TECHNISCHE UNIVERSITÄT MÜNCHEN

Professorship of International Entrepreneurship

The Power of Media: Consequences for a New Venture's Ability to Attract Attention and Resources

Friderike Bruchmann

Acknowledgements

My greatest and everlasting gratitude goes to my supervisor Prof. Hana Milanov, who has become an idol for me – professionally, but also personally. During my time as doctoral student, she taught me with great care and timely dedication what it means to become an excellent researcher. All my ambition, deep commitment and strong feeling of belonging that I developed towards the scientific community happened mostly thanks to her. She invested a lot of time in both my professional development as a scientist and my personal development as an empowered woman that has all her tools at hand. These past two years have been the most important learning time in my life and I am confident to say that they set the foundation for all the challenges that lie ahead of me.

In addition, I am very grateful to my mentor and chair of the Entrepreneurship Research Institute (ERI), Prof. Dr. Dr. Holger Patzelt, without whom I would have never had the chance to do my PhD in such a particular environment. ERI has become a trusted home, happy place and inspiring source for me. Further, I am deeply thankful for the many valuable feedback sessions and the unaffordable scientific input I received by Prof. Oliver Alexy. I will never forget the three-day workshop at the INSEAD Doriot Entrepreneurship Conference in Fontainebleau, France, where Prof. Alexy helped me to establish myself next to high-level management scholars. In addition, I am equally grateful for the emotional support and professional advices that I was given by Prof. Nicola Breugst. Her easiness to build up trusted relationships provided me with a strong feeling of physical comfort no matter the situation I found myself in. My sincere appreciation goes further to Prof. Hana Hottenrott for chairing the dissertation committee.

Besides our four admirable professors at the ERI, I would never have had such a great time if it wasn't for my wonderful colleagues with whom I spent unforgettable times at the institute together. That said, particular gratitude goes to my best friend and research colleague, Rieke Dibbern, with whom I have shared the same passion for research, who has emotionally supported me in any possible way and who has been always the first person I talked to about anything. And, I almost forgot that she was the ultimate reason why I decided to join ERI. With very mixed feelings, I know that our joined academic journey has now come to an end after 9,5 years.

Many thanks go to the scholars that have provided me with valuable feedback, in particular the reviewers from the Academy of Management Annual Meetings, Babson College

Entrepreneurship Conferences, Strategic Management Society conferences, INSEAD Doriot Entrepreneurship Conference and Leuphana Conference on Entrepreneurship.

Finally, I want to thank my parents, Heidrun and Alfred, and my grandmother, Ruth, who have been always there for me, believed in me and lifted me up.

<div align="center">Thank you all for having taken part in my journey.</div>

Table of contents

List of figures

VI

List of tables

List of abbreviations

API	Application Programming Interface
B2B	Business-to-Business
B2C	Business-to-Consumer
CEO	Chief Executive Officer
CMO	Chief Marketing Officer
cf.	Confer
e.g.	Exempli gratia (for example)
Et al.	Et alii (and others)
HR	Hazard rate
i.e.	Id est (that is)
IV	Instrument variables
IRR	Incident rate ratio
PhD	Doctor of Philosophy
R^2	R-squared
SE	Standard error
SEC	United States Securities and Exchange Commission
SD	Standard deviation
TUM	Technische Universität München
U.S.	United States of America
VIF	Variance inflation factor
VC	Venture capitalist
VCs	Venture capitalists
vs.	Versus

X

Abstract

This thesis deals with the impact of the traditional and social media on a new ventures' ability to attract audience attention and resources. Whereas traditional media takes the role of an info-mediary that selects and shapes information provided to the audiences, social media allows new ventures to take control of the information provision. I discuss the different implications that the media has on new ventures' legitimation outcomes in terms of attracting venture capitalist funding and attracting audience recognition in the social media context.

Keywords: Media, media attention, social media, venture capitalist decision making, new venture identity development

Zusammenfassung

Die vorliegende Arbeit beschäftigt sich mit der Auswirkung traditioneller und sozialer Medien auf die Fähigkeit von Startups, Aufmerksamkeit und Ressourcen zu generieren. Während traditionelle Medien die Informationsvermittlung über Startups im eigenen Interesse steuern, bieten soziale Medien Startups neue Möglichkeiten, den Informationsfluss selbst zu kontrollieren. Ich diskutiere die Auswirkungen von Medien für die Legitimierung von Startups im Kontext von Venture Capital-Finanzierung und Anerkennung in sozialen Netzwerken.

Keywords: Medien, mediale Aufmerksamkeit, Social Media, Venture Capital Entscheidungen, Identitätsentwicklung von Startups

1. Introduction

1.1. Theoretical background

Organizations need to gain legitimacy, which is the public perception that their actions are desirable and appropriate in the eyes of their audience (Suchman, 1995), in order to attract important resources for survival, such as financial means or social support (Aldrich & Fiol, 1994; DiMaggio & Powell, 1983; Stinchcombe, 1965; Zimmerman & Zeitz, 2002). For this, organizations have to be known, because being 'visible' is the necessary first step to enter the set of evaluation choices of other market actors (Hoffman & Ocasio, 2001; Petkova, Rindova, & Gupta, 2013; Pollock, Rindova, & Maggitti, 2008; Rindova, Williamson, Petkova, & Sever, 2005). Without being noticed, there is no possibility to become recognized in the market (Kennedy, 2008), which in turn is the precondition of obtaining legitimacy and ultimately acquiring critical resources (Petkova et al., 2013; Suchman, 1995). This is especially a challenge for new ventures, which mostly have no proven track record of activities and thus, are barely known to the public. Due to their "liability of newness" (Stinchcombe, 1965), new ventures strive for public attention to receive social validation (Bitektine, 2011).

Scholars have proposed several ways for new ventures to overcome this lack of public recognition, such as by attracting media attention (Pollock & Rindova, 2003; Rindova, Pollock, & Hayward, 2006), affiliating with prominent third-parties (Gulati & Higgins, 2003; Stuart, Hoang, & Hybels, 1999), developing an identity (Fisher, Kotha, & Lahiri, 2016; Navis & Glynn, 2011) or communicating with stakeholders more extensively (Lounsbury & Glynn, 2001; Petkova et al., 2013; Rindova, Petkova, & Kotha, 2007). Most of the suggested activities are closely related and go hand in hand, such as that sharing a lot of information may help to attract media attention, but also helps a new venture to develop its identity.[1]

In this dissertation, I investigate a new venture's legitimation efforts by the means of (1) media attention through third-party affiliation, and (2) identity building through social media attention. Because of limited lifespan and resources, new ventures usually lack the time, momentum or even contacts to the media to attract own media attention (i.e., the amount of news), which makes it a scarce asset. With the phenomenological rise of 'celebrity angels' increasingly reported in the media (e.g., Forbes or TechCrunch), new ventures are presented a new way to

---

[1] For a detailed review of legitimation mechanisms, see Fisher and his colleagues (2017), and Überbacher (2014).

attract public attention: the affiliation with recognized third-parties, such as private investors that are highly visible in the media. At the same time, social media platforms, where users exchange content with each other (Blankespoor, Miller, & White, 2014; Zhou, Lei, Wang, Fan, & Wang, 2015), play an increasingly important role for new ventures due to their low operating costs and wide-reach to different audiences (Coupland & Brown, 2004; Fischer & Reuber, 2014; Marwick, 2013). With that, social media platforms offer a promising way to the venture to develop its identity by actively disseminating information about "who" the venture is and "what" it does (Navis & Glynn, 2011; Whetten, 2006) – thus, making itself known to the public. I describe the role of the traditional vs. the social media in the next section and review extant research that lays the background for my research topics.

1.2. The role of the traditional and social media

The traditional media, i.e., where media outlets select and report on newsworthy topics, acts as a self-regulated information intermediary since it controls the information distribution to the public (Abrahamson & Fombrun, 1994; McCombs & Shaw, 1972). By that, the media influences the public perception and opinions of market actors and objects as well as their behavior towards them. Because of the great power the media exerts on the public, it has become the focus of much management research, such as in terms of building reputation (Fombrun & Shanley, 1990), increasing legitimacy (Pollock & Rindova, 2003) or enhancing market performance (Pollock et al., 2008). Media attention has been studied at different units of analysis – traditionally at the individual level and subsequently at the firm level. For example, researchers have studied the media visibility of the top management and how this affected firm performance (Hayward, Rindova, & Pollock, 2004; Johnson, Ellstrand, Daily, & Dalton, 2005; Wade, Porac, Pollock, & Graffin, 2006). Scholars have also looked at the relationship between media coverage and firm reputation (Fombrun & Shanley, 1990; Wartick, 1992), return on assets (Deephouse, 2000), IPO performance (Pollock & Rindova, 2003) and investor reactions (Pfarrer, Pollock, & Rindova, 2010; Pollock et al., 2008). In the context of new ventures, scholars were studying how new ventures build up media reputation (Rindova et al., 2007) and the impact of media attention on their chance to attract professional funding, such as from a venture capitalist (VC) (Petkova, 2014; Petkova et al., 2013).

These studies, however, yield a fairly disparate picture with regard to the benefits of media coverage. For example, Pollock and Rindova (2003) provided evidence for the positive impact of media coverage on IPO performance. As a contrast, Fombrun and Shanley (1990) found,

contrary to their theorizing, that media exposure had a negative effect on firm reputation. In addition, it seems that not all news trigger positive reactions and some also have no impact at all (Petkova et al., 2013). Indeed, when reviewing the literature, I only found three studies that report a positive and significant relationship between media reporting and (1) firms' return on assets (Deephouse, 2000), (2) investors' reactions (Pollock et al., 2008)[2], and (3) VC funding (Petkova et al., 2013). Interestingly, less research has specifically theorized on potentially detrimental effects of the media, and even when doing so, focused attention at the extreme situations such as the case of celebrity endorsers who have been involved in scandals (Knittel & Stango, 2013). It seems that more detailed work is needed to understand when media attention affects stakeholder's perception and when there exist situations in which media coverage does not lead to mere positive outcomes (cf. Pollock et al., 2008).

With the rise of social media, this traditional process of information provision has been shifted toward organizations taking a more active role themselves (e.g., Jung, Naughton, Tahoun, & Wang, 2017; Prokofieva, 2014). Social media differs from traditional media in that the presented content is provided by the respective market actors themselves (Comm, 2010). Moreover, information presented on social media is seen as especially valuable, because such information is often not captured by the traditional media (Blankespoor et al., 2014; Chen, Hwang, & Liu, 2017; Jung et al., 2017; Prokofieva, 2014). Consequently, market actors aim to improve the information environment for their stakeholders in order to attract public attention (e.g., Fischer & Reuber, 2011; Fischer & Reuber, 2014; Jin, Wu, & Hitt, 2017; Jung et al., 2017; Prokofieva, 2014). For example, scholars have provided evidence that social media presence leads to greater investor activities (Blankespoor et al., 2014; Chen et al., 2017; Prokofieva, 2014) or even helps new ventures to close financial deals (Jin et al., 2017). There are, however, limits to the instant reach of social media platforms, as they do not allow for distinct communication to different stakeholders (Fisher et al., 2016; Fisher, Kuratko, Bloodgood, & Hornsby, 2017). With a new venture moving across its life cycle phases, such as from its early days (i.e., conception phase) to later days (i.e., commercialization phase), it also faces distinct audience groups, which require different information to make sense of what the venture "is" and "does" (cf. Albert & Whetten, 1985; Pratt & Foreman, 2000). Whereas past research has postulated that the temporal and spatial separation of reaching out to different audiences allows for adapting a new venture's identity to each audience (Fisher et al., 2016; Garud, Schildt, & Lant, 2014) (e.g., think of a pitch event in front of investors compared to an exhibition at an industry fair to

---

[2] Pollock and his colleagues state a positive significant relationship between cumulated media attention and investor reactions (attention and evaluation), but a negative significant relationship between recent media attention and investor reactions.

connect with partners and consumers) that is not feasible in the single context of a social media community. Thus, we need a better understanding of how new ventures navigate their identity development, and with that their information provision, when confronting an increasingly diverse audience over time.

1.3. Research summaries

In this dissertation, I study both i) the effects of media attention provided by traditional media sources (e.g., newspapers and magazines) and ii) new ventures taking an active role in disseminating information themselves (i.e., via social media platforms). With that, I investigate the importance of established, as well as emerging media channels, as both contribute and interfere with the organization's legitimation. Table 1 summarizes the key points of my studies, which I reveal in greater detail below.

Study 1: "Media attention, affiliation, and venture capital decision-making"

My first study deals with the early affiliation of new ventures with media-visible business angels and how this affects the venture's likelihood of attracting funding from venture capitalists (VCs) in further investment rounds. Business angels typically invest in the seed round, i.e., the first investment round (Drover, Wood, & Zacharakis, 2015), of a new venture and can serve as a source of increased visibility for VC investors that might be more willing to invest in the next funding round (Hunter & Davidsson, 2007; Hunter, Burgers, & Davidsson, 2009). At the same time, there exist different news contexts, in which business angels can appear in, such as media reporting about their investment-related activities, i.e., *specific* news or non-investment-related news, i.e., *general* news. Intrigued by the mixed findings from past research, I wanted to understand when and why different types of media attention trigger positive audience reactions in terms new venture funding.

I draw on dual processing theory that is grounded in the work of Tversky and Kahneman (1973) to explain possible difference in outcomes: Individuals make use of two different information systems of cognitive processing – so-called system 1 and system 2. The first one is used for automatic, i.e., non-reflective, processing of unconscious information. The second system contrasts the first, as it triggers rational and deliberate consumption of information, that is within the conscious awareness of the individual. Both systems consequently cause different attitudes (Edell & Burke, 1987; Green, 2008) and evaluations (Lerner & Keltner, 2000; Zauberman,

Diehl, & Ariely, 2006), depending on the individual awareness and amount of thoughts that a person allocates to an information.

To conduct the study, I collected information on 988 U.S. business angel-funded new ventures, and media mentions of more than 2000 business angels over a period of 10 years from two major data sources, i.e., Crunchbase and Factiva. Crunchbase is an increasingly popular database that provides detailed information about new ventures, investments, investors, competitors and many more (Alexy, Block, Sandner, & Ter Wal, 2012; Homburg, Hahn, Bornemann, & Sandner, 2014; Ter Wal, Alexy, Block, & Sandner, 2016). Crunchbase has been shown to have less missing or incorrect data with regard to new ventures in comparison to other leading databases (Homburg et al., 2014; Werth & Boeert, 2013). It is thus suitable for my study, as it comprises comprehensive information on new ventures' early phases and seed funding rounds. The second database, Factiva, is a media database and provides a collection on various types of media mentions containing a comparably greater number of media channels relevant to my study purpose (e.g., Wall Street Journal and Business Week) than other media databases, such as Lexis-Nexis. For data analysis, I used the statistical software package STATA that offers a great range of user-written statistical programs and online user support (e.g., Cameron & Trivedi, 2010). I decided for the survival analysis applying the Cox proportional model (Cox, 1972), which is a semi-parametric model, thus offering the advantages of both parametric and non-parametric models. Further, the Cox model allows for right-censored data, which is inevitable in many times series studies. For robustness checks, I further conducted instrument variable estimation (IV) to control for potential endogeneity issues of the media variables.

My findings show that besides the amount of news, it is in particular the context of the news, i.e., *specific* versus *general* news, that determines the way in which a particular audience processes information. The results reveal that beyond the positive effects of attracting attention through the media spillover effect, there exists a point where a new venture's affiliation with a publicly visible business angel is negatively related to the VCs' evaluations, as reflected in their reduced likelihood of investment in the next funding round. In particular, I provide evidence that a higher amount of general news (non-investment news) is negatively associated with VC funding, whereas a higher amount of specific news (investment-related news) has an inverted-U curvilinear relationship with the likelihood of VC investment. I discuss the implications for further research in that I point out to the downsides of high media attention that has been mainly considered as a social asset for legitimation purposes. My study results also advise new ventures to not be blinded by 'celebrity' business angel as this might turn off institutional investors, such as VCs.

Study 2: "New venture identity development, social media and audience recognition"

In my second study, I examine the new venture's online presence on the social media platform Twitter and its effects on audience recognition in forms of likes. In particular, I investigate why and when some identity claims of a new venture matter more or less to audience recognition in a particular life cycle phase, such as the conception or commercialization phase. I argue that a new venture has to carefully construct its online identity and with that the information it provides, as it moves from its early days, i.e., conception phase, to its later days, i.e., commercialization phase. That is because the main audiences change from a more tech-oriented crowd to professional stakeholders, such as customers, investors and journalists (Fisher et al., 2016; Fisher et al., 2017). With the immediate and transparent online world, the new venture must convey messages that are "liked" by the increasingly divergent audiences to not risk losing its audience's favorable validation. To inform my theorizing, I consulted extant studies on identity development in times of changes (Ibarra, 1999; Ibarra & Barbulescu, 2010).

In addition to Crunchbase and Factiva, for this study I withdrew public data from the Twitter Application Programming Interface (API). The social platform Twitter has been recognized to be one of the widest spread and adopted communication platforms of businesses (e.g., Prokofieva, 2014; Zhou et al., 2015). Its practical significance has also been acknowledged among many scholars (cf., Blankespoor et al., 2014; Chen et al., 2017; Jung et al., 2017). I retrieved all available Twitter information, such as tweets (i.e., postings) of 139 U.S. VC-funded new ventures from their early days (i.e., conception phase) to their first funding round and beyond (i.e., commercialization phase). This data was combined with investment information from Crunchbase. To analyze the content of the tweets, I employed IBM's natural language processing software Alchemy that has recently become popular among scholars to cope with large amounts of linguistic data in an unstructured format (e.g., Biondi, Franzoni, & Poggioni, 2017). Using again STATA, for the longitudinal design of my study, I chose the random effects negative binomial regression model. This type of model is recommended for highly overdispersed data (which is usually the case with count data) (Allison & Waterman, 2002). In the robustness section, I also applied alternative panel regression models that allow for fixed effects to obtain qualitatively same results.

My findings reveal that a new venture's self-referential tweets are more positively received by audiences in the commercialization phase than in the conception phase. In addition, I find that the content of the messages provided matter differently to the audiences across the two life cycle phases. Whereas tech-related topics are vital for the tech-savvy audience in a new

6

venture's early days, business-related topics seem to be favored by the professionalized audience in later phase. Interestingly, the number of topics the venture tweets about when referring to itself does not differ across phases. My results have important implications for future research on the importance of social media activities of new ventures in that their online identity development matters greatly for social validation. I advise new ventures to be particularly aware of the life cycle phase they find themselves in, as this should guide their reliance on stories about themselves and the content of their messages.

Table 1: Summary of study key points

Study	Media attention, affiliation, and venture capital decision-making	New venture identity development, social media and audience recognition
Research question	Why and when is an affiliate's media attention beneficial for resource acquisition?	Why and when does the content of a new venture's identity claims matter more or less in audience recognition over the early life cycle phases?
Theory	• Dual-process theory • Spillover mechanism	• Narrative identity work • Identity theory
Data sources	• Crunchbase • Factiva	• Crunchbase • Twitter • Factiva
Sample	988 U.S. business angel-funded new ventures with 286 that have already received VC investment in subsequent funding round	139 U.S. VC-funded new ventures from their early days (i.e., conception phase) to their first funding round and beyond (i.e., commercialization phase)
Main method	• Cox survival analysis	• Negative binominal panel regression

Key findings	• Affiliation with any media-visible business angel is beneficial for increased likelihood of VC investment
	• Beyond quantity, the type of media attention matters too:
	  o Higher amount of general news (non-investment news) is negatively associated with VC funding
	  o A higher amount of specific news (investment-related news) have a curvilinear relationship with likelihood of VC investment
		• Self-referential identity claims are positively related to audience recognition in the commercialization phase
		• Tech-related content is associated with less positive audience recognition in the commercialization phase
		• Business-related content is associated with more positive audience recognition in the commercialization phase, which is further strengthened in combination with self-referential identity claims
		• Addressing multiple topics with identity claims is beneficial throughout the different phases

1.4. Scope and limitations

This dissertation focuses on the impact of media on new venture's audience recognition and resource acquisition. Whereas the first study examines the effects of traditional media attention of a venture's early affiliates on a new venture's probability to secure further funding, the second study considers the new venture's own social media presence and its likelihood to receive social validation. My studies are limited to secondary data sources with focus on high-tech ventures in the U.S. region only.

While limiting generalizability, the reasons to decide for the respective databases and U.S. ventures are multiple. First, extant research in media has largely focused on high-tech ventures in the U.S. region. To allow for better comparison between my study results with prior findings and theorizing (Fisher et al., 2016; Fisher et al., 2017; Higgins & Gulati, 2003; Petkova et al., 2013; Pollock & Rindova, 2003), I decided to similarly limit my sample to those specifications. Second, the U.S. has the highest adoption rate of social media platforms (Malhotra, Malhotra, & See, 2012), which are even legitimized by the Federal institutions since 2012 for information dissemination to investors (SEC, 2013). Third, the U.S. VC industry has the longest and most active history of VC activity offering large and comprehensive data to thoroughly investigate new ventures' activities over a long period of time (Kaplan & Lerner, 2016). Finally, my choice of sampling reduces unobserved heterogeneity and allows performing statistical analyses on several hundred high-tech ventures that have all been founded after the dotcom bubble in 2000. I acknowledge the drawback of less general conclusions and encourage scholars to replicate the results in other regions with different media characteristics and VC activity.

The main limitation of this dissertation may be the reliance on secondary data, which restricts the validation of the theorized mechanisms (study 1), such as cognitive processes in VC decision-making, or the assumptions made about the different audiences' expectations across new ventures' life cycle (study 2). Yet, I draw on established research findings to justify the reasoning for my hypothesizing, such as the existence of two distinct systems of information processing (Tversky & Kahneman, 1973, 1974) that lead to different perceptions and behaviours (Edell & Burke, 1987; Lerner & Keltner, 2000) – even in the context of experienced market actors, such as VCs (Huang & Pearce, 2015; Zacharakis & Meyer, 2000). Regarding my second study, I build on recent theoretical work of Fisher and his colleagues (2016, 2017), which has been greatly acknowledged by one of the top journals in management and entrepreneurship research. As a matter of fact, only due to the secondary data approach, I was able to validate

my research findings on a large scale. However, more work should be done with primary data collection to validate the underlying mechanisms in more depth.

1.5. Contributions

The work of my dissertation contributes to several research streams, such as the ongoing debate regarding the effects of media attention (Pollock et al., 2008) – through third-party affiliations (Gulati & Higgins, 2003; Stuart et al., 1999; Vanacker & Forbes, 2016), and other legitimation mechanisms, such as identity development in the context of new ventures and over time (Fisher et al., 2016; Fisher et al., 2017; Garud et al., 2014; Kraatz & Block, 2008; Navis & Glynn, 2011). In particular, I provide evidence for the limits of media attention in securing important resources – as in case of VC funding (Petkova, 2014; Petkova et al., 2013; Vanacker & Forbes, 2016). Further, by theorizing on the cognitive processes behind different types of information dissemination, I acknowledge the lack in 'mechanism-based' theorizing not only in management research (Davis & Marquis, 2005; Rindova et al., 2005), but especially also in the entrepreneurship literature (Petkova et al., 2013). Third, new media and in particular social media data offer new opportunities to conduct empirical studies, with the potential to yield new insights on many so-far researched organizational phenonomena (Chen et al., 2017). I join this still relatively small group of management (finance) scholars (Blankespoor et al., 2014; Chen, De, Hu, & Hwang, 2014; Chen et al., 2017; Jung et al., 2017; Prokofieva, 2014) in that I have analyzed hundred thousand of data points by the mean of new software programs based on machine-learning algorithms, such as the natural language processing software Alchemy from IBM. With that, I importantly advance the adoption of a more linguistic perspective in management research, because language constitutes our reality and should thus be given higher priority in future research (Boje, Oswick, & Ford, 2004; Martens, Jennings, & Jennings, 2007).

