase 3 a firm provides more releases “communicating the negative data,” whereas in phase 2 the tendency is that a firm “generally only releases positive data and sometimes only some of it,” and “negative data is seldom released.”

management scholars. This study provides one look into a thriving industry that is likely to have an increasing influence on our everyday lives. In the next section, I put forward predictions for AIM–RIM paths in this context, arguing that a firm’s use of offsetting, amplification, or anticipatory reticence will shape the reactive strategy it selects.

Hypothesized Relationships: Bringing Anticipatory and Reactive Strategies Together

A key element in understanding how a firm’s anticipatory strategies impact the reactive strategies it chooses lies in how each AIM strategy modifies the information environment around a prospective threat to evaluators’ perceptions of the firm. For each AIM strategy, a firm’s decision to disclose or withhold information shapes interpretations of the focal event. Given how evaluator judgments rely on interpretations of how a focal event impacts a firm’s future success (Coombs, 2007b), AIM produces contexts where situational attributions are challenged or fundamentally changed (Graffin et al., 2011, 2016). Indeed, prior work suggests that the prevailing influence of anticipatory disclosures, above and beyond their ability to influence market reactions, is to enable firms to manage events in certain ways in the future: “The strategic release of simultaneous information... allows firms to contest subsequent interpretations” (Graffin et al., 2011: 765). I now turn my attention to consider how each AIM strategy discussed—offsetting, amplification, and anticipatory reticence—shapes the likelihood for firms to pursue reactive strategies that are accommodative or defensive following terminated, late-stage clinical trials.¹⁴

The reactive impact of offsetting. An AIM strategy of offsetting involves the release of unrelated, positive information leading up to the disclosure of a negative event (Graffin et al., 2016). This strategy benefits firms seeking to manage impressions in at least two ways: First, it reduces the negativity of an anticipated event by buffering it with other positive news, and

¹⁴ In advancing theory on AIM and RIM, I assume the perspective that a firm’s managers develop baseline strategies based on the assumed efficacy of each strategy they follow. In hypothesis 5, I advance theory that details how each AIM–RIM path a firm follows is influenced by how AIM is received.

second, it generates causal ambiguity by introducing additional, material information that evaluators must interpret alongside the event.¹⁵ Past empirical work demonstrates the effectiveness of these mechanisms, as Graffin and colleagues (2016) showed how offsetting significantly decreased the negative abnormal return around firm acquisition announcements. Below, I consider which RIM strategy a firm will likely pursue to further manage a trial terminated that is positively offset.

An offsetting AIM strategy that is followed by accommodative RIM—a reactive strategy that claims responsibility—may at first seem potentially harmful to the firm. Acknowledging firm responsibility can draw attention to details of the termination, help reduce information asymmetries, and increase evaluator scrutiny through transparent dialogues and restitutive actions (Coombs, 2007b). Despite this potential downside, I expect the benefits of accommodative responses to outweigh this liability. In particular, through reactive strategies that clarify the impact of the focal event and acknowledge the firm’s responsibility, a firm can strategically use the two main effects of offsetting. First, the causal ambiguity offsetting introduces through the disclosure of additional information creates a desire for evaluators to disentangle the independent impact of the termination. Accommodative responses, through discussing the firm’s responsibility for an event and its impact on shareholder value, address this demand for reduced information asymmetry (Bundy & Pfarrer, 2015). Second, because offsetting tends to reduce the negative impact of a disclosed event, a firm can accept responsibility for it with fewer consequences (Graffin et al., 2016; Gamache et al., 2019). Taken together, these effects motivate managers to pair offsetting with accommodative responses.

¹⁵ One example of offsetting in my sample was GlaxoSmithKline’s announcement on September 16, 2013 that the US Food and Drug Administration (FDA) granted a Priority Review designation to one of its supplemental treatments for unressectable or metastatic melanoma. This news was unambiguously positive, as Priority Review status speeds up a drug’s timeline to reach consumers and become profitable.

In contrast, a firm may choose to use offsetting to reactively downplay the damage caused by a trial through a defensive response. Because evaluators have difficulty identifying the exact effect of the termination due to the offsetting information alongside it, they are motivated to seek additional information for clarification (Graffin et al., 2011). A defensive response, however, risks inviting unwanted evaluator scrutiny in the process and does not foster a firm's relationship with external evaluators (Staw et al., 1981). While the ambiguity introduced by offsetting makes a defensive strategy appear more legitimate, such a response does not use the buffering effect of offsetting to foster relationships. In turn, this strategy risks harming, rather than enhancing, firm credibility.

A third reactive option, reactive reticence, risks forfeiting the firm's ability to foster favorable impressions through transparency. This reactive strategy does little to reduce information asymmetries between managers and external evaluators, and it does not leverage the two key mechanisms of offsetting: The buffering effect of additional positive information and the causal ambiguity caused by multiple information disclosures (Graffin et al., 2011; Gamache et al., 2019). A reactively reticent strategy, therefore, maintains the status quo and fails to capture the evaluative gains that could be realized through an accommodative response.

In summary, for situations leading up to a trial termination where the firm engages in offsetting, I argue that it is most advantageous for its managers to be reactively accommodative, accepting responsibility for a negative event that is now buffered by the positive information accompanying it. Managers, who seek to mitigate the impact of a failed clinical trial with offsetting, will tend to follow offsetting with accommodative RIM in order to further repair relationships with external evaluators. Given this, I predict the following:

Hypothesis 1: There is a positive relationship between a firm's use of an offsetting AIM strategy and the degree to which it is reactively accommodative.

The reactive impact of amplification. Amplification involves the release of additional negative information leading up to the disclosure of a negative event. This strategy influences external evaluators in at least two ways. First, through releasing multiple negative disclosures, it involves a trade-off between heightened negativity in the short-term and prolonged negativity through delayed disclosure (Titus et al., 2018). This strategic benefit is motivated by the firm's desire "to reduce the duration of negative events, even at the expense of greater momentary negativity" (Titus et al., 2018: 3).¹⁶ Second, through the causal complexity introduced by multiple disclosures—a similar mechanism to that of offsetting—amplification exploits "stakeholders' limited capacity to attend and proportionally respond to temporally clustered and repeated events" (Titus et al., 2018: 638). This second mechanism of influence, therefore, provides the firm with a near-term benefit and also provides it with greater flexibility to reactively manage impressions.

I argue that a defensive response capitalizes on this flexibility. By reactively downplaying or dismissing the negativity of an event, the firm can distance itself from the negative information it previously disclosed in pursuit of limiting the duration of short-term negativity (Kirschenheiter & Melumad, 2002). In contrast to events buffered by offsetting information, a firm has a reduced motivation to own up to the details of a negative event that has been amplified. Defensive responses, therefore, can be a means to lessen evaluator scrutiny and position the firm to exceed expectations in future periods. In context, a firm faced with a clinical trial termination could disclose other pieces of negative news with it to prevent prolonged negative perceptions by its external evaluators downstream. Reactively, the firm could then follow with a dialogue that avoids attributing the negative response to any particular piece of

¹⁶ One example of amplification in my study was Pfizer Consumer Healthcare's announcement on September 24, 2010 to voluntarily recall an unrelated product. This announcement was made leading up to an announcement about a failed late-stage clinical trial.

information. This strategy positions the firm to focus on exceeding expectations in the future and avoids harming the firm by revisiting event details.¹⁷

In contrast, an accommodative response risks prolonging the negativity of the disclosed event, undermining a key strategic advantage of amplification (Kirschenheiter & Melumad, 2002). Accommodation, through acknowledging an event's severity and the firm's responsibility for it, enables evaluators to grasp details related to the negative information disclosed (Bundy et al., 2017). Thus, while this type of reactive strategy is effective in certain contexts—such as organizational crises where obfuscation and buffering strategies may be less effective—it works against the strategic purpose of amplification to bear the brunt of momentary scrutiny in order to avoid prolonged, negative evaluations (Titus et al., 2018; Kirschenheiter & Melumad, 2002).

Likewise, reactive reticence also possesses undesirable characteristics for a firm that has chosen to amplify a negative event, as it leads external evaluators to rely heavily on previously disclosed information (Decker, 2012; Ferrin et al., 2007). When a firm chooses to be reactively silent, evaluators, in their attempt to understand a negative market reaction, will revisit previously disclosed information (Coombs, 2007b). This process represents a relinquishing of a firm's ability to reactively downplay an event, prolonging its negativity to the firm's detriment.

In summary, following amplification, a firm is likely to benefit most from reactive strategies that avoid prolonging negative perceptions toward negative events (Kirschenheiter & Melumad, 2002). In particular, a defensive response following amplification positions the firm such that it may (1) exploit evaluator's limited capacity to respond to events, and (2) limit the duration of negative evaluations toward a failed trial by reactively downplaying negative information. Given this, I predict:

¹⁷ One reason why impression management scholars typically view accommodativeness as the preferred response strategy is that its effects have yet to be considered when preceded by AIM (Bundy et al., 2017). To illustrate the utility of using a defensive response after AIM, I conducted a supplemental analysis described later in this manuscript. This analysis showed that AIM paired with defensiveness led to more positive stock responses than accommodativeness alone.

Hypothesis 2: There is a positive relationship between a firm's use of an amplification AIM strategy and the degree to which it is reactively defensive.

The reactive impact of anticipatory reticence. A strategy of anticipatory reticence involves a firm's decision to withhold confounding information leading up to the disclosure of a negative event. Unlike offsetting and amplification, which both involve the disclosure of additional pieces of information, anticipatory reticence avoids disrupting the information environment around an event leading up to its disclosure (Coombs, 2007b). Anticipatory reticence motivates observers to rely on an event's details and fosters certain strategic advantages to the firm when managed correctly.

When reticence is used, evaluators rely more heavily on previous judgments of event-specific information (Decker, 2012; Ferrin et al., 2007). This provides the firm with an opportunity to reactively respond in a manner that aligns with evaluator judgments toward the event—an approach that is conceptually linked with the repair of negative impressions (Deepphouse & Suchman, 2008; Bundy & Pfarrer, 2015). Due to the information vacuum anticipatory reticence creates, accommodative RIM provides an effective avenue by which a firm can manage the consequences of a negative event. An example of accommodative RIM after anticipatory reticence could be a firm's disclosure of a product recall followed by an apology and plan to address any future product-related issues (e.g., Zavyalova et al., 2012). Likewise, in the context of a terminated clinical trial, this could involve a description of how a firm was disappointed in the trial's results, followed by a stated commitment to continue development in the specific therapeutic area.¹⁸ In both cases, anticipatory reticence leads evaluators to rely on

¹⁸ One example of reticence and accommodativeness in my dataset was Otonomy, Inc.'s public statement on August 30, 2017. Reticent leading up to their termination announcement, Otonomy's top management team chose to be accommodative about their recently terminated trial: "We are greatly disappointed by these results... We are immediately suspending all development activities for OTIVIDEX... In addition, the company is undertaking a

event-related disclosures more heavily. In turn, this enables the firm to benefit from communications that appears trustworthy and align with external expectations (Coombs, 2007b).

