LANGUAGE AND COMPETITION: COMMUNICATION VAGUENESS, INTERPRETATION DIFFICULTIES, AND MARKET ENTRY

WEI GUO
Hong Kong Polytechnic University

TIEYING YU
Boston College

JAVIER GIMENO
INSEAD

Firms have a lot to lose from the entry of competitors into their markets. Grounded in the research on interfirm rivalry and strategic communication, we proposed and tested hypotheses suggesting that when the managers of incumbent firms perceive a high threat of entry, they are more likely to use vagueness in their corporate communications to make their strategies and actions harder to discern. This lessened interpretation results in fewer competitive entries by potential entrants. We used computerized content analysis to quantify the use of vague language in incumbent firms' annual reports and empirically tested our hypotheses through data from the U.S. domestic airline industry. We found robust support for our hypotheses. By revealing that strategic use of language shapes competitive interactions, our research sheds new light on the process through which information is delivered, received, and interpreted by rivals. This process is at the heart of competitive dynamics and strategy research.

The authors would like to thank our Associate Editor Dovev Lavie and three anonymous reviewers for their helpful comments and suggestions. We also thank Ken G. Smith, Mary Ann Glynn, Daniel Simon, and participants at the Academy of Management annual meeting (2014, Philadelphia) and Hong Kong Junior Macro Faculty Consortium for their comments on previous versions of this article. This work was supported by the Research Grants Council of Hong Kong's General Research Fund (F-PP2L). A previous version of this article won the Academy of Management Best Paper Proceedings in 2014.

In June 1995, when asked about Southwest's expansion strategy for the coming year, Herb Kelleher, Southwest Airlines chairman, said, "*Opportunities for new service exist, but they are limited by congested airports*" and Southwest "*will fly someday to somewhere in Florida from somewhere else*" and declined to offer specifics about the strategy.

As quoted in *Aviation Daily* (June 30, 1995)

Vagueness occurs regularly in organizational communications. The quote above illustrates how managers sometimes make vague statements to avoid revealing details of its strategy. However, the key questions are, under what conditions are managers likelier to use vague language in corporate communication, and how will rivals react to such vagueness? It is important to answer these questions because understanding the factors that influence rivals' reactions to competitive initiatives is at the heart of competition and strategy research. Previous researchers have emphasized the importance of economic motivations that lead companies to initiate or respond to competitive moves (e.g., Baum & Korn, 1996; Chen, Smith, & Grimm, 1992; Gimeno & Woo, 1996). For example, Chen and colleagues (1992) have shown that the high economic value of key markets creates strong incentives for managements to react to competitive attacks on these markets. Another stream of research emphasizes the significance of resources and capabilities that enable the execution of competitive actions and reactions (e.g., Markman, Gianiodis, & Buchholtz, 2009; Ndofor, Sirmon, & He, 2011; Peteraf & Bergen, 2003; Wernerfelt, 1984). For example, Chen (1996) has shown that the ability to compete is closely tied to the amount of resources available to the firm under attack. The literature on competition contains relatively little research devoted to understanding how rivals communicate and process competitive information. Specifically, we know little about how the use of certain types of language in strategic communication may discourage or embolden rivals' competitive behavior.

In this study, we focus on one specific feature of corporate communication in the public arena – the use of *vague language*. Vague language is defined as the use of linguistic means to

make communication less precise in meaning and impossible to paraphrase precisely (Channell, 1994). Examples of vague language include terms such as *may, nearly, sometimes*, and *as far as.*[1] For instance, the following statement from American Airlines (2003) is considered vague: "The Company announced *a series of* initiatives to further reduce *its* costs, simplify *its* aircraft fleet, and enhance productivity. These initiatives included, *among other things*, de-peaking of *some of* the Company's airports; gradually phrasing out operation of *some of its* old aircraft fleets, and reducing capacity."[2] On the other hand, SkyWest Airlines is considered less vague in the following statement, "We ended the year with 220 aircraft, averaging 1200 flights per day" (SkyWest Airlines, 2001). We focus on vague language because such language increases the difficulty rivals have in understanding and interpreting information that may be relevant for their competitive decisions. According to the competitive dynamics literature, firms can only respond to competitive initiatives if they are aware of them (e.g., Chen *et al.*, 1992; Chen, Su, & Tsai, 2007; Yu & Cannella, 2007). However, noticing rivals and their strategies (attention) and understanding them (interpretation) are two distinct tasks. Research in social cognition suggests that a cogent and effective response requires both attention and interpretation (e.g., Daft & Weick, 1984; Dutton & Jackson, 1987a; Kiesler & Sproull, 1982; Thomas, Clark, & Gioia, 1993). By focusing on vague language delivered through highly visible and public channels, we hope to underscore that rivals' competitive behavior is affected not only by their attention to the available information but also by their ability to interpret such information. By doing so, this study highlights the role of interpretation in shaping the competitive actions firms adopt and extends competitive dynamics research that has largely emphasized the role of noticing or

[1] Words in italic are examples of keywords drawn from the communication vagueness dictionary.

[2] This statement is considered vague because of its use of several linguistic devices such as nonnumerical terms to refer to indefinite amounts (e.g., *some of*, *a series of*), repeated use of pronouns (e.g., *its*), and bluffing terms (e.g., *among other things*) to insert vagueness into the statements.

attending to rivals' competitive initiatives (Chen & Hambrick, 1995; Chen & Miller, 1994; Derfus *et al.*, 2008).

In sum, our research develops a model of how competitive contexts shape the propensity of firms to use vague language and how in turn such language use will affect rivals' market entry decisions. Market entry is a major strategic decision because it involves commitment of significant resources. Thus, before entering, potential entrants confront the important and difficult task of evaluating market conditions and incumbents' strengths and weaknesses. For incumbent firms, however, the possibility of new competition represents a formidable threat because new entrants often bring substantial resources and the desire to gain market share. Therefore, we propose that the frequency with which incumbent firms use vague language will be associated with the level of threats perceived from potential entrants. In terms of the consequences of the use of vague language, we argue that vagueness in communication by incumbents may hamper the entry decisions of potential entrants because it increases their difficulty in interpreting the strategy of incumbent firms and anticipating their reactions. Additionally, we suggest that the impact of incumbents' vagueness in hampering market entry is amplified when those incumbents or markets receive strong attention from potential entrants. In other words, we suggest that attention and interpretation are complementary processes: Vague communications that hinder interpretation are important only if rivals are paying attention.

Our research makes three contributions. First, to our knowledge, we are the first to systematically examine how the use of language in a firm's communications affects how its competitors behave. Researchers have long acknowledged that language and communication matter in interfirm rivalry (e.g., Caves, 1984; Porter, 1980; Rindova, Becerra, & Contardo, 2004; Smith & Grimm, 1991). Nevertheless, little has been done to this point to unpack how specific

use of language affects rivals' behavior or to delve into the contingencies that govern this relationship. To fill this gap, our study explains the competitive antecedents of the use of vague language in strategic communications and the impact of incumbents' use of vague language on their rivals' market entry decisions. Moreover, by retreating from the assumption in earlier studies that awareness of competitors and their strategies is the same as being able to decipher this information, we contribute to the competitive dynamics literature by emphasizing the need for firms' to be able to interpret their rivals' strategies.

Second, we challenge the prevailing view in competitive signaling theory by demonstrating the competitive benefits of a firm's vague and equivocal communication. Competitive signaling theory has strongly emphasized the value of a firm's explicit and aggressive communication in thwarting invasions by rivals (e.g., Heil & Robertson, 1991; Moore, 1992; Porter, 1980). However, the accessibility of corporate communications by multiple stakeholders with divergent interests (e.g., investors, customers, regulators, and competitors) may make managers reluctant to use explicit communications. For example, a statement that clearly signals predatory behavior against potential entrants might antagonize customers and regulators. We theorize and empirically show that by using vague language to make strategic information less precise, a firm's managers may create ambiguity that hampers rivals' market entry decisions. Hence, we extend the competitive signaling literature by introducing vagueness in communication as a way to counter invasion by rivals and as an alternative to prevailing approaches.

Third, our research adds the specific context of interfirm rivalry to the growing literature on how organizations use public language as a strategic tool to engage stakeholders (see Gao, Yu, & Cannella, 2016 for a review). Although researchers have examined the role of language

use in entrepreneurial (e.g., Martens, Jennings, & Jennings, 2007), image-threatening (e.g., Elsbach, 1994), and financial settings (e.g., Tetlock, Saar-Tsechansky, & Macskassy, 2008), they have paid only limited attention to how language can be used to shape competitors' behaviors. By exploring how rivals use vague language, our paper adds to the language literature by identifying the antecedents and consequences of language use in a competitive setting.

THEORETICAL BACKGROUND

Driving Forces of Interfirm Rivalry

The study of why, how, and when firms compete and its performance consequences is at the heart of strategy research; hence, scholars working from different theoretical perspectives have been drawn to examine this phenomenon. Among these perspectives, earlier work in competitive dynamics research from an information processing perspective demonstrated that the likelihood of a firm's launching an action is related to its managers' ability to sense and process information contained in rivals' strategy and actions (Smith & Grimm, 1991; Smith *et al.*, 1991). In comparison, scholars inspired by an industrial organization (IO) economics perspective tended to emphasize the economic rationality of competitive actions and argued that different situations may create different incentives to act. These studies emphasized factors that influence perceptions of gains and losses and hence give managers incentives to act or not act. Factors mentioned are pervasiveness of a rival's attack (Chen *et al.*, 1992), the strategic importance of the markets at stake (Chen & Miller, 1994), the financial conditions of the focal firm (Ferrier *et al.*, 2002; Miller & Chen, 1994), and the level of market overlap between a focal firm and a rival (Baum & Korn, 1996; Gimeno & Woo, 1996). Lastly, scholars who embrace a resource perspective have emphasized the importance of heterogeneous resource positions and capabilities in defending and sustaining competitive advantage (e.g., Barney, 1991; Peteraf & Bergen, 2003).

These studies have shown that firm's competitive behaviors are influenced by a variety of resource-related factors such as levels of organizational slack (Ferrier, 2001); managerial experience (Miller & Chen, 1996); resource versatility, mobility, and discontinuity (Markman *et al.*, 2009), and organizational operational capability (Chen *et al.*, 2007).

Although research on competitive dynamics originated from an information processing perspective (Smith & Grimm, 1991; Smith *et al.*, 1991), few subsequent studies have followed this theoretical path. Thus far no study has considered how the characteristics of information communicated by a firm may influence its rivals' behavior. One research stream that has considered the signaling role of firms' communication in competition is in the literature on competitive signaling (e.g., Ferrier, 1997; Heil & Robertson, 1991; Moore, 1992). Research reflecting this stream of thought tends to focus on strategic communications that occur between a firm and its rivals. As noted earlier, this literature has suggested that firms project aggressiveness to preempt competitors. How customers, regulators, and other stakeholders might react is not considered. However, managers, conscious of their many stakeholders, may not be so bold. We argue that when firms are juggling the interests and perspectives of different stakeholders, they may counter competitive challenges by choosing vagueness over explicit and aggressive communication. In fact, Bunch and Smiley (1992) found that product managers often resort to hiding profitability to make entry less attractive to competitors. This is in addition to signaling their intent to compete rigorously against anyone who ventures to enter. This study provides preliminary evidence for the need to examine firms' communication that creates ambiguity for rivals rather than eliminating it.

Furthermore, existing studies in competitive dynamics combining insights from the information processing perspective offered an integrative model of the three behavioral drivers

of interfirm rivalry, the awareness-motivation-capability (AMC) framework (Chen *et al.*, 2007). In a nutshell, the AMC framework suggests that to act a competitor must be aware of the competitive landscape and the opportunities it offers; the competitor also must be motivated to act and be capable of doing so. Within the awareness component, earlier studies contained a strong emphasis on attending to or noticing competitors' initiatives. Accordingly, researchers pursuing the awareness component focused most of their empirical work on identifying those factors that influence whether rivals will notice a firm or its actions. For instance, these studies demonstrated how firm size, action volume, and action publicity attract attention from rivals and thus affect the number and speed of responses by rivals (e.g., Chen & Hambrick, 1995; Chen *et al.*, 1992; Derfus *et al.*, 2008). However, noticing is not necessarily understanding. According to prior research, both attention and interpretation are critical conditions that must be met before an effective response can be generated (e.g., Dutton & Jackson, 1987a; Kiesler & Sproull, 1982). However, few studies in the competitive dynamics literature have considered the important implication of interpretation in shaping competitive behavior (Basdeo *et al.*, 2006; Smith *et al.*, 1991; Tsai, MacMillan, & Low, 1991). Among these few studies that have considered the importance of interpretation, Smith and colleagues (1991) examined how organizational structure and resource endowments influence firms' ability to interpret competitive information. Basdeo and colleagues (2006) examined how the complexity of firms' action repertoire influences how their external stakeholders perceive them. Nevertheless, none of these studies has considered how characteristics of a firm's communication may impact rivals' interpretation. To fill in these gaps, we focus on the use of vague language by incumbent firms in the context of competitive market entry and how this vague language affects its interpretation by potential market entrants.