1.6. Structure of the dissertation

The structure of the dissertation is as follows. Each dissertation chapter (2 and 3) covers a separate study. In each of the studies (chapters), in the first subchapter I respectively explain the motivation and research gaps. In the second subchapter, I then lay the theoretical foundations for the hypotheses. In the third subchapter, I present respective sample selection criteria, collected data and respective sources, operationalization of variables and methods used. In the fourth sub chapter I present the results of a respective study, and in the final subchapter I discuss the findings and theoretical contributions, as well as reflect on the limitations, which in parts

also inspire suggestions for future research directions. I conclude this dissertation with a summary and final reflection.

References

Abrahamson, E. & Fombrun, C. J. 1994. Macrocultures: Determinants and consequences. *Academy of Management Review*, 19(4): 728-755.

Albert, S. & Whetten, D. A. 1985. Organizational identity. *Research in Organizational Behavior*, 7: 263-295.

Aldrich, H. E. & Fiol, C. M. 1994. Fools rush in? The institutional context of industry creation *Academy of Management Review*, 19(4): 645-670.

Alexy, O. T., Block, J. H., Sandner, P., & Ter Wal, A. L. 2012. Social capital of venture capitalists and start-up funding. *Small Business Economics*, 39(4): 835-851.

Allison, P. D. & Waterman, R. P. 2002. Fixed - effects negative binomial regression models. *Sociological Methodology*, 32(1): 247-265.

Biondi, G., Franzoni, V., & Poggioni, V. 2017. A Deep Learning Semantic Approach to Emotion Recognition Using the IBM Watson Bluemix Alchemy Language, *International Conference on Computational Science and Its Applications*: 718-729: Springer.

Bitektine, A. 2011. Toward a theory of social judgments of organizations: The case of legitimacy, reputation, and status. *Academy of Management Review*, 36(1): 151-179.

Blankespoor, E., Miller, G. S., & White, H. D. 2014. The role of dissemination in market liquidity: Evidence from firms' use of Twitter. *The Accounting Review*, 89(1): 79-112.

Boje, D. M., Oswick, C., & Ford, J. D. 2004. Language and organization: The doing of discourse *Academy of Management Review*, 29(4): 571-577.

Cameron, A. C. & Trivedi, P. K. 2010. *Microeconometrics using Stata*. Texas, U.S. : Stata press College Station.

Chen, H., De, P., Hu, Y., & Hwang, B.-H. 2014. Wisdom of crowds: The value of stock opinions transmitted through social media. *Review of Financial Studies*, 27(5): 1367-1403.

Chen, H., Hwang, B.-H., & Liu, B. 2017. Economic consequences of social media adoption by CEOs and CFOs.

Comm, J. 2010. *Twitter power 2.0: How to dominate your market one tweet at a time*: John Wiley & Sons.

Coupland, C. & Brown, A. D. 2004. Constructing organizational identities on the web: A case study of Royal Dutch/Shell. *Journal of Management Studies*, 41(8): 1325-1347.

Davis, G. F. & Marquis, C. 2005. Prospects for organization theory in the early twenty-first century: Institutional fields and mechanisms. *Organization Science*, 16(4): 332-343.

Deephouse, D. L. 2000. Media reputation as a strategic resource: An integration of mass communication and resource-based theories. *Journal of Management*, 26(6): 1091-1112.

DiMaggio, P. & Powell, W. W. 1983. The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American sociological review*, 48(2): 147-160.

Drover, W., Wood, M. S., & Zacharakis, A. 2015. Attributes of angel and crowdfunded investments as determinants of VC screening decisions. *Entrepreneurship Theory and Practice*.

Edell, J. A. & Burke, M. C. 1987. The power of feelings in understanding advertising effects. *Journal of Consumer Research*, 14(3): 421-433.

Fischer, E. & Reuber, A. R. 2011. Social interaction via new social media: (How) can interactions on Twitter affect effectual thinking and behavior? *Journal of Business Venturing*, 26(1): 1-18.

Fischer, E. & Reuber, A. R. 2014. Online entrepreneurial communication: Mitigating uncertainty and increasing differentiation via Twitter. *Journal of Business Venturing*, 29(4): 565-583.

Fisher, G., Kotha, S., & Lahiri, A. 2016. Changing with the times: An integrated view of identity, legitimacy, and new venture life cycles *Academy of Management Review*, 41(3): 383-409.

Fisher, G., Kuratko, D. F., Bloodgood, J. M., & Hornsby, J. S. 2017. Legitimate to whom? The challenge of audience diversity and new venture legitimacy. *Journal of Business Venturing*, 32(1): 52-71.

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

Garud, R., Schildt, H. A., & Lant, T. K. 2014. Entrepreneurial storytelling, future expectations, and the paradox of legitimacy. *Organization Science*, 25(5): 1479-1492.

Green, M. C. 2008. Transportation theory. In W. Donsbach (Ed.), *International Encyclopedia of Communication*: 5170-5175. Oxford, UK: Wiley-Blackwell.

Gulati, R. & Higgins, M. C. 2003. Which ties matter when? The contingent effects of interorganizational partnerships on IPO success. *Strategic Management Journal*, 24(2): 127-144.

Hayward, M. L., Rindova, V. P., & Pollock, T. G. 2004. Believing one's own press: The causes and consequences of CEO celebrity. *Strategic Management Journal*, 25(7): 637-653.

Higgins, M. C. & Gulati, R. 2003. Getting off to a good start: The effects of upper echelon affiliations on underwriter prestige. *Organization Science*, 14(3): 244-263.

Hoffman, A. J. & Ocasio, W. 2001. Not all events are attended equally: Toward a middle-range theory of industry attention to external events. *Organization Science*, 12(4): 414-434.

Homburg, C., Hahn, A., Bornemann, T., & Sandner, P. 2014. The role of chief marketing officers for venture capital funding: Endowing new ventures with marketing legitimacy. *Journal of Marketing Research*, 51(5): 625-644.

Huang, L. & Pearce, J. L. 2015. Managing the unknowable. *Administrative Science Quarterly*, 60(4): 634-670.

Hunter, E. & Davidsson, P. 2007. Celebrity entrepreneurship: Communication effectiveness through perceived involvement. *International Journal of Entrepreneurship and Small Business*, 4(5): 505-527.

Hunter, E. J., Burgers, J. H., & Davidsson, P. 2009. Celebrity capital as a strategic asset: Implications for new venture strategies. In G. T. Lumpkin & J. A. Katz (Eds.), *Entrepreneurial Strategic Content*, vol. 11: 137-160. West Yorkshire, UK: Emerald Group Publishing Ltd.

Ibarra, H. 1999. Provisional selves: Experimenting with image and identity in professional adaptation. *Administrative Science Quarterly*, 44(4): 764-791.

Ibarra, H. & Barbulescu, R. 2010. Identity as narrative: Prevalence, effectiveness, and consequences of narrative identity work in macro work role transitions *Academy of Management Review*, 35(1): 135-154.

Jin, F., Wu, A., & Hitt, L. 2017. Social is the new financial: How startup social media activity influences funding outcomes.

Johnson, J., Ellstrand, A., Daily, C., & Dalton, D. 2005. Board reputation and stockholder wealth: The influence of the financial press. *Strategic Management Journal*, 26(5): 461-471.

Jung, M. J., Naughton, J. P., Tahoun, A., & Wang, C. 2017. Do firms strategically disseminate? Evidence from corporate use of social media. *The Accounting Review*, Forthcoming.

Kaplan, S. N. & Lerner, J. 2016. Venture capital data: Opportunities and challenges. *Harvard Business School*, Working Paper 17-012.

Kennedy, M. T. 2008. Getting counted: Markets, media, and reality. *American Sociological Review*, 73(2): 270-295.

Knittel, C. R. & Stango, V. 2013. Celebrity endorsements, firm value, and reputation risk: Evidence from the Tiger Woods scandal. *Management Science*, 60(1): 21-37.

Kraatz, M. S. & Block, E. S. 2008. Organizational implications of institutional pluralism. *The Sage handbook of organizational institutionalism*, 840: 243-275.

Lerner, J. S. & Keltner, D. 2000. Beyond valence: Toward a model of emotion-specific influences on judgement and choice. *Cognition & Emotion*, 14(4): 473-493.

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

Malhotra, A., Malhotra, C. K., & See, A. 2012. How to get your messages retweeted. *MIT Sloan Management Review*, 53(2): 61-66.

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.

Marwick, A. E. 2013. Online Identity, *A Companion to New Media Dynamics*: 355-364: Wiley-Blackwell.

McCombs, M. E. & Shaw, D. L. 1972. The agenda-setting function of mass media. *Public Opinion Quarterly*, 36(2): 176-187.

Navis, C. & Glynn, M. A. 2011. Legitimate distinctiveness and the entrepreneurial identity: Influence on investor judgments of new venture plausibility. *Academy of Management Review*, 36(3): 479-499.

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.

Petkova, A. P. 2014. How to judge what can't be seen and touched? The contingent effect of media reputation on young firms' access to venture capital. *Corporate Reputation Review*, 17(4): 273-289.

Pfarrer, M. D., Pollock, T. G., & Rindova, V. P. 2010. A tale of two assets: The effects of firm reputation and celebrity on earnings surprises and investors' reactions. *Academy of Management Journal*, 53(5): 1131-1152.

Pollock, T. G. & Rindova, V. P. 2003. Media legitimation effects in the market for initial public offerings. *Academy of Management Journal*, 46(5): 631-642.

Pollock, T. G., Rindova, V. P., & Maggitti, P. G. 2008. Market watch: Information and availability cascades among the media and investors in the U.S. IPO market. *Academy of Management Journal*, 51(2): 335-358.

Pratt, M. G. & Foreman, P. O. 2000. Classifying managerial responses to multiple organizational identities. *Academy of Management Review*, 25(1): 18-42.

14

Prokofieva, M. 2014. Twitter-based dissemination of corporate disclosure and the intervening effects of firms' visibility: Evidence from Australian-listed companies. *Journal of Information Systems*, 29(2): 107-136.

Rindova, V. P., Williamson, I. O., Petkova, A. P., & Sever, J. M. 2005. Being good or being known: An empirical examination of the dimensions, antecedents, and consequences of organizational reputation. *Academy of Management Journal*, 48(6): 1033-1049.

Rindova, V. P., Pollock, T. G., & Hayward, M. L. A. 2006. Celebrity firms: The social construction of market popularity. *Academy of Management Review*, 31(1): 50-71.

Rindova, V. P., Petkova, A. P., & Kotha, S. 2007. Standing out: How new firms in emerging markets build reputation. *Strategic Organization*, 5(1): 31-70.

SEC; SEC says social media ok for company announcements if investors are alerted; Retrieved from https://www.sec.gov/news/press-release/2013-2013-51htm; 15 January, 2016.

Stinchcombe, A. L. 1965. Social structure and organizations. In J. March (Ed.), *Handbook of Organizations*: 142-193. Chicago, US: Rand McNally.

Stuart, T. E., Hoang, H., & Hybels, R. C. 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly*, 44(2): 315-349.

Suchman, M. C. 1995. Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3): 571-610.

Ter Wal, A. L. J., Alexy, O., Block, J., & Sandner, P. G. 2016. The Best of Both Worlds:The Benefits of Open-specialized and Closed-diverse Syndication Networks for New Ventures' Success. *Administrative Science Quarterly*, 61(3): 393-432.

Tversky, A. & Kahneman, D. 1973. Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5(2): 207-232.

Tversky, A. & Kahneman, D. 1974. Judgment under uncertainty: Heuristics and biases. *Science*, 185: 1142-1131.

Überbacher, F. 2014. Legitimation of new ventures: A review and research programme. *Journal of Management Studies*, 51(4): 667-698.

Vanacker, T. & Forbes, D. P. 2016. Disentangling the multiple effects of affiliate reputation on resource attraction in new firms. *Organization Science*, 27(6): 1525-1547.

Wade, J. B., Porac, J. F., Pollock, T. G., & Graffin, S. D. 2006. The burden of celebrity: The impact of CEO certification contests on CEO pay and performance. *Academy of Management Journal*, 49(4): 643-660.

Wartick, S. L. 1992. The relationship between intense media exposure and change in corporate reputation. *Business & Society*, 31(1): 313-326.

Werth, J. C. & Boeert, P. 2013. Co-investment networks of business angels and the performance of their start-up investments. *International Journal of Entrepreneurial Venturing*, 5(3): 240-256.

Whetten, D. A. 2006. Albert and Whetten revisited: Strengthening the concept of organizational identity. *Journal of Management Inquiry*, 15(3): 219-234.

Zacharakis, A. L. & Meyer, G. D. 2000. The potential of actuarial decision models: Can they improve the venture capital investment decision? *Journal of Business Venturing*, 15(4): 323-346.

Zauberman, G., Diehl, K., & Ariely, D. 2006. Hedonic versus informational evaluations: Task dependent preferences for sequences of outcomes. *Journal of Behavioral Decision Making*, 19(3): 191-211.

Zhou, M., Lei, L., Wang, J., Fan, W., & Wang, A. G. 2015. Social media adoption and corporate disclosure. *Journal of Information Systems*, 29(2): 23-50.

Zimmerman, M. A. & Zeitz, G. J. 2002. Beyond survival: Achieving new venture growth by building legitimacy. *Academy of Management Review*, 27(3): 414-431.

2. Media attention, affiliation, and venture capital decision-making

2.1. Introduction

> *"The media's the most powerful entity on earth. They have the power to make the innocent guilty and to make the guilty innocent, and that's power. Because they control the minds of the masses." (Malcolm X)*

Research in organizational theory and entrepreneurship has shown that being affiliated to prominent third parties is important for reducing a new venture's liability of newness (e.g., Gulati & Higgins, 2003; Stuart et al., 1999; Zott & Huy, 2007). Third-party affiliations often result in legitimation of new market actors who otherwise have little to show for in their brief operating histories. While there is mounting evidence on the benefits of such endorsement relationships, e.g. with reputable underwriters (e.g., Pollock, 2004), auditors (e.g., Beatty & Ritter, 1986), partners (e.g., Milanov & Shepherd, 2013), angel investors (Drover et al., 2015) and venture capitalists (VC) (e.g., Hsu, 2006), scholars have recently also started to scrutinize the advantages of such 'social approval assets' – intangible assets that derive their value from favorable collective perception (cf. Pfarrer et al., 2010). Under the flag "the more is not always better", several studies have shown that depending on the *class of social assets* (e.g., reputation vs. celebrity) (Pfarrer et al., 2010; Rindova et al., 2005), *types of affiliates* (e.g., investors vs. executives) (Pollock, Chen, Jackson, & Hambrick, 2010) and *situational conditions* (e.g., hot vs. cold markets) (Gulati & Higgins, 2003; Khoury, Junkunc, & Deeds, 2013; Lee, Pollock, & Jin, 2011; Podolny & Stuart, 1995), 'more' need not always result in positive outcomes for the venture.

Joining this stream of research, we[3] suggest that distinct effects can also exist *within a social asset* class brought by a *single affiliate type*. More specifically, we discuss why media attention can be considered as an important social asset and distinguish between different types of media attention in the context of third-party affiliations – studying it specifically with a new venture's early private investors. Interestingly, while media has been shown to help build reputation of public companies (e.g., Fombrun & Shanley, 1990), and increase legitimacy of freshly public ones (e.g., Pollock & Rindova, 2003), it has received fairly scant attention as an opinion-shaping mechanism with new ventures (for exception see Petkova et al., 2013), and especially with

---

[3] Previous versions of this manuscript were presented at the Academy of Management Conference (2017), the Babson College Entrepreneurship Research Conference (2016) and the Strategic Management Society Conference (2016), where Prof. Hana Milanov's contributions in terms of providing guidance for this research in its respective stages were acknowledged in the author list.

respect to their early affiliates. This is unfortunate from both practical and theoretical perspectives. Practically, media attention can make up for the lack of a proven record to be recognized by various stakeholders (Petkova et al., 2013). With limited lifespan and resources, many new ventures often lack the time, momentum or even contacts to the media to attract own media attention. Given the phenomenological rise of 'celebrity investors' increasingly reported in the media (CB Insights, 2016; Forbes, 2012, May 16) and academe alike (Hunter et al., 2009), new ventures may be presented with a new way to benefit from the heightened public awareness via their investors.

Theoretically, an affiliate's media attention may be similar to akin constructs studied in the context of venture affiliations, such as reputation (Milanov & Shepherd, 2013) or prestige (Gulati & Higgins, 2003), in that all share the dimension of visibility and being remarkable (for something). However, media attention is also different from the respective constructs in at least two important ways. First, the media is an active and self-regulated market agent that controls the information distribution in the public. In that way, it influences the public perception of objects and phenomena – which is different from other social assets that are usually 'owned' by the focal actor. Second, the media often purposely uses narratives in shaping the way information is presented in different contexts (e.g., Rindova et al., 2006). Depending on how such narratives are used, the media has the potential to respectively trigger one or the other information processing mechanism, as we explain below, and accordingly shape different reactions in the evaluation process.

Our research context consists of new ventures and their private investors (also known as business angels or angel investors) who typically invest in the early days of a new venture before the founders reach out for more professionalized equity capital (e.g., Hsu, Haynie, Simmons, & McKelvie, 2014; Huang & Pearce, 2015; Mason & Harrison, 2002). Such angel investors are often wealthy individuals who have become established personalities in the investment community, also partly due to their prior achievements (Elitzur & Gavious, 2003). We argue that a new venture's affiliation with an angel investor receiving significant media attention is likely beneficial for attracting resources critical for the venture's success – such as VC funding (e.g., Kirsch, Goldfarb, & Gera, 2009; Rosenbusch, Brinckmann, & Müller, 2013). However, we also make an important distinction between different types of media attention as determined by the context of the news that the private investor is appearing in: investment-related news (i.e., *specific* news) and non-investment-related (i.e., *general*) news. This distinction, as we will show, is theoretically substantial because the way information is disclosed in the media depends on the context it is presented in (Carroll, 1985). Practically, both types of news can be found in

18

different types of media outlets. Indeed, specialized media outlets increasingly report on news of general interest due to the heightened competition for readership (Jonsson & Buhr, 2011), and general media outlets increasingly cover business- and investment-related news. As we elaborate in our theory, the news context makes it likely to more strongly trigger one of the two different types of information processing systems: (1) an affective mode associated with the experience of emotions, or (2) an analytic mode associated with conscious evaluations (e.g., Epstein, 1994; Kahneman & Frederick, 2005; Tversky & Kahneman, 1973), and accordingly influence affiliated ventures' evaluation.

Our research draws on and contributes to several literature streams. First, we add to ongoing research on social approval assets and their contingent impact on performance (e.g., Deephouse, 2000; Pfarrer et al., 2010; Rindova et al., 2005). Particularly, we discuss why 'media attention' is an important social approval asset in the context of new ventures' third-party affiliations (Drover et al., 2015). Although media attention has been recognized for its role as an institutional infomediary (Pollock & Rindova, 2003), we show its potential to affect ventures' resource acquisition efforts in the context of third parties – both as a social asset or indeed, as a liability. Here, not only quantity or reach of information mediation matters, but also the context, and correspondingly, the way in which the news is respectively communicated. In that regard, we contribute to an ongoing debate regarding the effects of media attention (Pollock et al., 2008). By theorizing on the cognitive process behind different types of media attention, we also respond to a call for more 'mechanism-based' theorizing in this domain (Davis & Marquis, 2005; Petkova et al., 2013; Rindova et al., 2005). Third, we contribute to extant research on the nature of VC decision-making. While recent research highlights intuition and "gut feelings" (as opposed to rational processes) as a decision-making mechanism among investors (e.g., Huang & Pearce, 2015; Zacharakis & Meyer, 1998), our study provides further depth in understanding the context of their evaluation decisions – one framed by the media. Finally, in studying the context of high-growth startups, we also contribute to research in entrepreneurship; specifically to a line of studies examining the importance of seed funding attributes, such as the angel investor's investment experience and angel group membership (Drover et al., 2015). Whereas some studies found no benefits of affiliating with business angels (Kirsch et al., 2009), others more recently revealed the importance of their investment experience (Drover et al., 2015). Our study speaks to this stream of literature by highlighting media attention as an important attribute of business angels: one that matters above and beyond their investment experience – and not in an obvious way.

2.2. Theory and hypotheses

Third-party affiliations have been shown to positively influence a number of important new venture outcomes, from funding decisions (e.g., Drover et al., 2015), to the acquisition of strategic alliance partners (Ozmel, Reuer, & Gulati, 2013) and higher status in the industry (Milanov & Shepherd, 2013) to a venture's IPO performance (e.g., Gulati & Higgins, 2003). Literature highlights two main mechanisms to explain these findings. First, such relationships carry certification value in that the audiences presume that distinguished market actors are highly selective in whom they affiliate with: they would do so with another market actor only if that other actor offers some form of substantial value to the focal one (e.g., Drover et al., 2015; Lee et al., 2011; Ozmel et al., 2013; Podolny, 1994; Stuart et al., 1999). Given that prominent or reputable market actors are generally presented with many more opportunities than they can accept, their focus on a particular venture is deemed all the more special. A related mechanism, often dubbed as the "bask-in-reflected-glory" phenomenon (Cialdini, Borden, Thorne, Walker, Freeman, & Sloan, 1976), postulates that different kinds of social approval assets may implicitly transfer between two market actors by mere connection. In this regard, new ventures may draw from the favorable standing of their affiliates, as positive perceptions are likely to spill over between the two. Extant research has examined a number of affiliate actor attributes and found that associations with market actors possessing high levels of *prestige* (Carter, Dark, & Singh, 1998; Pollock & Gulati, 2007), *reputation* (e.g., Lee et al., 2011; Milanov & Shepherd, 2013), *status* (e.g., Khaire, 2010; Podolny, 1994, 2001; Rindova et al., 2005) or *legitimacy* (Deeds, Mang, & Frandsen, 2004; Pollock & Rindova, 2003) can yield positive outcomes for the focal actor.

In the context of affiliations, media attention can also be an important attribute. The potency of media in greatly influencing the public's knowledge of and opinion about people, organizations and events (e.g., Abrahamson & Fombrun, 1994; Deephouse, 2000; Hoffman & Ocasio, 2001; Rao, Greve, & Davis, 2001) qualifies it as an important social asset to investigate. As media outlets compete for readership, their aim is to increase readers' desire for more information on a particular topic (Hirsch, 1972; McCartney, 1987; McCombs, 1992; Rindova et al., 2006). To do this, journalists tend to select newsworthy and interesting events that are most likely to capture the public's attention and appraisal (Hung & Plott, 2001). Agenda-setting theorists go as far as to declare the media as an *active* agent selecting and shaping information to suite its own objectives and working procedures (e.g., Abrahamson & Fombrun, 1994; McCombs & Shaw, 1972; McQuail, 1985). Thus, the media can be quite powerful in shaping how an actor is

20

perceived in the public eye. In that sense, the media attention shares several features with already examined attributes such as reputation and status. For example, media attention confers visibility and stakeholder attention to the affiliated venture (Rindova et al., 2005). Further, media coverage shares similar selectivity mechanisms with reputation and status given its discriminating focus on newsworthy topics and individuals: many could be reported on, but few are chosen.