A reactively defensive strategy in context, however, involves downplaying the causal role of the firm and the severity of a trial termination *without* accompanying information to shape its interpretation. Given how anticipatory reticence heightens the perceived salience of a negative event, a reactive dialogue that downplays the impact of a clinical failure risks conflicting with the expectations of a firm's investors. Additionally, past literature indicates that reactive strategies that deny responsibility following clear violations face greater scrutiny (e.g., Decker, 2012; Ferrin et al., 2007; Marcus & Goodman, 1991). Thus, defensive RIM risks harming the firm's credibility due to the absence of confounding information.¹⁹

A strategy of reactive reticence is similarly deficient in that it implies culpability without repairing the damages an event caused. In the absence of additional information, reticence signals responsibility and is empirically the least effective strategy a firm can pursue to reactively repair impressions (Ferrin et al., 2007). This strategy does not leverage the firm's ability to repair evaluator perceptions through responses they are primed to agree with.

Following the use of anticipatory reticence, firms have a distinct opportunity to improve evaluator perceptions through reactive dialogues that accept responsibility and align with the expectations of external evaluators. Reactively defensive and reticent approaches, however, neglect this opportunity and may worsen or prolong the negative impact of a disclosed event. In summary, accommodative RIM provides the firm with a strategic advantage to enhance its

review of its product pipeline and commercial efforts to identify opportunities to extend its cash runway and build shareholder value.”

¹⁹ It is important to acknowledge that this relationship may depend on the framing of an event's disclosure. Given how this study focuses on failed phase 3 trials that are unambiguously negative, it was not expected that the framing of each disclosure would significantly alter this theorized relationship. Upon investigation, the tenor of firm termination disclosures varied little in the sample.

credibility and repair perceptions by accepting responsibility. I predict, therefore, that managers will consider this relationship when they develop a baseline strategy using anticipatory reticence:

Hypothesis 3: There is a positive relationship between a firm's use of an anticipatory reticence AIM strategy and the degree to which it is reactively accommodative.

Performance Implications of AIM–RIM pairings

Comparing the effectiveness of different AIM–RIM pairings can inform managers how to tailor their impression management strategies in a way that most benefits their firms. In the next section, I compare each predicted AIM–RIM combination and introduce a hypothesis about which pairing is expected to lead to the most positive reactive stock response.

Offsetting and accommodativeness. An AIM–RIM combination of offsetting and accommodativeness provides firms with the opportunity to manage a negative event such as a terminated trial in a way that uses the buffering effect of offsetting (Graffin et al., 2016) and the perceptual benefits an accommodative response can provide. Offsetting information can reduce the salience of a negative event in at least two ways—as a buffer using positive information and as a means to introduce causal ambiguity through multiple disclosures—enabling the firm to acknowledge responsibility at a lower perceptual cost. A reactive strategy that is accommodative is likewise shown to reduce the salience of a negative event, particularly in the case of competence-related violations such as clinical failures (Marcus & Goodman, 1991).

Amplification and defensiveness. An AIM–RIM combination of amplification and defensiveness provides the firm with the opportunity to (1) avoid prolonged negativity by disclosing multiple pieces of negative information together and (2) disclose additional negative information at a lower perceptual cost. This strategic combination heightens the overall negativity of evaluator impressions in the near-term to enable downstream perceptual benefits. The viability of this approach depends on a firm's near-term stability as well as its likelihood to

create a more positive information environment in future periods. Holding all else equal, at the time of its reactive management of an amplified event, a firm must contend with managing an event with heightened negativity resulting from multiple negative disclosures—a task likely more difficult than managing an offset event or an event preceded by anticipatory reticence.

Anticipatory reticence and accommodativeness. An AIM–RIM combination of anticipatory reticence and accommodative RIM enables the firm to enhance its credibility and repair a firm’s perceptions by adopting a reactive strategy that leverages the prominence an absence of information creates. Anticipatory reticence, while increasing the salience of a negative event, aligns firm and evaluator understanding about its impact. This agreement in perspective motivates a firm’s managers to be reactively accommodative, providing dialogues that coincide with external perceptions of the negative event (Bundy & Pfarrer, 2015). The viability of this approach depends on whether the reactive benefit of accommodativeness exceeds the potential buffering effect of offsetting or the shortened negativity derived from amplification (Graffin et al., 2016; Titus et al., 2018). Holding all else equal, at the time of its reactive management of an event preceded by anticipatory reticence, a firm must manage an event that is clearly perceived as negative (Coombs, 2007b). This is likely a more challenging task than managing an event buffered by offsetting information.

Considering these pairs together, I predict that an AIM–RIM pairing of offsetting and accommodativeness will evoke the most favorable response due to its ability to strengthen evaluator relationships and draw minimal scrutiny from outsiders. Given this, I hypothesize the following for firms seeking to manage failed clinical trials:

Hypothesis 4: The most favorable stock response will be associated with a firm that follows an AIM–RIM combination of offsetting and accommodativeness.

The Role of AIM Response on RIM Selection

I have argued so far that managers consider anticipatory and reactive strategies jointly, and that anticipatory strategies motivate managers to make certain reactive decisions in later periods. An important clarification—described in the following section—is that managers may not choose reactive strategies solely on the anticipatory strategies they follow. While anchored by the strategies they develop, managers also engage in continuous strategy development and adjust or confirm plans of action according to environmental information (Lawrence & Lorsch, 1967; Sutcliffe, 1994; Finkelstein, Hambrick, & Cannella, 2009). With this in mind, I describe how the selection of reactive strategies is further informed—yet not upended—by the observed effectiveness of a firm’s anticipatory strategies.

Hypothesized relationships with AIM response. In theorizing that AIM response moderates the path-dependent relationship between anticipatory and reactive strategies, it is important to first illuminate two concurrent forms of strategic decision making. First, managers of firms are motivated to develop strategies based on their expectation of future events and firm capabilities (Finkelstein et al., 2009). As a baseline, managers follow strategies they develop in prior periods. Second, managers are motivated to meet the demands of their immediate environments, and they continuously interpret external conditions—remaining attentive to salient information such as fluctuations in stock price—to adjust their baseline strategies (Lawrence & Lorsch, 1967). In combination, these two forms of decision making allow managers to be successful by implementing strategies tailored “to fit environmental conditions” (Sutcliffe, 1994:1360).

Applying these forms of decision making to impression management, I theorize that the first process involves managers evaluating and selecting a general, overarching strategy toward managing evaluator impressions around a negative event (Schwenk, 1984). At this stage, several

questions may arise in the mind of the manager: “Should we anticipatorily manage this? If so, how should we? Will a given strategy be effective? Assuming it is effective, what will we need to say or do afterward to protect ourselves?” This predetermined plan—similar to the pre-crisis prevention stage of crisis management (Bundy et al., 2017)—serves as a baseline strategy a firm will follow and applies strategic inertia to its future decision making (Sydow et al., 2009; Schwenk, 1984). Influential negative events such as clinical failures often require quick decision making and motivate the firm to rely on predetermined plans of action over other alternatives.

The second process involves a firm’s managers implementing strategies based on their beliefs or hypotheses about the relationship between strategic variables (e.g., anticipatory and reactive strategies) while remaining attentive to new information that may alter the viability of their decisions (Sutcliffe, 1994; Lawrence & Lorsch, 1967). In the presence of new information—such as an unexpectedly negative or positive stock response—a manager of a firm may ask: “How does this reaction change what we publicly say and do?” While this novel information is viewed through a manager’s preexisting plan of action, it can influence the near-term strategic actions or communications taken. One executive I spoke with, underscoring how he approached the management of negative events, noted the following: “More experienced CEOs often have learned to be balanced in their communications along the way, however, significant negative or positive events will always impact and modulate communications.”

Bringing these two forms of decision making together, I theorize that a firm’s managers first form holistic impression management strategies based on what they expect the effect of their strategic decisions to be. This holistic consideration anchors them to specific anticipatory and reactive pairings as a baseline. From this baseline, they then observe and incorporate information from the external environments to adjust predetermined strategies as needed. If an AIM strategy is proven effective—in other words, if more positive responses are associated with offsetting and

more negative responses with amplification and reticence—it gives the manager more evidence to lead his or her firm down its predetermined AIM–RIM path. If AIM is less effective, however, it motivates the manager to recalibrate his or her baseline reactive strategy. Due to the time-sensitivity of impression management, however, I propose that a firm will typically follow its baseline strategy to shape impressions. These ideas collectively show how contextual factors such as performance feedback “impact the occurrence and intensity” of path-dependent processes (Koch, Eisend, & Petermann, 2009: 68). I, therefore, theorize that each hypothesized AIM–RIM path will strengthen as the intended effect of each AIM strategy is observed.

Formally, I predict the following:

Hypothesis 5a: AIM response positively moderates the relationship between offsetting and accommodative RIM such that as the response to offsetting is more positive, the relationship between offsetting and accommodativeness will strengthen.

Hypothesis 5b: AIM response positively moderates the relationship between amplification and defensive RIM such that as the response to amplification is more negative, the relationship between amplification and defensiveness will strengthen.

Hypothesis 5c: AIM response positively moderates the relationship between reticence and accommodative RIM such that as the response of reticence is more negative, the relationship between reticence and accommodativeness will strengthen.

CHAPTER 5: METHODOLOGY

Sample

I collected data on terminated phase 3 trials from U.S. public companies using the U.S. National Library of Medicine archive (ClinicalTrials.gov), a publicly available government database that contains clinical trial information for public and private sponsors of registered clinical trials. New trials were first required by federal law to be registered in 1997, and following guidance introduced by the Food and Drug Administration (FDA) in 2002, more rigorous reporting standards were established to promote clinical trial transparency among all industry sponsors (U.S. Department of Health and Human Services, 2002). As such, my sampling frame for this study covered January 2003 through November 2017 and represented an initial sample of 847 phase 3 clinical trial terminations sponsored by publicly-traded U.S. firms in the ClinicalTrials.gov database.

To test my hypotheses concerning impression management around these terminations, it was critical to confirm that each trial termination in my sample was made public, and therefore subject to external scrutiny. To do so, I retained trials that were from public firms, were clearly terminated for negative reasons, and could be traced to definitive disclosure dates, either by official firm communications or third-party coverage. Developing a dataset based on these conditions provided a greater assurance that sufficient archival data would be available for each firm included in the sample, terminations would be publicized, and that each firm would be more vigilant to manage impressions around trial terminations through public communications directed toward firm shareholders.