Vagueness in Communication

What characteristic of information may influence one's ability to interpret it? Vague language, an increasingly explored phenomenon in language, has gained the position of a device to express imprecision and hamper interpretation in research concerned with a variety of settings. Such settings are work-related interactions (e.g., Koester, 2007), healthcare (e.g., Adolphs, Atkins, & Harvey, 2007), classroom interactions (e.g., Ruzaitė, 2007), academic writings (e.g., Sabet & Zhang, 2015), and courtrooms (e.g., Cotterill, 2007). As defined earlier, vagueness refers to the use of linguistic means to make the meaning of communication nonspecific and imprecise [3] (Channell, 1994). The notion of vagueness was introduced as early as 1902 to describe "words with blurred edges" (Peirce, 1902). In addition to the examples given earlier, vague language also encompasses the use of other devices. These include the use of qualifiers before a number to make it less specific (e.g., *about*, *around*, *nearly*), the use of nonnumerical terms to refer to indefinite amounts (e.g., *a couple*, *a little*, *a high rate of*), the use of approximation terms (e.g., *may*, *could be*, *perhaps*), and the use of bluffing terms to shift onto receivers the responsibility of making sense of the information (e.g., *as a matter of fact, in any event, as far as*). Traditionally, scholars have derided vagueness as a failure by a speaker to connect the right words and the right meaning (e.g., Lakoff & Johnson, 1980). However, after Channell's (1994) influential study of vague language, a number of scholars have subsequently shown that vagueness is not a demerit but an essential feature of language, both spoken and

[3] It is important to note that the notion of vagueness has some overlap with hedging. Hedging is a well-documented feature of spoken discourse, and hence the use of hedging in casual conversation has received the most scholarly attention (Hyland, 1996). Although hedging also involves the use of linguistic means to convey vagueness, it can serve many other purposes such as creating an informal atmosphere, facilitating discussion, showing politeness, or disguising a deficit of knowledge or vocabulary (Hyland, 1996; Liu & Tree, 2012). Therefore, we consider vagueness as a subcategory of hedging that focuses more specifically on lack of precision and exactness in communication. Given that the focus of this study is precision in communication, we chose to concentrate on vagueness.

written; and the appropriate use of vagueness is part of a speaker's communicative competence and can serve numerous purposes (e.g., Sabet & Zhang, 2015; Zhang, 2011).

Researchers in strategic communication have demonstrated that actors in organizational settings can use vagueness to preserve flexibility (e.g., Denis *et al.*, 2011; Sillince & Mueller, 2007). Corporate communication is often accessible by multiple stakeholders for different purposes, such as investors who assess investment opportunities, security analysts who make buy or sell recommendations, customers and suppliers who make purchasing or alliance decisions, and rivals who want to defeat the firm in competition. A long-standing dilemma for managers is whether to divulge more high quality information to attract resource providers or to avoid sharing valuable information that may make it easy for rivals to assess and understand their strengths and weakness (e.g., Darrough & Stoughton, 1990; Verrecchia, 1983). To manage this tradeoff, vagueness, which occupies a middle ground between full disclosure and nondisclosure, becomes an appealing alternative. For instance, Sillince and Mueller (2007) found that top management used vague statements to create ambiguity about its strategy and that this ambiguity not only gave middle managers considerable leeway in interpreting their responsibilities, but also left top management in a position to justify its strategy if it failed. Moreover, Sonenshein (2010) has shown that to make a planned change more acceptable, managers intentionally used equivocal language to describe it as a way to allow employees who favored either stability or change to construct their own versions of the message. Thus, the research contained in the literature on strategic communication suggests that although clarity is important in communicating a speaker's intended meaning to a specific audience, vagueness is also a powerful means used by organizational actors to serve strategic purposes.

Drawing on this prior research, we argue that there are two reasons managers' use of vagueness in communication will increase the difficulties their rivals encounter when trying to interpret their strategy and actions. First, communicators can use vague language as a tool to control the amount of information their messages provide. For example, when a statement from an airline said that "Beginning April 15, 1999, the Company will commence flights between Chicago-Midway and Cincinnati four times daily" (United Airlines, 1996), it clearly conveyed several specific details that could be extracted and understood. However, a statement that "We *may selectively* add new 'point-to-point' routes between cities other than Atlanta that we currently serve" (Delta Air Lines, 1998) did not. The use of approximation terms in this statement significantly limited the number of useful details that could be extracted.

Second, vague language may complicate the interpretation of information (Eisenberg, 1984). Although precision and vagueness are both considered forms of representation, the key difference between them is that in a precise form the relation of the representing system to the represented system is one-to-one, but in a vague form the relation is one-to-many (Russell, 1923; Zhang, 2011). Thus, information communicated in precise terms makes interpretation easy and straightforward. In contrast, vague language can often be interpreted in multiple ways, defying its interpretation. For instance, the intention is clear and easily understood in a statement that "Beginning January 1, 2001, the Company will decrease the commission it pays to travel agents from ten percent to eight percent for ticketless bookings" (United Airlines, 2001). In contrast, interpretation is anything but straightforward in this statement with qualifiers, indefinite amounts, and repeated use of pronouns: "The company revised *its* pricing system to compete more effectively against airlines that offered *a limited number of* seats at fares *at or below* the Company's *then* existing fares" (Vanguard Airlines, 1999).

HYPOTHESES

Antecedents of Vagueness

Given the importance of vagueness in influencing the ability of rivals to interpret information, in this section we delve into the conditions in which managers in a focal firm are more likely to use vague language in corporate communication. Because their vagueness affects the degree of difficulty their rivals will encounter in trying to interpret their strategies and actions, one would expect that the propensity of the focal firm's managers to be vague would increase in the face of heightened competitive threats. The key argument here is that a perception of increasing competitive threats will affect the previously mentioned tradeoff between transparency and secrecy to serve multiple stakeholders. Fearful of competition, managers will tilt their language in favor of vaguer and less explicit communication.

Among the many threats firms face, one of the most formidable is the entry of competitors into their territories (Peteraf & Bergen, 2003). New entrants bring new capacity, substantial resources, and a desire to gain market share. Once ensconced, they often undermine the profitability and market share of incumbents (Bain, 1956; Geroski, 1995). Bain (1956) highlighted the fact that incumbents may sometimes ignore threats of entry and make no changes to their behavior because new entry is blocked by insurmountable barriers (e.g., regulatory restrictions). On the other hand, they may sometimes accommodate the new entrant because of the lack of cost-effective barriers to prevent entry. However, he also emphasized that often managers of incumbent firms do have strong incentives to discourage potential entrants from entering their territories. Moreover, prior research in competitive dynamics has shown that competitive behavior can be shaped significantly by perceived competitive threats (Chen *et al.*, 2007). Their study found that management of a focal firm is likelier to take action toward rivals

that it perceives as representing a higher degree of competitive tension; in addition, management's perception of competitive tension is related to the rival's incentives and capabilities to challenge and contest the focal firm's position. In this study, we used entry threat to capture the competitive threats the managers of an incumbent firm perceive. We argue that incumbents in markets with higher levels of perceived entry threats will have stronger incentives to use vague language than incumbents in less threatened markets. We examined two factors—market attractiveness and the prevalence of potential entrants. We chose these factors because the former reflects how attractive a market is, and the latter captures the number of potential entrants well-positioned to enter the market. Next, we will explain how these two factors increase the perception of entry threat in a given market and thus increase the propensity of incumbent firms to use vaguer language.

Market attractiveness. Previous research suggests that the level of competitive threats that managers of incumbent firms perceive will be closely related to the desirability of that market to potential entrants. In evaluating the attractiveness of a market, potential entrants have often used its current profitability as a gauge of future profits (Masson & Shaanan, 1982). Research has found that potential entrants are likelier to enter highly profitable markets. For example, managers of biotech firms were found likelier to follow their rivals into product markets with greater profit prospects (Anand, Mesquita, & Vassolo, 2009). Research has also shown that the lure of highly profitable markets will drive managers of other firms to risk attacking their multimarket competitors and violate the norm of mutual forbearance (Yu, Subramaniam, & Cannella, 2009). Other factors being constant, we expect potential entrants will be more tempted to enter markets made attractive by high profit potential. Accordingly, we expect that managers of incumbent firms in highly profitable markets will feel more threatened

by potential entrants and will be likelier to use vague language to protect their competitive advantages. Stated formally:

> *H1: Firms with positions in more profitable markets are likelier to use vague language.*

The prevalence of potential entrants. Because of differences in market characteristics (e.g., economies of scale, capital requirements, and switching costs) and the market scope strategies of competitors, not all markets are equal in terms of the number of potential entrants capable of entering them. According to prior research, potential entrants refers to rivals who are not yet present in the focal firm's market but have resources similar to those of incumbents (e.g., Goolsbee & Syverson, 2008; Peteraf & Bergen, 2003). Potential entrants are often rivals capable of producing similar products or delivering similar services in head-to-head competition with the focal firm. Prior research on competitive dynamics found that managers are more threatened by their competitors who have similar resources (Chen, 1996; Chen *et al.*, 2007). In a related vein, Goolsbee and Syverson (2008) have shown that the presence of capable potential entrants has a strong impact on incumbents' pricing; this suggests that incumbents are aware of, and feel threatened by, potential entrants. As the number of potential entrants increases in a given market, we expect that managers of incumbent firms will face increased threats of entry and thus increase their propensity to use vague language. Stated formally:

> *H2: Firms with positions in markets with a higher number of potential entrants are likelier to use vague language.*

Vagueness and Implications for Entry by Potential Entrants

This section will use the concept of communication vagueness to predict the likelihood of market entry by potential entrants. Entering a new market is a major strategic decision that involves commitment of significant resources and incurrence of costs that sometimes cannot be

recovered. Thus, before entering, potential entrants are often eager to learn the strengths and weaknesses of incumbents, looking for opportunities to steal market share from them. A decision to enter will be justified only when potential entrants think they have competitive leverage against incumbent firms and thus can expect an adequate level of economic returns after entry (Porter, 1980). However, potential entrants' efforts to assess their competitive profile relative to existing firms in a given market may be more or less difficult depending on the nature of the information they can acquire. When managers of incumbent firms increase their use of vague language, the increased difficulties of interpreting their strategy and actions will influence potential entrants' entry decisions in two ways.

First, incumbent firms' use of vague language may reduce the likelihood of entry by lengthening potential entrants' decision-making process. Research in strategic decision making found that in reaching decisions based on ambiguous information, finding and understanding the key decision variables will typically take longer; as a result, decision making is often slower (Baum & Wally, 2003). Moreover, this literature has also shown that vague language capable of multiple interpretations may lead different decision-makers to make vastly different predictions about the estimated value of a strategic decision; the conflicting views of these multiple decision makers will then reduce the likelihood of a team's reaching a consensus (e.g., Charan, 2006). Thus, incumbent firms' use of vague language is likely to lengthen potential entrants' decision-making process, and slowness in making decisions could be detrimental in high velocity contexts (e.g., Bourgeois & Eisenhardt, 1988). Second, vague information disseminated from incumbent firms may increase the perceived level of risk associated with an entry decision, pushing potential entrants toward less risky strategic options. A potential entrant standing on the threshold of entering a new market often simultaneously evaluates several alternatives, such as

deferring entry, abandoning entry, or entering a different market. Vague information increases the degree of ambiguity potential entrants face, making it harder for them to evaluate their positions vis-à-vis incumbent firms. As a result, the risk-adjusted value of entering a market may decrease relative to alternatives (e.g., Dixit & Pindyck, 1994; Folta, Johnson, & O'Brien, 2006), making potential entrants likelier to abandon or delay entry.

For managers of incumbent firms, slower decisions by potential entrants as well as a higher likelihood of delaying or abandoning their entry attempt mean less likelihood of a current new entry. In sum, we argue that increased use of vague language to make their communication harder to interpret may reduce the likelihood of entry by potential competitors. Stated formally:

> *H3: Incumbents' use of vague language will be negatively associated with potential entrants' likelihood of market entry.*

The Moderating Role of Incumbent Size and Market Concentration

In the previous section, we highlighted the importance of interpretation as an under-developed component of awareness and emphasized the impact of incumbents' communication vagueness on potential entrants' interpretation. Because previous studies of awareness focused more extensively on the independent effect of limited organizational attention, we know little about how attention and interpretation interact and jointly affect how firms behave. The research in the social cognition literature specifies the relationship between attention and interpretation as a two-step sequential process in which selective attention is the first step and interpretation is the second; both are necessary prior conditions that must be met before a stimulus can provoke a response (Daft & Weick, 1984). Hence, among all the information competing for firms' attention and time, the stimuli likelier to gain a response are those that an organization not only notices but also understands. In our research setting, these prior studies suggest that the relationship between attention and interpretation will be complementary. As potential entrants devote more attention

to incumbent firms, this increased attention amplifies the influence of the incumbents' vagueness on potential entrants' market entry decisions. In other words, vagueness in communication by the managers of incumbent firms will have little impact if the potential entrants are not paying attention.