At the same time, media is different from previously examined affiliate attributes in several ways. While media accounts are central to the impression formation of the stakeholders (Chatterjee & Hambrick, 2007; Dutton, Dukerich, & Harquail, 1994; Salancik & Meindl, 1984), impression formation often happens in a way that is not under respective actors' control. For example, while the media can make 'celebrities' of individuals such as CEOs (Hayward et al., 2004), which can at least in the short run be positively valued by the stock market (Wade et al., 2006), extensive media coverage can also be surprisingly detrimental to firm reputation, even if the individual news items do not have a negative tenor (Fombrun & Shanley, 1990). That is striking because higher media exposure is actually expected to increase the familiarity, comprehension and subsequent liking of the subject (e.g., Heath & Tversky, 1991; Pollock & Rindova, 2003). A related distinguishing element of the media attention is its dynamics – where actors can be launched into popularity orbits as quickly as they can be forgotten if they cease to be considered 'media darlings' (Rindova et al., 2006). Hence, ensuring continuity of media attention is not as self-evident as maintaining high status, which is primarily under the focal actor's discretion. Finally, in order to create attention-gathering stories and some stickiness of readers' interests, journalists frequently rely on storytelling and creation of narratives for the reader (e.g., Bryant & Miron, 2002; McCartney, 1987; Rindova et al., 2006). What is special about storytelling is that story characters are presented as embedded in a sequence of events, with some facts being emphasized over others (e.g., Green & Brock, 2002). This allows the media to present an accented (if occasionally simplified) picture of what happened (Ashforth & Humphrey, 1997) – a phenomenon also noted in the business context of 'celebrity firms' (Rindova et al., 2006). Such accentuation is useful in that it helps the audience to better understand the subject and sequence of the story. When such narratives also include affective elements as a part of storytelling, they can further stimulate the reader's emotional involvement by sensitizing the reader towards the subject (e.g., Lounsbury & Glynn, 2001; Zillmann, 1995). In that sense, media attention is different from previously examined affiliate attributes given its potential to create personas from individual actors in the public eye, and in doing so can - beyond mere familiarity – trigger sentiments (good or bad) towards them (e.g., Van Laer, De

Ruyter, Visconti, & Wetzels, 2014). To the extent that the public remembers the personas and sentiments encountered when reading different news, and these in turn influence their attitudes towards covered actors, media can be more than an infomediary: indeed, its role can be described as an important participant in the sphere of market actors' evaluations (Pollock & Gulati, 2007; Pollock et al., 2008).

2.2.1. Media attention, dual-process theory, and VC decision-making

To appreciate how the media and different news types can affect investors' decision making, we follow prior research that studied effects of media coverage on public perception by drawing on sociocognitive findings (e.g., Pollock & Rindova, 2003; Rao et al., 2001). Prominent among the cognitive theories and understanding of individual information processing is the work by Tversky and Kahneman (1973), which has significantly shaped our understanding of individual decision-making across a number of contexts, from political campaigns (e.g., Ridout & Searles, 2011) to investment decisions (e.g., Huang & Pearce, 2015) and marketing efforts (e.g., Cavanaugh, Bettman, & Luce, 2015). Especially prominent is their dual-process theory, which argues that human thinking consists of two architecturally distinct information systems. The first - so-called *system 1*- involves the automatic and rather unconscious information processing, whereas the other system - *system 2* - refers to the rational and more deliberate intake of information.[4] The two systems have been found to lead to very different attitudes (e.g., Edell & Burke, 1987; Green, 2008), evaluations (e.g., Lerner & Keltner, 2000; Zauberman et al., 2006) and ultimately decisions (e.g., Metcalfe & Mischel, 1999) – all of which depend on the amount and kind of thought an individual devotes to a message.

In situations that evoke affective states (i.e., feelings)[5], such as viewing images or reading dramatic narratives (e.g., Van Laer et al., 2014), individuals typically use system 1 that operates under *low cognitive* processing power. The system 2 corresponds to the analytical type of thinking and works under *high cognitive* processing power. It is usually activated when individuals make a conscious effort to reflect on and systematically evaluate information. As affective stimuli can be more easily processed, people generally find the expression of sentiments easier than that of logical thinking – rendering the system 1 the default mode (e.g., Epstein, 1994; Lavine, Thomsen, Zanna, & Borgida, 1998; Zajonc, 1980). Whenever information is presented,

---

[4] There exist a variety of studies that, in spite of using differing notations, have their core assumptions rooted in the dual-process theory (for review see Evans, 2008 and Dane & Pratt, 2007). For clarification purposes, we adopt the terms introduced by Kahneman and Frederick (2002) and refer to system 1 and system 2.

[5] In this study, we use "feelings" as a broad term referring to various affective states and affective experiences, i.e., discrete emotions as defined by Seo and Barrett (2007).

individuals tend to unconsciously engage with the first affective cues that seem familiar to them (Gigerenzer & Goldstein, 1996; Graefe & Armstrong, 2012). This emotional 'memory' recalls thoughts where individuals have felt the same way and let them react accordingly, for example by adopting a similar attitude (Johnson & Tversky, 1983). In a social setting, system 1 is also present when we encounter new individuals upon entering a room, or a conference hall – we automatically form expectations or attitudes towards these individuals based on our first impressions (Brewer, 1988).

Dual-process theory is a potent lens to understand investing decisions in the VC context. Before investing into a new venture, or even considering a venture for proper due diligence, VCs have to go through an intensive (and often long) process of general venture screening, where often hundreds of business plans cross their tables, and myriads of short and long pitches take a toll on their cognitive load. Throughout this process, research has shown that VCs rely on different explicit criteria and analyses – reflective of system 2 thinking (for an overview, see Zacharakis & Meyer; 1998). For example, in a due diligence process, VCs thoroughly and systematically evaluate a venture's market and industry, investigate the founders' background and strengths as a team, and explore the robustness of technology 'edge' the venture claims to possess. At the same time, research also increasingly recognizes the potency of system 1 in VC decision-making. For example, scholars report on the role that different cues (Hisrich & Jankowicz, 1990; Zacharakis & Shepherd, 2001) and other soft factors (e.g., Cardon, Wincent, Singh, & Drnovsek, 2009; De Clercq & Sapienza, 2006; Mason & Stark, 2004; Navis & Glynn, 2011; Zott & Huy, 2007) play in VCs' decision-making processes. Relying on such 'cognitive shortcuts' and heuristics is inevitable in order to build in some efficiency into the screening and evaluation processes, and quickly categorize ventures into more or less interesting (Zacharakis & Shepherd, 2001). Indeed, some scholars have stated that in situations of high uncertainty and time restraints (that characterize well the VC setting) decision-makers increasingly rely on their intuition – or system 1 thinking (e.g., Busenitz & Barney, 1997; Gigerenzer & Gaissmaier, 2011; Huang & Pearce, 2015; Khatri & Ng, 2000). Even more strikingly, in case of dissonance between formal analysis and intuitive feelings, investors tend to discount the former and primarily rely on their intuition in evaluating the potential of venture's success (Huang & Pearce, 2015).

In conclusion, extant research provides bountiful evidence for both system 2- and system 1- thinking in the VC decision-making process. In doing so, it also opens doors to understanding the formation and processing of various cues that inform this process. In this regard, while past literature on third-party affiliations validated that attributes of exchange partners spill over to

influence perceptions of the venture's quality (Cialdini et al., 1976; Stuart et al., 1999), we posit that the characteristics of the investor's persona derived from its media attention are likely to spill over on the affiliated new venture to influence perceptions of the new venture's character, and as such represent an important cue in VC's evaluation.

2.2.2. Media attention – its baseline impact on VC decision-making

Extant research has generally established that any media attention is better than none (Petkova et al., 2013; Pollock & Rindova, 2003; Pollock et al., 2008). One important reason for this is that being publicly recognized is the first necessary step in entering the consideration set of other market actors' possible choices (Hoffman & Ocasio, 2001; Petkova et al., 2013). Stated simply - without being known, there is no possibility of being evaluated. In this regard, the affiliation with a prominent third party – such as a business angel with high media attention - can substitute for the venture's own lack of visibility.

Beyond getting the venture on the VC's radar', affiliation with a business angel with high media attention could support the positive evaluation of the new venture for at least two reasons. First, as mentioned earlier, in the process of screening for promising ventures to investigate for further due diligence (e.g., Cumming & Dai, 2013; Rosenbusch et al., 2013; Zacharakis & Meyer, 2000), system 2 can easily be drained. Therefore, VCs often rely on observable cues to facilitate their decision-making (Pollock et al., 2008). Here, even the nature of images and usage of color in business plans have been found to make a difference (Chan & Park, 2015), which would be standard evidence for the operation of system 1 in action. Given that investors have been found to take cues from other professionals' actions, such as journalists, to facilitate their decision-making (Busse & Green, 2002; Hoffman & Ocasio, 2001; Pollock et al., 2008), the name of a news-worthy business angel is likely to act as such readily available cue that directs the VC's attention and contributes to the VC's positive evaluation of the affiliated venture. In that sense, a business angel that has been often featured in the news becomes more widely available in memory and, importantly, becomes cognitively easier to recall through system 1 (Tversky & Kahneman, 1973).

Second, given the high uncertainty that surrounds the VC investment targets, seeing a familiar name affiliated to the venture is likely to reduce some of these doubts (Heath & Tversky, 1991). While layers of uncertainty that surround the new venture range from everything related to product, technology, and market related aspects, investors often report the human element as the most unpredictable one (e.g., Zacharakis & Meyer, 1998). Importantly, for a VC, the human element is relevant in assessing a venture not only in terms of its entrepreneurial team, but also

24

in terms of the extant investors in the venture. Indeed, one VC stated that having a bad co-investor is even worse than having experienced a bad entrepreneur, emphasizing familiarity and trust as key criteria in making joint investments (Walske, Zacharakis, & Smith-Doerr, 2007). In this regard, a sense of familiarity that a highly media covered business angel has can help the VC's positive venture assessment in two ways: directly, given the reduced uncertainty about him/herself (i.e., extant investors); as well as indirectly, to the extent that characteristics of ventures' affiliates can spill over to the venture team and give it a character of familiarity as well (cf. Cialdini et al., 1976). In that sense, a well-known business angel may help in that it sooths at least some of the VC's major concerns among many remaining uncertainties.

In conclusion, with 80% of the new ventures never making it over the initial screening hurdle (Petty & Gruber, 2011), the affiliation with media-visible angel investors is likely to act as a readily available cue that increases the likelihood of subsequent VC investment via increased visibility and reduced uncertainty owing to a sense of higher familiarity. Thus:

> *Hypothesis 1. The affiliation with a media-visible private investor increases the likelihood of a first VC investment.*

2.2.3. Types of news and information processing

While media coverage *per se* is likely to positively influence stakeholders' attention, we argue that the type of media reporting, i.e., business angels' coverage in the *general* vs. *specific* news, makes a difference in affecting VC's evaluations. Business angels often have a history of prior accomplishments (Hunter et al., 2009), having been entrepreneurs or (top) managers themselves, or having achieved accomplishments in different professional fields. For this reason, many angel investors are often featured in various news sections, other than those related to the startup community only.[6] In this vein, in our data we observe venture investments from established investors (e.g., the most active angel investor Fabrice Grinda, the self-made millionaire Mark Cuban or the angel legend Ron Conway), but also from individuals with different backgrounds (e.g., the film maker Rena Ronson, the golf player Stephen Elkington or the music manager Troy Carter). Apart from their prior investment-related activities, angel investors therefore not only differ in their extent of public visibility, but more importantly also in the type of media attention they receive. For example, whereas Mark Cuban's or Stephen Elkington's activities are mainly reported in general news, where stories of 'common' interest dominate (such as personal trivia, business, sports or public engagement), their investment activities are likely to be covered in specific news, where the focus is typically on a more defined field of

---

[6] We found on average three times the volume of non-investment-related news than for the investment context.

interest (such as startup investments) (Carroll, 1985). For example, among 2,160 news items found about Cuban and 890 about Elkington, 80% and 95% respectively are covering topics of general interest[7], such as about Cuban's acquisition of the "Dallas Mavericks" NBA team or about Elkington's plays at major championships and even controversial Twitter postings.

The two types of news are different in meaningful ways. Beyond the expected difference in the content, the news contexts likely also importantly differ in the extent of storytelling usage. In the general news, content is typically presented in a manner that is easily comprehensible and accessible to a broader audience, which is commonly facilitated by the extensive use of affective elements (e.g., Petkova et al., 2013; Rindova et al., 2006). In our data, even in business media, already the headlines from *general* news items are often characterized with affective or provocative elements. For example, appearing in the real estate section of the San Francisco Business Times, an article reported on the debate regarding the plans for a Golden State Warriors arena, which included Ron Conway's statements, with a headline: *"Exclusive: Benioff, Conway slam 'covert' critics of Warriors arena plan"* (Hoge, 2015, April 2015). Similarly, New York Times commented on Mark Zuckerberg's announcement of donating billions to charity in an article titled: *"How Mark Zuckerberg's Altruism Helps Himself",* even confessing in the opening of the article that *"...instead: Mr. Zuckerberg created an investment vehicle. Sorry for the slightly less sexy headline"* (Eisinger, 2015). Specialized news, in contrast, target an expert audience, and accordingly build on detailed and technical knowledge rather than relying on affective stimuli. For the same angel investors, exemplary news headlines are: *"Ronny Conway raising a $140M second early stage investment fund"* (Hall, 2015) and *"Zuckerberg Makes First Ed-Tech Investment, Leads $4M Round for Cambridge Startup"* (Landry, 2013).

Given that different types of news can emphasize anything from investors' relevant expertise to different personal trivia (or even scandals), such media attention can represent both a social asset or a social liability in the investors' eyes at the moment of venture evaluation. Indeed, while prior research seems to have often implicitly considered the media coverage as a valuable asset (e.g., Petkova et al., 2013; Pfarrer et al., 2010; Pollock & Rindova, 2003), the findings are quite inconsistent – and the type of news may well explain when possible liabilities can occur and why. We proceed to rely on dual-process theory in understanding how VCs evaluate media targets (and in turn affiliated new ventures) given the news contexts in which their business

---

[7] We conducted the search on the media database Factiva between 1 January 2010 and 1 January 2016.

angels are represented – above and beyond the visibility and familiarity that comes with the media coverage per se.

Specific media attention. In the VC decision-making context, we refer to specific media as news whose main objective is to provide information on important funding activities, investing trends, newcomers and upcoming events in the startup world. Here, journalists cater to the investors' specific interests of receiving relevant information to their profession. Given its relevance to the VC context, media-provided information on the business angels' investment activities further increases the affiliated venture's likelihood of a positive evaluation in several ways.

First, given that investors intentionally read such news to inform their daily work they are likely to consciously reflect upon the information presented. In such situations, the system 2 is more likely to be active, rendering the information as more impactful in turn (Fiske & Taylor, 1991). Specifically, when processed by system 2, the read information is given more weight in informing future decisions because it is the reader's perceived relevance of information that determines its value (Anderson, 1981). With a growing number of news items emerging on a BA's investment activities, the VC investors are not only increasingly likely exposed to such information, but also increasingly likely to be positively influenced by it for the reasons of relevance and credibility. Specifically, at the point in time when the venture is evaluated, beyond mere recall and familiarity bias (cf. hypothesis 1), system 2 processing of specific media attention is likely to have a stronger weight in informing the VC's decision, effectively upgrading the cue from mere familiarity to high relevance (cf. Heath & Tversky, 1991). This is important, as VC investors are more receptive to relevant information when taking funding decisions (Chen, Yao, & Kotha, 2009).

Relatedly, the uncertainty reduction resulting from the increased informational impact (cf. Heath & Tversky, 1991) is likely to translate into higher business angel's appreciation given that the relevant media found their investment-related activities to be newsworthy. As specific news is written by specialized journalists with deep knowledge in the venture investment field, their expertise provides additional credence to the protagonists covered (Petkova et al., 2013), thus embedding the existing cues of familiarity and relevance with additional credibility. This in turn is likely to positively affect the VC's assessment both directly and indirectly. Directly, relevant media attention is likely to increase the business angel's perceived fit as a future possible co-investor (e.g., Suchman, 1995): not only is the familiarity bias aiding in reducing an important uncertainty component of an otherwise unknown prospective syndicate partner, but

this familiarity comes embedded in a context of relevant, even news-worthy expertise. Given the importance of an experienced and reputable syndicate partner (e.g., Lerner, 1994; Meuleman, Lockett, Manigart, & Wright, 2010), this is a key factor in evaluation of a prospective investment target. Indirectly, via the spillover effect of affiliations, VCs are likely to make some assumptions about the affiliated venture team's character and fit (Amit, Brander, & Zott, 1998). For example, founders who are ready (and experienced) in working with rules and norms of serious business angels could be perceived as more likely to be aligned with the mindset of a professional investor such as a VC – which is otherwise often reported as a major point of conflict in a VC-entrepreneur relationship (cf. Laura & Knight, 2017). Therefore, we hypothesize that investment-related media attention positively influences the VC's evaluation of the affiliated venture.

Hypothesis 2. The affiliation with a private investor with high investment-related media attention is positively related to the likelihood of a first VC investment.

Non-investment-related media attention. In contrast to specific news, general news content is designed for the 'average reader'. Faced with highly competitive media market, general news developed special mechanisms in order to keep audiences' interest (Carroll, 1985). For example, if a piece of news has received initial attention, the general news tends to report on the same topic over and over again (Rao et al., 2001). To be able to do this, journalists tend to present the same story characters in different lights and by embedding them in a controversial or even dramatized context (Green, 2008; Rindova et al., 2006).

When taken to the VC context, such general (non-investment) news is likely not read with the same scrutiny, as VCs perceive it as less applicable to their daily work. At the same time, the extensive use of affective stimuli in the narrative of general news may trigger affective reactions of system 1 (Epstein, 1994). For example, reading about Pay Pal founder and angel investor Peter Thiel in general news, one could repeatedly read about his launch of a scholarship to fund students' entrepreneurial projects and his related motivations behind it in headlines such as: *"Make college accessible to the masses – and jobless", "College: Is it Worth The Cost?"* or *"Changing the World by Dropping Out".* Such headlines reflect the provocative and affect-laden vocabulary typical of general news; indeed, regardless of the media outlet, very few headlines simply stated: *"Thiel Foundation; Peter Thiel Opens Application Period for "20 Under 20" Thiel Fellowship."*

The usage of drama in the general news narrative is likely to affect a VC's perception of the news protagonist in several ways. First, such vocabulary is likely to decrease investors'

perceptions of the news as relevant and informative (cf. Heath & Tversky, 1991) and accordingly remain within the affective processing mode of system 1 (Epstein, 1994). As affective stimuli have been found to offset investors' funding decisions in other settings (Chen et al., 2009), general news could be very relevant in VCs' decisions, but in an opposite way than the specific news. For example, offsetting positive effects of greater visibility, an angel investor who is frequently featured in general news may not evoke (merely positive) familiar feelings with the VC as the context is different - and potentially even unknown.

General media coverage of the business angel is likely also important in shaping the nature of 'cues' that the venture's affiliation provides. For example, past findings in psychology have shown that ambiguous emotion-laden memories lead to 'cognitive confusion' and individuals' negative reactions - either by changing their mind (Zanna & Cooper, 1974), by denying the content (Gruenfeld & Wyer, 1992) or by overvaluing some information over other (Festinger, 1957; Huang & Pearce, 2015). With journalists often reporting news in a rather exaggerated and controversial manner (Rindova et al., 2006), there is a higher chance that the system 1 continues to be relevant in recall during venture evaluation as the VC investor unconsciously retrieves mixed emotions when recalling dramatized information about the business angel. Accordingly, because of the affective framing with which the BA's other activities are reported, the higher visibility is likely to cause growing cognitive dissonance (Zanna & Cooper, 1974). The effects when it comes to the familiarity, again, could be two-fold. Directly, general news coverage could lead to mistrust and higher uncertainty regarding the angel investor's behavior. Indeed, in discussing this research with one VC, it was remarked that "even beyond my opinion of their non-investment related activities, such people are simply likely to be inaccessible and erratic as syndicate partners, which could be a major turn-off". More subtly, the recall of affect-laden and provocative general news via system 1 likely prompts the VC investors to discount the prospects of the angel investor as a favorable co-investor and makes their investment targets less likely to be further considered. Indirectly, a new venture will most likely suffer from the discrepant perception of his or her affiliated angel investor due to the negative spillover effect. Therefore, we hypothesize that non-investment-related media attention negatively influences the VC's evaluation of the affiliated venture.

> *Hypothesis 3. The affiliation with a private investor with high non-investment-related media attention is negatively related to the likelihood of the first VC investment.*

2.3. Methods

2.3.1. Data and sample selection

Our sample consists of 988 U.S. ventures founded between 1 January 2000 and 31 December 2015 that operate in the Internet or IT sector and that have received their first funding from at least one business angel. Of those, 286 have received VC funding in their second funding round, whereas the remaining ventures have only obtained angel investment (702) by the end of the sample window.[8] The ventures were funded by a total of 2,334 private investors and 332 VC investors. We collected the data from multiple sources. First, we drew our data on new ventures from the increasingly popular venture database Crunchbase (e.g., Alexy et al., 2012; Homburg et al., 2014), which contains investment-related events and further profile information of new ventures. The data was downloaded on 18 April 2016. Being set up by the premier blog operator in entrepreneurship TechCrunch in 2007, its content is first provided by the community and subsequently validated by expert employees. Not only does Crunchbase have fewer occurrences of missing or incorrect data compared to many other leading databases (Homburg et al., 2014; Werth & Boeert, 2013), it was also more appropriate for our study, given that it comprises comprehensive information on ventures' early phases and seed funding rounds. Because the Crunchbase database was launched in 2007, we start the time period for the venture's founding date on 1 January 2009 to allow the database to be sufficiently established. We close the sample window on the date of data retrieval.

Second, we derived all media data from the media database Factiva, which we found to contain a larger number of media channels relevant to our study purpose (e.g., Wall Street Journal and Business Week) than other media databases, such as Lexis-Nexis. The data was withdrawn on an annual basis and limited to the U.S. region containing English-speaking news. We allowed for different formats of information output as news are not exclusively read in print magazines, but are also increasingly issued on blogs and websites.

---

[8] The high share of VC-backed startups is due to the specific assumptions of the selected research method, i.e., the Cox model, that requires every subject in the sample to experience the event of failure or survival eventually. For this reason, we excluded ventures for which the outcome is already known, for example those that received other than VC investment in the second funding round, or that closed their business or got acquired. Still, for robustness checks, we also conducted competing risk analyses controlling for alternative outcomes, revealing the same findings.

2.3.2. Measures

Our media attention measures track private investors' media coverage over the years (e.g., Bednar, 2012), and distinguish between the baseline media attention variable, and two context-specific media attention effects.

Media attention. To capture the baseline effect of media attention irrespective of the media context, we constructed a dummy variable taking the value of 1 if any of the affiliated angel investors of a new venture has been among the top quartile of reported persons in either the investment or non-investment context in a given year. Including this variable into the model should separate any baseline effects (visibility, media legitimation and familiarity cues) that a popular business angel would contribute towards a VC's (positive) evaluation of the venture, such that our remaining variables can capture the theorized additional effect of the news context.

