Examining Affective and Cognitive Discourse at the Time of IPO:

Effects on Underpricing and the Moderating Role of Entrepreneurial Orientation

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This study presents evidence concerning the effects of affective and cognitive rhetoric on the underpricing of firms at the time of their initial public offering. It is suggested that firms that use less affective, and more cognitively oriented discourse in their IPO prospectus will experience better underpricing outcomes. We examine these assertions using a sample of young high-tech IPO firms where investors rely on prospectuses as accurate and informative firm communications. Results from a robust five-year time span observe initial support for the hypothesized effects. Moreover, the signaling of a higher degree of entrepreneurial orientation in the firm prospectus is found to worsen the negative effects of affective discourse on underpricing. Study implications are discussed.

Keywords: firm discourse; initial public offering; prospectus; language; entrepreneurial orientation

The power of discourse as captured through written or spoken communications to affect meaningful change in the world has long been acknowledged. In the business domain, choices in rhetoric have been shown to impact the organizational identity, which a firm projects and has been linked with higher firm performance (Zachary, McKenny, Short, Davis, & Wu, 2011). Moreover, language choices have been shown to evidence a firm's marketing orientation (Zachary, McKenny, Short, & Payne, 2011) and emphasis on corporate social responsibility (Castelló & Lozano, 2011) within a company's official letters to shareholders. Furthermore, rhetoric choices in company communications have been observed to provide meaningful indicators into a firm's strategy-making disposition and overall entrepreneurial orientation (Short, Broberg, Cogliser, & Brigham, 2010).

Among IPO firms, it is suggested that rhetoric choices offer meaningful signals to investors considering the value of a firm at the time of its initial public offering (IPO) (Mousa, Wales, & Harper, 2015; Payne, Moore, Bell, & Zachary, 2013). At the time of IPO, firms must prepare a statement to investors, referred to as a prospectus, which includes key elements such as an overall business summary. This document is required by law in the United States to be as accurate, forthcoming, and diligently prepared as possible (Marino, Castaldi, & Dollinger, 1989). For young high-tech firms, the prospectus may be the first in-depth communication of their business summary and strategic vision to investors and is likely to be relied upon more heavily as an informative communication than among more established IPO firms. Nonetheless, understanding of how choices in rhetoric made by organizational members during the creation of their IPO prospectus may impact organizational outcomes is still in its infancy.

In the present study, we examine the open question of how choices in rhetoric may impact the degree of underpricing experienced by an IPO firm. In doing so we explore whether the choices organizations make in their official communications may impact the amount of money the firm "leaves on the table" during their IPO. Specifically, we examine the degree to which the rhetoric is either affective (e.g., expressive of emotion) or cognitive (e.g., expressive of consideration) in its composition and communication to investors. While such language choices may appear subtle, their impact can be rather pronounced (Pennebaker, Mayne, & Francis, 1997). We extend research on affective and cognitive rhetoric as a means to better understand how investors perceive a firm's official communications at the time of IPO.

Providing further insight, we examine the potential moderating role of firm entrepreneurial orientation (EO) in terms of how these influential choices in rhetoric are received by investors. Research on EO as a moderating factor has been highlighted as an influential direction for future research (Wales, 2016). Past research has demonstrated the importance of EO as a contextual condition within key relationships (i.e., Wiklund & Shepherd, 2003). While most research has examined EO

as an enhancing condition, we view EO as a potentially antagonistic influence within the relationship between IPO firm prospectus language and underpricing (Frazier, Tix, & Barron, 2004). We include EO within the present study given that past research suggests EO to constitute an important consideration at the time of IPO, which may heighten investor concern regarding the certainty of their investments (Mousa, Wales, & Harper, 2015). Indeed, firms with high levels of EO and innovation have been discussed as an interesting topic area within the media (VentureBeat, 2016), and a look at how they communicate with investors should add value to our understanding of these organizations poised for growth.

Hypothesis Development

Content analysis has become an established and growing area of inquiry in management research. A review of the content analysis literature from 1980–2005 by Duriau, Reger, and Pfarrer (2007) found 98 articles published or referenced in management journals. Helping to foster content analysis research, computer-aided text analysis (CATA) has been adopted in management (Morris, 1994) and broader organizational (Kabanoff, 1997) research. CATA analyzes documents by counting the words of relevance to capturing a particular construct or choice in rhetoric. Word use can have an impact on the way in organizations are perceived.