The U.S. National Library of Medicine archive was accurate in identifying whether a firm had terminated a trial, but it did not provide information relating to any communications

about the termination by the study sponsor. To identify when a trial was terminated, and whether its termination was publicized, it was necessary to follow a multi-stage process that involved hand-collecting and verifying the accuracy of data using several sources: AdisInsight Trials, ClinicalTrials.gov, European Medicines Agency (EMA) archives, FDA archives, Factiva (full searches, PR Newsire, Businesswire), firm press release archives, firm clinical trial archives, LexisNexis, SEC filings, SeekingAlpha, Thompson Street Events, and targeted web searches (including uses of archive.org). To collect data on each firm's anticipatory impression management, I employed and worked alongside a trained research assistant in gathering firm disclosures from Factiva, SEC Edgar, and official firm press release archives.²⁰

The result of these efforts yielded a novel database of 403 terminated phase 3 clinical trials. In instances where multiple trials for the same treatment were terminated in a single press release, I retained the focal trial associated with each disclosure (measured as the most enrolled trial at the date of the termination). Additionally, only trials with non-reticent RIM within one-year following each disclosure were included in the analysis, excluding 21 trials from the main sample. After accounting for these factors, my final sample was comprised of 238 terminated phase 3 clinical trials from 109 firm sponsors over the 2003–2017 time-period. A detailed breakdown of the sample and relevant variables is provided in Tables 5 and 6.

²⁰ For a negative trial outcome to occur, it was not necessary for a trial to be terminated. For instance, a firm could have completed a phase 3 trial and, upon analyzing study data, concluded that a treatment was ineffective in a target population. Due to the intensity of the data collection process for each trial, it was not feasible to also gather data on completed trials with unfavorable outcomes. Conversations with pharmaceutical executives supported the decision to focus on phase 3 terminations in assessing each firm's anticipatory and reactive strategies.

Table 5: Sample Information and Distribution of Anticipatory Impression Management

Anticipatory Strategy	Minimum	Maximum	Trials using strategy	Firms using strategy
Offsetting	0	7	126 of 238 (52.94%)	47 of 109 (43.12%)
Amplification	0	3	38 of 238 (15.97%)	20 of 109 (18.35%)
Neutral Information	0	2	28 of 238 (11.76%)	19 of 109 (17.43%)
Anticipatory Reticence	0	1	70 of 238 (29.41%)	56 of 109 (51.38%)

Table 6: Sample Information and Distribution of Reactive Impression Management

Reactive Strategy	Trials using strategy	Firms using strategy
Accommodative	Fully accommodative: 43 of 238 (18.07%) Very accommodative: 43 of 238 (18.07%) Slightly accommodative: 49 of 238 (20.59%) Accommodative trials: 135 of 238 (56.72%)	Fully accommodative: 37 of 109 (33.94%) Very accommodative: 30 of 109 (27.52%) Slightly accommodative: 29 of 109 (26.61%) Accommodative firms (unique): 79 of 109 (72.48%)
Neither Accommodative nor Defensive	Neutral trials: 63 of 238 (26.47%)	Neutral firms: 32 of 109 (29.36%)
Defensive	Fully defensive: 9 of 238 (3.78%) Very defensive: 13 of 238 (5.46%) Slightly defensive: 18 of 238 (7.56%) Defensive trials: 40 of 238 (16.81%)	Fully defensive: 8 of 109 (7.34%) Very defensive: 8 of 109 (7.34%) Slightly defensive: 15 of 109 (13.76%) Defensive firms (unique): 25 of 109 (22.94%)
Reticent	21 of 259 (8.11%) (<i>excluded from sample</i>)	14 of 111 ^a (12.61%) (<i>excluded from sample</i>)

^a 111 was used as the denominator because two firms that only provided reticent responses were excluded from the final sample.

Measuring Reactive Impression Management

Following recent OIM scholarship (e.g., Bundy & Pfarrer, 2015; Bundy et al., 2017), I measured accommodativeness and defensiveness as response strategies that exist along the same continuum. In particular, lower levels of accommodativeness were treated as defensive strategies (cf. Coombs, 2011). In coding accommodative and defensive RIM, I used a seven-point scale, with 1 representing a fully defensive strategy and 7 representing a fully accommodative strategy. This scale defined defensive strategies as those that attempted to avoid the damages caused by a negative event by reducing a firm's perceived association and responsibility for it. It also included the following examples: denying responsibility, downplaying an event's impact, attacking accusers, and shifting blame to others. This scale defined accommodative strategies as those that attempted to proactively repair the damages caused by a negative event by acknowledging a firm's perceived association and responsibility for it. It also included the following examples: accepting responsibility, acknowledging an event's impact, apologies, expressions of regret, and corrective actions and/or restitution. The coding scheme used to measure each firm's RIM is provided in Appendix A.

I collected and analyzed each firm's earliest public response following the day of each trial termination and assigned it a value from 1 to 7 based on how a firm discussed a termination. To minimize bias, all RIM scores were coded prior to AIM and in separate databases on separate days. To assess interrater reliability for the RIM dependent variable, I employed a trained research assistant who was blind to the hypotheses to code a random subset of 100 reactive firm responses (representing 42% of the sample). The result of this reliability check provided strong evidence for inter-rater agreement exceeding the accepted standard of 0.70, with an ICC(2) equal to 0.78 for the main dependent variable tested in the study (LeBreton & Senter, 2008).

Measuring Anticipatory Impression Management

Building off prior work in OIM (Graffin et al., 2016), I measured *offsetting* as the count of positive, material press releases leading up to each trial disclosure (ranging from $t-7$ to t). Material press releases referred to those that were considered likely to impact the perceived value of the firm once disclosed to the public (Graffin et al., 2011).²¹ Common examples of material press releases in my sample that positively offset termination disclosures included favorable earnings releases, changes in dividend rates, and new product announcements.²²

Where Graffin and colleagues (2016) established an event window of three days around the focal event (ranging from $t-1$ to $t+1$), I tested each firm's use of offsetting using a different time window ($t-7$ to t) incorporating only days leading up to and including each termination. This measurement approach was chosen for conceptual and empirical reasons. First, to be consistent with my theorizing around each firm's RIM strategy following each disclosure, it was necessary to treat any disclosures following the day of a termination as *reactive*. Coding firm communications on the day following a termination disclosure risked contaminating the AIM measure, as these disclosures could be influenced by stock responses relating to the termination. Qualitative evidence also strongly supported this approach, including the several day time-frame leading up to each disclosure.²³

²¹ One downside of this approach is how it weighs all material disclosures equally. Future research may benefit from weighing the relative significance of information disclosed by firms.

²² Later in this manuscript, I describe a supplemental test which includes non-material press releases. Common examples of non-material press releases were routine announcements for upcoming quarterly earnings calls and presentations of already-disclosed data at healthcare conferences.

²³ Prior to collecting data on this variable, I consulted three pharmaceutical executives actively involved in ongoing U.S. clinical trials and firm public relations—a chief executive officer, chief financial officer, and chief of intellectual property and strategy. One topic of conversation was whether firms with late-stage clinical trials prepared same-day press releases, or if press releases necessarily required more than one day of preparation. These conversations confirmed the practice of rapidly preparing press releases, particularly with issues classified as time sensitive. They also affirmed firm foreknowledge about clinical trial progress. Each of these executives had over 20 years of industry-related experience and has held or is currently holding a director position in an S&P 500 firm.

The procedure I followed to measure amplification and anticipatory reticence was similar to the process followed in collecting data on offsetting. *Amplification* was measured as the count of negative, material press releases in the week leading up to each termination disclosure (cf. Graffin et al., 2016). *Anticipatory reticence* was measured as a binary variable representing the presence or absence of material press releases in the week leading up to each termination disclosure, coded as “1” if a firm had no disclosures, and 0 otherwise.

It was a necessary condition that each disclosure for offsetting and amplification be unrelated to the trial termination. To assess interrater reliability for the offsetting and amplification measures, I had a research assistant who was blind to the hypotheses code a similar subset of 100 anticipatory firm disclosures. The result of this reliability check provided evidence for inter-rater agreement exceeding the accepted standard of 0.70, with an ICC(2) equal to 0.98 for offsetting and ICC(2) equal to 0.72 for amplification (LeBreton & Senter, 2008).

Measuring AIM Response

Hypotheses 5a, 5b, and 5c provide predictions around the moderating influence of AIM response on the selection of different RIM strategies. To conduct this test, *AIM response* was measured as the three-day (-1, +1) cumulative abnormal return (CAR) around each termination disclosure. For each CAR value, I used market model, equally weighted values. These values were derived by specifying CRSP Equally Weighted as the market index and MM as the benchmark type on Eventus.²⁴

Control Variables

To help eliminate alternative explanations and to identify factors that may influence independent and dependent variables in the study, I included a variety of firm- and event-level

²⁴ I also performed sensitivity analyses using several other windows (-1, 0; 0, +1; -2, +2; -7, 0; 0, +7). With the exception of the (0, +1) window where marginal significance on hypothesis 5c was lost, all results remained consistent with those presented.

controls. When the value for any control variable was missing, I hand-collected any missing data—where possible—using publicly available information from SEC filings via SEC Edgar, as well as other reliable databases where necessary, including government databases and official firm press release archives.²⁵ Given that late-stage clinical development was a requirement for inclusion, industry membership did not vary sufficiently to justify the control of industry-related factors (more than 96% of observations were associated with the same three-digit SIC code).

Past literature suggests that event-related characteristics inform the attributions of external evaluators and may signal that a firm has, or lacks, the ability to perform at a desired level (Mishina et al., 2012). It is therefore expected that a firm’s evaluators may respond differently to a stopped trial based on the reason for its termination, influencing a firm’s impression management strategy. To account for this possibility, I included several termination-related controls.

Efficacy termination was coded as “1” if a termination disclosure specifically explained that the ineffectiveness of a treatment was the reason for a trial’s termination, and 0 otherwise. Common examples of efficacy terminations included references to unmet endpoints, lack of statistical significance or null effects, lack of superiority above other standard of care treatments, and no improvement over groups receiving placebo treatment.

Safety termination was coded as “1” if a termination disclosure specifically explained that the safety of a treatment was the reason for a trial’s termination, and 0 otherwise. Common examples of safety terminations included disclosures referring to poor safety data, an unfavorable benefit to risk profile, adverse events in study subjects, and the prioritization of patient safety as reasons for the trial ending.

²⁵ I also conducted a test of my hypotheses by replacing any missing values with zero’s and including an additional indicator variable. When doing so, results remained substantively unchanged.

Shared termination was included as a dummy variable coded as “1” if a trial was one of multiple terminated trials for the same treatment announced in the same disclosure, and 0 otherwise. Inferences were unchanged when this variable was instead operationalized as the count of trials associated with each termination. This variable was included because it was possible that a firm’s impression management strategy may have differed if multiple trials were terminated at once.

Past conceptual and empirical work indicates that firm responsiveness to present concerns reflects managerial priorities and event-related characteristics (e.g., Mitchell, Agle, & Wood, 1997; Bundy, Shropshire, & Buchholtz, 2013; Reid & Toffel, 2009; Eesley & Lenox, 2006). This work implies that the longer a firm waits to respond to an issue, the less priority this specific issue has within a firm’s overall impression management strategy. To account for this, *time since disclosure* was measured as the total duration (in days) from a trial’s termination disclosure to a firm’s earliest reactive impression management of it. For example, if a trial termination was disclosed on February 12 and a firm’s next communication referencing the termination was on February 19 of the same year, this variable would receive a value of 7. The minimum value this variable was allowed to take was 1.