Context-specific media attention. To distinguish between the different dimensions of media attention, we followed studies that concentrated on context-specific information as well (e.g., Bystrom & Dimitrova, 2014; Graffin, Bundy, Porac, Wade, & Quinn, 2013; Park & Berger, 2004) and employed specifically designed keyword-based search queries (detailed below).[9] The appropriateness of keywords based on the obtained search results has been checked manually by two independent researchers with each assessing random 100 cases with an average of four news items categorized into the 'other' type of media attention. Given the fairly low occurrence of error, we proceeded using this method to distinguish between the two media attention types.

Investment-related media attention. For investment-related news we developed a comprehensive list of investment-specific keywords and combined them with each private investor's name. We browsed news on venture investment related topics and collected all terms that appeared frequently in such a context, for example "startup", "venture capital" or "funding" within 50 characters from the business angel's name in separating out news that talk about investments in general and not related to the person. Second, we applied different combinations of the terms and used both the singular and plural form, and similar spellings. This list was then validated

---

[9] Contrary to other approaches (Petkova et al., 2013), we decided against the division into media outlets (e.g., daily newspapers, business magazines, gossip channels) as, in our case, the different types of news could not be associated with one particular kind of media outlet. Also, as has been reported, most media channels provide both types of news due to increased competition for readership (see also Jonnson & Buhr, 2011). For example, professional media outlets, such as the Wall Street Journal and Forbes, increasingly report non-business-related news, whereas general media outlets, such as Daily Mail, feature more business-relevant stories.

with two venture investor experts. Further, as we were interested in the number of truly visible BAs in the media, similar to Pfarrer et al. (2010), we counted each time a private investor has been among the top quartile of persons in our sample in the investment context in a given year. For this, we created a dummy taking the value of 1 if the amount of investment-related media news was more than the 75% percentile of all investment-related media news in a given year. We aggregated this information for a 5-year time period preceding the year of the event of interest. In agreement with earlier research (Pollock et al., 2008), we did not find sufficient statistical proof for differences in news tenor. In a subsample of 100 angel investors' news coverage, we found 97% of the news marked as positive and 3 % as neutral based on the same calculation as employed by Pfarrer and colleagues (2010).[10] For each new venture, we then divided the obtained cumulative number by the number of ventures' angel investors.

Non-investment-related media attention. In order to capture non-investment-related news, we counted all articles that had been excluded by the key term-specific search queries applied for the investment-context. Also for this type of news, we examined a subsample of 100 business angels' news items, which resulted in a classification of 79% of news as positive, only 1% as negative, and the rest as neutral – invalidating examination of news tenor as viably relevant in this context. Again, we considered each private investor to have received sufficient media attention if they were among the top quartile (above the 75% percentile) of featured persons in the news in a given year within a 5-year time window.

Control variables. We consulted a growing body of research on VC decision-making to make sure we control for alternative factors that may influence VC investment decisions. At the venture level, we applied the same measurement for the *startup's media attention* to establish consistency in our analysis. We filtered all industrial media articles (Petkova et al., 2013) containing the startup's name for a 5-year time period preceding the year of the event of interest.[11] We created a dummy variable for startups that have at least once received high media attention in the designated period (75% percentile). We also controlled for the *startup age*. Further, we extracted the *number of founders* and the *team's prior founding experience* from the Crunchbase and measured the latter by the number of founder positions in previous startups as both

---

[10]We used the Linguistic Inquiry Word Count (LIWC) Dictionary 2015 and coded an article as "positive" if the positive affective content was at least 60 percent of the total affective content, and as "negative" if at least 60 percent of the total affective content was negative.

[11]We manually reviewed the media news results for all startups and replaced those with ordinary names (e.g., "Fever", "Converge", "Slide"), which affects about 15% of the startups in our sample, with the mean value of media coverage in a given year (cf. Tabachnick & Fidell, 2007). We run all analyses without those startups affected and obtained similar results.

are positively associated with capabilities and networks the team has access to (Eisenhardt & Schoonhoven, 1996). Further, we control for *the venture's industry category*. As most startups registered in Crunchbase have an IT or Internet background (Alexy et al., 2012), we relied on the same classification system of USA Today's Internet 100 index employed in earlier studies (Pollock, Fund, & Baker, 2009; Pollock & Gulati, 2007). We categorized the ventures into *E-Advertising, E-Finance, E-Infrastructure, E-New Media, E-Retail, E-Services/Solutions* and *others*.

Moreover, we control for the number of venture's *patent applications in the U.S.* as the patent portfolio is perceived to be a good proxy for a company's innovation orientation that is important to VCs (e.g., Homburg et al., 2014; Hsu & Ziedonis, 2008). Finally, we control for the venture's home base: *San Francisco area, New York area, Los Angeles, Boston, Seattle* and *other* (Sorenson & Stuart, 2001). We also include controls for the private investor's background, as it may inform VCs about their investment-related expertise (Drover et al., 2015). Therefore, we control for a business angel's number of *prior investments* and their *prior founding experience* (measured as the number of times a private investor had been co-founder prior to the investment).[12] To control for investment-specific characteristics, we included the *raised amount* (log-transformed due to high skewness) (e.g., Kirsch et al., 2009) and the number of private investment partners (angel *syndicate size)* (e.g., Dimov, Shepherd, & Sutcliffe, 2007; Ma, Rhee, & Yang, 2013) of the first private funding round. Both factors mitigate investors' uncertainty related to the young investment target (for an extensive review see Jääskeläinen, 2012). Further, we controlled for the *year of the first funding round*, but did not report it in tables to conserve space.

2.3.3. Dependent variable and model specification

To test our hypotheses we use duration analysis, because each history of an individual, team or organization can be seen as a sequence of events (Allison, 1982). For a new venture, the timely acquisition of sufficient funding resources is key to survival (Hsu, 2007). Further, as start-ups usually lack reports on their sales numbers and financial statements, financing commitments have become an established and measurable proxy for new venture performance (e.g., Martens et al., 2007; Zott & Huy, 2007).

---

[12]Given that only 5% of the private investors of our sample had a non-business background (e.g., arts, music, literature, sports, medicine or science), we did not include it in the final models.

In this study, our main event of interest is whether a new venture receives VC funding for the first time in the second funding round – where the first funding round included only private, not institutional (VC) investors. The waiting time T from the first funding round to the subsequent funding round is the dependent variable and usually denoted as *survival time* in the survival analysis terminology. The *hazard rate* is technically defined as the instantaneous rate the event of interest (here VC funding) can occur given that it has not occurred any time before. Survival models implicitly assume that the event of interest is bound to occur and if it does not happen at the time of the data analysis observations are considered as *censored*. In our case this would mean that all new ventures eventually receive VC funding, which is obviously not true. Still, the hazard and survival functions can still be calculated as long as the waiting time T is not used for interpretation purposes (Rodríguez, 2007). Further, we carefully designed the sampling strategy by distinguishing between different venture outcomes. Thereby, we were able to conduct several survival analyses as robustness checks.

We chose the proportional hazard Cox model (1972) as it has an important advantage over other survival models. The Cox model makes no assumptions about the baseline hazard function, that is the "risk" of receiving VC funding every venture faces at a given point of time independent of its set of covariates. Parametric models, on the contrary, specify the functional form of the baseline hazard, which requires full understanding of other influencing effects than the explanatory variables. Yet, being classified as a semi-parametric model, the Cox model allows for the parametrization of its covariates, which makes it more powerful than its non-parametric counterparts (e.g., Kaplan-Meier estimate). Further, the Cox model is called proportional in that the relative risk associated with the set of covariates a venture disposes is additive (i.e., multiplicatively proportional) to the baseline hazard. Thus, the effect of the covariates is either increasing, decreasing or constant over time. We estimate the hazard rate λ_i of a new venture x_i to receive VC investment at time t as follows:

$$\log \lambda_i\left(t/x_i\right) = \lambda_0(t) + \sum_{j=1\dots n} x'_{ij}\beta_j, \tag{1}$$

where $\lambda_0(t)$ is the baseline hazard function and $\sum_{j=1\dots n} x'_{ij}\beta_j$ the set of covariates for each venture. Our proportional hazard model assumes that the hazard function is continuous and, thus, that there are no tied survival times. Because of the way that time is recorded, however, tied events do occur in survival data. Therefore, we use the Breslow method (Breslow, 1974) for handling tied failures.

2.4. Results

In Table 2, we present the descriptive statistics and correlations. The average startup is 1.2 years old at its first funding round, has two founders and has filed one patent application. The average business angel has made approximately six investments and has more often than not founded a company in the past (approximately 70% did). In the first funding round, the mean raised amount is 1.5 million dollars with more than two private investors involved. 71% of the startups in our sample are affiliated with a private investor that has at least once received high media attention in some context. Inspecting correlation statistics, multicollinearity does not seem to be an issue in our models. The results of our main survival analysis can be seen in Table 3. A hazard ratio over 1 (below 1) indicates an increase (decrease) in the relative likelihood of receiving VC investment at the next point in time, conditional on the event of interest not having occurred already. To put it more intuitively, the hazard ratio is equivalent to the odds *P=HR/(1+HR)* that the venture with the higher hazard ratio will receive VC funding faster. The hazard ratio, however, does not convey information about how soon the VC investment will occur. Model 1 is our baseline model, containing only the control variables. Models 2 to 4 include stepwise all variables. Model 5 shows the full model. As predicted in Hypothesis 1, a new venture that is affiliated with a media-visible investor has a higher likelihood of 63% (HR = 1.70, $p < .01$) to receive a VC investment faster compared to a new venture without such affiliation. This confirms our first hypothesis.

Table 2: Descriptive statistics and correlations of variables for media attention analysis

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
Venture level															
1. Startup age	1.20	1.92	1.00												
2. Number of founders	2.05	0.93	0.04	1.00											
3. Team's prior founding experience	3.12	14.72	-0.06	0.32*	1.00										
4. US patent applications	1.03	19.70	0.22*	0.00	-0.00	1.00									
5. B2C business model	0.42	0.49	-0.05	0.01	0.03	0.03	1.00								
6. Startup media attention	0.23	0.42	0.10*	-0.01	-0.00	0.07*	-0.02	1.00							
Investment level															
7. Raised amount[a]	1,516,948.10	7,887,705.35	0.17*	-0.03	0.00	0.10*	-0.05	0.10*	1.00						
8. Syndicate size	2.37	2.13	0.04	0.09*	0.04	-0.02	0.03	0.05	-0.01	1.00					
Investor level															
9. Number of investments	5.57	12.54	-0.01	0.04	0.01	-0.01	0.01	0.08*	0.08*	0.01	1.00				
10. Founding experience	0.71	1.77	-0.11*	0.11*	-0.01	-0.01	0.01	0.04	0.02	0.03	0.04	1.00			
11. BA media attention	0.71	0.45	0.09*	0.05	0.08*	0.03	0.02	0.10*	0.06*	0.28*	0.21*	0.05	1.00		
12. Investment-related media attention	1.75	1.97	0.08*	-0.01	-0.03	-0.01	-0.01	0.14*	0.50*	0.01	0.27*	0.10*	0.57*	1.00	
13. Non-investment-related media attention	1.69	2.11	0.08*	-0.03	-0.00	0.07*	-0.00	0.08*	0.19*	0.00	0.14*	0.02	0.51*	0.64*	1.00

[a] Natural logarithm for correlation statistics.

* $p < .05$

Startup Internet industries, startup US locations, and years of first financing rounds are excluded from this table.

Table 3: Results of Cox survival analysis predicting the hazard rate of VC investment in the second funding round[a]

Variables	Model 1 HR	SE	Model 2 HR	SE	Model 3 HR	SE	Model 4 HR	SE	Model 5 HR	SE
Venture level										
Startup age	1.00*	0.04	0.93	0.04	0.93*	0.03	0.93*	0.04	0.93*	0.05
Number of founders	1.05*	0.04	0.92	0.04	0.92*	0.04	0.90*	0.04	0.91*	0.04
Team's prior founding experience	1.01***	0.00	1.01***	0.00	1.01***	0.00	1.01***	0.00	1.01***	0.00
US patent applications	0.99	0.01	0.99	0.02	0.99	0.02	1.00	0.01	1.00	0.02
B2C business model	1.41	0.40	1.37	0.38	1.36	0.39	1.27	0.35	1.32	0.37
Startup media attention	1.58***	0.21	1.52**	0.20	1.62***	0.21	1.53***	0.21	1.59***	0.21
San Francisco Bay	2.86***	0.51	2.72***	0.49	2.84***	0.51	2.61***	0.47	2.73***	0.50
New York City	2.97***	0.62	2.92***	0.62	2.93***	0.62	2.79***	0.59	2.84***	0.60
Boston	2.69***	0.79	2.51**	0.74	2.56**	0.74	2.25**	0.69	2.38***	0.75
Seattle	2.83***	0.88	2.66**	0.82	2.91***	0.91	2.34**	0.74	2.64**	0.84
Investment level										
Raised amount[b]	1.13**	0.05	1.11*	0.05	1.15**	0.05	1.13**	0.05	1.15**	0.05
Syndicate size	1.08**	0.03	1.05*	0.02	1.05*	0.03	1.04	0.02	1.04	0.03
Investor level										
Number of investments	1.01**	0.00	1.01*	0.00	1.02***	0.01	1.01**	0.00	1.02***	0.01
Founding experience	0.98	0.04	0.98	0.04	0.98	0.04	0.99	0.04	0.98	0.04
BA media attention			1.70**	0.31	2.50***	0.49	2.23***	0.43	2.68***	0.54
Investment-related media attention					0.83***	0.04			0.87**	0.04
Non-investment-related media attention							0.88***	0.03	0.93*	0.03
Harrell's C	0.72		0.72		0.73		0.72		0.73	

a n = 988 with 286 startups receiving VC investment.

b Natural logarithm.

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

Startup Internet industries, startup US regional locations, and years of first financing rounds are included in the analysis.

In Hypothesis 2 we stated that the affiliation with private investors receiving high *investment-related* media attention would be positively related to likelihood of VC funding. Interestingly and contrary to our theorizing, the hazard rate is negative (HR = 0.83) and highly significant (p < .001). Hypothesis 2 is therefore not supported. In Hypothesis 3, we argue that new ventures affiliated to private investors receiving high *non-investment-related* media attention have a lower likelihood of receiving a VC investment. We find that those new ventures have a 47% reduced chance (HR = 0.88, p < .001) to receive VC funding in the same time as their counterparts without such affiliations. Our results therefore support Hypothesis 3. The full Model 5 sustains the previous findings. In addition, we report the Harrell's concordance statistic to evaluate the predictive power of each model. The correctly identified order of VC investments lies between 72% and 73%, which signals a good model prediction.

2.4.1. Additional analyses and robustness checks

Intrigued by the results for our Hypothesis 2, we conducted additional analysis to better understand the underlying mechanisms. We speculated that perhaps the positive effects of media attention on VC investment decisions are positive but only up to a point. To test this nonlinear relationship, we introduced polynomial factors. Table 4 reveals the comparison of the models with the direct effect of investment-related media attention (Model 3a), and additionally, the squared effect of the variable (Model 3b). As can be seen from Table 4, when introducing the squared term for high investment-related media attention, the direct effect becomes positive (HR = 1.43, p < .01). The turning point is at 2.00. Accordingly, the affiliation with a media-visible angel investor in the investment-context leads to a 59% chance to obtain VC investment faster than ventures having no such affiliation. However, this is true up to the point the investor has been more than 2 times among the most reported persons in the investment context in the designated period. The mean value of investment-related media attention is 1.75 (median is 1), suggesting that most affiliations with investors being subject to high investment-related media attention are actually beneficial, which is echoing the argumentation behind our Hypothesis 2.

Table 4: Results of Cox survival analysis predicting the hazard rate of VC investment in the second funding round showing the squared effect of investment-related media attention[a]

Variables	Model 1 HR	SE	Model 2 HR	SE	Model 3a HR	SE	Model 3b HR	SE
Venture level								
Startup age	1.00*	0.00	1.00*	0.00	1.00*	0.00	1.00*	0.00
Number of founders	1.05*	0.03	1.05	0.03	1.04	0.03	1.05	0.03
Team's prior founding exp.	1.01***	0.00	1.01***	0.00	1.01***	0.00	1.01***	0.00
U.S. patent applications	0.99	0.02	0.98	0.02	0.98	0.02	0.98	0.02
B2C business model	1.41	0.40	1.37	0.38	1.36	0.39	1.25	0.35
Startup media attention	1.58***	0.21	1.52**	0.20	1.62***	0.21	1.53**	0.21
San Francisco Bay	2.86***	0.51	2.72***	0.49	2.84***	0.51	2.66***	0.48
New York City	2.97***	0.62	2.92***	0.62	2.93***	0.62	2.78***	0.59
Boston	2.69***	0.79	2.51**	0.74	2.56**	0.80	2.40**	0.74
Seattle	2.83***	0.88	2.66**	0.82	2.91***	0.91	2.92***	0.94
Investment level								
Raised amount [b]	1.13**	0.05	1.11*	0.05	1.15**	0.05	1.13*	0.05
Syndicate size	1.08**	0.03	1.05*	0.03	1.05*	0.03	1.02	0.03
Investor level								
Number of investments	1.01**	0.00	1.01*	0.00	1.02***	0.01	1.03***	0.01
Founding experience	0.98	0.04	0.98	0.04	0.98	0.04	0.99	0.04
BA media attention			1.70**	0.31	2.50***	0.49	1.64*	0.37
Investment-related media attention					0.83***	0.04	1.43**	0.20
Investment-related media attention *squared*							0.91***	0.02
Harrell's C	0.72		0.72		0.73		0.74	

[a] $n = 988$ with 286 startups receiving VC investment.
[b] *Logarithm.*
*** $p < .001$; ** $p < .01$; * $p < .05$
Startup Internet industries, startup U.S. regional locations, and years of first financing rounds are included in the analysis.

Figure 1 displays the differences in the cumulated probability of a new venture to receive VC funding depending on its affiliation with an angel investor with different types and levels of media attention. As can be seen in the second chart of Figure 1, the cumulated probability to receive VC investment rises up to the point the affiliated business angel was two times among the most visible persons in the investment-related news context and decreases afterwards. The affiliation with angel investors being often featured in the general news lowers the cumulated probability to receive VC funding right away.

Figure 1: Comparison of new venture's affiliation with investors of different types of media attention based on Cox model
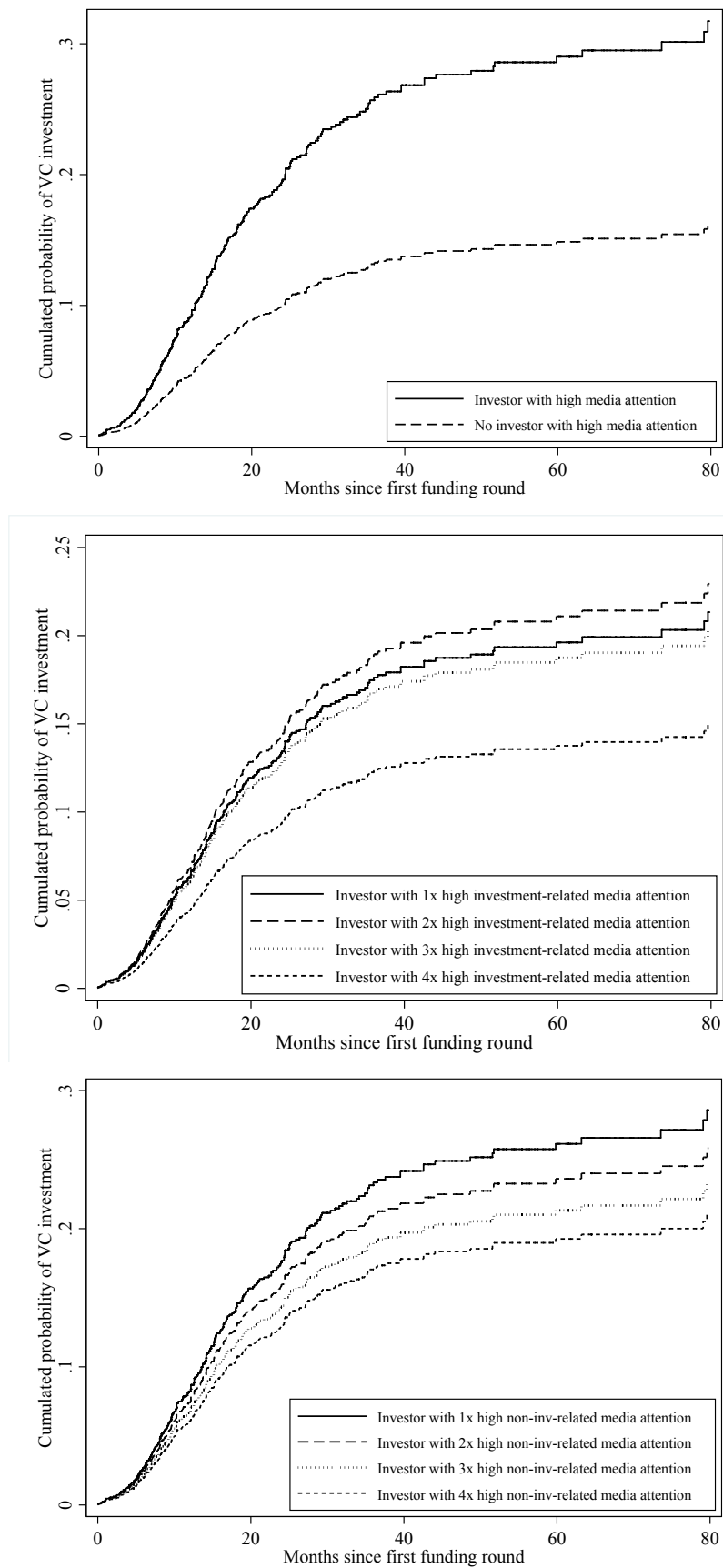
We performed several diagnostics to check if all our models are well fitted. First, we verified whether our models meet the proportional-hazards assumptions based on the analysis of the Schoenfeld residuals (Schoenfeld, 1982). For this, the relationship of the residuals is tested over time. In all our models, the H0 of zero slope cannot be rejected, which means that the log hazard function is constant over time. Second, we used the link test to check whether our covariates were correctly specified. The link test regresses the dependent variable on the prediction (the underlying model) and the prediction squared. In all link tests the prediction squared did not add explanatory power, which proved the appropriate specification of our covariates. Third, we assessed the overall model fit using Cox-Snell residuals (Cox & Snell, 1968) and also here our main models fit the data well.

We conducted additional analyses to increase the confidence in the robustness of our findings. First, we tested the presented models against alternative baseline assumptions that either assume a constant baseline hazard (exponential model) or that include estimated parameters to it (e.g., Weibull and Gompertz model). All results held and can be requested from the authors. Moreover, since we collected data on alternative outcomes in addition to receiving VC funding (such as new ventures that closed their business or became acquired), we also performed a competing risk analyses for the hazards of receiving VC funding, receiving BA funding (no VC involved), and being acquired. This yielded consistent results, which can be requested from the authors.

Finally, to address endogeneity issues that our media variables might be subject to, we applied several instrument variable (IV) estimation in separate analyses. In the case of survival analysis, and especially the Cox proportional model as relevant in this study, there is no tailored IV approach (such as employed by ivreg2 command in Stata for OLS). Therefore, we adapted existing IV approaches for the use with survival data by including the failure event (in our case VC funding happened = 1 or has not happened yet = 0) as a dependent variable and the time to failure event as time dummies. We are aware that one of the major concerns in IV modeling is finding suitable instruments that are both, relevant and exogenous (Bascle, 2008; Kennedy, 2008; Semadeni, Withers, & Trevis Certo, 2014). We wanted to find variables that could be related to the offending regressors (how much coverage a BA received), without being related to the error term ("venture performance"), which could influence the likelihood of VC investing.