Empirical findings in competitive dynamics research also support our proposed complementary relationship between attention and interpretation. For example, Smith and colleagues (1991) found that compared with tactical actions, rivals are less likely to respond to strategic actions because information contained in such actions is more difficult for rivals to interpret, understand, and duplicate. As Smith and colleagues put it, "No matter how effectively an information system is structured, decision makers must harness the information provided and interpret it before responding" (Smith *et al.,* 1991: 66). To conclude, we expect that the dampening effect of incumbent firms' use of vague language on entry decisions to be stronger in markets most attractive to potential entrants. Which markets are these? Choosing average incumbent size and the level of market concentration as two indicators of the focus of potential entrants' attention, we will next examine how these indicators moderate the effect of incumbents' use of vague language on potential entrants' entry decisions.

Average incumbent size. The average size of incumbents plays a significant role in determining how much attention potential entrants devote to a market. Research has shown that managers of firms are selective in who they imitate. Important strategic decisions such as market entry (Haveman, 1993) and new practice adoption (Burns & Wholey, 1993) are likelier to resemble those of large firms because their success signals they have done something right. Accordingly, we expect that potential entrants are likelier to pay attention to markets with large incumbents. Moreover, large size has been seen as conferring many advantages such as

economies of scale and scope, brand recognition, and experience (Chen & Hambrick, 1995; Woo & Cooper, 1981) . As a result, large incumbents are likelier to be considered significant threats. Therefore, potential entrants will monitor them more closely. In sum, we suggest that markets with large incumbents are likelier to attract the attention of potential entrants. Hence, the effect vague communication by incumbents has on potential entrants' entry decisions will be strengthened as the average size of incumbent firms increases. Stated formally:

> *H4: The average size of incumbent firms will amplify the relationship between incumbents' use of vague language and potential entrants' likelihood of entry.*

Market concentration. The level of concentration in a targeted market will also affect how much attention potential entrants give to incumbent firms' communication. First, market concentration makes incumbent firms and their competitive moves more visible. As the rate of concentration increases, an increasingly smaller number of firms will capture a greater share of a market. This means that attending to competitors becomes easier because one needs to monitor only a few powerful firms to grasp the market. As a result, more attention can be allocated to each incumbent firm in a concentrated market (Stigler, 1961). Second, in a concentrated market, each incumbent firm's competitive moves will have a more significant impact on potential entrants. In other words, the level of interdependence between incumbent firms and potential entrants will increase (Caves & Porter, 1977). This increased interdependence will increase the salience of incumbents in potential entrants' entry analysis. In sum, we suggest that market concentration reduces the number of incumbents that potential entrants need to monitor and increases the interdependence between potential entrants and incumbents. Thus, we expect that in the more concentrated markets, the use of vague language by incumbent firms will have a stronger effect on potential entrants' entry decisions. Stated formally,

H5: The level of concentration in a market will amplify the relationship between incumbents' use of vague language and potential entrants' likelihood of entry.

METHODOLOGY

Data and Sample

We tested our hypotheses in the context of the U.S. domestic airline industry between 1995 and 2001.[4] This industry was especially attractive for our study for several reasons. First, according to IO economics theory (Bain, 1956), entry deterrence is meaningful only under certain market structure conditions. This is because in some markets entry may be blocked by regulations or accommodated because of little likelihood of forestalling entry. Thus, it is critical for us to examine our hypotheses in a context in which entry deterrence is particularly important. In this regard, the U.S. airline industry is probably one of the settings used most to study entry deterrence and intense rivalry (e.g., Baum & Korn, 1996; Goolsbee & Syverson, 2008). Second, because of the public service importance of this industry, highly detailed secondary data is publicly available. This availability enabled us to properly code the language used in the sample firms' annual reports and measure a number of important structural and firm characteristics. Lastly, in this oligopolistic setting, distinct markets can be readily identified, along with their incumbent firms and potential entrants, all of which are difficult to do in many other sectors. We obtained data from the Department of Transportation's (DOT) Bureau of Transportation Statistics (BTS) by combining three interrelated databases: Airline Origin & Destination Survey, Air Carrier Statistics, and Air Carrier Financial Reports. The Airline Origin and Destination

[4] We chose the 1995-2001 timeframe for our study because this period represents an almost complete cycle of growth and decline in the history of the U.S. airline industry, including periods of growth and stability as well as declines in both industry capacity and profitability, without being seriously affected by external shocks that created upheavals in the industry (e.g., September 11 attacks, the war in Iraq, severe acute respiratory syndrome (SARS), and the economic crisis). Moreover, the availability of electronic annual reports for most U.S. airline firms only started around 1995, which limited our ability to cover the period before 1995.

Survey database (also known as DB1A) is a sample of 10% of all the tickets on scheduled flights sold in the United States by certified carriers. We used the DB1A sample to define markets at a city-pair level and to calculate prices for carriers. We used the Air Carrier Statistics database, which contains carrier traffic information, to calculate carrier market shares, passenger flow, and passenger load factors. Finally, we used the Air Carrier Financial Reports (also known as Form 41 reports) to get carrier financial, operating, and labor data. This data was also used to calculate the economic performance variables used in this study, such as number of employees, financial performance, cash flow, and leverage. These DOT sources reported data quarterly.

Consistent with prior research, we defined a *market* as a pair of cities[5] that indicate a set of customers demanding air travel by using either direct or one-stop flights (Gimeno & Woo, 1996). We focused on both direct and one-stop services for city-pairs because these services are often considered substitutes. We defined *incumbent* as a carrier having more than a minimum market share (5%) or a minimum efficiency scale of capacity in a market (900 travelers per quarter, or 10 travelers per day in a given city-pair market) (e.g., Borenstein, 1991; Gimeno & Woo, 1996). This definition allowed the inclusion of both major and niche players. *Potential entrant* was defined as a carrier that operated flights to or from both of the two endpoints of a route but did not yet operate a route linking the two endpoints (e.g., Baum & Korn, 1996; Gimeno & Woo, 1996). It has been documented that the probability of an airline's starting to soon fly a particular route and therefore enter a market increases by around 70 times once it starts operating at both endpoints of a route (Goolsbee & Syverson, 2008). Our final sample consists of 18 domestic airlines, 5,156 markets, and 8,095 realized new market entries.

[5] We selected our sample of markets (i.e., origin and destination cities) based on three conditions: (1) these cities need to be at least small hubs, according to the Federal Aviation Administration's (FAA) definition (i.e., carrying at least 0.05% of total traffic); (2) these cities were at least 100 miles apart (to eliminate substitution from ground transportation); and (3) the markets had average daily traffic of at least 10 passengers.

Measures and Analysis

Antecedents of vagueness. To test hypotheses 1 and 2, we examined the relationship between two market characteristics and incumbents' use of vague language. Our dependent variable for these two hypotheses is the percentage of vague language in incumbent firms' annual reports (*firm vagueness*). To quantify the vagueness of a given text, we used a word-count approach, which has been increasingly recognized and used in management research (e.g., Barr, Stimpert, & Huff, 1992; Kaplan, 2008; Petkova, Rindova, & Gupta, 2013). To control for document length, this variable was calculated as a count of vague words and expressions normalized by the total number of words in each document. We identified vague words and phrases by using Hiller's Communication Vagueness Dictionary (Hiller, Marcotte, & Martin, 1969),[6] which contains 362 vague words and expressions on 10 dimensions of vagueness. We used OLS multiple regression analysis to test hypotheses 1 and 2 at the firm-year level of analysis.

We used Form 10-K,[7] also known as an annual report, as the source of firms' communications. We chose to focus on annual reports rather than other types of firms' communications for three reasons. First, they are a critical source of information for all external stakeholders to understand a firm's strategies and operations. According to the SEC (2011), annual reports contain detailed information about a firm's financial resources, strategies, sources of income, and potential risks. More importantly, they contain management's discussion of the results of operations, changing business strategies, competition, resource utilization, and cost

[6] The dictionary was originally developed to analyze university lecture delivery but has been widely used to detect the lack of clarity in communications in many other settings, such as questionnaire design (Ford *et al.*, 2000), teaching program evaluation (e.g., Wilson & Wineburg, 1993), and political speech (e.g., Hogenraad & Garagozov, 2014).

[7] Form 10-K is a form of mandatory communication required by the U.S. Securities and Exchange Commission (SEC) that gives a comprehensive summary of a company's activities and performance in the previous fiscal year.

management. All of this information is vital to competitors' understanding of a firm. Second, evidence indicates that multiple stakeholders, including investors, journalists, and competitors, regularly review the annual reports of companies of interest to gather intelligence and inform their decisions. A survey conducted by the SEC (1977) found that 91% of respondents acknowledged reading annual reports. The broad coverage of annual reports' readership suggests that firms may need to be strategically vague in this form of communication. Lastly, through our conversations with experts in disclosure management, we learned that many CEOs, CFOs, and other c-suite executives often set up alerts to download and read the annual reports of their competitors the moment they are filed. Among the 13 sections typically contained in an annual report, we measured the use of vague language in four sections that are considered most relevant to competition. These four are *Business*, *Properties*, *Management Discussion and Analysis (MD&A)*, and *Financials.*"[8] We also developed an algorithm in Python to purge the document of attachments, headers, and exhibits so that we could focus on the report itself.

To assess the validity of using annual reports to represent firms' communications, we triangulated our measure of vagueness by using corporate press releases as an alternative source. First, we used the Factiva database to retrieve over 35,133 press releases between 1995 and 2001 for the firms in our sample. We used a word-count approach to calculate the percentage of vague words in a firm's press releases in a given year (*vagueness – press releases*). We found that measuring vagueness from both sources of a firm's communication generated largely consistent

[8] In unreported models, we created a variable *vagueness unrelated* by counting the frequency of use of vague language in the five sections of annual reports that are considered irrelevant in a competitive setting. These are *Legal Proceedings*, *Submission of Matters to a Vote of Security Holders*, *Risk Factors*, *Market for Registrant's Common Equity and Related Stockholder Matters*, and *Controls and Procedures*. We found that the relationship between *vagueness unrelated* and market entry by potential entrants to be negative and not statistically significant (coefficient = -0.020, *n.s.*). Moreover, we tested our hypotheses by using vagueness measured in the full annual report. The results were largely consistent.

results. This suggests that our results are not driven exclusively by our choice of annual reports as the source of firms' communication. Moreover, to further verify the reliability of the vagueness dictionary, we manually coded the Management and Discussion & Analysis (MD&A) section of a randomly drawn subsample of 34 firms. The coder identified words and expressions from the vagueness dictionary that were misclassified – words that belong to the vagueness dictionary but do not appropriately capture the underlying vagueness in communication. For example, the word *factor* may be used in other contexts to refer to a number of things taken into account and thus is included in the vagueness dictionary. But in the context of the airline industry, it refers to *load factor* — a performance measure — and hence is not considered vague. We assessed interrater reliability by using Krippendorff's alpha, which controls for chance coincidences (Krippendorff, 2004). The alpha coefficient was 0.82, which is above Krippendorff's most conservative threshold for reliability.

We also compared the use of vague language in annual reports and in other sources of communication. We found that a similar range of vague language is used in annual reports, press releases, and earnings conference calls, the three most commonly used sources of business communication. Additionally, we also compared the use of vague language in different sections of annual reports. We found that the use of vague language in the four sections considered most relevant to competition is 1.36%; that number increased to 2.51% if we only considered the MD&A section.[9] This finding is consistent with our expectation because the MD&A is where top management discusses its interpretation of numerous aspects of the company. Because it is

[9] To assess how vague annual reports are compared with language in other contexts such as political speeches (which are supposed to be the vaguest, according to the literature), we collected transcripts of 21 years of presidential State of the Union addresses. We found that the use of vague language in political speech is higher at 3.72%, with a maximum of 5%. This suggests that although annual reports contain some levels of vague language usage, they are not as vague as political speeches.

mostly opinion-based and unaudited by a third party, we expected the MD&A to contain a higher incidence of vague language than the rest of the annual report.

Our explanatory variable for Hypothesis 1 is market attractiveness, which was measured as the average profitability over a firm's portfolio of markets (*market profitability*). We calculated profitability of a market as the ratio between average ticket prices and the Standard Industry Fare Level (SIFL), a measure of cost of production. In the airline industry, cost of production is affected by changes in factors such as fuel and labor. The U.S. Federal Aviation Administration publishes an index of cost of production called the SIFL, which contains the cost of serving routes of different distances, taking into account changes in the costs of labor, airport services, and fuel inputs. The index is a widely accepted measure of costs of serving a particular market in this industry and has been used in several previous studies (e.g., Gimeno & Woo, 1996; Gimeno & Woo, 1999). Our explanatory variable for Hypothesis 2 is the prevalence of potential entrants. We counted the number of potential entrants in each market, averaged over an incumbent firm's portfolio of markets, as an indicator of the prevalence of potential entrants faced by incumbents (*potential entrants*).