While some words in a firm's prospectus may be eye-catching, such as innovation, patent, vision, etc., the general tone of how organizations portray their company's business summary is also important and likely to influence the impression of a given company in the minds of investors. Prior research has shown how linguistic choices in public communications can meaningfully impact observer perceptions and business outcomes. For instance, on a market level, Tetlock and colleagues investigate the sentiment of media content (daily news stories) to determine if such stories impact daily stock market activity (Tetlock, 2007; Tetlock, Saar-Tsechansky, & Macskassy, 2008). Tetlock (2007) observes that high levels of media pessimism correlate with downward price pressure on the Dow Jones Industrial Index. This study also found that abnormally high or low values of pessimism predict high market trading volume.

Moreover, foundational work in the communication literature by Tausczik and Pennebaker (2010) suggests that the function and emotion of words used in documents provide meaningful cues into the actors underlying thought processes, intentions, and motivations. In this vein, Li (2006) examines whether specific risk-related words in company annual reports provide information about future earnings. The author counts specific words (e.g., risk, risky, uncertainty, etc.) and finds that increases in risk-related word counts are predictive of poor future earnings. A related study examined the optimistic and pessimistic language used by managers in quarterly earnings press releases to furnish information about the expected firm performance, and found managers' use of sentiment expressed in such releases to signal future earnings performance (Davis, Jeremy, & Sedor, 2006). Moreover, the rhetoric used by top leaders has been shown to shift during critical events to better fit the demands of a given situation (Bligh, Kohles, & Meindl, 2004). Thus, not only do language choices supply credible information to the market, but also investors respond to organizations' language usage (Davis et al., 2006).

The present study builds upon and extends these efforts by suggesting that the affective and cognitive discourse within a firm's prospectus meaningfully influences underpricing at the time of IPO. Pennebaker, Mehl, and Niederhoffer (2003) note that developing insight into emotional and cognitive discourse and its potential consequences represents an important area of inquiry. Indeed, they note that understanding whether individual's linguistic choices while disclosing emotional topics may affect their long-term health changes was a driving rationale behind the Linguistic Inventory and Word Count (LIWC) program. We now extend this pioneering work on affective and cognitive discourse to the official firm communications prepared by organizations for investors as captured within the prospectus at the time of IPO.

Affective Discourse

Affective discourse is the use of language that captures the emphasis of positive and negative emotions in communications. The inclusion of affect helps emotionally connect with an audience and communicate feelings about a particular subject (Hyland, 1998). Often, affect is used to build relationships. For instance, President Bush's rhetoric was observed to change significantly following the 9/11 attacks to include more positive affect and better address the needs of a nation during a time of mourning (Bligh et al., 2004). Affective communication has also been shown to enhance group involvement and collaboration (Park, 2007). However, in the context of

official communications at the time of IPO, we assert that affective discourse can weaken an IPO firm's valuation when the firm is judged by investors.

Underpricing frequently results from an asymmetry of information between an IPO firm and its underwriters. Thus, investors must make valuation decisions under uncertainty, and they are incentivized to set offer prices low to avoid the risks and costs associated with an unsuccessful issue. An unconscious confirmation bias may therefore arise in which investors are more open to information and discourse that confirms their disposition that the IPO firm warrants a lower valuation. Emotionally charged dialogue, which captures instinctive or intuitive feelings as distinguished from more reasoned dialogue, is likely to help underwriters justify providing firms with lower valuations. There is also the potential for affective discourse to impact investors' overall impression of a company's state of development and thereby their intuition or "gut" feelings about the potential of the company based upon an emotionally charged summary of the firm's business directions in the IPO prospectus. Investors may interpret such emotional emphasis as positioning the firm's future earnings as more hopeful than secure. As such, investors may view the use of affective discourse as attempting to cover up for firm weaknesses by using more hopeful or relational appeals, as opposed to more concrete and rational points, which support their thesis of having a sound business warranting of a strong initial share price at the time IPO. Therefore, we hypothesize:

Hypothesis 1: *Affective discourse in the IPO prospectus is positively related to underpricing.*

Cognitive Discourse

Cognitive discourse is the use of language that reflects the process of understanding through the application of thought and consideration. Cognitive discourse includes language referencing such areas as insight, causation, and certainty. We assert that cognitively focused discourse in the IPO prospectus is likely to be responded to more favorably than affective discourse by underwriters given that cognitive discourse is more focused on providing understanding, insight, and rationale concerning the firm's business potential. This is particularly relevant given the information asymmetry that typically exists between the IPO firm and the underwriters seeking to evaluate the firm's worth.