Regulatory disclosure was coded as “1” if a regulatory agency, rather than the firm, disclosed a trial termination, and 0 otherwise. This variable was included because disclosures made by parties other than the firm may be subject to more evaluative scrutiny (e.g., Arpan & Pompper, 2003). Examples of regulatory disclosures included termination announcements made by agencies such as the FDA and EMA.

Trial size was measured as a count of the number of patients enrolled in a trial at the time of its termination. It was expected that the overall size of a clinical trial could influence whether a firm experienced additional pressure to manage impressions before and after its termination.

Firm R&D intensity was measured as a firm's total R&D expenditures divided by its total revenue (Crossland, Zyung, Hiller, & Hambrick, 2014).²⁶ This variable was winsorized at the 1% level to minimize the influence of extreme values. Including this variable helped control for the possibility that firms with varying levels of R&D investment were impacted differently by late-stage terminations.

Firm performance was captured using each firm's return on assets (ROA), measured as a firm's net income divided by its total assets. This variable was included because of the influential role a firm's prior performance can play in its strategic decision making.²⁷

Analysis

To test hypotheses 1, 2, and 3, I focused on examining the influence of offsetting, amplification, and anticipatory reticence on non-reticent RIM responses. Due to the meaningful ordering of categories in the primary outcome variable, RIM, I tested the influence of different AIM strategies on RIM using ordered probit regression with clustered robust standard errors (in Stata 15 using *oprobit*). Specifically, ordered probit regression was also appropriate because extant theory indicates that accommodative and defensive responses can be bracketed together, supporting the use of a model that accommodates for multiple thresholds in a latent variable (Baum, 2006: 257; Cohen, Cohen, West, & Aiken, 2003; Bundy & Pfarrer, 2015). This form of estimation is most appropriate when a study involves "an ordered, multiple-outcome dependent variable" (Stern, Dukerich, & Zajac, 2014: 523; Borooah, 2001). This approach allowed me to account for the potential of non-normally distributed errors, a characteristic of the event data that

²⁶ Results for each hypothesis were substantively unchanged when replacing this variable with a non-ratio variable measured as each firm's total R&D expenditure.

²⁷ Inferences were unchanged when measuring firm performance as a firm's net income. Given an observed correlation between firm size and firm performance (0.67), firm size was not included in the main regression. A supplemental test that excluded firm performance from the regression was conducted. For this test, results remained consistent whether one or both variables were included.

related approaches such as ordered logistic regression are not designed to handle (Long, 1997). For all analyses, firm-level predictors were lagged one year.²⁸

Results

Table 7 provides the means, standard deviations, and correlations for variables used in my analysis of each hypothesis. I calculated the variance inflation factor (VIF) for each model, which yielded an overall mean of 4.09 and showed that all VIF values were below the recommended threshold of 10 (Cohen et al., 2003). Additionally, the condition numbers for all regressions were well below the recommended threshold of 30 (Cohen et al., 2003), suggesting that multicollinearity was unlikely a concern in the analysis.

²⁸ Later in this manuscript, I detail a series of supplemental tests, including two-stage models to account for potential endogeneity. I also describe how a small set of observations with reticent RIM responses were handled.

Table 7: Descriptive Statistics and Correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Reactive impression management	4.81	1.59																	
2. Stock response	-0.03	0.17	-0.09																
3. Offsetting	0.87	1.17	-0.04	0.08															
4. Amplification	0.22	0.56	-0.35	0.04	-0.07														
5. Anticipatory reticence	0.29	0.46	0.29	0.01	-0.48	-0.25													
6. Offsetting-Accommodativeness	0.29	0.46	0.36	0.07	0.42	-0.05	-0.42												
7. Amplification-Defensiveness	0.06	0.23	-0.47	-0.05	-0.13	0.60	-0.16	-0.16											
8. Neutral information	0.13	0.36	-0.07	0.01	0.13	0.01	-0.23	-0.02	-0.09										
9. Efficacy termination	0.45	0.50	0.13	-0.07	-0.02	-0.07	0.04	0.04	0.00	-0.02									
10. Safety termination	0.13	0.34	0.04	0.04	0.03	-0.02	-0.01	0.07	-0.04	-0.04	-0.36								
11. Shared termination	0.27	0.44	-0.03	0.06	0.19	0.06	-0.10	0.14	0.15	-0.03	0.01	0.04							
12. Time since disclosure	46.32	56.23	-0.15	0.14	0.08	-0.02	-0.07	-0.05	-0.04	0.03	0.11	-0.05	-0.02						
13. Regulatory disclosure	0.19	0.39	-0.01	0.10	-0.03	0.05	-0.02	0.03	-0.02	-0.02	-0.43	-0.19	-0.02	-0.06					
14. Trial size	5.92	1.62	0.14	-0.02	0.11	-0.02	-0.06	0.25	0.03	-0.04	0.19	0.06	0.21	-0.09	0.00				
15. Firm performance	-0.16	0.51	-0.20	0.19	0.24	0.14	-0.25	0.18	0.13	-0.05	-0.03	0.09	0.10	0.09	-0.08	0.13			
16. Firm R&D intensity	3.49	12.59	0.13	-0.37	-0.17	-0.08	0.23	-0.16	0.00	-0.08	0.05	0.11	-0.12	-0.12	-0.09	0.00	-0.18		
17. AIM response	-0.14	0.26	-0.36	0.18	0.30	0.09	-0.33	0.18	0.04	0.00	-0.09	0.05	0.11	0.11	-0.03	0.03	0.46	-0.33	

Note: $n = 238$. Correlations greater than $|0.12|$ are statistically significant at $p < .05$.

Table 8 presents the results of my regressions predicting a firm's RIM based on the AIM strategy it selected. For my estimation of these relationships, Model 1 included control variables only and Model 2 included the main effects for hypotheses 1, 2, and 3.

Table 8: Predicting RIM with AIM

	Model 1	Model 2
Efficacy termination	0.357* (0.178)	0.400* (0.199)
Safety termination	0.456* (0.213)	0.509* (0.232)
Shared termination	-0.042 (0.152)	-0.041 (0.155)
Time since disclosure	-0.003† (0.002)	-0.003* (0.002)
Regulatory disclosure	0.177 (0.242)	0.243 (0.279)
Trial size	0.075* (0.037)	0.066† (0.037)
Firm performance	-0.199 (0.220)	-0.095 (0.211)
Firm R&D intensity	-0.005 (0.009)	-0.008 (0.009)
AIM response	-1.753** (0.377)	-1.770** (0.372)
Neutral information	-0.171 (0.145)	-0.063 (0.161)
Offsetting	H1	0.158† (0.092)
Amplification	H2	-0.512** (0.141)
Anticipatory reticence	H3	0.600** (0.224)
Year dummies included	Yes	Yes
Observations	238	238
Number of firms	109	109

Robust standard errors in parentheses.

† $p < .10$

* $p < .05$

** $p < .01$

Offsetting and accommodativeness. Hypothesis 1 investigated whether a firm's choice of offsetting would positively influence the degree to which it was reactively accommodative. As seen in Model 2 of Table 8, there is marginal statistical support to suggest that the relationship between offsetting and accommodativeness is non-zero ($\beta = 0.158, p < 0.10$). These results indicated that at high levels of offsetting, there was a 43% probability of a fully accommodative response, compared to a 15% probability of a similar response when offsetting was absent. More robustly speaking, there was a 22% probability of a more accommodative response (RIM +1 s.d. above the mean) when offsetting was high compared to a 17% probability of a similar response when offsetting was absent. Overall, predicted values revealed that the probability of accommodativeness increased for every level of offsetting, providing support for hypothesis 1.

Amplification and defensiveness. Hypothesis 2 investigated whether a firm's choice of amplification would positively influence the degree to which it was reactively defensive. As seen in Model 2 of Table 8, there is a high probability that the relationship between amplification and reactive accommodativeness is non-zero ($\beta = -0.466, p < 0.01$). These results revealed that at high levels of amplification, there was a 26% probability of a fully defensive response, compared to a 2% probability of a fully defensive response when an amplification strategy was not used. More robustly speaking, there was a 14% probability of a more defensive response (RIM -1 s.d. below the mean) when amplification was high compared to a 7% probability of more defensive response when amplification was absent. To put this into perspective, predicted values revealed that the probability of defensiveness increased for every level of amplification, providing support for hypothesis 2.

Anticipatory reticence and accommodativeness. Hypothesis 3 investigated whether a firm's choice of anticipatory reticence would positively influence the degree to which it was reactively accommodative. As seen in Model 2 of Table 8, there is a high probability that the

relationship between anticipatory reticence and accommodative RIM is non-zero ($\beta = 0.600, p < 0.01$). These results revealed that when anticipatory reticence was used, there was a 27% probability of a fully accommodative response, compared to a 13% probability of a fully accommodative response when a firm was not reticent. More robustly speaking, there was a 23% probability of a more accommodative response (RIM +1 s.d. above the mean) when anticipatory reticence was used compared to a 17% probability of more accommodative response when it was not used. Overall, predicted values revealed that the probability of accommodativeness increased when firms chose to be reticent, providing support for hypothesis 3.

Stock response of each strategic pairing. Hypothesis 4 compared the relative stock response to each AIM–RIM strategic pairing and predicted that a combination of offsetting and accommodativeness would lead to the most positive stock response. For this analysis, the dependent variable *stock response* was measured as the three-day (–1, +1) cumulative abnormal return (CAR) around each RIM disclosure. *Offsetting-accommodativeness* was coded as “1” if a firm offset a trial (offsetting > 1) and followed this disclosure with an accommodative response (RIM > 4), and 0 otherwise. An additional control variable, *amplification-defensiveness*, was coded as “1” if a firm amplified a trial (amplification > 1) and followed it with a defensive response (RIM < 4), and 0 otherwise.²⁹ Table 9 presents the results of my regressions comparing the relative stock response to each AIM–RIM pairing. For my estimation of these relationships, Model 1 included control variables only and Model 2 included the main effect for hypothesis 4.

²⁹ The pairing of reticence and accommodativeness was omitted to serve as the reference group for this analysis.

Table 9: Predicting Stock Response with AIM–RIM Pairings

	Model 1	Model 2
Efficacy termination	0.020 (0.025)	0.021 (0.026)
Safety termination	0.074* (0.032)	0.074* (0.032)
Shared termination	0.010 (0.018)	0.015 (0.018)
Time since disclosure	0.000 (0.000)	0.000 (0.000)
Regulatory disclosure	0.068† (0.036)	0.066† (0.037)
Trial size	−0.003 (0.006)	−0.004 (0.006)
Firm performance	0.047† (0.025)	0.048* (0.024)
Firm R&D intensity	−0.005** (0.001)	−0.004** (0.001)
AIM response	0.011 (0.085)	−0.011 (0.087)
Neutral information	0.010 (0.021)	0.012 (0.019)
Offsetting	0.010 (0.008)	0.003 (0.006)
Amplification	0.012 (0.011)	0.028* (0.011)
Anticipatory reticence	0.080** (0.028)	0.101** (0.031)
Reactive impression management	−0.005 (0.007)	−0.018* (0.009)
Offsetting–accommodativeness pairing	H4	0.053** (0.020)
Amplification–defensiveness pairing		−0.093† (0.054)
Year dummies included	Yes	Yes
Observations	238	238
Number of firms	109	109

Robust standard errors in parentheses.