For hypotheses 1 and 2, we controlled for several key characteristics of incumbent firms that may influence incumbents' vulnerability to threats of entry and their propensity to use vague language in annual reports; these characteristics include firm size, market share, performance, cash flow, load factor, and operational efficiency. *Firm size* was measured by number of employees. *Firm market share* averaged a firm's market share across all city-pair markets. *Firm performance* reflected return on assets. *Firm cash flow* was measured using a firm's cash flow from operations to reflect its internal availability of financial resources. In addition to financial performance, we included *passenger load factor,* a common nonfinancial performance measure

of airlines. It is calculated as the ratio between the total number of passengers carried by a focal firm and the total seats available. *Operational efficiency* was measured using total operational expenses divided by the total revenue. This variable is reverse coded by adding a negative sign, so a lower number means higher efficiency.

Consequences of vagueness. In hypotheses 3 through 5, we examined the impact of incumbents' use of vague language on potential entrants' entry decisions. We also examined the moderating role of average incumbent size and market concentration on the hypothesized relationship between vagueness and likelihood of entry. Our dependent variable for these hypotheses is the likelihood of entry by potential entrants (*market entry*). It was measured using a dummy variable equal to 1 if a potential entrant enters a market in the quarter following the release of incumbent firms' annual reports and zero otherwise. Because the dependent variable for hypotheses 3 through 5 is the hazard (or instantaneous probability) of a potential entrant entering a given market, we used survival analysis to model the hazards of a market entry event. We constructed a longitudinal dataset of the timing of market entry by potential entrants. We configured the data into quarterly spells. Each spell was an entrant-market-quarter observation, and the first spell for each observation was the first quarter when a firm became a potential entrant. The time when an airline became a potential entrant in a given market marked the beginning of an observation period; the potential entrant's entry into the market or the end of the data period marked the end of an observation period. We observed each potential entrant until June 30, 2001, leading to right-censoring of observations. Our basic estimation technique was the Cox proportional hazards model (Cox, 1972), a robust technique for hazard rate analysis that gives no particular parameterization and makes no assumptions about the shape of the hazard over time. Hypotheses 3 through 5 were all tested at the entrant-market-quarter level of analysis.

Our explanatory variable for Hypothesis 3 was the average use of vague language by incumbent firms in a given market (*incumbent vagueness*). Because each market contained multiple incumbents, we aggregated the use of vagueness by firms to the market-quarter level by averaging all incumbents' use of vagueness language, weighted by the market share of each incumbent in a market.[10] The explanatory variable for Hypothesis 4 was *average incumbent size*. We captured the size of all incumbent firms in a given market by taking the average of all incumbents' total number of employees, weighted by the market share of each incumbent in a market. The explanatory variable for Hypothesis 5 was *market concentration*. We measured the concentration rate by using the Herfindahl Index (HHI) to calculate the sum of the square of the market shares of incumbent firms in a market.

Because the objective of this study is to provide a refined understanding of how awareness affects potential entrants' entry decisions, according to the AMC framework, it is critical that we control for factors that may shape potential entrants' motivation and capability to enter a market. On the motivation side, one well-known factor that may influence the motivation of a firm to enter a market is the level of market overlap between the firm and its competitors. Prior research found that potential entrants' motivation to invade a market will decrease if the market is occupied by incumbent firms with whom they have considerable market overlap (Baum & Korn, 1996). Potential entrants' *market overlap* with incumbents in a market was calculated by using the average number of multimarket contacts a potential entrant had with each of the incumbent firms in a market. We also calculated the square term of multimarket contacts (*market overlap squared*) because prior research has found a curvilinear relationship exists between market overlap and likelihood of entry (Baum & Korn, 1996). On the capability side,

[10] In unreported models, we also tested Hypothesis 1 and Hypothesis 2 by using an equally weighted measure of incumbents' use of vague language. The results were consistent with what we found using the weighted measure.

we included variables earlier researchers have used extensively to manifest firms' capabilities, including size, performance, and operational efficiency. Because in our setting, both the capability of incumbents to defend their markets and the capability of potential entrants to invade matter, we controlled for both incumbent and entrant capability-related characteristics. The incumbent characteristics (i.e., *incumbent performance, incumbent cash flow, incumbent load factors, and incumbent operational efficiency*) were calculated by taking an average of these characteristics of all incumbents in a market, weighted by the market share of each incumbent in each market. The characteristics of potential entrants (i.e., *entrant size, entrant performance, and entrant cash flow*) were calculated for each potential entrant. Overall, the likelihood of entry in markets is expected to be positively associated with incumbents' capabilities and negatively associated with potential entrants' capabilities.

Additionally, to control for the role of incumbent firms' competitive aggressiveness in deterring entry, we controlled for incumbent firms' competitive activities and their use of tough talk. Potential entrants' decisions will be influenced by the likelihood of retaliation by incumbent firms. Research has shown that potential entrants are less motivated to enter a market when it is occupied by highly aggressive incumbents (Ferrier, 2001). We measured *incumbent competitive activities* as the percentage change in the number of actions carried out by all incumbent firms in a market compared with the previous year. In addition, prior research in competitive dynamics demonstrated that incumbent firms may engage in "tough talk" or "overt proclamations" (Ferrier, 1997: 99) to signal their future strategic intent, which in turn alters the strategic decisions of rivals.[11] Tough talk is often an overt market signal that representatives of a firm make in the media to provide direct or indirect indications of the firms' future goals, motives, and results

[11] We thank an anonymous reviewer for suggesting this important control variable.

(Ferrier, 1997; Fombrun & Shanley, 1990). It captures communication by a firm's management regarding its future plans. This differs from our vagueness measure, which reflects a firm's choice to be less explicit about matters in the past, present, and future. To measure incumbents' use of tough talk (*incumbent tough talk*), following Ferrier (1997), we included three types of announcements as tough talk: announcements of future moves (e.g., Southwest next spring is dropping Orlando-West Palm Beach service in order to shift aircraft to routes with higher demand), announcements of strategic intent (e.g., Western Pacific Airlines is considering operations at nearby Denver Airport), and announcements to boost stock prices or enhance the firm's reputation (e.g., Delta and its chairman, Ron Allen, on June 28, 1995, will be awarded the Anti-Defamation League's 1995 Torch of Liberty Award, given annually to an individual or company for outstanding contributions to the community).[12] Using structured content analysis, we identified competitive activities and instances of tough talk by reading 15,064 articles from *Aviation Daily*.

Lastly, we controlled for several other market characteristics that may also lead to higher entry likelihood. We controlled for *environmental uncertainty* that captures the volatility, unpredictability, and absence of a pattern in the environment (Dess & Beard, 1984; Keats & Hitt, 1988). Some may argue that incumbents' use of vague language is not a strategic choice to manage ambiguity but simply reflects a response to uncertainty in the environment. To test against this alternative explanation, we measured market uncertainty as the volatility of sales

[12] Threats of action are another type of tough talk announcement that prior studies considered (Ferrier, 1997). Because we were unable to identify any instances of threats of action by airlines in our sample of *Aviation Daily* articles, our measure of tough talk focuses on the other three types. We also noticed that in our sample, airlines rarely mention each other's names in their public announcements. We speculate that not mentioning competitors by name and the absence of explicit threats of action may both be because U.S. airlines are under regulatory scrutiny and consequently, they refrain from talking about or to each other in public to avoid accusations of antitrust violations.

revenue of all firms in the airline industry; this measurement used an approach first suggested by Dess and Beard (1984) that has subsequently been used in numerous studies (e.g., Cannella, Park, & Lee, 2008; Yang, Zheng, & Zaheer, 2014).[13] Additionally, one may argue that firms will be more reluctant to enter small markets with high density and circularity. To control for these possibilities, *market density* was measured as the total number of passengers on a route. *Market circularity* was measured as the ratio of the distance passengers actually traveled to the minimum distance between two endpoints. It equals 1 if it was a direct flight. *Market size* was measured using a gravity model.[14]

RESULTS

Table 1 presents the descriptive statistics and correlation matrix for all variables used to predict incumbents' use of vague language. Table 2 reports the results of OLS regression analysis for hypotheses 1 and 2. The unit of analysis is a firm year. The sample included 91 firm-year observations.

Hypotheses 1 and 2 predict that market profitability and the number of potential entrants will relate positively to the use of vague language by incumbent firms. As shown in Model 2 of Table 2, the coefficient of market profitability on incumbents' use of vague language was positive (coefficient = .117) and statistically significant ($p < .05$). Model 3 shows that the number of potential entrants also has a significant and positive effect on incumbents' use of vague language (coefficient = .014, $p < .05$). Thus, both hypotheses 1 and 2 are supported. In an

[13] In unreported models, we compared different measurements of market uncertainty that we calculated by using two other alternative data sources, the number of revenue passengers, which was obtained from the DOT, and total sales revenue, which was obtained from Compustat. Results were consistent using all three measures.

[14] The gravity model is a commonly used traffic forecasting model that states traffic between two cities is proportional to the total economic activities in the origin and destination cities and inversely proportional to the distance between them. Measuring market size based on such a gravity model not only takes into account the variations in route distance, population, and income levels of the two endpoint cities, but also bypasses any potential multicollinearity problem.

unreported model, we also tested the interaction between market profitability and number of potential entrants; we found a positive and significant relationship between the interaction term and incumbents' use of vague language (coefficient = .002, $p < .01$). As to economic significance, our results show that a one standard deviation increase in market profitability increases incumbents' use of vague language by 15% of a standard deviation of the vagueness variable. In addition, a one standard deviation increase in the number of potential entrants increases incumbents' use of vague language by 12% of the standard deviation of vagueness variable.[15] Notably, the inclusion of our predictors has increased the explanatory power of the model from 13.6% (Model 1, with only control variables) to 24.1% (Model 4, the full model).

Insert Table 1 & 2 about here

Hypothesis 3 proposed that potential entrants were less likely to enter a given market when incumbents increased the degree of vagueness in their annual reports. Table 3 contains the descriptive statistics and correlation matrix for variables used for the survival analysis. Table 4 reports the results of the survival analysis. Model 1 in Table 4 is our baseline model that reports the influence of control variables. Generally, our control variables were estimated as expected. For instance, it appears that the likelihood of entry is higher (a) when incumbents are larger, perform better, and have less cash flow; and (b) when potential entrants are larger, perform poorly, and have less cash flow. In terms of market characteristics, we found the likelihood of entry was higher in markets that had high density and circularity and low environmental uncertainty. In Model 2, we added incumbents' vagueness and found that the coefficient of

[15] In unreported models, we compared the results using OLS regression analysis at the firm-year level with the fixed-effects model at the market-year level. The results, which are available upon request from the first author, were highly consistent across the two levels of analysis.

vagueness was negative (coefficient = -2.329) and significant ($p < .01$). In likelihood ratio tests comparing the restricted Model 1 (only control variables) to Model 2 (adding vagueness), the chi-squared value for the test was 150.18 ($p < 0.0001$); this suggests that adding vague language as a predictor of market entry results in a statistically significant improvement in model fit.[16]

A key assumption of the Cox hazards model is that the hazard impact of the independent variables is independent of time (Box-Steffensmeier & Jones, 2004). We tested the hazards proportionality assumption with a test of Schoenfeld (1982) residuals. We found that our independent variable of interest, incumbent vagueness, exhibited no relationship with time. However, the global residual was correlated with time. To further check the use of the Cox hazards model, we estimated a discrete time hazard probit model in Model 4 and a complementary log-log model in Model 6.[17] Models 3 and 5 are the constrained models with only control variables. In models 4 and 6, we added our vagueness predictor and found a negative and significant relationship between incumbents' use of vagueness and competitors' market entry in both the probit and complementary log-log models (Model 4: coefficient = -.822; $p < .01$ and Model 6: coefficient = -1.90; $p < .01$). This is highly consistent with the estimates of Cox proportional hazards. Thus, Hypothesis 3 was supported. Moreover, the effect of vagueness on market entry was also economically significant. A one standard deviation increase in incumbents' use of vague language — the use of 59 additional vagueness words in an annual report while holding all other variables at their mean values — reduced the probability of market entry by 11.4%.

[16] In unreported models, we also tested Hypothesis 3 by using a composite measure of incumbent vagueness that is the mean of the vagueness level in corporate annual reports and press releases. The results were highly consistent with our original measure.

[17] When the dependent variable is considered a rare event with a large number of zeros, the complementary log-log model is preferred because it provides consistent estimates of the continuous time and proportional hazards parameters, regardless of the interval length or the size of the failure rate (Jenkins, 1995).