The IPO process offers a company the opportunity to present its strategic vision to underwriters. Because the IPO prospectus provides critical insight into a company's vision, it allows outsiders to judge the strategic trajectory of the company. As such, language that helps communicate reasoning may impact how favorably investors interpret the firm's potential as a public company. Cognitive language suggests careful thought and consideration and offers insight regarding causation and certainty. Thus, rhetoric, which is more cognitively focused, would likely enhance impressions of the organization's strategic vision and will help convince investors regarding the firm's potential strength as a public company. In turn, this will contribute to higher valuations by investors and drive the underwriting price up. In accordance, we posit:

Hypothesis 2: *Cognitive discourse in the IPO prospectus is negatively related to underpricing.*

Entrepreneurial Orientation as Moderator

The influence of choices in discourse on underpricing are likely to be magnified in more sensitive firm contexts, such as when the firm has a higher degree of EO. EO captures the extent to which a firm is innovative, risk-taking, and proactive in its firm processes and behavior (Miller, 1983; Covin & Slevin, 1989). Although other dimensions have been proposed (e.g., Antoncic & Hisrich, 2003; Lumpkin & Dess, 1996), EO has been theorized to capture the shared variance between these three dimensions in the literature (Covin & Wales, 2012; Miller, 2011). In this vein, prior research has focused most intensely on this conceptualization of EO (Wales, Gupta, & Mousa, 2013). Innovativeness reflects a firm's creativity, discovery, and imagination. Risk-taking is associated with a firm's bold and daring actions and ventures with uncertain returns. Proactiveness represents a forward-looking and opportunity-seeking perspective to anticipate, explore, and search for new possibilities. EO has been shown to be reflected in official company communications such as shareholder letters (Short et al., 2010) and IPO prospectuses (Mousa & Wales, 2012). Short and colleagues (2010) observed support for the validity of measuring a firm's EO using a CATA approach based on firm communications.

As a strategic orientation communicated by young technology firms at the time of IPO, EO has been shown to have a negative impact on investor perceptions, reducing the amount of capital raised by the IPO firm (Mousa, Wales, & Harper, 2015). Mousa et al. (2015) posit that since EO captures an exploratory strategy posture characterized by high variance in performance (Wiklund & Shepherd,

2011), stronger EO signals might weaken underwriter's confidence in the ability of a prospective firm to project strong consistent earnings post-IPO. In this vein it is noted by Mousa and colleagues (2015) that returns from firm's efforts focused on exploration are generally "uncertain, distant, and often negative," whereas more exploitative efforts produce returns that are more "positive, proximate, and predictable" (March, 1991, p. 85).

Investors are highly sensitive to an IPO firm's performance in the market once trading begins given that stock performance impacts their reputation as an underwriter, which can have lasting repercussions for their ability to bring future firms public. Thus, underwriters are inherently risk-averse, with a strong motivation to price a firm's stock lower given that underpricing decreases the likelihood of legal action being taken against the investment bank for promoting issues that perform below expectations. Being highly entrepreneurial—that is when a firm signals it is being more innovative, proactive, and risk-taking in the marketplace—increases investor concerns regarding the certainty of the firm's potential as a public company. When firms are more entrepreneurially oriented we would expect that the influence of their affective and cognitive choices in rhetoric to be interpreted in a more critical light. Thus, for a given level of affective or cognitive discourse, higher EO may have an antagonistic effect on underpricing, which is negative and consistent across both cognitive and affective discourse. In short, with greater EO, both cognitive and affective language are likely to be interpreted more critically, and thus we propose that EO has an antagonistic moderating influence on how investors interpret IPO firm prospectuses and ultimately their valuations. Therefore, we hypothesize:

Hypothesis 3a: *The effects of affective discourse on underpricing are moderated by the degree of EO signaled in the firm prospectus. Firms with greater EO experience more significant underpricing when engaging in affective discourse.*

Hypothesis 3b: *The effects of cognitive discourse on underpricing are moderated by the degree of EO signaled in the firm prospectus. Firms with greater EO experience more significant underpricing when engaging in cognitive discourse.*