† $p < .10$

* $p < .05$

** $p < .01$

As seen in Model 2 of Table 9, there is a high probability that the most positive response was associated with the offsetting–accommodative pairing ($\beta = 0.053, p < 0.01$). Predicted values for this relationship indicated that the presence of an offsetting AIM and accommodative RIM pairing led to a positive stock response of 1.3% compared to an average, negative stock response of –4.3% when this pairing was not used. To juxtapose this pairing with each theorized alternative, the presence of an amplification AIM and defensive RIM pairing led to an average stock response of –11.2%. When using offsetting and accommodativeness as the reference group, reticence and accommodativeness led to an average stock response of –3.2%.

The moderating role of AIM response. Hypotheses 5a, 5b, and 5c further investigated the moderating influence of AIM response beyond this average response, testing how varying degrees of AIM response influenced which reactive strategy a firm selected. Table 10 presents the results of my regressions assessing the moderating influence of AIM response on the selection of reactive strategies. For my estimation of these relationships, Model 1 included control variables only and Model 2 included the main effects for hypotheses 5a, 5b, and 5c.

Table 10: Predicting RIM with AIM and AIM Response

	Model 1	Model 2
Efficacy termination	0.400* (0.199)	0.349† (0.206)
Safety termination	0.509* (0.232)	0.482* (0.237)
Shared termination	-0.041 (0.155)	-0.069 (0.154)
Time since disclosure	-0.003* (0.002)	-0.003* (0.002)
Regulatory disclosure	0.243 (0.279)	0.271 (0.284)
Trial size	0.066† (0.037)	0.065 (0.036)
Firm performance	-0.095 (0.211)	-0.002 (0.205)
Firm R&D intensity	-0.008 (0.009)	-0.008 (0.009)
Neutral information	-0.063 (0.161)	-0.096 (0.163)
Offsetting	0.158† (0.092)	0.200* (0.098)
Amplification	-0.512** (0.141)	-0.353* (0.150)
Anticipatory reticence	0.600** (0.224)	0.743** (0.255)
AIM response	-1.770** (0.372)	-3.119** (0.697)
Offsetting x AIM response	H5a	1.031 (0.807)
Amplification x AIM response	H5b	2.249** (0.739)
Anticipatory reticence x AIM response	H5c	1.398† (0.773)
Year dummies included	Yes	Yes
Observations	238	238
Number of firms	109	109

Robust standard errors in parentheses.

† $p < .10$

* $p < .05$

** $p < .01$

As seen in Model 2 of Table 10, the influence of AIM response on offsetting AIM and accommodative RIM predicted in Hypothesis 5a was not supported ($\beta = 1.031, p > 0.10$). Overall, these results indicated that managerial decisions to follow offsetting with a specific RIM strategy were not meaningfully influenced by the positivity or negativity of AIM response.³⁰

As seen in Model 2 of Table 10, the coefficient on the interaction term is positive with a high likelihood that its value differs from zero, providing statistical support for Hypothesis 5b ($\beta = 2.249, p < 0.01$). These results indicated that the probability of a fully defensive response was 6% when amplification was more effective (i.e., when the interaction between amplification and AIM response was one standard deviation below the mean), compared to only 2% when it was less effective (i.e., when this interaction was one standard deviation above the mean). Further, predicted values consistently revealed that the probability of defensiveness following amplification increased inversely with stock response, providing support for hypothesis 5b. Figure 2 plots the interaction for hypothesis 5b.

³⁰ A marginal effects analysis was used to further examine hypothesis 5a. This analysis demonstrated that low-to-average levels of AIM response had no significant influence on a firm's RIM strategy. Marginal statistical support was found, however, for higher levels of AIM response (responses one standard deviation above the mean).

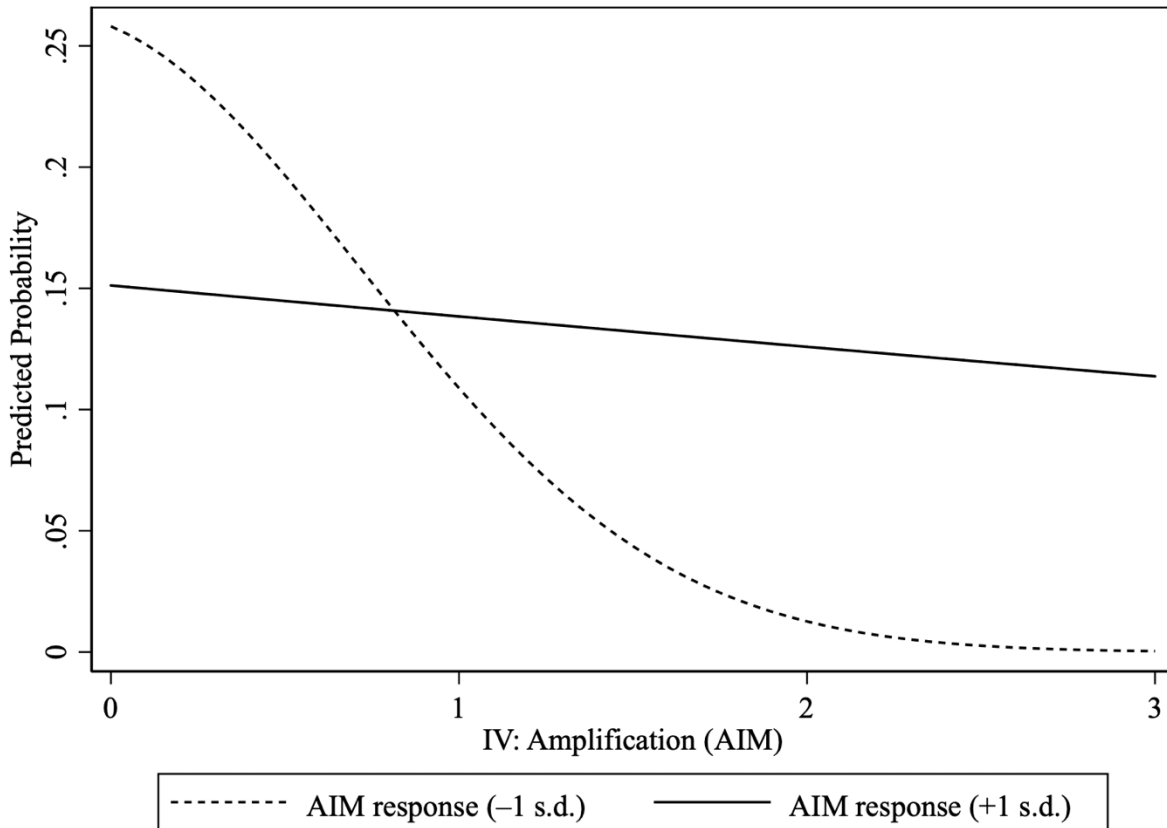


Figure 2: Moderating Role of AIM Response on Amplification and Accommodative RIM

As seen in Model 2 of Table 10, the coefficient on the interaction term is positive with marginal statistical support in the opposite direction predicted in Hypothesis 5c ($\beta = 1.398, p < 0.10$). These results indicated that the probability of a fully accommodative response was 15% when reticence was more effective (i.e., when the interaction between reticence and AIM response was one standard deviation below the mean), compared to 25% when it was less effective (i.e., when this interaction was one standard deviation above the mean). Further, predicted values consistently revealed that the probability of accommodativeness following anticipatory reticence increased with the positivity of the stock response. One explanation for this finding may be that managers of reticent firms had more confidence in reactively communicating smaller faults—represented by more positive AIM responses—than more

negative events. It is plausible that, when faced with unexpectedly negative responses, managers had less confidence about which accommodative actions to take. Figure 3 plots this interaction.

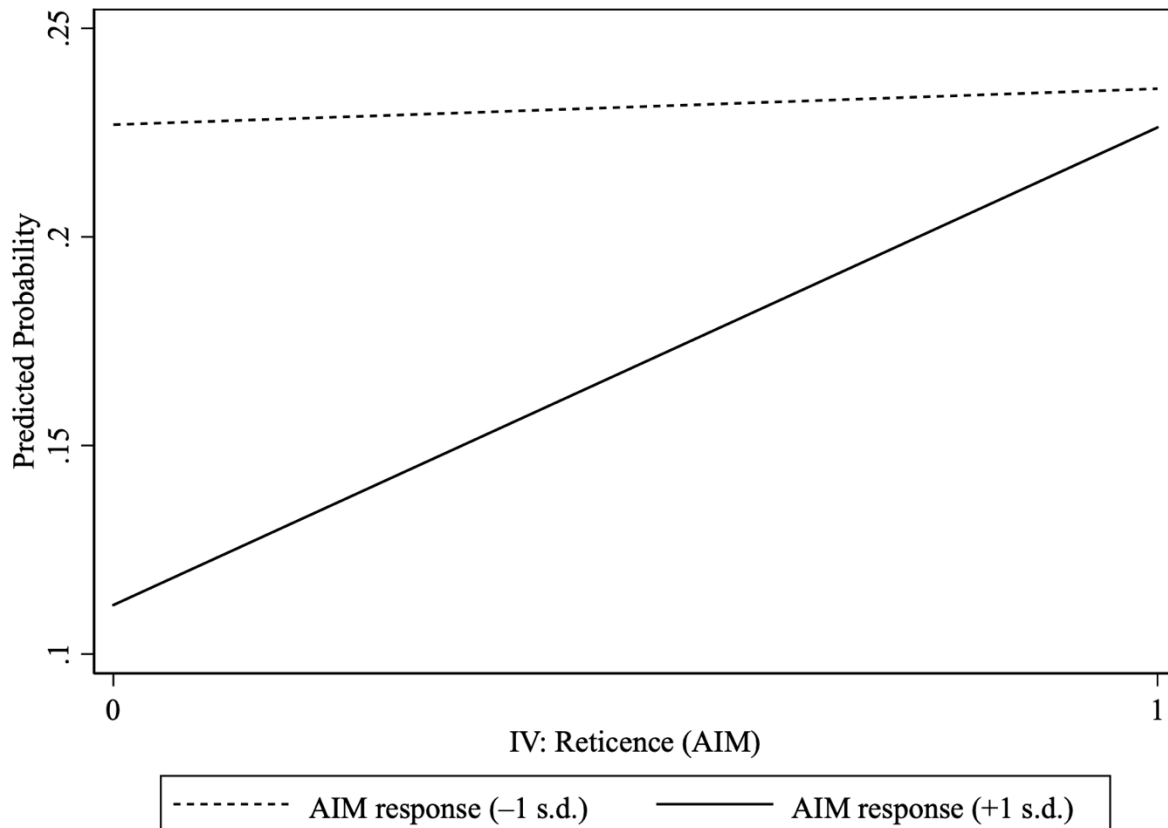


Figure 3: Moderating Role of AIM Response on Reticence and Accommodative RIM

Supplemental Analyses

To further explore and test the strength of inferences made in hypotheses 1 through 5, I engaged in several supplemental analyses. Overall, these analyses provided substantial support for my hypothesized relationships and also offered new conceptual and empirical insights for future scholarship to consider.