Insert Table 3 & 4 about here

Models 7 to through 9 of Table 4 present our results for hypotheses 4 and 5. These two hypotheses concern the moderating effect of average incumbent size and market concentration on the relationship between incumbents' use of vague language and potential entrants' likelihood of entry. We found that the interaction of average incumbent size and incumbent vagueness was negative and significant (coefficient = -0.929; $p < .01$). The interaction of market concentration and incumbent vagueness was also negative and significant (coefficient = -8.547; $p < .05$). These results confirm that both average incumbent size and market concentration are important contingencies governing the relationship between market entry and incumbents' use of vagueness. However, because the coefficients of interaction terms in nonlinear models (e.g., survival and probit) lack a straightforward interpretation (Hoetker, 2007; Zelner, 2009), we followed Zelner (2009) in assessing the interaction effects by using a simulation-based approach.[18] We graphed our interaction results in figures 1 and 2 to further aid interpretation. Figure 1 shows that increases in the size of incumbent firms amplifies the impact of incumbent vagueness on the likelihood that competitors will enter a market. Thus, Hypothesis 4 was supported. Figure 2 demonstrates a similar effect for market concentration. It shows that the negative relationship between incumbent vagueness on competitors' likelihood of entry was strengthened when the rate of market concentration increased, thus supporting Hypothesis 5.

Insert Figure 1 & 2 about here
---

[18] The simulation-based approach draws estimates from distributions corresponding to the mean, variance, and covariance of each coefficient and independent variable in models 7 and 8 of Table 4. By repeated sampling, we can estimate the mean effect of vague language on market entry conditioned on the size of incumbent firms and the degree of concentration in a market.

Robustness Tests

We made additional attempts to explore the robustness of our results in several ways. First, to account for potential endogeneity in our market entry model, we used an instrumental variable technique[19] (Bascle, 2008). We used the presence of a high-status general counsel (GC) in a firm as the instrument. We expected that the propensity of incumbent firms to use vague language in annual reports would decrease when a GC was on the top management team. The role of a GC as a "gatekeeper" in influencing the quality of firms' financial reports has long been recognized in the finance and accounting literature (Hopkins, Maydew, & Venkatachalam, 2014; Kwak, Ro, & Suk, 2012). Research has shown that GCs are compelled to closely monitor the accuracy of corporate disclosures and persuade management to refrain from language that might lessen the quality of disclosure.

Using data from the Executive Compensation database provided by Wharton Research Data Service, we measured the presence of a high-status GC in a firm by using a dummy variable equal to 1 if a GC was among the top five most highly compensated officers. We then counted the total number of GCs for all incumbent firms in a market to aggregate this variable to the market-year level so as to be consistent with the level of analysis for incumbent vagueness and market entry.[20] Table 5 reports the two-stage regression results. In the first-stage regression, we used the exogenous instrument (*general counsel*) to predict the endogenous variable (*incumbent vagueness*) to produce a predicted value of the endogenous variable. As expected, the variable

[19] An instrumental variable is a third variable that is correlated with the endogenous variable (e.g., firm vagueness) but uncorrelated with the omitted variables (e.g., firm strategic considerations) and the dependent variable (e.g., market entry by competitors). This approach is widely used in econometrics to obtain consistent parameter estimates when independent variables may be endogenous.

[20] The results also hold if we use the presence of a high-status GC measured at the firm-year level to predict firm vagueness.

general counsel had a negative and significant relationship with firms' propensity to use vague language (coefficient = -.006, $p<.01$). Both the Anderson-Rubin (AR) and Cragg-Donald Wald F statistic tests rejected the null of underidentification ($chi^2 = 60.01$, $p < .001$ and $chi^2 = 59.59$, $p < .001$ respectively), confirming the strength of this instrument. We then entered the predicted value of incumbent vagueness (*predicted incumbent vagueness*) into the second-stage model and found a negative and significant relationship between incumbent vagueness and market entry (coefficient: -1.197, $p<.01$). Results of the two-stage instrumental estimation again confirmed the robustness of our results for Hypothesis 3.

Second, precise language is theoretically the opposite of vague language. However, empirically measuring precise language is difficult. This is because the types of words and phrases that are clear and precise will vary significantly, depending what is being communicated and the relationship between the communicators. As an alternative, we used the Linguistic Inquiry Word Count (LIWC) text analysis to count the percentage of certainty language used in annual reports. Examples of words that convey certainty include *always*, *must*, *will*, and *highest*. We found a positive, but not statistically significant, relationship between the use of certainty language by incumbents and the likelihood of entry. We think it is promising for future research to use a better proxy to further explore the antecedents and consequences of precise language.[21]

Third, we explored the degree to which our results were driven by the amount of space incumbent firms devoted in their annual reports to discussions of future events. Prior research in psychology has shown that when discussing future events or events with which they have no direct experience, people are more likely to be vague about their topic (Trope & Liberman,

[21] We compared the results by using a composite measure of vagueness by taking the difference between incumbents' use of vague and certainty language. The results, which are available upon request from the first author, are highly consistent across these two measures. We chose the simpler measure for ease of interpretation.

2000). Some may argue that our measure of vagueness in annual reports may be correlated with how much space is devoted to discussing future events that are vague by nature, creating a spurious effect between language vagueness and entry likelihood. As was done in prior research (Nadkarni & Chen, 2014), we used the LIWC text analysis program to count the frequency of words in annual reports that denote the future tense (e.g., *will*, *may*, *might*, *going to*) and past tense (e.g., *had*, *did*, *was*, *were*). In total, the dictionary has 48 words that reflect a text's future focus and 145 words that reflect a text's past focus. We created the variable *incumbent future focus* by dividing the percentage of total words in annual reports devoted to the future by the percentage of total words devoted to a past focus. We found a negative relationship between the incumbents' future focus in communication and the rate of entry by competitors. However, this relationship was not statistically significant, and the result of our vagueness variable remains unchanged. This seems to suggest that the result of vagueness on entry is not entirely driven by the amount of space incumbents devote to discussing future activities.

Insert Table 6 about here

DISCUSSION

Over the last two decades, the competitive dynamics perspective has emerged as a research stream that specifically investigates interfirm rivalry, its antecedents, and outcomes. This approach has identified three behavioral drivers of a firm's competitive actions: awareness of the competitive landscape; motivation to act; and the capability to do so (Chen & Miller, 2012). Compared with attention to the motivation and capability components, the awareness component has received only marginal consideration. More importantly, prior research often equates attentiveness to rivals' strategies and actions with being able to interpret such

information, which is problematic for the reasons we discussed earlier. To better understand how awareness affects rivals' competitive actions, we decided to focus on the implication of interpretation in our analysis of rivals' entry decisions.

We found that an increase in incumbent firms' use of vague language in annual reports is associated with a lower likelihood of market entry by potential entrants. And the effect of vagueness (an interpretation-related variable) remained significant even after we controlled for a number of attention-related factors (i.e., variables that may lead to more attention from the potential entrants) such as a firm's size and performance, market overlap, market concentration, tough talk, and aggressiveness. This finding — coupled with the significant interaction effect we found between interpretation (captured by vague language use) and attention (captured by average incumbent size and market concentration) — seems to attest to the importance of considering interpretation in trying to explain rivals' competitive actions. Examining the antecedents of firms' use of vague language, we found that vague language is likelier to be used by incumbent firms in markets with higher profitability and a higher number of potential entrants. These findings align with prior research on competitive tension (Chen *et al.*, 2007), which has shown that high levels of competitive tension resulting from rivals' capability to contest focal firms' competitive positions increases focal firms' likelihood of conducting competitive actions.

By unpacking the effect of the awareness component of the AMC framework on interfirm rivalry, our research has special meaning for scholars of competitive dynamics because it reconnects this body of work to its theoretical roots or to the initial focus, which was organizational communication and information processing theory (Chen *et al.*, 1992; Smith & Grimm, 1991; Smith *et al.*, 1991). Our findings also have important implications for the

literature on language use in organizational research. Prior research has suggested that language can be used as a strategic tool to secure resources from important stakeholders (Lounsbury & Glynn, 2001); gain legitimacy when controversial events threaten a company's image (Elsbach, 1994); and align the interests of executives and shareholders (Wade, Porac, & Pollock, 1997). Our finding provides some evidence that language serves an important purpose in a competitive context as well.

Despite its merits, this study has its limitations that offer fruitful avenues for future research. First, our findings are based on firms in a single industry over a specific time period. Although this was a necessary tradeoff in our effort to measure entry in a fine-grained way, the results nevertheless may reflect some factors specific to the industry or time period. In turn, these characteristics may limit generalizability. Second, although we tried numerous ways to control for the impact of uncertainty in the environment because it is a critical alternative explanation for the effect of vagueness in communication, these are nonetheless proxies of the underlying construct of environment uncertainty. It is possible that future research may uncover different and more interesting results using more refined measures of environmental uncertainty. Third, this study relied on theoretical mechanisms that were assumed but not directly observed. We used vague language as a formative indicator of interpretation difficulty without observing interpretation directly. Future research could use direct measures (e.g., surveys or cognitive maps) to develop indicators that reflect the degree of interpretation difficulty. The measures would allow them to unpack more explicitly the relationship(s) between language use, interpretation, and behavior in interfirm rivalry.

Fourth, firms communicate with the public through multiple channels, including annual report, press releases, earnings conference calls, and conference presentations. Our reliance on

annual reports will limit the generalizability of our findings to other types of corporate communication. We tried to enhance the robustness of our findings by showing that the effect of vagueness on market entry holds even if we measure vagueness by using press releases, which are an alternative source of firm communication. However, we found that vagueness in annual reports and press releases affect competitors' likelihood of entry both negatively and significantly. This suggests that the two types of vagueness may be formative factors in contributing to vagueness in communication. Hence, one promising direction for future research is to delve into the relationships between vagueness in different communication channels. Moreover, although our use of an automated text analysis approach comes with its strengths (e.g., transparency and replicability), it also comes with its weaknesses. It limits our ability to identify within-narrative variations in vagueness in a single document across various topics. Future research that takes a qualitative approach to develop more fine-grained measures of language that allow identification of themes in firms' language choices across various contexts within the same document will certainly complement our approach.

Fifth, as the first attempt to explore empirically the use of language in competitive interaction, it was critical that we devote adequate attention to the relationship between vague language use and rivals' market entry decisions. As a result, we were unable to fully explore the antecedents of vague language use. In fact, several attributes of a firm's competitive repertoire may also affect perceived threats from rivals and therefore affect their motivation to use vague language (e.g., Ferrier, 2001; Miller & Chen, 1996). For instance, we would expect that a competitor will be less likely to use vague language when its competitive repertoires are different from the industry norm and are complex and unpredictable. In a similar vein, at a competitive dyad level, we expect that the degree of resource similarity and market commonality between a

focal firm and a given rival may also affect the focal firm's use of vague language because of the tension the focal firm perceives from the rival (Chen *et al.*, 2007). Constrained by the structure of our data and the scope of our study, we were unable to test these hypotheses, and we encourage future researchers to explore these important opportunities. Moreover, McGrath, Chen, MacMillan (1998) once suggested three resource diversion stratagems for multimarket rivals: the thrust, feint, and gambit. These authors argue that information asymmetry increases the strategic value of threats, feints, and gambits. In fact, we propose that language can be used together with these stratagems to further increase information asymmetry. As two different ways to create ambiguity, will the use of vague language substitute for or complement the use of resource diversion stratagems? Are there any market- or rival-specific characteristics to make the use of language (or resource diversion stratagems) more effective in deterring rivalry? These questions suggest interesting directions for future research.

Future research can also consider extending our work in two important ways. First, we think that competitive dynamics research can be advanced through integration with other research streams. For instance, it might be useful to explore how language can shape or be shaped by the mental maps (Reger & Palmer, 1996), cognitive frameworks (Marcel, Barr, & Duhaime, 2011), identity domains (Livengood & Reger, 2010), and sensemaking processes (Weick, 1995) of managers and later affect their strategic decisions in response to specific rivals. In addition, the literature on framing strategic issues (e.g., Dutton & Jackson, 1987b; Fiss & Zajac, 2006; Rhee & Fiss, 2014) can also be useful in exploring the power of words in competition. Strategically framing a firm's competitive actions will not only gain legitimacy from its important stakeholders but also shape their perceptions of rivals and coordinate their actions in the firm's best interest. Second, in addition to vagueness, we believe that many other

language characteristics may have implications for a firm's competitive behavior as well. These include aggressiveness, tenor, spontaneity, and consistency of language. For instance, prior research has found that the fraction of negative words in firm-specific news stories forecasts low firm earnings (Tetlock *et al.*, 2008). It has also shown that the degree to which the presidents of the Federal Reserve articulate their assumptions positively affects market volatility (Harmon, 2015). It would be an important extension of our study to investigate the effect of these other language characteristics in a competitive context.