Methods

Sample

To test the hypotheses, we developed a sample of young high-tech firms, 8 years of age or younger, that had undertaken an IPO in the United States over a robust 5-year period from 2000 to 2005. These years were selected in order to provide a 5-year period that avoids the majority of the dotcom bubble which ran from 1997 until early 2000, or the housing bubble stemming from increased foreclosure rates beginning in 2006, which depressed the market during the late 2000s and until quite recently. Based on Standard Industrial Classification (SIC) codes, firms were identified as operating in high-technology industries sectors (e.g., Loughran & Ritter, 2004; Mousa & Reed, 2013). Consistent with prior research in the field, holding companies, financial institutions, and real estate investment trusts (REITs) were excluded from the sample (e.g., Fischer & Pollock, 2004). The data were collected from a number of sources: the prospectuses found on the Securities and Exchange Commission's (SEC's) Electronic Data Gathering and Retrieval (EDGAR) system for IPOs and the Compustat Database. Other data, such as first-day closing prices used to calculate the dependent variable were obtained from CRSP data tapes. After excluding companies due to missing prospectuses or financial data, the final sample consisted of 98 firms located within the following two-digit SIC industry groups: 28 (biotechnology and drugs), 35 (computer and related), 38 (medical equipment), 73 (software), 36 (electronics and communication), and 48 (telephone equipment and communications services).

Measures

Dependent Variable.

Underpricing, or first-day trading period returns, is a unique performance indicator that is used extensively in IPO contexts. We calculated underpricing using the following formula: (P1-P0)/P0 (first-day closing price—the offer price/offer price) based on prior research (Arthurs, Hoskisson, Busenitz, & Johnson, 2008; Certo, Daily, & Dalton, 2001b; Filatotchev & Bishop, 2002).

Independent and Moderating Variables.

All data required for the independent and moderating variables were obtained from the IPO prospectuses of new issues. Content analysis strives to interpret the meaning of texts and communications (Holsti, 1969). We used the business summary section of the IPO prospectus as the relevant communication between the IPO firm and its investors to be interpreted. We use the Manifest Content Analysis (MCA) method content analysis, which counts the words present in a document based on dictionaries for each construct. We employed the technique of computer-

aided text analysis (CATA) given its ability to process large samples with high speeds and reliabilities (Short et al., 2010). When applying CATA techniques we built on the method defined by Short et al. (2010). Whereas they used content analysis of shareholder letters, we started by downloading and saving the prospectuses from the SEC's EDGAR database in text format (Mousa et al., 2015).

Two independent variables were used to test the hypotheses, *affective* and *cognitive rhetoric*. Both of these variables were computed using the Linguistic and Inventory Word Count software, LIWC 2007. Affective rhetoric is measured using a dictionary of 915 words, which captures the general emotional content of a document. As emotions can be expressed in either a more positive or negative manner, both are captured in our measure of a prospectuses affective rhetoric. Examples of more positively oriented emotional rhetoric would be language choices, which include terms such as nice, happy, elegant, joyful, or love. Examples of more negatively oriented emotional rhetoric include terms such as anxiety, hurt, fearful, wrong, or annoyed. The second independent variable, cognitive rhetoric, is measured using a dictionary of 730 words that captures language choices, which include terms such as insight, think, cause, certain, and consider. These dictionaries, while included in the LIWC 2007 software, were developed and supported with evidence presented in the work of Pennebaker, Mayne, and Francis (1997).[1]

A moderating variable, *Entrepreneurial Orientation (EO)*, was also used in this study. EO was measured as the combination of innovativeness, risk-taking, and proactiveness based on the theorized shared variance between these dimensions of EO (Miller, 2011). These three dimensions were measured using content analysis, which has been applied extensively in many fields including the strategy and entrepreneurship literature on public companies (e.g., Mousa et al. 2015; Short et al., 2010). Short et al. (2010) validated word dictionaries for each of the dimensions of EO to facilitate CATA. As such, they followed a structured process to develop the list of words for each EO dimension to improve overall construct validity (see Short et al., 2010, p. 333 for the final list of words included in each dimension's dictionary). The total word count for each of these dimensions, summed together, formulates the level of EO.