Impression management as pure strategies. The three primary AIM–RIM relationships—Hypotheses 1 through 3—were also tested by treating each AIM tactic as a “pure” strategy. The purpose of this test was to assess the effect of each AIM strategy (coded as dummy

variables) on RIM above a mixed strategy baseline. To do so, *offsetting* was coded as “1” if a firm released only positive disclosures, *amplification* if only negative, neutral if only neutral, and *anticipatory reticence* if no disclosures were made, and zero otherwise. All other strategies (i.e., those that were “mixed” or involved combinations of positive, negative, and/or neutral information) were assigned a dummy variable category. While marginal significance on hypothesis 1 was lost ($\beta = 0.177, p > 0.10$), statistical support remained for hypothesis 2 ($\beta = -1.191, p < 0.01$) and hypothesis 3 ($\beta = 0.533, p < 0.01$).

The two primary RIM strategies were also tested by treating each RIM as a “pure” strategy. To do so, *defensive RIM* was coded as “1” if a firm’s response was at least slightly defensive (i.e., had a RIM score less than 4), and 0 otherwise. *Accommodative RIM* was coded as “1” if a firm’s response was at least slightly accommodative (i.e., had a RIM score greater than 4), and 0 otherwise. To test these relationships, I ran two probit regressions with the same post-estimation commands included in the main analysis. The first regression tested the influence of each AIM tactic—using its original operationalization—on defensive RIM. This test provided statistical support for hypothesis 1 ($\beta = -0.313, p < 0.01$) and hypothesis 2 ($\beta = 0.400, p < 0.05$) and marginal support for hypothesis 3 ($\beta = -0.586, p < 0.10$). The second regression tested the influence of each AIM tactic on accommodative RIM. While this test did not provide statistical support for hypothesis 1 ($\beta = 0.156, p > 0.10$), statistical support was found for hypothesis 2 ($\beta = -0.423, p < 0.05$) and hypothesis 3 ($\beta = 0.510, p < 0.05$).

Mixed reactive strategies. In the main analysis, reactive responses were coded by their degree of accommodativeness—ranging from fully defensive to fully accommodative. As a supplemental test, I recoded a random sub-sample of RIM disclosures (25 disclosures, representing 10.5% of the sample) to determine whether firm responses contained elements of accommodativeness and defensiveness. Of this sub-sample, three disclosures contained clear

evidence of mixing, and one disclosure contained some evidence of mixing. These results suggested that firms typically aligned with one reactive strategy or another.³¹

A broader test of firm disclosures. To further investigate AIM's influence on RIM, I coded an alternate version of each AIM variable to also include any non-material disclosures (e.g., announcements regarding upcoming earnings calls or presentation announcements). While marginal support for hypothesis 1 was lost ($\beta = 0.134, p > 0.10$), results for this relationship were substantively similar to the main analysis, and strong statistical support was again evidenced for hypotheses 2 ($\beta = -0.486, p < 0.01$) and 3 ($\beta = 0.653, p < 0.01$). Overall, these results provide further support that the information each firm disclosed before a termination announcement impacted the reactive impression management it pursued.

Predicting reactive reticence. While neither offsetting, amplification, nor anticipatory reticence were theoretically expected to predict reactive reticence, I performed a supplemental test to see whether any of these tactics would predict a firm's decision to be reactively silent. This test did not demonstrate statistical significance for any of the AIM strategies (offsetting, $p > 0.60$; amplification, $p > 0.70$; anticipatory reticence, $p > 0.10$). Given the focus of this study on late-stage terminations, it is possible that such relationships may exist in a different context.

Alternate AIM time window. While comments from pharmaceutical executives supported the examination of a one-week window leading up to each trial disclosure, I also collected data on each AIM strategy following Graffin and colleagues' (2016) three-day window around each termination. To do so, I gathered additional data for all 238 terminations and recoded the measure of each AIM strategy to include firm disclosures announced one day prior to and one day following each announcement. When measuring AIM using this shortened time-window,

³¹ When analyzing this sub-sample of disclosures, I also investigated whether firms mentioned any anticipatory information they disclosed—if they did not use anticipatory reticence—within their reactive disclosures. Of the 18 non-reticent trials in this sub-sample, four directly mentioned preemptively released information, including positive, negative, and neutral disclosures. Those that referred to offsetting disclosures were on average less accommodative than those that mentioned amplifying disclosures.

only hypothesis 2 was supported ($\beta = -1.066, p < 0.01$). One explanation for this lack of support was how variance in AIM was constrained due to the shorter time-window specified.

Quadratic polynomial regression models. To further investigate stock responses associated with reactive pairings at varying levels of offsetting and amplification, I used quadratic polynomial regression to produce response surface models (Edwards, 2002). One benefit of this approach was how it enabled a visual inspection of each relationship in three-dimensional space, showing how varying combinations of AIM and RIM impacted firm stock responses. In particular, this supplemental test allowed for the direct examination of assumptions central to crisis and impression management theory, comparing performance outcomes for firms that used anticipatory and reactive strategies versus those that focused on reactive strategies alone. Response surface models for these relationships are presented in Figures 4 and 5.

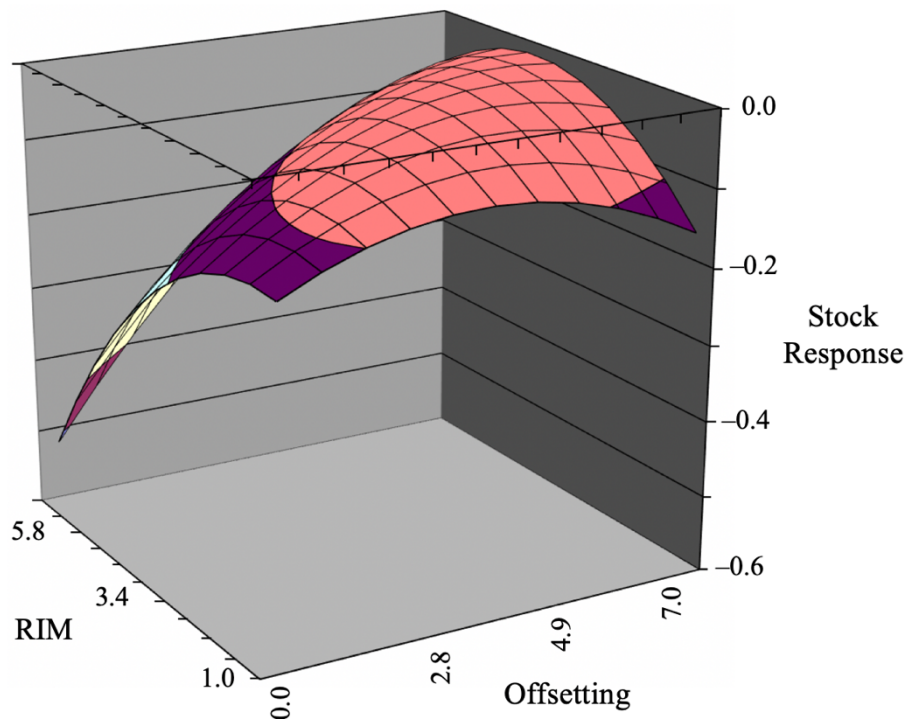


Figure 4: Polynomial Surface Model of Offsetting–RIM Combinations

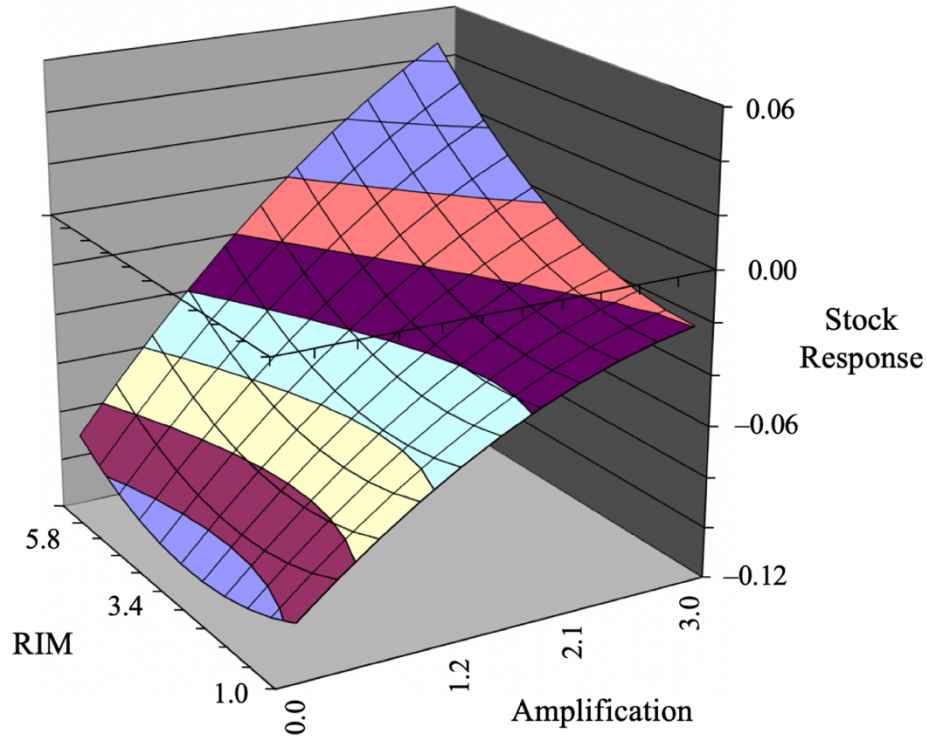


Figure 5: Polynomial Surface Model of Amplification–RIM Combinations

Taken together, these models provide evidence for the value of using AIM and RIM together. Where prevailing theory places a significant emphasis on reactive responses that are accommodative (e.g., Bundy et al., 2017; Zavyalova et al., 2012), these results suggest that the effectiveness of reactive strategies may depend on whether a firm chose to implement an anticipatory strategy. Notably, Figure 4 shows how more accommodative responses—those typically proposed by scholars to be most appropriate following negative organizational events (Bundy et al., 2017)—elicited the most negative stock market reactions in the absence of offsetting. Figure 5 further supports this finding and associates the highest stock market reactions with firms that followed combinations of amplification and accommodativeness—a surprising result. Future research has the opportunity to further unpack the joint effects of AIM and RIM on

various performance outcomes. Further, opportunities exist for scholars to determine why managers may not pursue firm strategies most optimal to their success.³²

Fuzzy set qualitative comparative analysis. Given the potential for managers to evaluate organizational impression management strategies as complex configurations of interdependent strategies (e.g., Campbell, Sirmon, & Schijven, 2016; Ragin, 2008), I investigated this possibility using fuzzy set qualitative comparative analysis (fsQCA). In particular, a supplemental fsQCA offered at least two benefits: First, it provided me with the ability to “compare the symmetry of the ‘good’ and ‘bad’” AIM–RIM combinations (Campbell et al., 2016: 164). Second, it addressed limitations of regression-based frameworks, which “isolate the net effects of individual factors” and may obscure theoretical nuances of the AIM–RIM relationship (Campbell et al., 2016: 164). To conduct this analysis, I followed the direct method of calibration, converting all interval variables into scales ranging from 0.0 to 1.0 and specifying the non-membership and crossover conditions for each (Ragin, 2008). Whenever possible, I used examples from prior literature and external benchmarks to calibrate each variable in the analysis and relied on sample characteristics where appropriate (Campbell et al., 2016).