Our research has important managerial implications. Communication is often a critical part of a firm's strategy. Thus, how to strategically use language and properly interpret rivals' use of language have become essential skills for managers to develop. Sun Tzu had a famous saying: "The supreme art of war is to subdue the enemy without fighting." Although the use of aggressive language to clearly signal a firm's intent to attack or respond to attack has received more scholarly attention in competitive dynamics research (Porter, 1980), our study demonstrates the power of vague language in reducing rivals' likelihood of market entry. This finding has implications for both the users and interpreters of language. For those who analyze their competitors' choice of language, i.e., the interpreters, we provide evidence that they should cautiously consider subtle clues in competitors' verbal messages, paying particular attention to both the presence of communication as well as to the lack of clear communication. It is also important that managers learn to develop a systematic approach to competitive analysis and competitive intelligence to ensure they will not be fooled by rivals' strategically massaged communication. For those whose behavior is being analyzed, i.e., the users of language, this study suggests they should be aware that competitors are sophisticated users of information and may make inferences from what they choose to communicate and what they choose not to. This

is especially important when firms' public communication is accessible simultaneously by multiple audiences with divergent interests.

REFERENCES

Adolphs, S., Atkins, S., & Harvey, K. 2007. Caught between professional requirements and interpersonal needs: Vague language in healthcare contexts. In J. Cutting (Ed.), ***Vague Language Explored***: 62-78. London: Palgrave Macmillan UK.

Anand, J., Mesquita, L. F., & Vassolo, R. S. 2009. The dynamics of multimarket competition in exploration and exploitation activities. ***Academy of Management Journal***, 52(4): 802-821.

Bain, J. S. 1956. ***Barriers to New Competition: Their Character and Consequences in Manufacturing Industries*** (1st ed.). Boston: Harvard University Press.

Barney, J. 1991. Firm resources and sustained competitive advantage. ***Journal of Management***, 17(1): 99-120.

Barr, P. S., Stimpert, J. L., & Huff, A. S. 1992. Cognitive change, strategic action, and organizational renewal. ***Strategic Management Journal***, 13(S1): 15-36.

Bascle, G. 2008. Controlling for endogeneity with instrumental variables in strategic management research. ***Strategic Organization***, 6(3): 285-327.

Basdeo, D. K., Smith, K. G., Grimm, C. M., Rindova, V. P., & Derfus, P. J. 2006. The impact of market actions on firm reputation. ***Strategic Management Journal***, 27(12): 1205-1219.

Baum, J. A. C. & Korn, H. J. 1996. Competitive dynamics of interfirm rivalry. ***Academy of Management Journal***, 39(2): 255-255.

Baum, R. & Wally, S. 2003. Strategic decision speed and firm performance. ***Strategic Management Journal***, 24(11): 1107-1129.

Borenstein, S. 1991. The dominant-firm advantage in multiproduct industries: Evidence from the US airlines. ***Quarterly Journal of Economics***, 106(4): 1237-1266.

Bourgeois, L. J. & Eisenhardt, K. M. 1988. Strategic decision processes in high velocity environments: Four cases in the microcomputer industry. ***Management Science***, 34(7): 816-835.

Box-Steffensmeier, J. M. & Jones, B. S. 2004. ***Event History Modeling: A Guide for Social Scientists***. New York: Cambridge University Press.

Bunch, D. S. & Smiley, R. 1992. Who deters entry? Evidence on the use of strategic entry deterrents. ***Review of Economics and Statistics***, 74(3): 509-521.

Burns, L. R. & Wholey, D. R. 1993. Adoption and abandonment of matrix management programs: Effects of organizational characteristics and interorganizational networks. ***Academy of Management Journal***, 36(1): 106-138.

Cannella, A. A., Park, J. H., & Lee, H. U. 2008. Top management team functional background diversity and firm performance: Examining the roles of team member colocation and environmental uncertainty. ***Academy of Management Journal***, 51(4): 768-784.

Caves, R. E. & Porter, M. E. 1977. From entry barriers to mobility barriers: Conjectural decisions and contrived deterrence to new competition. ***Quarterly Journal of Economics***, 91(2): 241-261.

Caves, R. E. 1984. Economic analysis and the quest for competitive advantage. ***American Economic Review***, 74(2): 127-132.

Channell, J. 1994. ***Vague Language***. Oxford: Oxford University Press.

Charan, R. 2006. Conquering a culture of indecision. ***Harvard Business Review***, 84(1): 108-117.

Chen, M. J., Smith, K. G., & Grimm, C. M. 1992. Action characteristics as predictors of competitive responses. ***Management Science***, 38(3): 439-455.

Chen, M. J. & Miller, D. 1994. Competitive attack, retaliation and performance: An expectancy-valence framework. ***Strategic Management Journal***, 15(2): 85-102.

Chen, M. J. & Hambrick, D. C. 1995. Speed, stealth, and selective attack: How small firms differ from large firms in competitive behavior. ***Academy of Management Journal***, 38(2): 453-482.

Chen, M. J. 1996. Competitor analysis and interfirm rivalry: Toward a theoretical integration. ***Academy of Management Review***, 21(1): 100-134.

Chen, M. J., Su, K., & Tsai, W. 2007. Competitive tension: The awareness-motivation-capability perspective. ***Academy of Management Journal***, 50(1): 101-118.

Chen, M. J. & Miller, D. 2012. Competitive dynamics: themes, trends, and a prospective research platform. ***Academy of Management Annals***, 6(1): 135-210.

Cotterill, J. 2007. 'I think he was kind of shouting or something': Uses and abuses of vagueness in the British courtroom. In J. Cutting (Ed.), ***Vague Language Explored***: 97-114. London: Palgrave Macmillan.

Cox, D. R. 1972. Regression Models and Life-Tables. ***Journal of the Royal Statistical Society. Series B (Methodological)***, 34(2): 187-220.

Daft, R. L. & Weick, K. E. 1984. Toward a model of organizations as interpretation systems. ***Academy of Management Review***, 9(2): 284-295.

Darrough, M. N. & Stoughton, N. M. 1990. Financial disclosure policy in an entry game. ***Journal of Accounting and Economics***, 12(1): 219-243.

Denis, J.-L., Dompierre, G., Langley, A., & Rouleau, L. 2011. Escalating indecision: Between reification and strategic ambiguity. ***Organization Science***, 22(1): 225-244.

Derfus, P. J., Maggitti, P. G., Grimm, C. M., & Smith, K. G. 2008. The red queen effect: Competitive actions and firm performance. ***Academy of Management Journal***, 51(1): 61-80.

Dess, G. G. & Beard, D. W. 1984. Dimensions of organizational task environments. ***Administrative Science Quarterly***, 29(1): 52-73.

Dixit, A. K. & Pindyck, R. S. 1994. ***Investment Under Uncertainty***: Princeton University Press.

Dutton, J. E. & Jackson, S. E. 1987a. Categorizing strategic issues: Links to organizational action. ***Academy of Management Review***, 12(1): 76-90.

Dutton, J. E. & Jackson, S. E. 1987b. Categorizing Strategic Issues - Links to Organizational Action. ***Academy of Management Review***, 12(1): 76-90.

Eisenberg, E. M. 1984. Ambiguity as strategy in organizational communication. ***Communication Monographs***, 51(3): 227-242.

Elsbach, K. D. 1994. Managing organizational legitimacy in the California cattle industry: The construction and effectiveness of verbal accounts. ***Administrative Science Quarterly***, 39(1): 57-88.

Ferrier, W. J. 1997. Tough talk and market leaders: The role of overt signaling and reputation building behaviors in sustaining industry dominance. ***Corporate Reputation Review***, 1(2): 98-103.

Ferrier, W. J. 2001. Navigating the competitive landscape: The drivers and consequences of competitive aggressiveness. ***Academy of Management Journal***, 44(4): 858-877.

Ferrier, W. J., Fhionnlaoich, C. M., Smith, K. G., & Grimm, C. M. 2002. The impact of performance distress on aggressive competitive behavior: A reconciliation of conflicting views. ***Managerial & Decision Economics***, 23(4-5): 301-316.

Fiss, P. C. & Zajac, E. J. 2006. The symbolic management of strategic change: Sensegiving via framing and decoupling. ***Academy of Management Journal***, 49(6): 1173-1193.

Folta, T. B., Johnson, D. R., & O'Brien, J. 2006. Uncertainty, irreversibility, and the likelihood of entry: An empirical assessment of the option to defer. ***Journal of Economic Behavior & Organization***, 61(3): 432-452.

Fombrun, C. & Shanley, M. 1990. What's in a name? Reputation building and corporate strategy. ***Academy of Management Journal***, 33(2): 233-258.

Ford, J. M., Stetz, T. A., Bott, M. M., & O'Leary, B. S. 2000. Automated content analysis of multiple-choice test item banks. ***Social Science Computer Review***, 18(3): 258-271.

Gao, H., Yu, T. Y., & Cannella, A. A. 2016. The use of public language in strategy: A multidisciplinary review and research agenda. ***Journal of Management***, 42(1): 21-54.

Geroski, P. A. 1995. What do we know about entry? ***International Journal of Industrial Organization***, 13(4): 421.

Gimeno, J. & Woo, C. Y. 1996. Hypercompetition in a multimarket environment: The role of strategic similarity and multimarket contact in competitive de-escalation. ***Organization Science***, 7(3): 322-341.

Gimeno, J. & Woo, C. Y. 1999. Multimarket contact, economies of scope, and firm performance. ***Academy of Management Journal***, 42(3): 239-259.

Goolsbee, A. & Syverson, C. 2008. How do incumbents respond to the threat of entry? Evidence from the major airlines. ***Quarterly Journal of Economics***, 123(4): 1611-1633.

Harmon, D. 2015. Federal reserve speech structure and market uncertainty, ***Working Paper***: University of Southern California.

Haveman, H. A. 1993. Follow the leader: Mimetic isomorphism and entry into new markets. ***Administrative Science Quarterly***, 38(4): 593-627.

Heil, O. & Robertson, T. S. 1991. Toward a theory of competitive market signaling: A research agenda. ***Strategic Management Journal***, 12(6): 403-418.

Hiller, J. H., Marcotte, D. R., & Martin, T. 1969. Opinionation, vagueness, and specificity-distinctions: Essay traits measured by computer. ***American Educational Research Journal***, 6(2): 271-286.

Hoetker, G. 2007. The use of logit and probit models in strategic management research: Critical issues. ***Strategic Management Journal***, 28(4): 331.

Hogenraad, R. L. & Garagozov, R. R. 2014. Textual fingerprints of risk of war. ***Literary and Linguistic Computing***, 29(1): 41-55.

Hopkins, J. J., Maydew, E. L., & Venkatachalam, M. 2014. Corporate general counsel and financial reporting quality. ***Management Science***, 61(1): 129-145.

Hyland, K. 1996. Writing without conviction? Hedging in science research articles. ***Applied Linguistics***, 17(4): 433-454.

Jenkins, S. P. 1995. Easy estimation methods for discrete-time duration models. ***Oxford Bulletin of Economics and Statistics***, 57(1): 129-138.

Kaplan, S. 2008. Framing contests: Strategy making under uncertainty. ***Organization Science***, 19(5): 729-752.

Keats, B. W. & Hitt, M. A. 1988. A causal model of linkages among environmental dimensions, macro organizational characteristics, and performance. ***Academy of Management Journal***, 31(3): 570-598.

Kiesler, S. & Sproull, L. 1982. Managerial response to changing environments: Perspectives on problem sensing from social cognition. ***Administrative Science Quarterly***, 27(4): 548-570.

Koester, A. 2007. About twelve thousand or so': Vagueness in North American and UK offices. In J. Cutting (Ed.), ***Vague Language Explored***: 40-61. London: Palgrave Macmillan.

Krippendorff, K. 2004. Reliability in content analysis some common misconceptions and recommendations. ***Human Communication Research***, 30(3): 411-433.

Kwak, B., Ro, B. T., & Suk, I. 2012. The composition of top management with general counsel and voluntary information disclosure. ***Journal of Accounting and Economics***, 54(1): 19-41.

Lakoff, G. & Johnson, M. 1980. ***Metaphors We Live By***. Chicago: University of Chicago Press.

Liu, K. & Tree, J. E. F. 2012. Hedges enhance memory but inhibit retelling. ***Psychonomic Bulletin & Review***, 19(5): 892-898.

Livengood, R. S. & Reger, R. K. 2010. That's our turf! Identity domains and competitive dynamics. ***Academy of Management Review***, 35(1): 48-66.

Lounsbury, M. & Glynn, M. A. 2001. Cultural entrepreneurship: Stories, legitimacy, and the acquisition of resources. ***Strategic Management Journal***, 22(6-7): 545-564.

Marcel, J. J., Barr, P. S., & Duhaime, I. M. 2011. The Influence of Executive Cognition on Competitive Dynamics. ***Strategic Management Journal***, 32(2): 115-138.

Markman, G. D., Gianiodis, P. T., & Buchholtz, A. K. 2009. Factor-market rivalry. ***Academy of Management Review***, 34(3): 423-441.

Martens, M. L., Jennings, J. E., & Jennings, P. D. 2007. Do the stories they tell get them the money they need? The role of entrepreneurial narratives in resource acquisition. ***Academy of Management Journal***, 50(5): 1107-1132.