We chose to use content analysis to measure EO as we wanted to depart from previous research, which has generally relied on surveys to measure EO. Similar to other studies that chose this approach (e.g., Mousa et al., 2015), we employ an objective measure of EO as it avoids a number of limitations that are generally associated with surveys, such as recall bias, which are common in survey-based research (e.g., Barr, Stimpert, & Huff, 1992). Content analysis thereby not only provides a high degree of reliability and replicability (Finkelstein & Hambrick, 1996), but also, it is especially appropriate when trying to study data that is difficult to obtain (e.g., Short & Palmer, 2008; Tetlock et al., 2008), such as herein where it enables the use of archival data to categorize communications using a set of procedures (Weber, 1990).

Control Variables.

Based upon prior research exploring short-term IPO performance, we controlled for influences such as *firm age* (e.g., Beatty, 1989; Beatty & Zajac, 1994; Finkle, 1998), measured as years from founding (e.g., Dimov & Shepherd, 2005). We also controlled for *ownership presence* as the number of shareholders which serves as a proxy measure of information asymmetry (Wu, 2004). Underpricing is expected to correlate positively with the likelihood of private placements given that greater underpricing is associated with higher information asymmetry (Chemmanur, 1993). Further, both Booth and Chua (1996) and Brennan and Franks (1997) suggested a positive relationship with underpricing. Further, larger IPO firms have been shown to outperform smaller ones in terms of stock appreciation (e.g., Megginson & Weiss, 1991; Mikkelson, Partch, & Shah, 1997). Thus, we also controlled for *firm size* using the log of number of employees to account for possible skewness in the data.

Given that the extent of voluntary disclosure that an IPO firm provides has been found to be significantly related to IPO performance (Leone, Rock, & Willenborg, 2007), we also controlled for *use of proceeds*. By being more specific about how it will use IPO proceeds, a firm can reduce underpricing. Yet, management also has to balance this potential benefit with the costs of disclosing such information to rivals. Three variables (dynamism, munificence, and complexity) were used to help us account for external environment conditions (see Dess

[1] While our analysis used LIWC version 2007, we note that at the time of publication LIWC version 2015 introduces revisions to the cognitive processes dictionaries, which further refine the measurement of cognitive activity.

& Beard, 1984). *Environmental dynamism*, was measured by entering the natural logarithm of sales figures into a quasi-time series regression with time serving as the independent variable. Then we used the antilog of the standard errors of the resulting regression slope coefficients to capture environmental volatility in the same fashion of previous studies (Dess & Beard, 1984; Keats & Hitt, 1988). *Industry munificence*, also known as environmental capacity (Aldrich, 1979), generally indicates the availability of environmental resources to support firm growth (Keats & Hitt, 1988). Building on well-established literature (e.g., Dess & Beard; 1984; Keats & Hitt, 1988), we also chose to measure this variable as industry net sales in the quasi-time series regression, especially since Dess and Beard (1984) argued that industry sales are the primary factor in environmental munificence. *Industry competition* was controlled for by following the previous literature which measured competitive intensity based on a firms' market share (Mezias & Boyle, 2005; Swaminathan, 1995). This was measured by using the inverse of the four-firm concentration ratio obtained from the US Census of manufacturers for the year of the IPO. We collected this data from Compustat Data

Consistent with prior research, we included *number of risk factors* (e.g., Beatty & Welch, 1996) as higher risk may increase underpricing. Certo, Covin, Daily, & Dalton (2001a, p. 650) write that "risk factors associated with a firm can affect both performance expectations and realized performance." Therefore, a firm's risk position was operationalized as the number of risk factors as reported in the prospectus (Beatty & Zajac, 1994; Welbourne & Andrews, 1996). We also controlled for the possible effects of *venture-capital backing (VC-Backing)* (e.g., Certo et al., 2001b; Megginson & Weiss, 1991). This variable has been shown to influence the ability of an IPO firm to raise capital (Brav & Gompers, 2003; Gulati & Higgins, 2003; Megginson & Weiss, 1991) and increase chances of survival (Khurshed, 2000). Firms backed by venture capitalists were calculated as a dichotomous measure coded 1 for venture-capital backing, 0 if not.

Method of Analysis

Consistent with other IPO research, all hypotheses in regards to the underpricing were analyzed using partial hierarchical multiple regression analysis (Arthurs, Hoskisson, Busenitz, & Johnson, 2008; Certo et al., 2001a; Dimov & Shepherd, 2005; Zimmerman, 2008). This type of analysis allows the researcher to determine the order of entry of the variables.[2] We used a four-step hierarchical regression analysis. The first model contained all of the control variables. In the second and third models we added the independent variables to the base model.