As suggested by Wooldridge (2002), and applied in the VC context (Hellmann, Lindsey, & Puri, 2008; Hsu, 2007), geography-related variables often make good instruments. We created several candidates. Given that media tends to write about events of local relevance (Sallot &

Johnson, 2006), business angels tend to invest locally (Harrison, Mason, & Robson, 2003) and proximity to ventures may influence journalists' perception of who is of interest (Itule & Anderson, 1994), we collected data on the regional concentration of journalists in the venture's state. We also collected data on the number of top 100 U.S. daily newspaper outlets in each U.S. state, the daily circulation of the 100 U.S. daily newspaper outlets in each U.S. state, and the journalist employment rate per 1,000 employees in each U.S. state. In a similar vein, we measured the regional distribution of private investors in the U.S. by calculating the percentage of BAs in each U.S. state (Crunchbase). We expected a higher number of private investors in a specific area to attract interest of reporters as well.

As a next group of instruments, we considered BA attributes, since media visibility in the investment context could be the result of the BA's important accomplishments, which range from general level of activity in the investment field, but also from prior founding experience. Looking at the correlation table indeed revealed moderate correlations between the media visibility variables and the number of investments (0.45), but negligible correlations with BA's founding experience (0.01), with substantially lower correlations with VC funding (ranging from 0.11 to 0.08). We decided to include number of investments as a relevant instrument. Although this selection of instrument is more easily challenged theoretically, empirically, the inclusion of this IV importantly improved all IV tests for instrument relevance and exogeneity.

We followed the instructions of Bascle (2008), Semadeni et al., (2014) and consulted the Stata Journal (Baum, Schaffer, & Stillman, 2007) for all instrument test reports. Further, we acknowledge that dealing with endogeneity in quadratic relationships requires a particular form of IV estimation, which is instrumenting the direct and squared term separately (Haans, Pieters, & He, 2016; Wooldridge, 2002). For this, we considered to use the squared term of a suitable instrument as additional instrument (Haans et al., 2016). We ran different combinations of IVs to identify those that i) pass the underidentification test, such as the Anderson LM and the Cragg-Donald Wald statistic (H0 must be rejected), ii) the first-stage F-statistic for critical values of instrument relevance (Stock & Yogo, 2004), iii) the weak-instrument robustness interference test, such as Anderson-Rubin Wald test or Stock-Wright LM statistic (H0 must be rejected) and iv) the overidentification tests, such as the Sargan statistic (H0 must not be rejected). All of those tests have to be considered in order to allow for a comprehensive, transparent and thorough use of IVs (Baum et al., 2007; Semadeni et al., 2014)

Table 5: Results of Instrument Variables estimations

Variables	OLS b	OLS SE	2SLS b	2SLS SE	LIML b	LIML SE	FULL b	FULL SE
Venture level								
Startup age	-0.000**	0.00	-0.000	0.00	-0.000	0.00	-0.000	0.00
Number of founders	0.023*	0.01	0.040***	0.01	0.041***	0.01	0.037***	0.01
Team's prior founding exp.	0.003+	0.00	-0.001	0.00	-0.001	0.00	-0.001	0.00
US patent applications	-0.000	0.00	0.001	0.00	0.002	0.00	0.001	0.00
B2C business model	-0.001	0.06	0.066	0.07	0.073	0.08	0.061	0.07
Startup media attention	0.089*	0.04	0.001	0.03	-0.004	0.03	0.006	0.03
San Francisco Bay	0.203***	0.03	-0.012	0.03	-0.014	0.03	-0.012	0.03
New York City	0.172***	0.04	-0.003	0.04	-0.002	0.04	-0.006	0.04
Boston	0.114+	0.06	0.001	0.04	-0.001	0.04	0.006	0.04
Seattle	0.192*	0.08	0.096	0.06	0.102	0.06	0.089	0.06
Investment level								
Raised amount [b]	0.025**	0.01	-0.013	0.01	-0.016	0.01	-0.012	0.01
Syndicate size	0.000	0.01	-0.009	0.01	-0.011	0.01	-0.009	0.01
Investor level								
Founding experience	-0.003	0.01	-0.007	0.01	-0.006	0.01	-0.007	0.01
BA media attention	0.078*	0.04	-0.211	0.15	-0.277	0.17	-0.169	0.13
Investment-related media attention (1st)	0.095**	0.03	0.315*	0.15	0.384*	0.18	0.301*	0.14
Investment-related media attention *squared* (2nd)	-0.019***	0.00	-0.046*	0.02	-0.057*	0.03	-0.043*	0.02
Anderson LM statistic (p-value)			0.00		0.00		0.00	
First-stage F-statistic (1st)			39.42		39.42		39.17	
First-stage F-statistic (2nd)			43.42		43.42		43.96	
Sargan statistic (p-value)			0.16		0.17		0.21	
Is each instrument exogenous?			Yes		Yes		Yes	
R²		0.26						
N		988	512		512		512	

Excluded instruments are: Number of investments, number of investment squared, the employment rate of reporters per 1000 employees per U.S. state and the daily circulation of the top 100 U.S. newspaper outlets in a U.S. state.
[b] *Logarithm.*
*** p < .001; ** p < .01; * p < .05; + p < .10
Startup Internet industries, startup US regional locations, and years of first financing rounds are included in the analysis.

Following the respective instructions, we found the best fitting models based on the IV tests criteria with the following IVs: BA's number of investments, BA's number of investments squared, the employment rate of reporters per 1,000 employees in a venture's state and the daily circulation of the top 100 U.S. newspaper outlets in the venture's state. Jointly, they fulfill the criteria of instrument relevance, i.e., such as the F-statistic values for all endogenous regressors well exceed the critical threshold of 7.56 (Stock & Yogo, 2004). In addition, the Anderson-Rubin Wald test is rejected at the 1% level, meaning that our instruments are relevant and each of the IVs pass the test of exogeneity, such as that the null of the difference-in-Sargan test statistic (H0: exogeneity of instrument) cannot be rejected. Following suggestions by Bascle

(2008), we report the results of 2SLS, the limited information maximum likelihood (LIML), and the Fuller's modified LIML (FULL) estimation in Table 5. Especially the LIML and FULL estimation are expected to perform best with weak instruments (Blomquist & Dahlberg, 1999; Stock & Yogo, 2004). We only instrumented the direct and squared factor of investment-related media attention in the IV estimation based on our additional results reported in Table 4, because the more potential endogenous regressors, the more IVs are simultaneously needed, which is obviously difficult to achieve. Though, we kept BA media attention in the model and the results did not differ in case we removed it (similar to the inclusion of non-investment-related media attention). We run separate IV estimations with the BA media attention and non-investment-related media variables and obtained qualitatively similar results to the ones in our main models. As can be drawn from the main test results reported in Table 5, our main findings remained robust after considering endogeneity.

2.5. Discussion

Extant research largely takes the standpoint that "no news is bad news" (Petkova et al., 2013) in that media attention raises public attention, which is especially valuable for new ventures (Petkova et al., 2013; Pollock & Gulati, 2007; Pollock & Rindova, 2003). At the same time, findings are not as clear, with some results portraying even a negative effect of media attention (e.g., Fombrun & Shanley, 1990; Pollock et al., 2008). Intrigued by these opposing results, we study media attention in the context of new ventures' third-party affiliations and investigate the impact of publicly visible private investors on the new venture's likelihood to attract subsequent VC funding. We suggest that above and beyond the *level* of media attention, there exist distinct effects across two different *types* of media attention, namely investment-related news (i.e., *specific* news) and non-investment-related news (i.e., *general*) news.

 Overall, our findings support the view that media is a powerful market intermediary in shaping the public perception - in our case, shaping investment decisions of VC investors. Our first hypothesis builds on past research providing additional evidence that sheer media attention is better than none (e.g., Petkova et al., 2013; Pollock & Rindova, 2003). We show that new ventures being affiliated to a publicly visible private investor have a higher likelihood to become visible and pass the initial screening hurdles of professional investors. In that sense, our study speaks to extant research on social approval assets by interpreting the effects of media attention through the information-processing lens. To the extent that venture capitalists are more likely to recall the business angels the media continuously reports about, and such recall imbues a

sense of familiarity, affiliated ventures are likely to be that much more positively evaluated due to the reduced uncertainty, especially as it pertains to the human element. In this regard, by theorizing on the information processing mechanism that links different types of media attention to a behavioral outcome such as a funding decision, we contribute more mechanism-based theorizing to research on social assets, and media attention in particular (Davis & Marquis, 2005; Petkova et al., 2013; Rindova et al., 2005).

 At the same time, we importantly caution that beyond the *quantity*, it is the *type* of media attention that matters too. As theorized, we find that business angels with an increasing number of general news negatively affect VCs' evaluations. We reasoned that because *general news* is largely composed of affective narratives processed by the affective information system 1, it can add ambiguous feelings to initial familiarity – which in the context of VC funding decisions is likely to lead to unfavorable evaluations. To that end, our results translate the findings of previous work on 'cognition confusion' that can drive individuals to discount their favorable assessment (Gruenfeld & Wyer, 1992; Huang & Pearce, 2015; Zanna & Cooper, 1974) to the context of media informed VC investments. In our case, the affiliated business angel's high general media coverage and associated affective language and recall are likely to result in a reduced chance for the venture to be favorably evaluated by the VC investor given their poor fit to the investment context and expectations.

Our study also identifies an interesting though unexpected finding. Contrary to our reasoning, we found a negative effect of a private investor's specific media attention for the new venture's likelihood of raising VC funds. This result is striking as we expected investment-related media articles to solely contribute to the angel investor's positive assessment via several mechanisms related to the conscious information intake via system 2. Probing into the nature of this effect further, we found that following a positive effect (as hypothesized), there exists a turning point where the scope of specific media coverage starts to negatively influence the likelihood of attracting VC investment. In trying to interpret this tipping point, we took a deeper look into our data. We realized that there exist several classes of investors – some that continue attracting long-term media coverage, such as Mark Zuckerberg (the founder of Facebook), Andreas von Bechtolsheim (the first investor of Google) and Peter Thiel (the founder of PayPal); others that have received comparatively low media attention, yet are nevertheless very active as business angels and have been famous as first-time founders in the investment community (e.g., Fabrice Grinda, super angel with more than 200 investments; or Reid Hoffmann, the founder of LinkedIn with more than 60 personal investments). To that end, we visited theoretical work on

the 'celebrity phenomenon' (Rindova et al., 2006), which would argue that there exists a threshold of media coverage where a protagonist, such as an angel investor, becomes more than recognized, but actually 'celebrated' (Turner, 2004). Interpreted through celebrity literature lens, repetitive stories about the investors could become increasingly inflated and detached from these protagonists' actual achievements, which could result in questioning of the reasonableness or even credibility of their actions or knowledge. While celebrity literature is one way to explain our tipping point finding, a related explanation is offered by findings in social cognition, where scholars have revealed that readers with a high motivation to process information (via system 2) tend to detect 'faults' or 'flaws' in the argumentation and generate resistance to an influence attempt (cf. Killeya & Johnson, 1998). It could be that investors - who carefully read investment-related news - attend more closely to stories from their specific background and react negatively if increasing or exaggerated claims are made (Martens et al., 2007). While future research is encouraged to further probe into the exact nature of this mechanism, we consider this finding a step in the direction of uncovering important nuances of media attention. Indeed, between "any news is better than no news" (cf. Petkova et al., 2013) and "public might react negatively to all forms of publicity" (Fombrun & Shanley, 1990: 253) there is fertile ground for inquiry. In this regard, our study takes a more nuanced standpoint: rather than polarizing the media as exclusively good or bad, we suggest that it is the way the media reporting works through repetitive recasting of similar news and resulting narrative building that eventually may lead to a negative perception.

In a broader sense, our findings concur with "the more is not always better" literature (Pfarrer et al., 2010). Indeed, while third party relations are generally considered beneficial for new ventures (Pollock et al., 2010; Stuart et al., 1999), our study provides new insights as we theorize and find that distinct effects can be triggered by a *single type of affiliate* - depending on the context and quantity of their media attention. In understanding the role of media attention through the lens of dual-process theory, we highlight that media matters beyond its role in reaching different stakeholders (sharing the information). Indeed, media is a powerful framing tool that can be a not only a carrier but a trigger of affect that shapes investors' behaviors.

In discussing our contributions, it is also important to mention some limitations. First, our sample is biased towards IT and Internet companies and limited to U.S.-based ventures and investors, which restricts the generalizability of our findings. Future research may investigate whether different industries or regions provide boundaries to our theorizing. Second, similar to earlier work (Pollock et al., 2008), we only count the number of media mentions without

analyzing their content, which could provide for more nuanced analysis. Like many other studies investigating the effects on VC decision-making, our study design may be susceptible to endogeneity (e.g., Homburg et al., 2014), because certain factors that lead to the affiliation with highly publicly visible BAs may also increase the likelihood of a subsequent VC investment. While we followed the approach of previous studies (e.g., Ma et al., 2013), added various control variables on different levels and applied IV estimation (e.g., Bascle, 2008, Semadeni et al., 2014) to capture alternative explanations, future research could apply more experimental approaches to examine VCs' reactions to startup affiliates' media attention context and coverage.

Managerial implications

This study sensitizes new ventures for a careful selection of early affiliates. To the extent that the goal is attracting VC funding, new ventures would be well advised not to be attracted by the 'strongest shining' star in the private investor world, as it appears that it can – beyond initial attention-grabbing effects - deter VCs. Our results suggest that even among the top reported angel investors in the investment context - where one would expect positive spill-over effects of investment-newsworthy media coverage - there exist a critical point where media attention becomes "over the top" and negatively affects the VC investor' judgment. Instead of only focusing on the media "glow" of the private investor, we advise founders to take into account additional information factors when making decisions on the first round of financing, such as previous investment experience and industrial fit. Since past studies have shown that new ventures are prone to agreeing on less favorable conditions when affiliating with prominent third parties (e.g., Hsu, 2004), we hope that our results provide them with a better guidance on the necessity of agreeing to such terms and put a more realistic price on assumed "celebrity capital". For VCs, our study is also a call to reconsider how media may affect and occasionally distort one's evaluation of potential ventures. While a "light too bright" may indeed call for additional scrutiny, it may also result in dismissing a diamond in the rough.

References

Abrahamson, E. & Fombrun, C. J. 1994. Macrocultures: Determinants and consequences. *Academy of Management Review*, 19(4): 728-755.

Alexy, O. T., Block, J. H., Sandner, P., & Ter Wal, A. L. 2012. Social capital of venture capitalists and start-up funding. *Small Business Economics*, 39(4): 835-851.

Allison, P. D. 1982. Discrete-time methods for the analysis of event histories. *Sociological Methodology*, 13(1): 61-98.

Amit, R., Brander, J., & Zott, C. 1998. Why do venture capital firms exist? Theory and Canadian evidence. *Journal of Business Venturing*, 13(6): 441-466.

Anderson, N. H. 1981. *Foundations of information integration theory*. New York, U.S.: Academic Press.

Ashforth, B. E. & Humphrey, R. H. 1997. The ubiquity and potency of labeling in organizations. *Organization Science*, 8(1): 43-58.

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

Baum, C. F., Schaffer, M. E., & Stillman, S. 2007. Enhanced routines for instrumental variables/generalized method of moments estimation and testing. *The Stata Journal*, 7(4): 465-506.

Beatty, R. P. & Ritter, J. R. 1986. Investment banking, reputation, and the underpricing of initial public offerings. *Journal of Financial Economics*, 15(1-2): 213-232.

Bednar, M. K. 2012. Watchdog or lapdog? A behavioral view of the media as a corporate governance mechanism. *Academy of Management Journal*, 55(1): 131-150.

Blomquist, S. & Dahlberg, M. 1999. Small sample properties of LIML and jackknife IV estimators: Experiments with weak instruments. *Journal of Applied Econometrics*, 14(1): 69-88.

Breslow, N. 1974. Covariance analysis of censored survival data. *Biometrics*, 30(1): 89-99.

Brewer, M. B. 1988. A dual model of impression formation. In T. K. Strull & R. S. Wyer (Eds.), *Advances in Social Cognition*, vol. 1: 1-36. Hillsdale, NJ: Erlbaum.

Bryant, J. & Miron, D. 2002. Entertainment as media effect. In J. Bryant & D. Zillmann (Eds.), *Media Effects: Advances in Theory and Research*: 548-582. Mahwah, US: Lawrence Erlbaum Associates.

Busenitz, L. W. & Barney, J. B. 1997. Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing*, 12(1): 9-30.

Busse, J. A. & Green, T. C. 2002. Market efficiency in real time. *Journal of Financial Economics*, 65(3): 415-437.

Bystrom, D. & Dimitrova, D. V. 2014. Migraines, marriage, and mascara media coverage of Michele Bachmann in the 2012 republican presidential campaign. *American Behavioral Scientist*, 58(9): 1169-1182.

Cardon, M. S., Wincent, J., Singh, J., & Drnovsek, M. 2009. The nature and experience of entrepreneurial passion. *Academy of Management Review*, 34(3): 511-532.

Carroll, G. R. 1985. Concentration and specialization: Dynamics of niche width in populations of organizations. *American Journal of Sociology*, 90(6): 1262-1283.

Carter, R. B., Dark, F. H., & Singh, A. K. 1998. Underwriter reputation, initial returns, and the long-run performance of IPO stocks. *The Journal of Finance*, 53(1): 285-311.

Cavanaugh, L. A., Bettman, J. R., & Luce, M. F. 2015. Feeling love and doing more for distant others: Specific positive emotions differentially affect prosocial consumption. *Journal of Marketing Research*, 52(5): 657-673.

CB Insights; Fame and fortune: The top 22 celebrity startup investors and their investments in one infographic; Retrieved from https://www.cbinsights.com/blog/celebrity-startup-top-investors/; 22 November, 2016.

Chan, C. S. R. & Park, H. D. 2015. How images and color in business plans influence venture investment screening decisions. *Journal of Business Venturing*, 30(5): 732-748.

Chatterjee, A. & Hambrick, D. C. 2007. It's all about me: Narcissistic chief executive officers and their effects on company strategy and performance. *Administrative Science Quarterly*, 52(3): 351-386.

Chen, X.-P., Yao, X., & Kotha, S. 2009. Entrepreneur passion and preparedness in business plan presentations: a persuasion analysis of venture capitalists' funding decisions. *Academy of Management Journal*, 52(1): 199-214.

Cialdini, R. B., Borden, R. J., Thorne, A., Walker, M. R., Freeman, S., & Sloan, L. R. 1976. Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology*, 34(3): 366.

Cox, D. R. & Snell, E. J. 1968. A general definition of residuals. *Journal of the Royal Statistical Society. Series B (Methodological)*, 30(2): 248-275.

Cox, P. R. 1972. Regression models and life-tables *Journal of the Royal Statistical Society. Series B (Methodological)*, 34(2): 187-220.

Cumming, D. & Dai, N. 2013. Why do entrepreneurs switch lead venture capitalists? *Entrepreneurship Theory and Practice*, 37(5): 999-1017.

Davis, G. F. & Marquis, C. 2005. Prospects for organization theory in the early twenty-first century: Institutional fields and mechanisms. *Organization Science*, 16(4): 332-343.

De Clercq, D. & Sapienza, H. J. 2006. Effects of relational capital and commitment on venture capitalists' perception of portfolio company performance. *Journal of Business Venturing*, 21(3): 326-347.

Deeds, D. L., Mang, P. Y., & Frandsen, M. L. 2004. The influence of firms' and industries' legitimacy on the flow of capital into high-technology ventures. *Strategic Organization*, 2(1): 9-34.

Deephouse, D. L. 2000. Media reputation as a strategic resource: An integration of mass communication and resource-based theories. *Journal of Management*, 26(6): 1091-1112.

Dimov, D., Shepherd, D. A., & Sutcliffe, K. M. 2007. Requisite expertise, firm reputation, and status in venture capital investment allocation decisions. *Journal of Business Venturing*, 22(4): 481-502.

Drover, W., Wood, M. S., & Zacharakis, A. 2015. Attributes of angel and crowdfunded investments as determinants of VC screening decisions. *Entrepreneurship Theory and Practice*.

Dutton, J. E., Dukerich, J. M., & Harquail, C. V. 1994. Organizational images and member identification. *Administrative Science Quarterly*, 39(2): 239-263.

Edell, J. A. & Burke, M. C. 1987. The power of feelings in understanding advertising effects. *Journal of Consumer Research*, 14(3): 421-433.

Eisenhardt, K. M. & Schoonhoven, C. B. 1996. Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. *Organization Science*, 7(2): 136-150.

Eisinger, J.; How Mark Zuckerberg's altruism helps himself; https://www.nytimes.com/2015/12/04/business/dealbook/how-mark-zuckerbergs-altruism-helps-himself.html?_r=0 20 April, 2017.

Elitzur, R. & Gavious, A. 2003. Contracting, signaling, and moral hazard: a model of entrepreneurs,'angels,'and venture capitalists. *Journal of Business Venturing*, 18(6): 709-725.

Epstein, S. 1994. Integration of the cognitive and the psychodynamic unconscious. *American Psychologist*, 49(8): 709.

Festinger, L. 1957. *A theory of cognitive dissonance*. Stanford, U.S.: Stanford University Press.

Fiske, S. T. & Taylor, S. E. 1991. *Social cognition*. New York, U.S.: McGraw-Hill.

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

Forbes; Celebrity entrepreneurs on the rise?; Retrieved from http://www.forbes.com/sites/karstenstrauss/2012/05/16/celebrity-entrepreneurs-on-the-rise/ - 7b55b1445520; 12 September, 2016.

Gigerenzer, G. & Goldstein, D. G. 1996. Reasoning the fast and frugal way: Models of bounded rationality. *Psychological Review*, 103(4): 650.

Gigerenzer, G. & Gaissmaier, W. 2011. Heuristic decision making. *Annual Review of Psychology*, 62: 451-482.

Graefe, A. & Armstrong, J. S. 2012. Predicting elections from the most important issue: A test of the take-the-best heuristic. *Journal of Behavioral Decision Making*, 25(1): 41-48.

Graffin, S. D., Bundy, J., Porac, J. F., Wade, J. B., & Quinn, D. P. 2013. Falls from grace and the hazards of high status: The 2009 british MP expense scandal and its impact on parliamentary elites. *Administrative Science Quarterly*, 58(3): 313-345.

Green, M. C. & Brock, T. C. 2002. In the mind's eye: Transportation-imagery model of narrative persuasion. In M. C. Green, J. J. Strange, & T. C. Brock (Eds.), *Narrative Impact: Social and Cognitive Foundations*: 315-341. Mahwah, NJ: Erlbaum.

Green, M. C. 2008. Transportation theory. In W. Donsbach (Ed.), *International Encyclopedia of Communication*: 5170-5175. Oxford, UK: Wiley-Blackwell.

Gruenfeld, D. H. & Wyer, R. S. 1992. Semantics and pragmatics of social influence: How affirmations and denials affect beliefs in referent propositions. *Journal of Personality and Social Psychology*, 62(1): 38.

Gulati, R. & Higgins, M. C. 2003. Which ties matter when? The contingent effects of interorganizational partnerships on IPO success. *Strategic Management Journal*, 24(2): 127-144.

Haans, R. F. J., Pieters, C., & He, Z.-L. 2016. Thinking about U: Theorizing and testing U- and inverted U-shaped relationships in strategy research. *Strategic Management Journal*, 37: 1177-1195.