Masson, R. T. & Shaanan, J. 1982. Stochastic-dynamic limiting pricing: An empirical test. ***Review of Economics and Statistics***, 64(3): 413-422.

McGrath, R. G., Chen, M. J., & MacMillan, I. C. 1998. Multimarket maneuvering in uncertain spheres of influence: Resource diversion strategies. ***Academy of Management Review***, 23(4): 724-740.

Miller, D. & Chen, M. J. 1994. Sources and consequences of competitive inertia: A study of the US airline industry. ***Administrative Science Quarterly***, 39(1): 1-23.

Miller, D. & Chen, M. J. 1996. Nonconformity in competitive repertoires: A sociological view of markets. ***Social Forces***, 74(4): 1209-1234.

Moore, M. C. 1992. Signals and choices in a competitive interaction: The role of moves and messages. ***Management Science***, 38(4): 483-500.

Nadkarni, S. & Chen, J. H. 2014. Bridging yesterday, today, and tomorrow: CEO temporal focus, environmental dynamism, and rate of new product introduction. ***Academy of Management Journal***, 57(6): 1810-1833.

Ndofor, H. A., Sirmon, D. G., & He, X. M. 2011. Firm resources, competitive actions and performance: Investigating a mediated model with evidence from the in-vitro diagnostics industry. ***Strategic Management Journal***, 32(6): 640-657.

Peirce, C. S. 1902. Vagueness. In M. Baldwin (Ed.), ***Dictionary of Philosophy and Psychology II***. London: Macmillan.

Peteraf, M. A. & Bergen, M. E. 2003. Scanning dynamic competitive landscapes: A market-based and resource-based framework. ***Strategic Management Journal***, 24(10): 1027-1041.

Petkova, A. P., Rindova, V. P., & Gupta, A. K. 2013. No news is bad news: Sensegiving activities, media attention, and venture capital funding of new technology organizations. ***Organization Science***, 24(3): 865-888.

Porter, M. E. 1980. ***Competitive Strategies: Techniques for Analyzing Industries and Competitors***. New York: The Free Press.

Reger, R. K. & Palmer, T. B. 1996. Managerial categorization of competitors: Using old maps to navigate new environments. ***Organization Science***, 7(1): 22-39.

Rhee, E. Y. & Fiss, P. C. 2014. Framing controversial actions: Regulatory focus, source credibility, and stock market reaction to poison pill adoption. ***Academy of Management Journal***, 57(6): 1734-1758.

Rindova, V. P., Becerra, M., & Contardo, I. 2004. Enacting competitive wars: Competitive activity, language games, and market consequences. ***Academy of Management Review***, 29(4): 670-686.

Russell, B. 1923. Vagueness. ***Australasian Journal of Psychology and Philosophy***, 1(2): 84-92.

Ruzaitė, J. 2007. Vague references to quantities as a face-saving strategy in teacher-student interaction. ***Pragmatics***, 3(1): 157-178.

Sabet, P. G. P. & Zhang, G. Q. 2015. ***Communicating Through Vague Language: A Comparative Study of L1 and L2 Speakers***. London: Palgrave Macmillan.

Schoenfeld, D. 1982. Partial residuals for the proportional hazards regression model. ***Biometrika***, 69(1): 239-241.

SEC. 1977. Report of the advisory committee on corporate disclosure to the Securities and Exchange Commission, ***House Committee on Interstate and Foreign Commerce***, vol. 2. U.S.: US Government Printing Office.

Sillince, J. & Mueller, F. 2007. Switching strategic perspective: The reframing of accounts of responsibility. ***Organization Studies***, 28(2): 155-176.

Smith, K. G. & Grimm, C. M. 1991. A communication-information model of competitive response timing. ***Journal of Management***, 17(1): 5-23.

Smith, K. G., Grimm, C. M., Gannon, M. J., & Chen, M. J. 1991. Organizational information processing, competitive responses, and performance in the US domestic airline industry. ***Academy of Management Journal***, 34(1): 60-85.

Sonenshein, S. 2010. We're changing-Or are we? Untangling the role of progressive, regressive, and stability narratives during strategic change implementation. ***Academy of Management Journal***, 53(3): 477-512.

Stigler, G. J. 1961. The economics of information. ***Journal of Political Economy***: 213-225.

Tetlock, P. C., Saar-Tsechansky, M., & Macskassy, S. 2008. More than words: Quantifying language to measure firms' fundamentals. ***Journal of Finance***, 63(3): 1437-1467.

Thomas, J. B., Clark, S. M., & Gioia, D. A. 1993. Strategic sensemaking and organizational performance: Linkages among scanning, interpretation, action, and outcomes. ***Academy of Management Journal***, 36(2): 239-270.

Trope, Y. & Liberman, N. 2000. Temporal construal and time-dependent changes in preference. ***Journal of Personality and Social Psychology***, 79(6): 876-889.

Tsai, W. M.-H., MacMillan, I. C., & Low, M. B. 1991. Effects of strategy and environment on corporate venture success in industrial markets. ***Journal of Business Venturing***, 6(1): 9-28.

Verrecchia, R. E. 1983. Discretionary disclosure. ***Journal of Accounting & Economics***, 5(3): 179-194.

Wade, J. B., Porac, J. F., & Pollock, T. G. 1997. Worth, words, and the justification of executive pay. ***Journal of Organizational Behavior***, 18(Special issue: Computers can read as well as count: Computer-aided text analysis in organizational research): 641-664.

Weick, K. E. 1995. ***Sensemaking in Organizations***. Thousand Oaks: Sage Publications.

Wernerfelt, B. 1984. A resource-based view of the firm. ***Strategic Management Journal***, 5(2): 171-180.

Wilson, S. M. & Wineburg, S. S. 1993. Wrinkles in time and place: Using performance assessments to understand the knowledge of history teachers. ***American Educational Research Journal***, 30(4): 729-769.

Woo, C. & Cooper, A. C. 1981. Strategies of effective low share businesses. ***Strategic Management Journal***, 2(3): 301-318.

Yang, H., Zheng, Y., & Zaheer, A. 2014. Asymmetric learning capabilities and stock market returns. ***Academy of Management Journal***, 58(2): 356-374.

Yu, T. & Cannella, A. A. 2007. Rivalry between multinational enterprises: An event history approach. ***Academy of Management Journal***, 50(3): 665-686.

Yu, T., Subramaniam, M., & Cannella, A. A. 2009. Rivalry deterrence in international markets: Contingencies governing the mutual forbearance hypothesis. ***Academy of Management Journal***, 52(1): 127-147.

Zelner, B. A. 2009. Using simulation to interpret results from logit, probit, and other nonlinear models. ***Strategic Management Journal***, 30(12): 1335-1348.

Zhang, G. 2011. Elasticity of vague language. ***Intercultural Pragmatics***, 8(4): 571-599.

Table 1 Descriptive Statistics and Correlations for Antecedent Models (Hypotheses 1-2)

		Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9
1	Firm vagueness	1.36	0.47	0.00	2.39									
2	Market profitability	0.70	0.20	0.36	1.97	-0.04								
						(0.74)								
3	Potential entrants	4.13	1.17	1.55	7.32	0.42	-0.19							
						(0.00)	(0.07)							
4	Competitive activities	0.12	0.98	-1.00	7.00	-0.16	0.17	-0.06						
						(0.23)	(0.11)	(0.58)						
5	Firm size (thousands)	34.49	34.39	0.54	113.90	-0.08	0.09	-0.31	0.11					
						(0.55)	(0.42)	(0.00)	(0.31)					
6	Firm market share	0.43	0.15	0.07	0.78	-0.19	0.45	0.11	0.10	0.25				
						(0.16)	(0.00)	(0.28)	(0.36)	(0.02)				
7	Firm performance	0.01	0.16	-1.14	0.26	0.00	0.21	-0.06	0.00	0.13	0.27			
						(1.00)	(0.04)	(0.55)	(1.00)	(0.21)	(0.01)			
8	Firm cash flow	0.02	0.07	-0.20	0.36	-0.02	0.05	0.02	0.01	-0.19	-0.08	0.15		
						(0.85)	(0.63)	(0.85)	(0.90)	(0.07)	(0.44)	(0.16)		
9	Passenger load factor	0.68	0.10	0.32	0.84	-0.09	-0.34	-0.12	0.11	0.23	-0.04	0.03	-0.05	
						(0.52)	(0.00)	(0.27)	(0.29)	(0.03)	(0.70)	(0.77)	(0.64)	
10	Operational efficiency	-0.90	0.08	-1.29	-0.76	0.31	0.14	0.15	0.01	0.19	0.22	0.28	-0.02	-0.01
						(0.02)	(0.18)	(0.16)	(0.92)	(0.07)	(0.04)	(0.00)	(0.88)	(0.92)

N = 91 observations, 18 firms, 7 years

Table 2 Antecedents for Firm Vagueness

	Firm Vagueness			
	(1)	(2)	(3)	(4)
Hypothesized effects				
H1: Market profitability		0.117*		0.189*
		(0.038)		(0.081)
H2: Presence of potential entrants			0.014*	0.025**
			(0.006)	(0.009)
Controls				
Firm size	-0.033	-0.042+	-0.017	-0.019
	(0.031)	(0.020)	(0.020)	(0.030)
Firm market share	-0.241*	-0.283+	-0.273	-0.367**
	(0.097)	(0.134)	(0.150)	(0.083)
Firm performance	0.023	0.025	0.023	0.026
	(0.019)	(0.014)	(0.014)	(0.017)
Firm cash flow	-0.113	-0.138	-0.127	-0.179
	(0.109)	(0.105)	(0.103)	(0.108)
Passenger load factor	-0.159	-0.076	-0.138	0.013
	(0.106)	(0.080)	(0.086)	(0.131)
Operational efficiency	0.168	0.144	0.138	0.074
	(0.181)	(0.169)	(0.174)	(0.134)
Constant	0.708**	0.571*	0.618*	0.323
	(0.204)	(0.224)	(0.256)	(0.225)
Observations	91	91	91	91
R-squared	0.136	0.174	0.161	0.241

Robust standard errors in parentheses
** p<0.01, * p<0.05, + p<0.1

Table 3 Descriptive Statistics and Correlations for Market Entry Models (Hypotheses 3-5)

		Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Market entry	0.04	0.19	0.00	1.00																	
2	Incumbent vagueness	1.44	0.18	0.00	2.24	-0.04																
						(0.00)																
3	Average incumbent size	4.03	0.45	0.71	4.74	0.06	0.03															
						(0.00)	(0.00)															
4	Incumbent performance	1.00	0.12	0.73	3.32	-0.01	0.12	-0.36														
						(0.00)	(0.00)	(0.00)														
5	Incumbent cash flow	0.00	0.02	-0.20	0.18	-0.01	0.15	-0.17	-0.03													
						(0.00)	(0.00)	(0.00)	(0.00)													
6	Incumbent load factor	0.68	0.08	0.14	0.93	0.04	-0.10	0.12	-0.09	-0.10												
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)												
7	Incumbent operational efficiency	-0.19	0.10	-2.30	-0.02	0.01	0.08	0.56	-0.13	-0.09	-0.05											
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)											
8	Incumbent competitive activities	0.10	0.38	-1.00	4.47	0.01	-0.12	-0.01	-0.01	-0.15	0.09	-0.04										
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)										
9	Incumbent tough talks	0.08	1.05	-1.00	6.00	0.01	0.07	-0.01	0.13	0.11	0.03	-0.02	0.35									
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)									
10	Entrant size	3.65	0.94	0.32	4.74	0.02	0.01	-0.04	-0.06	-0.03	-0.07	0.02	0.03	0.00								
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.95)								
11	Entrant performance	0.02	0.08	-1.27	0.26	-0.02	-0.05	-0.02	0.03	-0.05	0.07	-0.01	0.02	-0.00	0.13							
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.50)	(0.00)							
12	Entrant cash flow	0.01	0.05	-0.31	0.57	-0.01	0.14	-0.01	0.03	0.02	-0.02	-0.02	-0.09	-0.07	-0.25	0.19						
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)						
13	Market overlap	477.49	252.66	0.00	1291.00	0.03	0.15	0.27	-0.11	-0.05	-0.06	0.10	-0.05	-0.04	0.69	-0.09	-0.12					
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)					
14	Environmental uncertainty	0.52	0.18	0.30	2.57	-0.01	0.34	0.07	-0.04	0.14	-0.25	0.05	-0.28	-0.51	-0.00	-0.20	0.17	0.09				
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.03)	(0.00)	(0.00)	(0.00)				
15	Market density	4.53	10.80	0.09	196.26	-0.02	-0.06	-0.13	0.02	0.06	0.04	-0.09	0.00	0.01	-0.25	-0.05	0.04	-0.30	-0.03			
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)			
16	Market concentration	0.46	0.21	0.00	1.00	-0.10	0.14	-0.13	0.03	-0.03	-0.19	0.04	-0.08	-0.09	0.16	-0.02	-0.03	0.19	0.02	-0.07		
						(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		
17	Market circularity	1.09	0.15	1.00	3.64	-0.00	-0.01	-0.02	0.01	-0.00	0.01	-0.03	0.06	0.02	0.01	0.00	-0.01	-0.01	-0.03	-0.01	-0.06	
						(0.75)	(0.00)	(0.00)	(0.00)	(0.46)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.13)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
18	Market size	175.93	687.35	0.30	15897.89	-0.04	0.00	-0.10	0.03	0.01	-0.27	0.01	0.00	-0.01	-0.01	-0.01	-0.01	-0.06	-0.02	0.22	0.14	-0.05
						(0.00)	(0.23)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.66)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Table 4 The Impact of Vagueness and Its Interaction with Incumbent Size and Market Concentration on Market Entry