Results

Table 1 presents descriptive statistics and correlations between the variables. The descriptive statistics reveal that the average age of these young high tech firms is 5.6 years, thus reflecting a consistent age with our focus on young firms which is similar to those found in other young IPO studies (e.g., Certo et al., 2001a). Many previous IPO studies have an average age of 10 or higher (e.g., Fischer & Pollock, 2004), however when firms are more established, the prospectus is likely to be less heavily relied on as an informative communication. Also, the table shows that most of the correlations seem to be low to moderate. To test for multicollinearity, we examined the variance inflation factors (VIFs) and found none approaching the commonly known threshold of 10; none of the VIFs was above 1.609. This indicates that that multicollinearity is not unduly influencing our results (Kutner, Nachtsheim, Netter, & Li, 2005).

Table 2 gives the results of the hierarchical regression analysis. Model 1 is the baseline model without inclusion of any independent variables. In Model 2 we added the independent variable (EO) and in Model 3 we added both of our main independent variables (affective and cognitive discourse). Model 3 is used to test the first two hypotheses. In Model 4 we added the interaction terms and use it to examine hypotheses 3a and 3b (Andersson, Cuervo-Cazurra, & Nielsen, 2014).

Hypothesis 1 stated that the impact of affective discourse on underpricing would be positive. The results show that the direct affect is positive and significant (β=.224, $p < 0.05$). Thus, it would appear that more affective discourse does increase underpricing. Hypothesis 2 stated that the impact of cognitive discourse on underpricing would be negative. The results show that the direct affect is negative and significant (β=-.209, $p < 0.05$). Thus, more cognitive discourse does reduce underpricing. Hypotheses 3a and 3b both predicted that the impact of the moderator will positively impact underpricing.

[2] This is not to be confused with Hierarchical Linear Models that deal with observations that are not independent.

Table 1: Descriptive Statistics and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
Underpricing	.0823	.11753												
Firm Age	5.6038	1.82407	.125											
Ownership Presence	20.9286	30.78366	.210*	-.038										
Firm Size	2.2619	.64861	.139	-.022	-.031									
Use of Proceeds	3.5849	2.06959	-.231*	-.200*	.000	-.199*								
Industry Dynamism	1.1140	.14022	.104	-.021	-.034	.156	.060							
Industry Munificence	1.2585	.50920	.024	-.187	.038	-.078	.071	.384**						
Industry Competition	.6475	.22040	-.026	.069	-.150	-.040	-.071	.385**	.165					
Firm Risk	33.4057	7.34429	-.245*	-.084	.016	-.226*	.058	.021	-.019	-.082				
VC-backing	.8491	.35969	.267**	.126	-.126	-.181	-.290**	.029	.029	-.023	.099			
EO	.9139	.49080	-.048	-.116	-.163	-.338**	.223*	-.153	.070	-.065	.089	-.025		
Affective Discourse	3.1643	.90834	.158	.136	.020	.257**	-.012	.024	-.071	-.104	.142	.066	-.078	
Cognitive Discourse	17.2102	1.88101	-.149	.045	.096	.068	-.027	-.025	.055	-.209*	.216*	-.100	.113	.306**

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The results support hypothesis 3a (β=.785, $p < 0.05$), thus showing that an increase in firm's EO at IPO appears to further strengthen the relationship between affective discourse and underpricing. We did not find support for hypothesis 3b. Thus, there is no evidence in our study that EO moderates the relationship between cognitive discourse and underpricing.

Discussion

The results suggest that organizations should be mindful of the rhetoric they use when preparing their firms prospectus in anticipation of an IPO. As affective rhetoric is shown to lead to more significant underpricing, it would appear that investors are sensitive to the use of emotional language in the prospectus. While emotionally charged language can help build relationships, it might also be

Table 2: Results of Linear Regression Predicting Underpricing

Variables	Model 1	Model 2	Model 3	Model 4
Firm Age	0.07	0.079	0.073	0.063
Ownership Presence	0.261**	0.285**	0.292**	0.293
Firm Size	0.127	0.165	0.121	0.142
Use of Proceeds	-0.091	-0.106	-0.142	-0.144
Industry Dynamism	0.118	0.131	0.14	0.175
Industry Munificence	-0.004	-0.02	0.007	0.014
Industry Competition	-0.028	-0.025	-0.061	-0.069
Firm Risk	-0.268**	-0.267**	-0.257**	-0.258
VC-backing	0.313**	0.322**	0.27**	0.258
EO		0.123	0.164	0.265
Affective Discourse			0.224**	-0.183
Cognitive Discourse			-0.209**	-0.056
EO X Affective Discourse				0.785**
EO X Cognitive Discourse				-0.816
R2	.271	.283	.339	.374
Adjusted R2	.196	.200	.246	.268

N=98. Standardized coefficients reported. Two-tailed tests.