Hall, G.; Ronny Conway raising a $140M second early stage investment fund; Retrieved from http://www.bizjournals.com/sanjose/blog/techflash/2015/12/ronny-conway-raising-a-140m-second-early-stage.html; 5 May, 2017.

Harrison, R., Mason, C. M., & Robson, P. 2003. Determinants of long-distance investing by business angels. In W. D. Bygrave (Ed.), *Proceedings of the Twenty-Third Annual Entrepreneurship Research Conference*. Massachusetts, U.S.: Frontiers of Entrepreneurship Research 2003.

Hayward, M. L., Rindova, V. P., & Pollock, T. G. 2004. Believing one's own press: The causes and consequences of CEO celebrity. *Strategic Management Journal*, 25(7): 637-653.

Heath, C. & Tversky, A. 1991. Preference and belief: Ambiguity and competence in choice under uncertainty. *Journal of Risk and Uncertainty*, 4(1): 5-28.

Hellmann, T., Lindsey, L., & Puri, M. 2008. Building relationships early: Banks in venture capital. *The Review of Financial Studies*, 21(2): 513-541.

Hirsch, P. M. 1972. Processing fads and fashions: An organization-set analysis of cultural industry systems. *American Journal of Sociology*, 77(4): 639-659.

Hisrich, R. D. & Jankowicz, A. D. 1990. Intuition in venture capital decisions: An exploratory study using a new technique. *Journal of Business Venturing*, 5(1): 49-62.

Hoffman, A. J. & Ocasio, W. 2001. Not all events are attended equally: Toward a middle-range theory of industry attention to external events. *Organization Science*, 12(4): 414-434.

Hoge, P.; Exclusive: Benioff, Conway slam 'covert' critics of Warriors arena plan; Retrieved from http://www.bizjournals.com/sanfrancisco/blog/2015/04/marc-benioff-warriors-arena-salesforce.html; 30 Apr, 2017.

Homburg, C., Hahn, A., Bornemann, T., & Sandner, P. 2014. The role of chief marketing officers for venture capital funding: Endowing new ventures with marketing legitimacy. *Journal of Marketing Research*, 51(5): 625-644.

Hsu, D. H. 2004. What do entrepreneurs pay for venture capital affiliation? *Journal of Finance*, 59(4): 1805-1844.

Hsu, D. H. 2006. Venture capitalists and cooperative start-up commercialization strategy. *Management Science*, 52(2): 204-219.

Hsu, D. H. 2007. Experienced entrepreneurial founders, organizational capital, and venture capital funding. *Research Policy*, 36(5): 722-741.

Hsu, D. H. & Ziedonis, R. H. 2008. Patents as quality signals for entrepreneurial ventures *Academy of Management Proceedings*, vol. 2008: 1-6: Academy of Management.

Hsu, D. K., Haynie, J. M., Simmons, S. A., & McKelvie, A. 2014. What matters, matters differently: A conjoint analysis of the decision policies of angel and venture capital investors. *Venture Capital*, 16(1): 1-25.

Huang, L. & Pearce, J. L. 2015. Managing the unknowable. *Administrative Science Quarterly*, 60(4): 634-670.

Hung, A. A. & Plott, C. R. 2001. Information cascades: Replication and an extension to majority rule and conformity-rewarding institutions. *The American Economic Review*, 91(5): 1508-1520.

Hunter, E. J., Burgers, J. H., & Davidsson, P. 2009. Celebrity capital as a strategic asset: Implications for new venture strategies. In G. T. Lumpkin & J. A. Katz (Eds.), *Entrepreneurial Strategic Content*, vol. 11: 137-160. West Yorkshire, UK: Emerald Group Publishing Ltd.

Itule, B. D. & Anderson, D. A. 1994. *News writing and reporting for today's media*. New York, U.S.: McGraw-Hill.

Jääskeläinen, M. 2012. Venture capital syndication: Synthesis and future directions. *International Journal of Management Reviews*, 14(4): 444-463.

Johnson, E. J. & Tversky, A. 1983. Affect, generalization, and the perception of risk. *Journal of Personality and Social Psychology*, 45(1): 20.

Jonsson, S. & Buhr, H. 2011. The limits of media effects: Field positions and cultural change in a mutual fund market. *Organization Science*, 22(2): 464-481.

Kahneman, D. & Frederick, S. 2005. A model of heuristic judgement. In K. Holyoak & R. G. Morrison (Eds.), *The Cambridge Handbook of Thinking and Reasoning*: 267-294. Cambridge, UK: Cambridge University Press.

Kennedy, M. T. 2008. Getting counted: Markets, media, and reality. *American Sociological Review*, 73(2): 270-295.

Khaire, M. 2010. Young and no money? Never mind: The material impact of social resources on new venture growth. *Organization Science*, 21(1): 168-185.

Khatri, N. & Ng, H. A. 2000. The role of intuition in strategic decision making. *Human Relations*, 53(1): 57-86.

Khoury, T. A., Junkunc, M., & Deeds, D. L. 2013. The social construction of legitimacy through signaling social capital: Exploring the conditional value of alliances and underwriters at IPO. *Entrepreneurship: Theory & Practice*, 37(3): 569-601.

Killeya, L. A. & Johnson, B. T. 1998. Experimental induction of biased systematic processing: The directed-thought technique. *Personality and Social Psychology Bulletin*, 24(1): 17-33.

Kirsch, D., Goldfarb, B., & Gera, A. 2009. Form or substance: the role of business plans in venture capital decision making. *Strategic Management Journal*, 30(5): 487-515.

Landry, L.; Zuckerberg Makes First Ed-Tech Investment, Leads $4M Round for Cambridge Startup; http://www.bizjournals.com/sanjose/blog/techflash/2015/12/ronny-conway-raising-a-140m-second-early-stage.html; 25 May, 2017.

Laura, H. & Knight, A. P. 2017. Resources and relationships in entrepreneurship: An exchange theory of the development and effects of the entrepreneur-investor relationship *Academy of Management Review*, 42(1): 80-102.

Lavine, H., Thomsen, C. J., Zanna, M. P., & Borgida, E. 1998. On the primacy of affect in the determination of attitudes and behavior: The moderating role of affective-cognitive ambivalence. *Journal of Experimental Social Psychology*, 34(4): 398-421.

Lee, P. M., Pollock, T. G., & Jin, K. 2011. The contingent value of venture capitalist reputation. *Strategic Organization*, 9(1): 33-69.

Lerner, J. 1994. The syndication of venture capital investments. *Financial Management*, 23(3): 16-27.

Lerner, J. S. & Keltner, D. 2000. Beyond valence: Toward a model of emotion-specific influences on judgement and choice. *Cognition & Emotion*, 14(4): 473-493.

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

Ma, D., Rhee, M., & Yang, D. 2013. Power source mismatch and the effectiveness of interorganizational relations: The case of venture capital syndication. *Academy of Management Journal*, 56(3): 711-734.

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.

Mason, C. & Stark, M. 2004. What do investors look for in a business plan? A comparison of the investment criteria of bankers, venture capitalists and business angels. *International Small Business Journal*, 22(3): 227-248.

Mason, C. M. & Harrison, R. T. 2002. Is it worth it? The rates of return from informal venture capital investments. *Journal of Business Venturing*, 17(3): 211-236.

McCartney, H. P. 1987. Applying fiction conflict situations to analysis of news stories. *Journalism Quarterly*, 64(1): 163-170.

McCombs, M. E. & Shaw, D. L. 1972. The agenda-setting function of mass media. *Public Opinion Quarterly*, 36(2): 176-187.

McCombs, M. E. 1992. Explorers and surveyors: Expanding strategies for agenda-setting research. *Journalism & Mass Communication Quarterly*, 69(4): 813-824.

McQuail, D. 1985. Sociology of mass communication. *Annual Review of Sociology*: 93-111.

Metcalfe, J. & Mischel, W. 1999. A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, 106(1): 3-19.

Meuleman, M., Lockett, A., Manigart, S., & Wright, M. 2010. Partner selection decisions in interfirm collaborations: The paradox of relational embeddedness. *Journal of Management Studies*, 47(6): 995-1019.

Milanov, H. & Shepherd, D. A. 2013. The importance of the first relationship: The ongoing influence of initial network on future status. *Strategic Management Journal*, 34(6): 727-750.

Navis, C. & Glynn, M. A. 2011. Legitimate distinctiveness and the entrepreneurial identity: Influence on investor judgments of new venture plausibility. *Academy of Management Review*, 36(3): 479-499.

Ozmel, U., Reuer, J. J., & Gulati, R. 2013. Signals across multiple networks: How venture capital and alliance networks affect interorganizational collaboration. *Academy of Management Journal*, 56(3): 852-866.

Park, D.-J. & Berger, B. K. 2004. The presentation of CEOs in the press, 1990-2000: Increasing salience, positive valence, and a focus on competency and personal dimensions of image. *Journal of Public Relations Research*, 16(1): 93-125.

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.

Petty, J. S. & Gruber, M. 2011. "In pursuit of the real deal": A longitudinal study of VC decision making. *Journal of Business Venturing*, 26(2): 172-188.

Pfarrer, M. D., Pollock, T. G., & Rindova, V. P. 2010. A tale of two assets: The effects of firm reputation and celebrity on earnings surprises and investors' reactions. *Academy of Management Journal*, 53(5): 1131-1152.

Podolny, J. M. 1994. Market uncertainty and the social character of economic exchange. *Administrative Science Quarterly*, 39(3): 458-483.

Podolny, J. M. & Stuart, T. E. 1995. A role-based ecology of technological change. *American Journal of Sociology*, 100(5): 1224-1260.

Podolny, J. M. 2001. Networks as the pipes and prisms of the market. *American Journal of Sociology*, 107(1): 33-60.

Pollock, T. G. & Rindova, V. P. 2003. Media legitimation effects in the market for initial public offerings. *Academy of Management Journal*, 46(5): 631-642.

Pollock, T. G. 2004. The benefits and costs of underwriters' social capital in the US initial public offerings market. *Strategic Organization*, 2(4): 357-388.

Pollock, T. G. & Gulati, R. 2007. Standing out from the crowd: The visibility-enhancing effects of IPO-related signals on alliance formation by entrepreneurial firms. *Strategic Organization*, 5(4): 339-372.

Pollock, T. G., Rindova, V. P., & Maggitti, P. G. 2008. Market watch: Information and availability cascades among the media and investors in the U.S. IPO market. *Academy of Management Journal*, 51(2): 335-358.

Pollock, T. G., Fund, B. R., & Baker, T. 2009. Dance with the one that brought you? Venture capital firms and the retention of founder-CEOs. *Strategic Entrepreneurship Journal*, 3(3): 199-217.

Pollock, T. G., Chen, G., Jackson, E. M., & Hambrick, D. C. 2010. How much prestige is enough? Assessing the value of multiple types of high-status affiliates for young firms. *Journal of Business Venturing*, 25(1): 6-23.

Rao, H., Greve, H. R., & Davis, G. F. 2001. Fool's gold: Social proof in the initiation and abandonment of coverage by Wall Street analysts. *Administrative Science Quarterly*, 46(3): 502-526.

Ridout, T. N. & Searles, K. 2011. It's my campaign I'll cry if I want to: How and when campaigns use emotional appeals. *Political Psychology*, 32(3): 439-458.

Rindova, V. P., Williamson, I. O., Petkova, A. P., & Sever, J. M. 2005. Being good or being known: An empirical examination of the dimensions, antecedents, and consequences of organizational reputation. *Academy of Management Journal*, 48(6): 1033-1049.

Rindova, V. P., Pollock, T. G., & Hayward, M. L. A. 2006. Celebrity firms: The social construction of market popularity. *Academy of Management Review*, 31(1): 50-71.

Rodríguez, G.; Lecture Notes on Generalized Linear Models; http://data.princeton.edu/wws509/notes/ 12 October, 2016.

Rosenbusch, N., Brinckmann, J., & Müller, V. 2013. Does acquiring venture capital pay off for the funded firms? A meta-analysis on the relationship between venture capital

investment and funded firm financial performance. *Journal of Business Venturing*, 28(3): 335-353.

Salancik, G. R. & Meindl, J. R. 1984. Corporate attributions as strategic illusions of management control. *Administrative Science Quarterly*, 29(2): 238-254.

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

Semadeni, M., Withers, M. C., & Trevis Certo, S. 2014. The perils of endogeneity and instrumental variables in strategy research: Understanding through simulations. *Strategic Management Journal*, 35(7): 1070-1079.

Sorenson, O. & Stuart, T. E. 2001. Syndication networks and the spatial distribution of venture capital investments. *American Journal of Sociology*, 106(6): 1546-1588.

Stock, J. H. & Yogo, M. 2004. Asymptotic distributions of instrumental variables statistics with many instruments, *Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg*.

Stuart, T. E., Hoang, H., & Hybels, R. C. 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly*, 44(2): 315-349.

Suchman, M. C. 1995. Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3): 571-610.

Turner, G. 2004. *Understanding celebrity*. London, UK: Sage Publications Ltd.

Tversky, A. & Kahneman, D. 1973. Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5(2): 207-232.

Van Laer, T., De Ruyter, K., Visconti, L. M., & Wetzels, M. 2014. The extended transportation-imagery model: A meta-analysis of the antecedents and consequences of consumers' narrative transportation. *Journal of Consumer Research*, 40(5): 797-817.

Wade, J. B., Porac, J. F., Pollock, T. G., & Graffin, S. D. 2006. The burden of celebrity: The impact of CEO certification contests on CEO pay and performance. *Academy of Management Journal*, 49(4): 643-660.

Walske, J. M., Zacharakis, A., & Smith-Doerr, D. 2007. Effects of Venture Capital Syndication Networks on Entrepreneurial Success, *Babson College Entrepreneurship Research Conference (BCERC)*: Frontiers of Entrepreneurship Research.

Werth, J. C. & Boeert, P. 2013. Co-investment networks of business angels and the performance of their start-up investments. *International Journal of Entrepreneurial Venturing*, 5(3): 240-256.

Wooldridge, J. M. 2002. *Econometric analysis of cross section and panel data* (2 ed.). Cambridge, UK: The MIT Press.

Zacharakis, A. L. & Meyer, G. D. 1998. A lack of insight: Do venture capitalists really understand their own decision process? *Journal of Business Venturing*, 13(1): 57-76.

Zacharakis, A. L. & Meyer, G. D. 2000. The potential of actuarial decision models: Can they improve the venture capital investment decision? *Journal of Business Venturing*, 15(4): 323-346.

Zacharakis, A. L. & Shepherd, D. A. 2001. The nature of information and overconfidence on venture capitalists' decision making. *Journal of Business Venturing*, 16(4): 311-332.

Zajonc, R. B. 1980. Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35(2): 151-175.

Zanna, M. P. & Cooper, J. 1974. Dissonance and the pill: An attribution approach to studying the arousal properties of dissonance. *Journal of Personality and Social Psychology*, 29(5): 703-709.

Zauberman, G., Diehl, K., & Ariely, D. 2006. Hedonic versus informational evaluations: Task dependent preferences for sequences of outcomes. *Journal of Behavioral Decision Making*, 19(3): 191-211.

Zillmann, D. 1995. Mechanisms of emotional involvement with drama. *Poetics*, 23(1): 33-51.

Zott, C. & Huy, Q. N. 2007. How entrepreneurs use symbolic management to acquire resources. *Administrative Science Quarterly*, 52(1): 70-105.

3. New venture identity development, social media, and audience recognition

3.1. Introduction

"You can please some of the people all of the time, you can please all of the people some of the time, but you can't please all of the people all of the time."

(John Lydgate, later adapted by President Lincoln)

Research in organizational theory and entrepreneurship has well established the importance of receiving social validation, which is especially true for new ventures that depend on different resource providers over time (e.g., Delmar & Shane, 2004; Fisher et al., 2016; Singh, Tucker, & House, 1986; Stinchcombe, 1965; Zimmerman & Zeitz, 2002). Such validation is important because it commonly translates into *"obtaining concrete resources, such as information, [...] social support, including acceptance and inclusion."* (Ibarra & Barbulescu, 2010: 140). Whereas past research has assumed that there exists one threshold beyond which a new venture is validated as being 'desirable, proper, or appropriate' (Suchman, 1995), recent literature suggests that a venture faces 'multiple legitimacy thresholds' as it matures (Fisher et al., 2016). This is because maturation of the venture is typically accompanied with increase in diversity of key resource providers that vary in their expectations (e.g., Bitektine, 2011; Hanlon & Saunders, 2007). For example, a high-tech new venture may be simultaneously interfacing with scientific staff who is likely legitimizing a venture based on its approach to flexible working times and the scientific challenge of the venture's activities, and engaging with professional investors who may have different legitimizing criteria such as the scalability of the business model and the extent to which the venture has professionalized its management practices (Maurer & Ebers, 2006; Sauermann & Stephan, 2013). Such differences can be even more striking between a venture's life cycle stages, e.g., from the conception phase where government funding bodies value the innovative potential of the product[13] to the commercialization phase where professional investors assess the market potential of the business idea (Fisher et al., 2016).

---

[13] When talking about the product or products, this includes services as well.

To overcome described challenges, a new venture is advised to portray different identities to the different audience groups to address the respective audiences' expectations in what they 'want to see' in a new venture (Fisher et al., 2016; Fisher et al., 2017; Garud et al., 2014; Golant & Sillince, 2007). A venture's identity, basically made up of claims of what constitutes an entity (Navis & Glynn, 2011), renders a new venture comprehensible and meaningful to its audience. Indeed, because the first step in legitimizing is being understood by an audience, answering the identity-related questions of "who" the venture is and "what" it does (Navis & Glynn, 2011; Whetten, 2006) has been declared to be one of most important and widely used instruments for legitimation purposes (Fisher et al., 2017).

Notwithstanding the importance of adapting a new venture's identity to distinct audiences across its life cycle stages, many new ventures (and especially high-tech ones) at least temporarily have to engage with different audience groups within a particular life cycle stage – and what makes the issue especially potent – *within a single context.* While the temporal and spatial separation of audiences across a new venture's life cycle allows for possible adaptations in identity claims, the transparent and immediate world of online communication poses challenges to our understanding of new venture identity development (cf. Albert & Whetten, 1985; Pratt & Foreman, 2000). Practically, social media has been recognized to have one of the most fundamental impacts on the organization's engagement with its stakeholders (Aral, Dellarocas, & Godes, 2013). Given the increasingly recognized role of cost-efficient and wide-reaching online platforms in corporate and entrepreneurial communication alike (e.g., Chae, 2015; Fischer & Reuber, 2014; Zhou et al., 2015), studying how new ventures obtain validation in an online context as the venture matures is an important and timely endeavor. Accordingly, with this study, *we[14] aim to investigate why, when and which content of identity claims matters more or less for receiving audiences' validations as the venture matures.* To do so, we reserve our attention to ventures on the cusp of professional fundraising, as professional investors are known to have very specific expectations about how a 'fundable' new venture looks like and how it should act at a certain developmental stage (Pahnke, Katila, & Eisenhardt, 2015). Accordingly, this represents a time of important transition for a new venture from conception to commercialization phase, where bifurcation of audience types can be expected (Fisher et al., 2016).

---

[14]Previous versions of this manuscript were presented at the INSEAD Doriot Conference (2017), the Babson College Entrepreneurship Research Conference (2017) and the Strategic Management Society Conference (2017), where Prof. Hana Milanov's contributions in terms of providing guidance for this research in its respective stages were acknowledged in the author list.

To shed light on how identity claims impact audiences' social validations as the venture matures, we follow extant work on narratives (Brown, 2006; Dailey & Browning, 2014), which suggests that an organization's identity is a linguistic phenomenon (Boje et al., 2004). In the organizational context narratives can take the form of IPO prospectuses (Martens et al., 2007), websites (Navis & Glynn, 2011), or annual reports (Wolfe & Shepherd, 2015) and have been found to affect resource providers' behavior, including professional investors' decisions (Jin et al., 2017; Jung et al., 2017). Whereas narratives have been traditionally studied as 'fuller' stories, composed of a temporally developing story plot with a story character and an intended goal (Lounsbury & Glynn, 2001; Martens et al., 2007), in this study we follow recent work that increasingly considers small narratives, such as informal conversations (Bamberg & Georgakopoulou, 2008; Hjorth & Steyaert, 2004), mail exchanges (Coupland & Brown, 2004) or online posts (Chen et al., 2017; Lee, Hwang, & Chen, 2017; Lee, Oh, & Kim, 2013), which are argued to yield richer insights into identity construction as they are more closely reflective of the protagonist's everyday life (e.g., Lee et al., 2017). To inform our theorizing, we particularly draw on related identity research that has addressed complexities of identity management in situations of individuals' identity transitions (Ashforth, 2001; Ibarra & Barbulescu, 2010) and presence of multiple identities in organizations (Ashforth, 2001; Pratt & Foreman, 2000). The former is relevant as it describes *how* individuals revise and reconstruct their identities during sequentially held work-role transitions, where narrative work can help to "instate a sense of continuity between who they have been and they are becoming, as well as to obtain validation from relevant parties." (Ashforth, 2001; Ibarra & Barbulescu, 2010: 136). Such transitions in career progressions are not unlike the transitions that ventures go through in changing from one phase to the next: much like work role transitions require individuals to adopt and develop new attitudes, behaviors and skillsets (Ibarra & Barbulescu, 2010), phase transitions require new ventures to adopt and develop new practices, processes, and capabilities (Levie & Lichtenstein, 2010). The latter is relevant as the theoretical work on managing multiple organizational identities helps us theorize which *content* of identity claims is likely to be more or less granted during the venture's transition to the commercialization phase (Ashforth, 2001; Pratt & Foreman, 2000).

Our study sample consists of 139 US venture capital (VC)-backed ventures from the Internet and IT industries for which we have collected all Twitter activities (e.g., online posts or tweets) and their audiences' social validation actions (e.g., favorite posts in form of likes) from their early days (conception phase) to the first post-funding phase (representative of commercialization phase). Observing social validation of a venture's identity claims in the online world is

especially advantageous as an empirical strategy given that the visibility of online communication allows us to trace a venture's identity claims and audiences' reactions from its early days. We focus on technology-based ventures that have received VC investment in the first funding round to allow for a clear separation between expectations of the audiences before and after the funding round and to stay in line with earlier theoretical work on identity development across a venture's life stages (Fisher et al., 2016; Fisher et al., 2017).

Our work aims to primarily contribute to ongoing research at the intersection of organizational legitimacy, entrepreneurship and identity development (e.g., Cardon et al., 2009; Fisher et al., 2016; Fisher et al., 2017; Garud et al., 2014; Lounsbury & Glynn, 2001; Navis & Glynn, 2011). We importantly add to recent theoretical work (Fisher et al., 2016; Fisher et al., 2017) in that we empirically examine audiences' validations of a new venture's identity claims as the venture matures and presumably faces increasingly diverse audiences' expectations in *a single context*. In considering the rising adoption of social media platforms, which have been acknowledged in their potential to improve audiences' understanding and decision-making processes (e.g., Jung et al., 2017; Prokofieva, 2014), we therefore point out the tensions that such transparency brings with venture maturation and audience dynamics. By applying theory from individual role changes (Ibarra & Barbulescu, 2010), we add new insights to our understanding of how new ventures can manage their identity development when moving across their early life cycle phases (Garud et al., 2014; Kraatz & Block, 2008). In addition, we contribute to research on multiple identities in that we investigate the kind of identity claims that are positively acknowledged by an increasingly diverse audience in a single context (Fisher et al., 2016; Fisher et al., 2017; Gioia, Schultz, & Corley, 2000; Kraatz & Block, 2008; Pratt & Foreman, 2000). Lastly, we respond to calls to give higher priority to language when investigating organizational phenomena (Boje et al., 2004; Lounsbury & Glynn, 2001; Martens et al., 2007). In doing so we add to the scarce body of studies in management and entrepreneurship literatures making use of unstructured data sources in social media that enable different insights on new and old phenomena alike (e.g., Chen et al., 2017; Fischer & Reuber, 2014; Vaast, Davidson, & Mattson, 2013). Adopting a linguistic perspective in the social media context allows us to enrich our theoretical understanding of how new ventures gain validation as they mature and professionalize.