Following my theorizing around a firm’s preemptive strategies, I coded offsetting and amplification as the count of each type of disclosure divided by the total count of anticipatory releases made by the firm (e.g., offsetting was operationalized as the count of positive disclosures divided by the total count of press releases made by the firm during the AIM time window). It was unnecessary to calibrate reticence, as this variable already existed on a scale appropriate to run the fsQCA.

Building on my theorizing around accommodative RIM responses, the crossover point was set at 4—representing the middle of the scale—with values below this point (i.e., 1, 2, 3)

³² 11 different firm sponsors used combinations of amplification and accommodativeness to manage 12 trial terminations. The incidence of this strategic combination in the main sample was slightly greater than 5%.

representing increasing degrees of non-membership and values above this point (i.e., 5, 6, 7) representing degrees of increasing membership. Lastly, following prior literature (Campbell et al., 2016: 170), I selected -5% and $+5\%$ abnormal returns around the mean as “fully in and fully out calibration thresholds” for the stock response to a firm’s RIM strategy, and set the average stock reaction to RIM (-2.5%) as the crossover point.³³

I ran a comparative analysis (in STATA 15 using *fuzzy*) exploring the stock response to each strategic pairing predicted in hypothesis 4. For this analysis, I followed prior best practices and set a threshold of eight cases per configuration with a final solution consistency of 0.70, using truth table configurations to arrive at logically reduced solutions (Crilly, 2011).³⁴ Solution consistency measured the degree to which a predictor should count as a probabilistically sufficient condition for an outcome. As solution consistency increased, the support for the logical statement “if X, then Y” increased—with 1.00 representing perfect consistency (Longest & Vaisey, 2008; Ragin 2000, 2006).

For this supplemental test, the fsQCA produced two solutions above the 0.70 threshold with a sufficient number of cases: offsetting AIM and accommodative RIM (solution consistency: 0.763; unique coverage: 0.373) and amplification and accommodative RIM (solution consistency; 0.887; unique coverage: 0.039). While these results offer strong support for hypothesis 4, the potential benefit of an amplification–accommodative pairing presents an opportunity for future research.

³³ Results were consistent when specifying RIM non-membership as values at or below 3, membership as values at or above 5, and retaining 4 as the crossover point. A second fsQCA testing hypotheses 1-3 found consistent solutions for each theorized pairing.

³⁴ Following recommendations by Fiss (2011) and Campbell and colleagues (2016), a small constant (0.001) was added to avoid exact values of 0.50 and guarantee that no cases would be dropped from the analysis.

Accounting for endogeneity. Endogeneity is an ever-present concern in strategy research.³⁵ Hamilton and Nickerson (2003: 51) observed how “the field of strategic management is fundamentally predicated on the idea that management’s decisions are endogenous to their expected performance outcomes.” Following this, one concern for the main analyses presented is the possible presence of an unobserved factor that could influence a firm’s decision to select a specific impression management strategy over another. To further investigate this possibility and assess the validity of my findings, I conducted a series of tests to account for factors that may have biased my inferences.

First, to assess the likelihood of an omitted variable invalidating these findings, I followed recent studies (e.g., Busenbark et al., 2017; Harrison et al., 2018) and computed the impact threshold for a confounding variable (ITCV) for each hypothesized relationship that received at least marginal support in the main model (Frank, 2000). Table 11 summarizes the results for each ITCV test, noting the correlations necessary for an omitted variable to overturn results for each hypothesis.

Table 11: Summary of ITCV Tests on Study Hypotheses

Endogenous independent variable	Correlation necessary to overturn (IV, DV)	Proportion due to bias to overturn
H1: Offsetting	−0.123, 0.123	13%
H2: Amplification	−0.353, 0.353	45%
H3: Anticipatory Reticence	0.234, 0.234	26%
H4: Offsetting–Accommodative Pairing	0.228, 0.228	25%
H5b: AIM response x Amplification	0.287, 0.287	35%
H5c: AIM response x Anticipatory Reticence	−0.099, 0.099	8%

³⁵ Sample-induced endogeneity—the threat of an omitted variable influencing the probability of entering the sample and the dependent variable of interest—was not relevant, as the study sample was comprised of all publicly disclosed phase 3 terminations during the sampling frame (Certo, Busenbark, Woo, & Semadeni, 2016).

The correlational results of each ITCV test—with exception of hypotheses 1 and 5c—provided compelling evidence that the presence of such an omitted variable was unlikely to bias my findings. I proceeded, however, to test for the presence of potential endogeneity for all hypotheses using several two-stage models. These models used a combination of hand-collected and pre-existing variables in my dataset as instruments. The goal of this approach was to identify strong instruments based on their relevance and exogeneity (Kennedy, 2003). Instrument relevance denotes “the degree to which the instrument corresponds with the endogenous variable” (Semadeni et al., 2014: 1072); higher F-statistics indicate greater instrument relevance. Likewise, instrument exogeneity refers to how uncorrelated an instrument is with the disturbance term in a model’s second stage. Selecting suitable instruments—those that are relevant and exogenous—is typically seen as “the most problematic aspect of instrumental variable estimation” (Semadeni et al., 2014: 1072).

To identify suitable instruments, I followed two processes: an initial data-driven process that involved investigating all variables in the main dataset and a second, theory-driven process that involved data collection for variables expected to influence AIM selection. To conduct the first process, I correlated all available variables with each potentially endogenous variable (e.g., offsetting, amplification, and anticipatory reticence for H1–H3). The goal of this process was to identify—or in certain cases, generate—continuous variables highly correlated with each endogenous variable and lowly correlated with each model’s dependent variable.³⁶

The second process involved obtaining data for three additional variables expected to influence the selection of each AIM strategy—high reputation, past terminations, and trial duration. The goal of this second approach was to account for theoretically relevant reasons why

³⁶ In the case of offsetting and amplification, the two-group, three-group, and Durbin methods of rank ordering and categorizing the endogenous variable by size were derived (Kennedy 2003: 162–163).

managers would select certain strategic paths over others. With the help of a trained research assistant, I collected data on each of these variables.³⁷

High reputation was measured as a binary variable coded as “1” if a firm appeared in the top 25 of the Fortune or Harris Interactive firm reputation lists, and 0 otherwise (Graffin et al., 2016; Haleblan, Pfarrer, & Kiley, 2017; Pfarrer, Pollock, & Rindova, 2010). This variable was selected because of the likelihood that as firm reputation increased, the expectations of external evaluators toward the firm also increased (Fombrun, 1996). Graffin and colleagues (2016) demonstrated the role of firm reputation on impression offsetting behavior in their empirical study of firm M&A activities.

Past terminations was measured as the count of other phase 3 terminations by the firm in the six months leading up to each termination disclosure. This variable was selected because of theory supporting how evaluators are led to prescribe negative behavioral tendencies and undesirable characteristics to firms that repeatedly violate evaluator expectations (e.g., Ballinger & Rockmann, 2010; Pfarrer et al., 2008; Skowronski & Carlston, 1987, 1989).

A third variable, *baseline announcements*, was measured as the three-day average count of press releases made by each firm over a three-month period prior to each termination disclosure. Following Graffin and colleagues (2016), the count of baseline announcements was measured from day –121 to day –30. This variable was selected because of the possibility that certain firms would tend to be more silent than others, disclosing less information to their external evaluators (Bundy et al., 2017; Decker, 2012).

Taken together, these two processes of selection—one empirically- and another conceptually-driven—identified a number of potential instruments. While not all identified instruments exceeded F-statistic benchmarks recommended by Stock, Wright, and Yogo (2002),

³⁷ Results remained consistent for all hypotheses when including these variables as controls.

all retained instruments significantly predicted each corresponding endogenous variable. Table 12 provides the strength of each variable identified and used in each two-stage model.³⁸

Table 12: Instrumental Variable Characteristics for Endogeneity Tests

Endogenous independent variable	Instrument	<i>p</i> -value	F statistic (first stage)
H1: Offsetting	Rank-ordered version of endogenous variable	<i>p</i> = 0.00	F = 33.30
H2: Amplification	Past terminations	<i>p</i> = 0.03	F = 1.96
H3: Anticipatory reticence	Baseline announcements	<i>p</i> = 0.05	F = 5.55
H4: Offsetting–accommodative pairing	Rank-ordered version of offsetting variable	<i>p</i> = 0.00	F = 10.82
H5a: Offsetting x AIM response	N/A	N/A	N/A
H5b: Amplification x AIM response	Rank-ordered version of endogenous variable	<i>p</i> = 0.00	F = 3.75
H5c: Reticence x AIM response	Baseline announcements	<i>p</i> = 0.01	F = 27.14

After identifying instruments for each hypothesis, I conducted a series of two-stage models to address the influence of endogeneity on my predictions. For hypotheses 1 through 3, I specified separate two-stage extended ordered probit models. An extended ordered probit model is similar to two-stage least square regression (2SLS), with the exception that it is specifically designed to fit an ordered probit regression to accommodate endogenous covariates (e.g., Roodman, 2011; Wooldridge, 2010). When using the rank-ordered version of offsetting as an instrument for offsetting (Kennedy, 2003), strong support was found for hypothesis 1 (*p* = 0.009). Hypothesis 2 was supported when using past terminations as an instrument for amplification (*p* = 0.017), and hypothesis 3 was supported when using baseline announcements as an instrument for anticipatory reticence (*p* = 0.001).

³⁸ Of note, these instrument characteristics were calculated using two-stage limited information maximum likelihood (*ivregress liml* in STATA 15) for ease of interpretation.

Due to the continuous nature of stock responses to RIM, I ran a two-stage least square (2SLS) regression for hypothesis 4. When using the rank-ordered version of offsetting as an instrument for a firm's pairing of offsetting AIM and accommodative RIM, statistical support was evidenced ($p = 0.055$). Lastly, I ran separate two-stage extended ordered probit models to assess potential endogeneity for hypotheses 5b and 5c. When using the rank-ordered version of amplification as an instrument, I found marginal statistical support for hypothesis 5b ($p = 0.101$). Marginal statistical support for hypothesis 5c was lost when using a firm's level of baseline announcements as an instrument ($p = 0.265$).

In sum, each two-stage model—with the exception of hypotheses 5b and 5c—provided robust support for my main predictions. While these results suggested that endogeneity may not have been a significant enough concern to overturn my findings, it remains important to note that correct inferences rely on the use of strong instruments. Moving forward, it is my hope that researchers will work to identify additional instruments that are relevant and exogenous to assess AIM–RIM relationships.