† p < 0.10, * p < 0.05, ** p <0 .01, ***p<0.001

interpreted as an attempt at persuading investors to evaluate the IPO firm more favorably on a non-pecuniary basis. Investors appear to value firms more favorably when their prospectus has a greater emphasis on cognitively focused language, which is associated with less underpricing, or money being "left on the table" by a firm at IPO. In short, emotion appears to be a poor substitute for more cognitively directed communication when crafting the IPO prospectus, and summarizing the firm's business activities.

In the final model, we observe EO to only worsen the effects of affective language on underpricing. These findings contribute to the small, but growing evidence that EO as captured within official firm communications to investors at the time of IPO may affect key financial outcomes (e.g., Mousa et al., 2015, Payne et al., 2013, etc.).

The results of this study make several contributions. First, it is suggested that IPO firms must be mindful of the general tone of how they craft their prospectus if they are to maximize their gains at the time of IPO. This is a very significant finding as while such choices in rhetoric may seem minor, all else being equal, our results suggest that firms which use more cognitive and less affective language in their prospectus will achieve more favorable underpricing. The findings offered herein have strong implications for organizational members preparing their firms for IPO given that their rhetoric is imminently malleable. Moreover, these findings are highly relevant to

practitioners given that many firms are presently most likely not paying a great deal of attention to affective/cognitive rhetoric choices as they prepare their prospectus. Yet, such choices are found to matter and significantly impact underpricing at IPO.

An additional finding offered herein is that firms which are more entrepreneurially orientated experience more significant underpricing when affective discourse is more pronounced in their prospectus. This suggests that the investors are particularly sensitive to affective discourse among firms which are highly entrepreneurial, that is very innovative, risk-taking, and proactive in the market place. Given the uncertainty surrounding EO firm's ultimate potential as public companies, it would appear that affective dialogue pushes underwriters to provide lower valuations. As discussed, underpricing frequently results from an asymmetry of information between an IPO firm and its underwriters. Thus, these investors must make valuation decisions under uncertainty, and they are incentivized to set offer prices low to avoid the risks and costs associated with an unsuccessful issue. An unconscious confirmation bias may therefore arise in which they are more open to information and discourse, which confirms their disposition that the IPO firm warrants a lower valuation. In short, this finding further emphasizes that feelings appear to be a poor substitute to a more cognitively focused, reasoned dialogue. EO firms would be particularly wise to avoid affective rhetoric in their prospectus.

Limitations and Future Directions

While initial evidence of interesting relationships is provided, the present findings must be interpreted in light of the study limitations and implications for future research. To begin, this study focused on a sample of firms in which communications between the IPO firm and the underwriter are likely to be very important given that young high-tech firms have uncertain potential in the marketplace. Nonetheless, it is possible that the results of the present study may not hold among more established firms. Certainly future research is encouraged to explore broader contexts within which to test the present findings.

We also note that the affective dictionary captures the emotional content of the dialogue irrespective of whether the sentiment being expressed is either positive or negative. Nonetheless, there is still significant variance left unexplained in the model. Future research may choose to differentiate relationships between positive and negative emotions, etc. We also note that the cognitive processes dictionary includes an exclusive dimension which covers words such as but, without, and exclude, which, while part of this validated instrument, seem somewhat overly general (Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007). As discussed, at the time of publication an update to the LIWC software (version 2015) has sought to address some of the generality issues of version 2007. Thus, while version 2007 observes support for the novel hypotheses advanced in this study, future research may examine more refined dictionaries of cognitive and affective language.

In summary, the present study helps extend research on discourse and affective cognitive rhetoric to the influential managerial setting of IPO prospectus communication. It is postulated and a test is performed that supports the notion that such subtle choices in rhetoric can have meaningful implications for a firm's IPO performance. It is our hope that these initial research findings encourage future studies into how linguistic choices within IPO firms' official communications may impact their performance.

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