		Cox Model	Probit Model	Complementary Log-log model			Cox Models
	(1)	(2)	(3)	(4)	(7)	(8)	(9)
Hypothesized effects							
H3: Incumbent vagueness		-2.329**	-0.822**	-1.900**	1.526	6.462**	3.120
		(0.189)	(0.079)	(0.185)	(1.292)	(2.360)	(2.343)
H4: Vagueness*Average incumbent size					-0.929**		-0.663**
					(0.290)		(0.099)
H5: Vagueness*Market concentration						-8.547*	-8.497*
						(4.086)	(3.909)
Average incumbent size	0.796**	0.729**	0.322**	0.741**	0.608**	0.007	0.473**
	(0.055)	(0.055)	(0.025)	(0.059)	(0.174)	(0.052)	(0.089)
Incumbent performance	2.234**	1.668*	-0.674*	-1.788*	0.878	1.269	0.663
	(0.734)	(0.725)	(0.287)	(0.719)	(1.816)	(1.893)	(1.779)
Incumbent cash flow	-2.978**	-3.635**	-1.131**	-2.659**	-4.614**	-4.146**	-4.493**
	(0.786)	(0.806)	(0.337)	(0.819)	(1.560)	(1.522)	(1.532)
Incumbent load factor	1.151**	1.252**	0.471**	0.902**	1.508**	1.495**	1.550**
	(0.222)	(0.225)	(0.103)	(0.255)	(0.556)	(0.557)	(0.554)
Incumbent operational efficiency	-1.567**	-1.170**	-0.562**	-1.101**	0.902*	0.704	0.942*
	(0.247)	(0.260)	(0.110)	(0.282)	(0.460)	(0.447)	(0.462)
Incumbent competitive activities	-0.113*	-0.172**	-0.152**	-0.340**	-0.199+	-0.127	-0.221+
	(0.053)	(0.053)	(0.023)	(0.054)	(0.116)	(0.122)	(0.116)
Incumbent tough talk	-0.194**	-0.103**	0.018*	0.040*	-0.064	-0.123*	-0.059
	(0.020)	(0.021)	(0.008)	(0.017)	(0.054)	(0.057)	(0.053)
Entrant size	-0.069+	-0.106**	-0.048**	-0.143**	-0.216*	-0.215*	-0.216*
	(0.037)	(0.037)	(0.017)	(0.040)	(0.095)	(0.095)	(0.095)
Entrant performance	-1.221**	-1.146**	-0.665**	-1.534**	-0.927	-0.832	-0.961
	(0.222)	(0.226)	(0.107)	(0.254)	(0.655)	(0.672)	(0.650)
Entrant cash flow	1.739**	1.879**	0.904**	2.272**	1.718	1.452	1.738
	(0.346)	(0.345)	(0.155)	(0.369)	(1.259)	(1.300)	(1.258)
Market overlap	0.003**	0.003**	0.001**	0.003**	0.004**	0.004**	0.004**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Market overlap squared	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Environmental uncertainty	-1.297**	-0.665**	-0.018	-0.136	-0.500	-1.015**	-0.521+
	(0.134)	(0.144)	(0.056)	(0.126)	(0.310)	(0.314)	(0.312)
Market density	0.003	0.003+	-0.000	0.001	0.004	0.003	0.004
	(0.002)	(0.002)	(0.001)	(0.002)	(0.006)	(0.006)	(0.006)
Market concentration	-2.171**	-1.997**	-0.803**	-1.872**	-1.999**	-1.630**	-1.414**
	(0.084)	(0.085)	(0.041)	(0.106)	(0.235)	(0.341)	(0.337)
Market circularity	-0.132	-0.149	-0.091*	-0.241*	-0.193	-0.198	-0.173
	(0.097)	(0.098)	(0.042)	(0.099)	(0.245)	(0.245)	(0.245)
Market size	-0.001**	-0.001**	-0.000**	-0.001**	-0.001**	-0.001**	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant			-2.843**	-5.443**			
			(0.161)	(0.394)			
Log-likelihood test		150.18***	105.43***	100.32***	29.85***	20.50***	215.26***
Observations	149,988	149,988	149,988	149,988	149,988	149,988	149,988

Standard errors in parentheses
** p<0.01, * p<0.05, + p<0.1

Figure 1
Moderating Effect of Incumbent Size

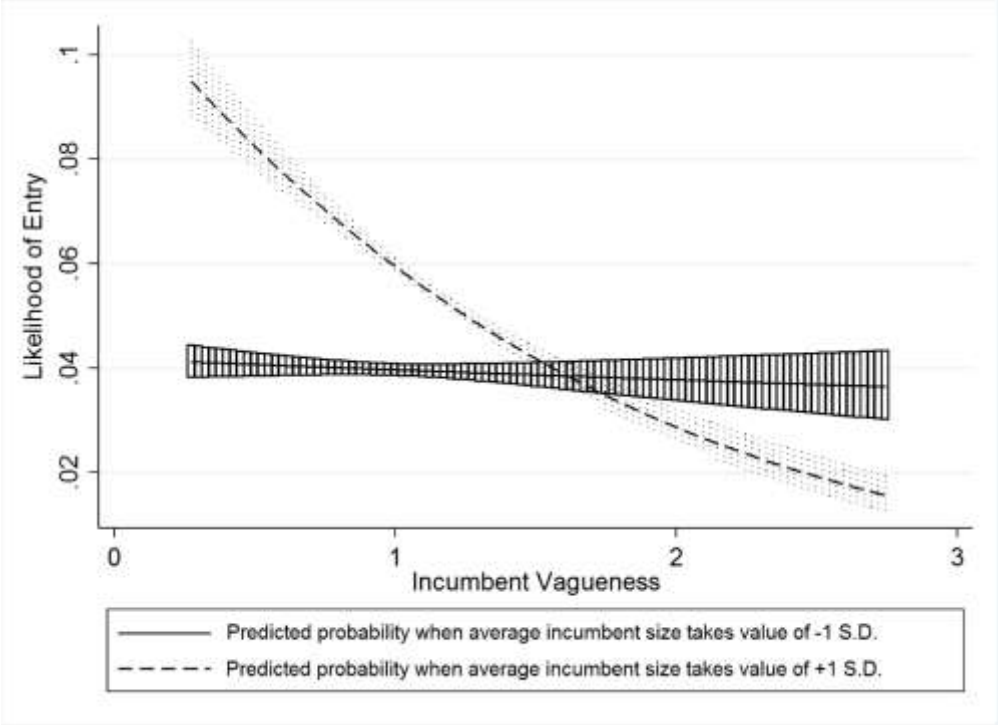

Figure 2
Moderating Effect of Market Concentration

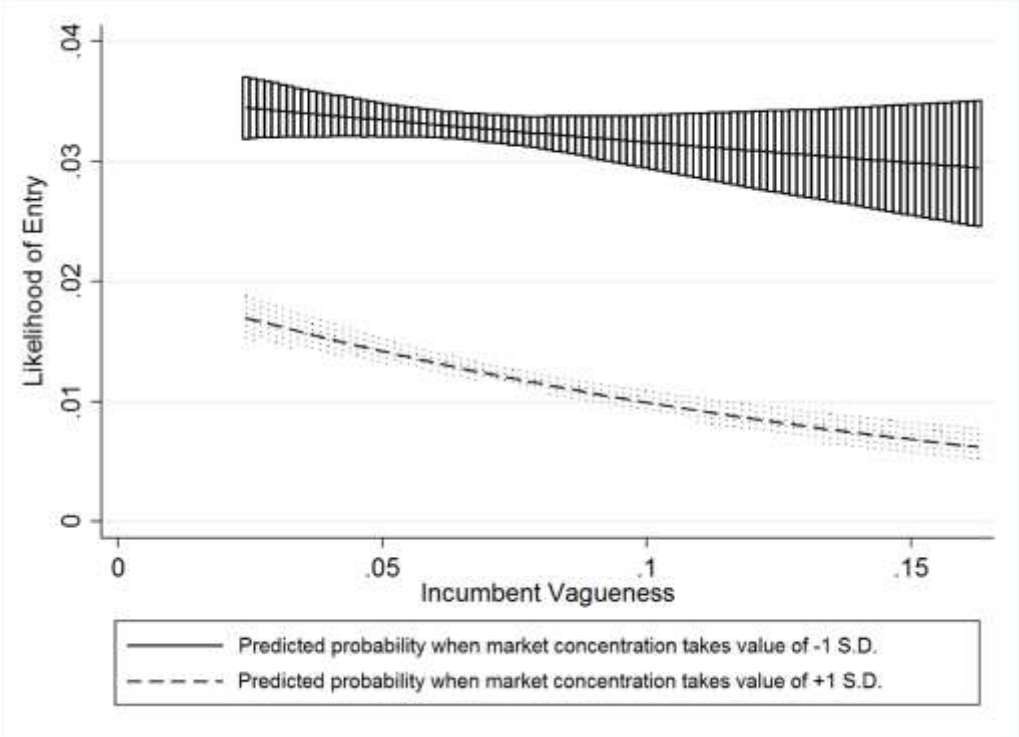

Table 5 Predicting Market Entry Using a Two-stage Instrumental Model

	Incumbent Vagueness		Market Entry
	(1)	(2)	(3)
General counsel		-0.006**	
		(0.000)	
Predicted incumbent vagueness			-1.197**
			(0.125)
Average incumbent size	-0.014**	-0.014**	0.761**
	(0.001)	(0.001)	(0.055)
Incumbent performance	-0.076**	0.001	3.083**
	(0.009)	(0.010)	(0.740)
Incumbent cash flow	0.090**	0.148**	-2.865**
	(0.010)	(0.011)	(0.788)
Incumbent load factor	0.055**	0.050**	1.188**
	(0.003)	(0.004)	(0.223)
Incumbent operational efficiency	0.094**	0.098**	-1.521**
	(0.003)	(0.004)	(0.252)
Incumbent competitive activities	-0.037**	-0.032**	-0.051
	(0.001)	(0.001)	(0.051)
Incumbent tough talk	0.035**	0.034**	-0.196**
	(0.000)	(0.000)	(0.020)
Market overlap	0.000**	0.000**	0.004**
	(0.000)	(0.000)	(0.000)
Market overlap squared	-0.000**	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)
Entrant size	-0.021**	-0.023**	-0.133**
	(0.001)	(0.001)	(0.038)
Entrant performance	-0.024**	-0.016**	-1.152**
	(0.003)	(0.004)	(0.224)
Entrant cash flow	0.084**	0.086**	1.872**
	(0.004)	(0.005)	(0.345)
Environmental uncertainty	0.329**	0.326**	-1.181**
	(0.002)	(0.002)	(0.134)
Market density	-0.000**	-0.000**	0.003+
	(0.000)	(0.000)	(0.002)
Market concentration	0.071**	0.072**	-2.184**
	(0.001)	(0.001)	(0.086)
Market circularity	0.004**	0.005**	-0.112
	(0.001)	(0.001)	(0.097)
Market size	0.000**	0.000**	-0.001**
	(0.000)	(0.000)	(0.000)
Constant	0.429**	0.437**	
	(0.005)	(0.006)	
R-squared	0.282	0.288	
Wald Chi^2			59.59***
Observations	129,799	129,799	129,799

Robust standard errors in parentheses
** p<0.01, * p<0.05, + p<0.1

Wei Guo (wei-vivian.guo@polyu.edu.hk) is an assistant professor in management at Hong Kong Polytechnic University. She received her Ph.D. from University of Maryland at College Park. Her research focuses on how language plays a role in competitive dynamics, impression management, and innovation.

Tieying Yu (yuti@bc.edu) is an associate professor at Boston College. She received her Ph.D. from Texas A&M University. Her research interests focus on global strategy and competition, competitive dynamics, and competitor analysis.

Javier Gimeno (Javier.gimeno@insead.edu) is professor of strategy and Dirk Verbeek Chair in International Risk and Strategic Management at INSEAD. He received his Ph.D. from Purdue University. His research interests include competitive dynamics in multimarket contexts, the effect of organizational incentives and delegation on competitive interaction, entrepreneurship, and strategic risk management.