3.2. Theoretical background and hypotheses

3.2.1. New venture legitimation and identity development

There exist different mechanisms to establish and manage organizational legitimacy – with identity development being among the key activities for new ventures (Fisher et al., 2017; Navis & Glynn, 2011; Überbacher, 2014). In a new venture's early days that are characterized by high uncertainty and ambiguity (Aldrich & Fiol, 1994) answering the identity-related question of "what a venture will do" and "what it will become" (Navis & Glynn, 2011; Whetten, 2006) provides meaning to the audience and helps them to connect - if not even identify - with the new venture (Ashforth & Gibbs, 1990; Fisher et al., 2016; Glynn & Abzug, 2002; Lounsbury & Glynn, 2001). Only once the venture's identity, as expressed by identity claims, is comprehensible at first, can it be further evaluated and validated by the audience (Aldrich & Fiol, 1994; Petkova et al., 2013; Suchman, 1995).

In the context of technology-based ventures that evolve from their early conceptual days to their first funding round and beyond, these audiences change notably, ranging from early tech-savvy supporters to investors and business partners (Beckman, Eisenhardt, Kotha, Meyer, & Rajagopalan, 2012; Fisher et al., 2017; Hanlon & Saunders, 2007). For example, a technology-based venture typically starts off in a closed environment, such as a research institute that provides early grants, office space, access to their network and consultation to allow the new venture to develop its product until its ready for market launch (Fisher et al., 2016; Fisher et al., 2017; Pahnke et al., 2015). At this early stage, there often exists only a prototype where its features are in the process of being tested within a closed community. Eventually, the new venture has to prove the commercial potential of its product by attracting pilot customers and establishing first cooperations to get a foot into the market. These audiences usually judge the organizational maturity of a new venture, such as the internal structures and management practices required to scale (e.g., Martens et al., 2007). To further commercialize its product, a new venture usually reaches out to private and professional investors that have specific assumptions about how a fundable new venture should act and look like (Pahnke et al., 2015) and evaluate a new venture according to its market potential and exit likelihood (e.g., Fisher et al., 2017; Hisrich & Jankowicz, 1990; Zacharakis & Shepherd, 2001). Thus, as the focus of the new venture shifts from the technology, to the product and eventually its commercialization, the venture encounters increasingly different audiences with distinct expectations (Glynn, 2000; Quinn & Cameron, 1983). Over time, the new venture's audience becomes increasingly complex resulting in "institutional pluralism" where multiple "*socially constructed systems of norms, values,*

beliefs" co-exist (Fisher et al., 2016: 388). Thus far, literature advises ventures to address situations of such pluralism by portraying different identity claims to the respective audiences in separate environments (Fisher et al., 2016; Kraatz & Block, 2008). For example, pitching the business plan in front of investors demands a different self-presentation of the founders (Chen et al., 2009; Kirsch et al., 2009; Mason & Stark, 2004) than promoting the product to customers (Delmar & Shane, 2004), attracting prospective employees (Cardon & Stevens, 2004) or standing out to get the journalists' attention (Rindova et al., 2007). However, this advice is challenging to take at face value in the context of social media, where communication targeted at one stakeholder group is visible to anyone at all times and thus, may not fit the expectations of the respective audience.

3.2.2. Identity development through small narratives

Identity claims are largely made up of language as it is expressive of everything *"what an organization is and everything that happens in and to it"*(Boje et al., 2004: 571) (cf. Cooren, 1999; Ezzy, 1998; Ibarra & Barbulescu, 2010; Pentland, 1999). The usage of language is a fundamental tool by which individuals make sense of the world (Navis & Glynn, 2011) in that the act of talking and writing itself enables individuals (also as representatives of organizations) to share information, to build a common understanding, and in doing so to create a social reality (Brown, 2006; Downing, 2005).

We follow extant conventions and view a new venture's identity claims as largely conveyed through *narratives* (Brown, 2006). Narratives can take the form of entrepreneurial stories (Lounsbury & Glynn, 2001; Navis & Glynn, 2011), presented in IPO prospectuses (Martens et al., 2007), conversations (Coupland & Brown, 2004; Hjorth & Steyaert, 2004), and promotional materials (Czarniawska & Wolff, 1998). According to Brown (2006), relevant narratives are not just restricted to 'formal constructions' (for example alike those found in IPO prospectuses), but can equally be found in less formal messages in casual meetings, unauthorized mails, sudden encounters or online posts, which allow for a more personal and unfiltered examination of the underlying issues compared to official documents or statements that have been carefully constructed and often professionally filtered (e.g., Lee et al., 2017; Marwick & Boyd, 2011; Obschonka, Fisch, & Boyd, 2017; Wynn & Katz, 1997).

In the entrepreneurial context, content of identity messages spans all three levels of analysis: from founding team and people, to venture and organization, to the market and the venture's context, which together weave the venture's "theory of being" (cf. Navis & Glynn, 2011; Fisher

et al., 2017). For example, past research considered relevant messages to contain information about a new venture's employees, technologies, organizational capabilities, vision, and its partners, among others (Lounsbury & Glynn, 2001; Martens et al., 2007). Similarly, messages can inform about the background of the team, the discovery of the business idea or updates on product development (e.g., Martens et al., 2007). In other cases, messages promote specific events, people (Brown, 2006) or inform about market updates (Navis & Glynn, 2011). Identity claims may thus be viewed on a topic level as they describe and connect all three levels of analyses and in doing so supply the content to a venture's identity, which ultimately provides the basis for meaning and understanding to an organization's audience (cf. Boje, 1991; Gabriel, 2004; Rao, 1994). In that sense, while each of the messages typically communicates on one aspect of a venture's evolving identity, the totality of such messages also helps to understand "what the venture is" and "what the venture does" (Boje et al., 2004; Brown, 2006; Navis & Glynn, 2011).

3.2.3. Identity development in the social media context

Social media platforms play an increasingly important role for new ventures on multiple levels. Activity on social platforms improves the information environment for new ventures' stakeholders, which is also consequential for establishing an organizations' legitimacy (e.g., Fischer & Reuber, 2011; Fischer & Reuber, 2014; Jin et al., 2017; Jung et al., 2017; Prokofieva, 2014). Relatedly, recent finance studies show that engagement on social media platforms such as Twitter also helps reduce information asymmetry among investors, which is especially helpful for less visible firms (Blankespoor et al., 2014; Chen et al., 2017; Prokofieva, 2014). Moreover, information presented on social media is seen as especially valuable, because such information is often not captured (at all or in a less timely fashion) by traditional media sources (Blankespoor et al., 2014; Chen et al., 2017; Jung et al., 2017; Prokofieva, 2014). Finally, some scholars even report implications for resource acquisition by finding a link between a new venture's ability to engage its followership on Twitter and its subsequent likelihood of closing a professional financing round (Jin et al., 2017). It is not surprising then that social media platforms have achieved great popularity among companies in disseminating different kinds of information to their stakeholders (Zhou et al., 2015). For young new ventures, this means that keeping an engaged followership that validates ("likes") who they are and what they do is very consequential.

Due to the social media platforms' low operating costs and wide and instant reach, online world is commonly one of the early and important identity development contexts for new ventures

(Coupland & Brown, 2004; Fischer & Reuber, 2014; Marwick, 2013). Indeed, social media platforms are particularly appropriate as a context for understanding identity development through a narrative lens due to their highly discursive nature (e.g., Fischer & Reuber, 2014; Lee et al., 2017). In this sense, social media is distinct from other communication tools that have been studied in the context of new ventures and entrepreneurs, such as their websites or IPO prospectuses, in that their content is more dynamic, timely and authentic (e.g., Lee et al., 2017; Marwick & Boyd, 2011; Obschonka et al., 2017), where its interactive nature simultaneously allows a study of social validation of identity claims over time. Among social media platforms, Twitter has been increasingly recognized not only as one of the most widely adopted communication tools (e.g., Prokofieva, 2014; Zhou et al., 2015)[15], but also as one with practical significance for the receiving audiences as described earlier (Blankespoor et al., 2014; Chen et al., 2017; Jung et al., 2017; Prokofieva, 2014). Moreover, Twitter's importance is further increased by governmental institutions such as the Securities and Exchange Commission (SEC) that formally recognize it as a channel for sharing official financial statements (SEC, 2013). Together, the adoption rates, impact, and SEC endorsement, make Twitter the platform of choice in this study.

Twitter operates on the basis of online posts (i.e., tweets) that can be viewed, liked, shared (retweeted) and commented on by other Twitter followers.[16] On Twitter, social activities are generally defined by social interactions in that a *like* (favorite post), a *comment* or a *retweet* is reflective of a follower's approval (Fischer & Reuber, 2011; Fischer & Reuber, 2014; Ibarra & Barbulescu, 2010). Actors on social media platforms commonly define themselves through the social validation they receive from their followers (i.e., audiences), because this increases their visibility in the overall social network (Huberman, Romero, & Wu, 2008). For example, the more often a tweet is liked or shared, the more often it is also shown on the timeline of related but not directly following Twitter accounts, as Twitter and other social media platforms operate on the basis of "showing content of greatest interest". Given the reported consequences of

---

[15]We also reviewed the Crunchbase database and found more than 75% of the U.S. startups that have a Twitter account compared to only 65% that have a Facebook account.

[16]To become a Twitter follower of another account, one has to actively decide to „follow" a Twitter account. With that, one has access to all information shared by the Twitter account and one can like, share or comment on the posts. Each tweet consists of maximum 140 characters and can contain hyperlinks, hashtags (starting with "#" followed by the concept of choice, and denoting a conversation tagline on the platform), and target specific Twitter accounts (@ 'Twitter account name'). Retweeting means to share a post of another Twitter account on one's own account.

audiences' engagement on Twitter for new ventures' resource acquisition, keeping audiences' validation rates high is a non-trivial issue (Jin et al., 2017).

Viewing the Twitter presence through the lens of 'narratives', commonly defined as *"temporally sequenced accounts of interrelated events or actions undertaken by characters"* (Martens et al., 2007: 1109), the new venture's Twitter account could be conceptualized as taking the role of the story character that reports on its actions (cf. Brown, 2006; Lounsbury & Glynn, 2001). To illustrate the nature of a new venture's messages and types of actions that are collectively reflective of a venture's identity claims, in Table 6 we provide representative examples of what new ventures usually tweet about. Common among new ventures' tweets are for example messages that refer to the new venture's mission or strategy, those that inform about product features or updates, and those that highlight the venture's team, presence on events, achievements and awards. Some of these tweets are directly expressive of a venture's identity claims, communicating the essence of how the venture views what it does and who it is. For example, Jifiti, a new venture for gifting experiences, communicated: *"Enjoy giving. Enjoy Getting. That's what we're all about"*. Another venture, GitLab, tweeted *"Why we think "code review" is too narrow a term for what we do",* pointing to a mission behind their core activity. Other tweets are less literally pointing at what the venture is or does, but tell about important team's achievements, such as the announcement of a financial round (e.g., *"ILLUMAGEAR is pleased to announce a new investment in our company from a Seattle accredited investor"*) or the inclusion of the venture on a 'celebrity' list (e.g.,*"Won't catch us arguing with @Forbes. Proud to be on the list!"*, as tweeted by Jifiti), pointing to its distinctiveness (cf. Navis & Glynn, 2011). At the same time, new ventures do not always tweet explicitly about themselves – one commonly finds posts on other companies' activities (e.g., Jifiti tweeted *"Any of you miss Google Reader? Quibb is a new site that wants to bring community back to discussion"*) or even financial milestones (e.g., Illumagear tweeted *"BuildersCloud raises $1.1M from super angels Dave McClure, Rudy Gadre and others"*). Although such tweets are subtler contributors to a venture's identity development in that the audience cannot literally learn about the venture from the content of the tweet, such messages still provide audiences with important directional cues in terms of the venture's categorization aspirations (Lounsbury & Glynn, 2001; Navis & Glynn, 2010, 2011), with respect to product development or raising funds for example, as illustrated here.

Table 6: Narrative components of tweet examples

Story character

	GitLab - startup building a platform for software developers	Workable - startup building an employee recruiting software

Illustrative types of content

Mission/ Strategy	We take an analytical approach in order to understand the needs of all users, which is paramount for successful UX LINK	"Workable aims to give smaller firms the same bells and whistles...that the big ones have." - @MeghanMBiro @Forbes LINK
	We have some big news! GitLab has acquired @gitchat! LINK	What Workable learned about #remotework in 3 years of growth LINK
	Why we think "code review" is too narrow a term for what we do LINK	'Workable's "genius" is its automated workflow process' in-depth review by @pchaney in @smallbiztrends2 LINK
Product	Curious about GitLab Enterprise Edition? Join a live #demo with solutions architect @therebbie! LINK	Pre-employment testing is now available in the Workable platform. Integrate @CriteriaCorp with your hiring LINK
	We just released backports 8.15.7 and 8.14.10 including recent Mattermost security patches LINK	Today we launch our Developer Partner Program! Bringing the hiring & HR tools you know & trust together in Workable LINK
Events	We're excited to attend @DubTechSummit! You can still register to join us in Dublin, and DM us for discount codes LINK	Thanks to everyone that joined us at our #WorkableWorldTour stop in London! More info on our upcoming tour stops LINK
	Some GitLab team members have descended on Dublin and are fired up for @DubTechSummit tomorrow!	We're at #devitconf today! If you are too, drop by and say hello. LINK
People	Join our #webcast with CEO and co-founder @sytses to talk about all things #CloudNative on 3/23 LINK	Women of Workable share their growth stories.
	Very happy to announce that Scott Grudman has joined #TeamGitLab! Welcome @ScottGrudman! LINK	Our Senior Data Scientist organized a #datascience #meetup, and here's what he learned: LINK
Achievements	We've passed 50k commits on GitLab Community Edition! Thanks everyone for your contributions	21 tools to hire smarter. Thanks for including us, @TechSpaceInc. #HRTech #recruitment LINK
	Thanks to our community, we're one of the 30 highest velocity open source projects!	Workable highlighted by the European Investment Bank @EIBtheEUbank as a successful early stage investment #growth LINK
Companies	We're excited to partner with @rollbar! Now you can turn error into trackable GitLab issues LINK	Great tools for tracking team morale: @OfficeVibe @CultureAmp @TINYpulse @nikonikoapp LINK

Temporal sequence

	We just released GitLab 8.16.4 to address a handful of regressions. LINK	Couldn't make it to #HRTechConf in Vegas? Nevermind. Here's day 2 overview on the Workable blog LINK
	Celebrate the launch of GitLab 9.0 with us in a city near you #GitLab9.0 #SF #Denver #Boston #Amsterdam LINK	Our recap of #HRTechConf Day 3 is out, featuring @kris_dunn @CareerEngager @1SHRMScribe LINK
	9.0 tackles new enterprise challenges, enabling faster delivery of value so you can better serve your customers LINK	This week we covered #HRTechConf, next week we'll cover #HRTechWorld LINK
	GitLab 9.2 Released with Multiple Assignees for Issues, Pipeline Schedules, and much more! Enjoy! LINK	Our Day 1 recap of #HRTechWorld is out: LINK Featuring @hambrody, Yves Morieux @BCG, @vlastelica
		Kicking off Day 2 of #HRTechWorld. How's everyone doing?
		Check tomorrow's #WorkableWrap for the best from #HRTechWorld LINK

Note: RT stands for Retweet; hyperlinks in tweets have been replaced with the word "LINK" for space preservation and readability.

Table 6 continued: Narrative components of tweet examples

Story character

	Jifiti - startup for gifting experiences	Illumagear - startup building safety and task lighting solutions

Illustrative types of content

	Jifiti - startup for gifting experiences	Illumagear - startup building safety and task lighting solutions
Mission/ Strategy	Enjoy giving. Enjoy getting. That's what we're all about. We're excited to officially launch Jifiti! Our new #gifting #app will change the way you shop! What the video here LINK That's why with Jifiti, you can gift just like you always have - just better, faster, stronger. We have the technology LINK	We have our new logo! A little taste is now part of our twitter profile. Illumagear is presently developing its brand image and corporate logo. Any ideas or suggestions send our way. I truly believe The Halo Light will save lives. LINK Read about how the idea for #TheHaloLight was conceived in @ATSSAHQ's Signal Magazine. LINK
Product	Boarding in few hours with the new live product. Let the show begin... Jifiti gets gifts exactly as advertised, letting you select real items in store before teleporting them instantly LINK	The Halo Light offers 4 different lighting modes, whatever your need - Halo, HI-Alert, Task, and Dim LINK With its rechargeable battery pack, #TheHaloLight keeps batteries out of landfills.
Events	Incredible event by @NCRCorporation - Synergy 2015. #NCRsynergy LINK We're making a big deal about #FathersDay! There's no better way to gift than Jifiti. LINK	Very excited to be part of the @nwangelconf. Competition looks great. LINK We're headed to CO & AZ for #TheHaloLight product tour in early January. Message us if you'd like to meet.
People	Get to know our CEO! LINK Our CTO @SXSW: that's right. Drinks in jars. We just hope they washed out the pickle brine first	Our design and engineering partner, Pensar Development on @slideshare LINK Our CEO @JMaxwellB found his love of construction while working to build the Brightwater Treatment Plant. LINK
Achievements	It's a big day for Jifiti! Public beta testing for our ios app before the big launch. Download and send feedback. LINK Proud to be a finalist at @RetailWeek Live 2017 along with @currencytransfr LINK Won't catch us arguing with @Forbes. Proud to be on the list! LINK	ILLUMAGEAR is pleased to announce a new investment in our company from a Seattle accredited investor. Thank you! ILLUMAGEAR wins 3 awards at the Zino Social Innovation Investment forum -- Best Presentation, Judges Best Investment, & Fund Finalist! LINK
Companies	Any of you miss Google Reader? Quibb is a new site that wants to bring community back to discussion. LINK Fantastic new ad by @IKEAUSA! Proud to be working with the incredible people at IKEA. LINK	Just met the president at PCL #construction. Congrats on the safety award PCL. LINK BuildersCloud raises $1.1M from super angels Dave McClure, Rudy Gadre and others. LINK

Temporal sequence

	Jifiti - startup for gifting experiences	Illumagear - startup building safety and task lighting solutions
	Had an excellent solid month of development in Israel. Back to the US for follow up meetings. Some great partnerships in the works. 12 hours, 4 meetings. Day one in NY: check. Off to Chicago.	Will have 1st version beta prototype ready next week with field testing starting next month! Talked with my engineer and reviewed first version of prototype. For the record building new products is not that easy. Meeting later today with National Safety in Seattle to discuss market release of new product. Good test. 5 different users. Feedback was solid. Letter of Intent will be forthcoming. That is a wrap and I need to sleep. Saw the first draft of the experience prototype today. We're getting close! #thehalolight ILLUMAGEAR has received its first Purchase Order for The Halo Light from a top US Contractor! @TheHaloLight

Note: RT stands for Retweet; hyperlinks in tweets have been replaced with a word "LINK" for space preservation and readability.

While tweets are by the nature of the platform activity posted (and read) over time, it is also important to highlight that the Twitter narrative manifests characteristics of temporal sequencing of the new venture's actions (Barry & Elmes, 1997; Gabriel, 2004; Pentland, 1999). When following a new venture on Twitter, the audience is informed about the different activities that occur over time, implying a natural progression of the new venture (cf. Martens et al., 2007). As can be seen in Table 6, the audience can for example learn about the momentum behind different business trips of the gifting new venture *"Had an excellent solid month of development in Israel. Back to the US for follow up meetings. Some great partnerships in the works"* (11 Sep 2011) and *"12 hours, 4 meetings. Day one in NY: check. Off to Chicago"* (1 Nov 2011), whereas another venture reports on its product development progress *„We just released GitLab 8.16.4 to address a handful of regressions"* (2 Feb 2017) and *"GitLab 9.2 Released with Multiple Assignees for Issues, Pipeline Schedules, and much more! Enjoy!"* (22 May 2017). Hence, while each tweet can be viewed as a message devoted to a specific topic (cf. Lounsbury & Glynn, 2001; Zhou et al., 2015), with each of them providing a piece of information of the venture's underlying identity (Marwick, 2013), cumulatively, a venture's tweets portray an image of a venture's evolving identity, helping the audiences appreciate "what the venture is" and "what the venture does" as it matures (Boje et al., 2004; Brown, 2006; Navis & Glynn, 2011).

3.2.4. Online identity development over the early life cycle phases

Starting from the early life cycles of technology-based ventures (Kazanjian, 1988), the new venture is likely to be confronted with a significant change in audiences when transitioning from its conceptual phase to the commercial phase. As explained earlier, technology-based ventures typically come out of knowledge-intensive environments, characterized by like-minded people. Extant research argues that a new venture's initial identity narrative is likely to be tied to these early settings, where the focus lies on the underlying technology or technical superiority of a product (Fisher et al., 2016; Fisher et al., 2017). With the transition towards a commercialization phase, the new venture is likely to face different audiences that value increased professionalism (e.g., Petkova et al., 2013). Those audiences can range from cooperation partners to customers and investors that, despite different emphasis on their individual validation criteria, are collectively more likely to evaluate a new venture from the business, rather than from a pure technology-related perspective.

In seeking to understand how a new venture may manage its identity claims when facing a significant transition across phases, we draw on research on work-role transitions, which studies identity management of individuals entering new professional or organizational roles (Ibarra,

1999; Ibarra & Barbulescu, 2010). Much like work-role transitions require changes in the individual's skills, behaviors and attitudes that need to be explained to others (Ibarra & Barbulescu, 2010), a venture progressing to commercialization phase needs to make a convincing claim to have professionalized processes, management, and is developing from a "garage" or "lab" identity it may have started from towards a more "business" related one (e.g., Maurer & Ebers, 2006). This is especially true for ventures raising funds from professional investors, given that venture capitalists have distinct assumptions (and expectations) about what a venture should act and look like given its development stage (Pahnke et al., 2015).

While individuals entering new roles can approach identity adaptation with various actions, from revising one's clothes to changing one's office appearance (Elsbach & Kramer, 2003), research reports usage of rhetorical devices and narratives in explaining the transitions (Ibarra & Barbulescu, 2010) – also known as narrative identity work – to be particularly effective (Ibarra & Barbulescu, 2010; Van Maanen, 1998). This is because in transitions, the background of the individuals and where the role transitions are taking them need to be reconciled. Engaging in self narratives is seen as helpful for audiences to make sense of such transitions -- particularly in ambiguous or discontinuous situations - as it helps to reduce confusion between the old and new identities (e.g., Ashforth, 2001). In that sense, while individuals can engage in self-narration at any point during their professional lives, such self-narratives are likely to be particularly relevant for audiences during the transitional stage.