CHAPTER 6: DISCUSSION AND CONCLUSION

Since the 1980s, researchers have investigated the role of impression management at the firm level. Building on the central assumption of impression management that favorable impressions hold strategic importance for firms, an emergent area of research has investigated the various strategies managers use to reactively shape the perceptions of external evaluators (e.g., Bundy & Pfarrer, 2015; McDonnell & King, 2013; Zavyalova et al., 2012; Vergne, 2012; Elsbach, 2003). A recent line of inquiry has adapted these findings to consider different strategies firms employ to anticipatorily manage the information environment around focal events (e.g., Busenbark et al., 2017; Graffin et al., 2016; Graffin et al., 2011; Elsbach et al., 1998). Surprisingly, these two streams of research continue to mature in absence of inquiries that consider any potential relationship between the anticipatory and reactive impression management strategies (AIM and RIM, respectively) firms engage in. In this dissertation, I make contributions to management and organizational sciences by theorizing and testing how a firm's choice of impression management before and after events is interconnected and affects firm performance. This work serves as an important extension of prior scholarship that investigates the numerous impression management strategies firms engage in. By putting forward novel conceptual and empirical support for a framework that views impression management as path-dependent, I hope to inspire future research that accounts for the joint effects of AIM and RIM.

Specifically, my study provides several relevant findings for strategic management scholars, managers, and external evaluators. Results for hypothesis 1 through 3 revealed that the anticipatory strategy a firm selects will influence which reactive strategy it is more likely to select after an event is disclosed. First, results for hypothesis 1 indicated that high levels of offsetting corresponded with a 43% probability of a fully accommodative response, as compared

to a 15% probability of a similar response when offsetting was not used. Second, hypothesis 2 demonstrated that high levels of amplification were associated with a 26% probability of a fully defensive response, as compared to a 2% probability of a similar response when this strategy was not used. Third, hypothesis 3 demonstrated that anticipatory reticence was associated with a 27% probability of a fully accommodative response, compared to a 13% probability when a firm was not anticipatorily reticent.

Results for hypothesis 4 revealed which theorized AIM–RIM combination was most impactful on firm performance, demonstrating that a pairing of offsetting and accommodativeness—when present—led to a positive stock response of 1.3% compared to an average response of –4.3% associated with other pairings. Further, this response was more positive than average responses associated with amplification and defensiveness (–11.2%) and reticence and accommodativeness (–3.2%). My results for hypotheses 5a, 5b, and 5c provided mixed evidence that managers double-down on certain AIM–RIM combinations when an anticipatory strategy is proven effective. In this regard, statistical support for hypothesis 5a examining the role of AIM effectiveness on offsetting and accommodativeness was absent. Results for hypothesis 5b demonstrated that the probability of a fully defensive response when amplification was effective was 6%, as compared to only 2% when amplification was less effective. Results for hypothesis 5c demonstrated that the effectiveness of anticipatory reticence decreased the probability of accommodative responses. Specifically, there was a 15% probability of a fully accommodative response when reticence was more effective and a 25% probability of such a response when it was less effective.

Overall, this research demonstrates the possibility of path dependence in impression management by developing and testing arguments around how specific anticipatory strategies alter the information environment around events, such that a firm’s reactive decisions are shaped

by its previous strategic decision making. By viewing a firm's impression management strategy in this way, I develop and test a novel framework that reveals how preemptive attempts to protect external impressions determine the effectiveness of certain reactive strategies as well as the role of AIM effectiveness on strategic recalibration. Viewing impression management as interrelated enables scholars and practitioners to more clearly understand how firms foster positive impressions around critical events. With this in mind, I describe certain limitations associated with this research as well as promising directions for future work in this domain.

Implications for Theory and Future Research Directions

These ideas focused on explaining how a firm's anticipatory management of an event shapes the incentives it has toward implementing a specific reactive response. It is important to recognize, however, that reactive approaches are often more nuanced and are highly contingent on situational factors specific to the firm (e.g., Lamin & Zaheer, 2012; Coombs, 2007a). I hypothesized that a firm will engage in accommodative or defensive responses following strategies of offsetting, amplification, or anticipatory reticence. Future research could investigate other tactics that may fall outside of these general OIM categories—such as defamation or negotiation—as well as why managers sometimes choose to pursue less optimal impression management strategies (e.g., accommodative RIM without AIM).

Limitations due to sample characteristics. To develop and test a parsimonious framework in the context of late-stage clinical trials, my exploration of the path dependence between anticipatory and reactive strategies held many factors constant. However, it is important to note how other factors may shape the nature of these relationships. For example, while industry membership did not vary sufficiently to be tested in my chosen context, industry characteristics are likely to influence the selection and effectiveness of firm strategies. Likewise, defensive responses face increased scrutiny if the firm's attribution of responsibility is high—

another factor which may shape a firm's OIM decision making (e.g., Veil, 2011; Coombs & Holladay, 2002; Coombs, 1995). Investigating the effects of additional macro factors and specific firm attributions are fruitful areas for future work. Testing the various socio-cognitive mechanisms that may influence relative effectiveness of accommodative, defensive, or reticent approaches will contribute to this emerging stream of research and may lead to important conceptual and empirical breakthroughs.

Managerial intentionality. To suggest that pre-termination media releases are impression management strategies implies that managers intentionally disclose—or withhold—information leading up to each trial termination. Similarly, in advancing a view of holistic impression management, this study assumed that managers could be aware of each set of strategies at their disposal. This perspective, therefore, illustrated a form of strategic optimization rather than satisficing behavior (c.f. Simon, 1997). The potential for managers to not be aware of all AIM and RIM combinations available to them is possible and may influence whether different forms of holistic impression management are observed.

Archival studies are often unable to describe the complex decision processes that undergird impression management decisions. My hope is that future scholars will probe the boundaries of these and other relationships to further illuminate the role of OIM as a strategic tool to create positive firm outcomes. It is also my hope that impression management scholars will augment these findings with additional qualitative data to justify their claims.

Managing impressions around positive events. Few have considered the impression management of positive events for the firm, and its theoretical implications remain largely unexplored (Graffin et al., 2016). While many explanations for this may exist, I believe two prevailing assumptions explain the general focus of past scholars on the negative: (1) impression management is only used to manage an unfavorable information environment, and (2)

impression management decision making is only initiated only once a threat is identified. This threat-centric approach treats impression management as a set of strategies designed to attenuate negative outcomes, but not to also ensure positive outcomes (Sutton & Callahan, 1987; Bundy & Pfarrer, 2015; Graffin et al., 2016). Scholars can gain much by addressing this omission in the literature, building on a holistic view of impression management for positive events as well.

Determinants of anticipatory impression management. Given how a firm's AIM strategies are likely to have a downstream impact, it may be worthwhile for scholars to investigate factors that may explain the selection of one anticipatory strategy over another. Conceptual and empirical work in this domain remains limited, and I encourage future work to develop and test theory on potential determinants of AIM, including formal tests of potentially relevant characteristics such as a firm's social approval, recidivism, and executive confidence.

Ethical considerations. This paper investigates the effect of anticipatory and reactive strategies firms use to shape the information environment around events influential on external impressions. Impression management, at its foundation, involves the convincing of audiences "to back the version of the story given by the organization" (Elsbach, 2003: 4). What has not been discussed, however, is whether these efforts are something that firms *should* engage in. The intention of this research has been to describe how a firm's impression management interrelates and influences performance. In doing so, I do not prescribe that a firm should create an information environment around an event that enables it to be deceptively defensive (e.g., falsely shifting blame) or falsely accommodative (e.g., wrongly attributing responsibility to itself). I instead encourage the reader to consider past treatments of the ethics of impression management (e.g., Koehn, 2013; Ulmer, Sellnow, & Seeger, 2011; Bundy & Pfarrer, 2015) and contribute their own insights into the neglected ethical dimensions of OIM.

One of the few perspectives on the ethics of impression management suggests that these strategies are acceptable, noting: “There is nothing nefarious, superficial, or Machiavellian about packaging. Just as a textbook writer must edit information to present it in a readable, concise fashion, so must people edit information about themselves in everyday life to provide the ‘best’ description possible” (Schlenker & Weigold, 1990: 827). How this process of self-revision creates ethical consequences, in my view, is when it involves concealing relevant details of a situation (e.g., withholding material information from shareholders) or spreading inaccuracies.

It is important to acknowledge the difficulties encountered when assessing the ethics of impression management, particularly when it may inspire thoughts and opinions among external evaluators that are favorable to the firm yet misguided. It is outside the scope of this research to suggest to the reader whether a firm should or should not manage impressions, but I encourage practitioners reading this paper to develop and promote an honest dialogue when faced with impression management decisions. I also challenge scholars to engage with the ethical dimensions of impression management in future research.

An evolving context. While this study covered the time immediately following a major shift in clinical trial transparency among industry sponsors, trial transparency is improving at every stage of clinical development. As social expectations and legal requirements for transparency increase (Gramm, 2015), the legislative landscape of the pharmaceutical industry continues to evolve. It is, therefore, expected that data in this domain will increase in depth and availability for scholars and practitioners.

Conclusion

It is my hope that the downstream consequences of impression management decisions may be considered, such that managers and scholars may view impression management strategies as a continuous and ever-evolving aspect of corporate strategy. This research

demonstrates that there are real costs and benefits associated with information disclosure around terminated clinical trials. Specifically, it provides evidence that a firm can manage disclosures in such a way that benefits or harms its stock price, fulfilling an elusive goal central to evaluating the effectiveness of impression management efforts (Arndt & Bigelow, 2000; Elsbach et al., 1998; Elsbach, 2003).

This study presents novel theory and an empirical test of how a firm's anticipatory and reactive impression management interrelates, demonstrating the theoretical and empirical interdependence of these strategies. Through providing evidence that managers formulate holistic impression management strategies, I advance the idea that these tactical decisions can be viewed as interrelated. An understanding of the implications of anticipatory and reactive strategies will ideally promote thoughtful treatments of impression management as a complex set of strategies affecting a firm's viability. The findings of this study, based on a novel sample of late-stage clinical trial terminations, underscore the importance of scholarly considerations of the downstream effects of information disclosure. It is my hope that this work will lead managers to pursue holistic strategies that do much to protect firm viability and strengthen relationships with external evaluators.

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Appendix A: Reactive Impression Management Coding Scheme

Defensive strategies attempt to avoid the damages caused by a negative event by reducing a firm's perceived association and responsibility for it.

Examples: denying responsibility, downplaying an event's impact, attacking accusers, shifting blame to others

Accommodative strategies attempt to proactively repair the damages caused by a negative event by acknowledging a firm's perceived association and responsibility for it.

Examples: accepting responsibility, acknowledging an event's impact, apologies, expressions of regret, corrective actions/restitution.

(1)

(2)

(3)

(4)

(5)

(6)

(7)

Fully defensive

*Neither Defensive
nor Accommodative*

Fully accommodative