Given that new ventures face similar identity-related challenges in addressing new audiences as individuals do in work-role transitions, we expect self-narratives to be more beneficial in the commercialization phase, when the negotiation of the professional funding round occurs. Applying the theorizing of the work-role transitions literature to the context of new ventures' identities in social media, we can expect that audiences face some ambiguity or uncertainty with respect to how the venture will cope with the demands and challenges that come with raising professional funding. At this time, the new venture's communication about itself is particularly important as it is likely to facilitate the different audiences' understanding of the required phase change. For example, Jifiti tweeted *"It's a big day for Jifiti! Public beta testing for our iOS app before the big launch"* with which the new venture celebrates milestones signaling progress, and prepares its audiences for the commercialization of its product. Another venture tweeted at this time *"Today we launch our Developer Partner Program! Bringing the hiring & HR tools you know & trust together in Workable"*, similarly indicating professionalization in service provided to its customers. On the same note, financial announcements are important to inform

the audience about the future financial situation of the venture, such as: *"ILLUMAGEAR is pleased to announce a new investment in our company from a Seattle accredited investor. Thank you!"*. When the venture appears at the core of each statement, it is easier for the audience to make sense of the content of the message *in relation* to the new venture and get a better grasp of its activities.

More generally, usage of self-referential statements as the venture enters the commercialization phase should facilitate audiences' comprehension of the new venture's activities by creating a 'story' of the venture's transition, which increases the importance of the self-referential claims for audiences compared to more simple phases (cf. Ibarra & Barbulescu, 2010). Indeed, a new venture's self-narratives are less likely to be appreciated by the audiences when things are more or less progressing along a known course (e.g., tinkering with features in the early prototyping and conception phase) than in the transition to the commercialization phase when the stakes are higher, and the task complexities increase (Greiner, 1972). While raising first VC funding is an important milestone in itself, and often studied as representing venture's performance given the high selectivity and hurdles that characterize VC due diligence (Petkova et al., 2013), the acquired resources also come with large expectations and pressure to deliver (DeSantola & Gulati, 2017). Indeed, VC's growth expectations that demand speed and scale strains from a new venture are commonly known to result in the "crisis of leadership" (Greiner, 1972) and subsequent replacement of founders with a professional CEO (Wasserman, 2003). As illustrated here, given that even entrepreneurial success in VC-funded start-ups can be accompanied with uncertainty and changes (Maurer & Ebers, 2006), we expect that self-narratives regarding the venture's activities and developments that help bridge the past 'self' with the future goals will be more valuable for audience validation in the commercialization phase, than self-narratives describing the venture's activities in the early conception phase (Ibarra & Barbulescu, 2010).

> *Hypothesis 1. A new venture's number of self-referential tweets is more positively related to audience recognition in the commercialization phase than in the conception phase.*

Moderating role of content in identity claims

In considering the new venture's communication of identity claims, understanding the 'how' is as important as understanding the 'what' of the message (e.g., Ibarra & Barbulescu, 2010; Lounsbury & Glynn, 2001). In other words, the extent to which a new venture communicates its self-referential claims needs to be examined in the light of the specific content of the messages, as they may matter differently to audiences across different phases (Fisher et al., 2016;

Ibarra & Barbulescu, 2010; Kraatz & Block, 2008; Pratt & Foreman, 2000). For this, we reviewed extant work on strategies of managing growingly divergent audience expectations (e.g., Albert & Whetten, 1985; Golden-Biddle & Rao, 1997; Kreiner, Hollensbe, & Sheep, 2006; Pratt & Foreman, 2000). Past studies have well described the tensions that exist between the different foci of identity prevalent in different life cycle phases (Jain, George, & Maltarich, 2009; Maurer & Ebers, 2006; Powell & Sandholtz, 2012; Sauermann & Stephan, 2013). One important tension that occurs is related to the endurance of identity claims reflecting the starting identity and development of the change narratives that professionalized audiences are likely to expect as the venture matures (DeSantola & Gulati, 2017). Translated to content terms, this dilemma could be captured by investigating the extent to which audiences validate self-referential claims depending on whether these are accompanied by the technology (endurance narrative from conception phase) or business topics (change narrative) as a content anchor in tweets. Moreover, commercialization phase is commonly characterized by increasingly discinct audience groups, such as customers, employees, investors or journalists, who may have different interests and expectations, and ventures can choose to address such audiences independently in order to appeal to their tastes or ignore this variety to avoid challenges of such identity compartmentalization (Pratt & Foreman, 2000). We next investigate the differences in audiences' validation of different content as the venture matures.

Technology identity claims. The new venture's early audiences are commonly composed of tech-savvy supporters, such as tech "geeks", researchers and technology experts, who assess a new venture based on the technological superiority and features of the product with limited regard for commercial output (Fisher et al., 2016; Fisher et al., 2017; Pahnke et al., 2015). Accordingly, these audiences are more likely to value tech-related updates of the new venture (Beckman et al., 2012; Fisher et al., 2016; Fisher et al., 2017), as typified by tweets such as those from GitLab: *"We just released backports 8.15.7 and 8.14.10 including recent Mattermost security patches"* or from Workable*: "Pre-employment testing is now available in the Workable platform"*. Those product-related tweets can be commonly found in the early days of a new venture for two important reasons: First, in its early days, the biggest focus is usually given to the prototype or product development, because it is core to the overall venture and because the team needs to have "something" to show to potential customers (Wasserman, 2003). Second, especially in high-tech startups, human tech resources are scarce and expensive, which is why many young tech ventures depend on the interest and the intrinsic motivation of the developer community (Henkel, Schöberl, & Alexy, 2014). In explaining the identity through

self-narratives in the early days, connection to technology is likely to trigger the interest and validation of the tech-savvy audience.

When the new venture matures and enters the commercialization phase, which requires some form of product-market fit proof, the new venture is confronted with a more market-oriented audience that has less interest in (and perhaps even less understanding of) tech-specific content (Fisher et al., 2016; Fisher et al., 2017). For example, some of the new audiences may even not understand what a beta tester, backports, security patches, or pre-employment testing mean (Glynn, 2000; Kraatz & Block, 2008). In that sense, when moving from the conceptualization to the commercialization phase, a venture is faced with a tension requiring delicate identity management. While a change in audiences from tech to market expectations might tempt an identity shift away from tech-related topics, past studies have found that too sudden shifts in identity claims can also cause early audience's disengagement, such as in case of scientific biotech teams (that contributed to the early development of the product version) resigning from the venture as they failed to identify with investors' expectations (Jain et al., 2009; Maurer & Ebers, 2006; Powell & Sandholtz, 2012; Sauermann & Stephan, 2013). At the same time, too much tech-talk paired with self-identity work in commercial phase may signal 'venture-identity embeddedness' where initial identity endures either because the new venture failed to recognize the need to change (e.g., due to founder imprinting or inertia) (Beckman, Burton, & O'Reilly, 2007; DeSantola & Gulati, 2017), or actively resists to change its identity because it is closely tied to the early stakeholders, as illustrated by biotech firms where scientists militated against the commercialization expectations of VC investors (Maurer & Ebers, 2006). Such tensions in identity shifts have also been acknowledged in other cases, such as the shift from traditional non-profit hospitals to their incorporation into for-profit health care businesses (Starr & Macmillan, 1990). In meeting the trade-offs during the commercialization phase, we expect that a venture may still find some approval of its tech-related messages in the ongoing community of their early relationships (Hite & Hesterly, 2001), yet the effect of self-referential identity work is likely to be less validated in the commercialization phase when paired with high levels of technology related content in the light of facing a more evolved audience surrounding the venture's maturation.

> *Hypothesis 2. A new venture's number of self-referential tweets is more positively related to audience recognition in the commercialization phase than in the conception phase, but this effect becomes weaker (less positive) in the commercialization phase with an increasing coverage of technology-related content.*

Business-related identity claims. For the purpose of entering the market, the new venture has to reach out to professionalized resource providers, such as private and professional investors, which join in after there has been a first market evaluation and prototype testing (Fisher et al., 2016; Fisher et al., 2017). Given that the time from first pitches to potential investors to the final due diligence process usually takes up several months (Davila, Foster, & Gupta, 2003), the new venture is confronted with a sustained period of professionalization that starts prior the first funding round, when it still finds itself in the later conception phase and reaches its peak in later life cycle phases, such as the commercialization phase. According to a VC investor we talked to: "*When we have spotted an interesting investment target, we usually follow up on them for a longer time period to really understand what they are doing and if they can keep up the pace with their peers. Some founders we even know before they approached us for funding.*" Thus, to present itself as an attractive investment target to investors, the new venture has to convey that it understands the business it operates in. For this, the venture (i.e., the founders) has to learn entering the same conversations as investors or sponsors, including the knowledge of relevant key performance indicators (KPI) in their field (e.g., Hellmann & Puri, 2000; Pahnke et al., 2015; Petty & Gruber, 2011).

Similarly, ventures should convey that they understand the business context they are playing in, as failing to prove sufficient industry knowledge is one of the reasons why new ventures cannot secure professional funding (Vohora, Wright, & Lockett, 2004). Given the important role of the new venture's online communication for reducing at least to some extent some of the investors' uncertainties (e.g., Jin et al., 2017; Prokofieva, 2014), incorporating messages related to market knowledge and venture's professionalization is likely to be important not only to investors, but cooperation partners, suppliers and customers alike (Petkova et al., 2013). For example, prior research suggests that by demonstrating business "proof-points", such as external achievements by winning competitions or gaining certifications, ventures are more likely to be positively validated by the more professional audiences (e.g., Hallen & Eisenhardt, 2012; Rao, 1994). Such identity claims are illustrated in tweets of a lighting venture when talking about its wins: "*ILLUMAGEAR wins 3 awards at the Zino Social Innovation Investment forum*". In addition, showing a careful consideration of its customers "*Workable aims to give smaller firms the same bells and whistles...that the big ones have*" or "*Thanks to our community, we're one of the 30 highest velocity open source projects!*" is likely to be well perceived by the more professional followers that also know about the importance of engaging broad audiences with limited expertise, such as the venture's customers (Petkova et al., 2013).

Whereas those business topics play a minor role in the conception phase and should presumably be ignored or even devalued by the more tech-oriented audience, in the commercialization phase, a new venture's appearance must reflect a growingly professionalized organization that has in place practices and processes expected of a scalable venture (Pahnke et al., 2015). When such a change in narrative is absent, new ventures risk to be not perceived as undergoing the necessary maturing process. We expect that self-referential messages of new ventures would be more validated by audiences in commercial phase when these messages are also reflecting business-related content, evidencing the venture's willingness (and possibly even capabilities) to deal with an increasingly professionalized environment and market-oriented followership that accompanies a venture from the conception phase towards the commercialization phase. We thus expect business-related tweets to have a positive impact on the venture's self-referential identity work in the commercialization phase, whereas this did not matter as much in the conception phase.

> *Hypothesis 3. A new venture's number of self-referential tweets is more positively related to audience recognition in the commercialization phase than in the conception phase, and this effect becomes stronger (more positive) in the commercialization phase with an increasing coverage of business-related content.*

Number of topics. Given that successful online engagement of audiences can translate into increased prospects of funding (Jin et al., 2017), increased media coverage (Lariscy, Avery, Sweetser, & Howes, 2009), and contribute to overall branding among consumers (Burton & Soboleva, 2011; Jansen, Zhang, Sobel, & Chowdury, 2009), new ventures face the dilemma regarding how to keep different audiences engaged (Fisher et al., 2017; Petkova et al., 2013). While we theorized that the identity work can further be supported by discussing business topics, given that it contributes to matching diverse audiences' joint expectations of a venture's maturation as an organization, at the same time, narratives are likely to function most effectively when their content is aligned to the audiences' interests (Ibarra & Barbulescu, 2010; Lounsbury & Glynn, 2001). In that sense, we theorize that another way for the venture to support its self-narrative work in achieving audiences validation in commercialization phase is by separately addressing the diverse audiences - such as customers, employees, investors, and journalists – with targeted content that meets their interests (Fischer & Reuber, 2014; Fisher et al., 2016; Fisher et al., 2017; Petkova et al., 2013; Pratt & Foreman, 2000).

When looking at the data, some of the tweets seem to more distinctly target the different audience groups although they are accessible to all followers. For example, the venture Workable

tweeted "*Women of Workable share their growth stories*", which is likely to appeal more to prospective employees that value workforce diversity. Workable also informed about a meet-up that was to connect peers from data science. At a different occasion, Workable included a link about a news article from TechSpace that recommended their tool as one of 21 others to "*hire smarter*", which is helpful for promoting its product among customers and raising its legitimacy by pointing to its media coverage. As another example, Workable's tweet about being "*highlighted by the European Investment Bank as a successful early stage investment*" is probably more likely to appeal to investors' interests. Because these audiences' expectations are not always aligned, e.g., think of employees' preferences for work-life balance vs. investors goal-settings for the release of funds, they should be acknowledged individually, even if this comes at the risk of other audiences showing negative reactions to some information. The advantages lie in the greater response flexibility to the different audiences' interests and low co-ordination costs (Pratt & Foreman, 2000), which are obviously important factors for new ventures. We suggest that ignoring the different audiences' interests is even worse than the risk to tweet about topics irrelevant to another audience group, because the new venture depends on each of these critical stakeholders' support (cf. Pratt & Foreman, 2000). Since the number and size of the different audiences grows over time for professionally funded ventures and is expectedly greater in a new venture's later days, such as after the product launch or first major investment, we expect new ventures that satisfy a higher number of different interests to receive greater validation in the commercialization phase compared to the conception phase, where such tweets may again be ignored or devaluated because misunderstood. With that, this supporting the positive effect of self-referential claims in the commercialization phase.

> *Hypothesis 4. A new venture's number of self-referential tweets is more positively related to audience recognition in the commercialization phase than in the conception phase, and this effect becomes stronger (more positive) in the commercialization phase with a higher number of different topics.*

3.3. Methods

3.3.1. Data and sample selection

We collected our data from Crunchbase, an increasingly prominent investment database for new ventures (Alexy et al., 2012; Homburg et al., 2014). As mentioned earlier, we decided for 'Twitter' as the social media platform of choice as it is most commonly used for communication among established and new ventures, has been legitimized as an infomediary by SEC, and has been qualitatively and quantitatively studied in academe (e.g., Chen et al., 2017; Fischer &

Reuber, 2011; Fischer & Reuber, 2014; Zhou et al., 2015). Indeed, among all startups that are listed in the Crunchbase database, we found Twitter to be the most pervasive form of online participation with more than 75% startups having a Twitter account (Facebook came as a somewhat distant second as a communication channel with 60% of startups using it). Similar numbers have been reported in other studies (e.g., Malhotra et al., 2012).

To enter our sample, a startup had to fulfill several criteria. First, it had to be founded in the U.S. and obtain its first round of VC funding in its first funding round to allow for a clear distinction between the conception phase (e.g., research setting) and the commercialization phase (e.g., professional setting). Second, it had to have an open Twitter account at the time of data collection to be able to extract the data from the Twitter application programming interface (API). Importantly, this API is limited to accessing approximately 3,200 online posts per Twitter account (with the most recent tweet being the first one), which is why we had to decide on the sample of startups we were going to crawl the tweets for. We decided for startups that have set up their business after 1 January 2011 to have a greater chance of withdrawing all available tweets of the new venture since its Twitter account opening. With that, the initial sample resulted in 866 new ventures, for which we compiled all available Twitter information up to April 2016 (date of data collection). For 42 ventures, we reached the 3,200 maximum tweet number mark, revealing that the first collected tweet is dated after the first funding round date, making it impossible to collect the tweets from the early days of the venture. Accordingly, we retained 824 new ventures and their tweets for further content analysis.

For the analysis of social media content, past studies have primarily used natural language processing software that either relies on predefined dictionaries (e.g., LIWC) or machine-based learning. The lexical approach is advantageous in that the dictionaries are defined from the beginning. However, given the particular structure and characteristics of most social media data - such as usage of acronyms, slang, sentiment intensifiers (e.g., "very", "strongly", "increasingly") - machine-based learning tools have been proven to outperform software with predefined dictionaries in both text categorization and sentiment analysis (e.g., Abrahams, Jiao, Wang, & Fan, 2012; Batool, Khattak, Maqbool, & Lee, 2013; Hutto & Gilbert, 2014; Zhou et al., 2015). The technical superiority of machine-based learning tools comes for two main reasons: the 'wisdom of the crowd' and the consideration of the context a word is embedded in (i.e., its contextual meaning). Before a machine – or algorithm – automatically assesses new input text, huge amounts of data have been previously trained by a number of human raters.

Because the collective opinion is usually more accurate than an individual rater, the precision of these trained models is better than that of manual coding (e.g., Hutto & Gilbert, 2014).

With regard to social media, we are not aware of more tailored dictionaries available. For this study, we use the AlchemyLanguage software[17] that we obtained after applying for free research access offered by IBM. This free research license came with a restriction in terms of lines of text processed, which prompted us to feed the software with the tweets from a number of randomly chosen startups from our original sample. In determining how many startups to randomly sample, we relied on the average and median number of lines of text in the overall sample, and originally withdrew 206 startups, which tweets we submitted for content analysis to the Alchemy software. After manually reviewing some of the results, we further disregarded tweets that only consisted of an hyperlink, had less than 30 characters and were direct replies or retweets, because those are either too short to capture variations in a new venture's identity or are less descriptive in that their primary intended goal is to respond twitter messages initiated by others. Because of this, some ventures that had only relatively few tweets dropped out. In the end, we concluded with a sample of 111,342 tweets of 139 new ventures.[18]

Alchemy has been compared to other machine-based learning tools for the usage of social media data and showed to outperform those in quantity and accuracy of identified text output with both news articles and Twitter data (Rizzo & Troncy, 2011; Saif, He, & Alani, 2012). The assessment was made by reviewing the identified text output between different software programs and human coders. As a result, Alchemy not only extracted most text fragments, but also demonstrated the highest accuracy in "understanding" what they are about. To state it simply: Alchemy read the most and best out of (short) texts, even when compared to a small number of human coders. In addition, Alchemy offered an established hierarchical taxonomy categorization (e.g., business and industrial, or accounting and auditing), which has been manually trained by human coders and is continuously reviewed to ensure its high consistency and accuracy. With that each of the 111,342 tweets had been automatically classified into a predefined category, which we review below. The adoption of latest artificial language

---

[17] AlchemyLanguage has recently merged into Watson Natural Language Understanding in March 2017: https://www.ibm.com/blogs/watson/2017/05/top-3-reasons-move-alchemylanguage-watson-natural-language-understanding/

[18] We compared the difference in means between our final sample of 139 new ventures with the 67 dropped ventures in terms of team size, funding, industry and region to determine whether our final sample is biased in some way. We only found a statistically significant difference in means for the industry class (4.43 = "New Media" vs. 5.02= "Retail" at $p < .05$), however given that we only consider Internet startups and apply fixed effects as robustness checks, we considered this to be not an issue.

processing methods allowed us to process a higher amount of data while still paying attention to each line of text contained in a tweet.[19]

3.3.2. Measures

Self-referential identity claims. In order to capture tweets that explicitly relate to the venture, we labeled all tweets that contain either their own startup or Twitter account name, or words "we", "us" and "our(s)" as self-referential statements (cf. Martens et al., 2007), which is about one third of all tweets that are not direct replies or retweets. We acknowledge that this is a somewhat conservative measure as we disregard more passive language forms that may speak of the venture in an indirect way. However, given the average reader's speed of reading twitter messages, a more explicit calling of a startup's name or "we" etc. is likely to be a more appropriate measure of intended self-presentation. For example, when comparing "We are loved by our customers" vs. "Loved by our customers", the first post reflects a clearly identified subject (Martens et al., 2007), whereas the second post gives more room for interpretation (e.g., Is the product or service loved by our customers, or events organized etc.)

Content-related identity claims. We followed previous work of Zhou and colleagues (2015) in that we used a categorization approach of the different content addressed by a venture's tweets. However, contrary to their approach by selecting a previously published categorization scheme (Meek, Roberts, & Gray, 1995), we used the one provided by the Alchemy software for the reasons stated above. Alchemy analyzes each tweet according to its content and assigns it to different hierarchical taxonomy classes, such as business and industrial, finance, technology and computing, science, and more.[20] Given that a tweet can be classified into multiple taxonomies, we decided for the first category assignment, because Alchemy's score of confidence is commonly more than 80% here. Two independent raters manually reviewed 1,000 random tweets and agreed in 87% of the results with Alchemy's categorization. As can be drawn from the IBM Alchemy documentation,[21] there are 23 first-level taxonomy categories with more than 1,000 taxonomy sub-categories organized in hierarchical levels (e.g. from first level taxonomy

---

[19] To review the Alchemy output of a tweet example, please visit the demo version provided by IBM: https://natural-language-understanding-demo.ng.bluemix.net/ and enter *"A great NYTimes article on how technology can improve education through personalization"*, a tweet that we refer to on page 80. The Alchemy output shows that the tweet has an overall positive sentiment of 0.74 (range 0 to 1) and is categorized into the taxonomy *technology and computing* with a confidence score of 0.82 (range 0 to 1).

[20] See the IBM Alchemy documentation here: https://github.com/watson-developer-cloud/doc-tutorial-downloads/raw/master/alchemy-language/taxonomy-hierarchy.pdf

[21] See the IBM Alchemy documentation here: https://github.com/watson-developer-cloud/doc-tutorial-downloads/raw/master/alchemy-language/taxonomy-hierarchy.pdf

category "business and industrial", next sub-category is "business operations", further sub-category is "business plans"). For the sake of precision, we decided for the first level of taxonomy categories and captured each tweet that addressed either a *business-related content* (consisting of two taxonomy categories: business and industrial, or finance) or *technology-related content* (taxonomy category: technology and computing).

In addition, we used three other taxonomy categories predefined by Alchemy that are likely to address a specific audience group, such as (1) *advertisement and marketing,* as it may be broadly relevant for the venture's customers, (2) *media presence* (category *news* in Alchemy), that is important for reporters looking for news on the venture, and (3) *recruitment* (category *career* in Alchemy), as it reflects content relevant for potential employees. We collapsed remaining taxonomy categories into "other" and calculated the *number of different topics* covered by the venture's tweets in a month. [22]

In Table 7, we provide an overview of tweets that have been categorized into the different taxonomies. For example, a new venture's business-related tweets can inform about a venture's milestones *"Just filed for a provisional patent #progress"*, the founders *"Our founder made the cut! Looking forward to April 19"*, or financials *"We're excited to have closed a seed round of funding!"*, whereas technology-related tweets are often about technology trends *"A great NYTimes article on how technology can improve education through personalization"* or tech-related aspects of the product *"Our servers are now back up. We preserved completed games, though we might have lost a few in progress"*. Advertisement-related tweets could be read like this *"Did you know that you can customize your flowers? It's called hybridization."* and tweets depicted to future employees were framed for example like *"Check out our Seedcamp experience! RT @dessaigne: Seedcamp: Tips and Advice From a Finalist"* or more explicitly like *"Ubiquity is now hiring for our global operations hub in Manila!"*.

---

[22]In this study, "topic" refers to the broad taxonomy classes defined by the Alchemy software and thus, should not be confounded with the narrower definition of a *topic* (see definition in the Oxford English Dictionary (1997). We also experimented with different taxonomy inclusions to calculate the number of topics, obtaining generally consistent results.

Table 7: Taxonomy categorization of tweet examples

Business	Just filed for a provisional patent #progress
	Excited to have Robert Egger on our advisory board. Robert is a huge deal in the non profit world.
	We're thrilled to be a finalist! RT @nwangelconf: The 2012 Seattle Angel Conference FINALISTS ANNOUNCED LINK
	Excited to welcome @ragnartanner Co-Founder of @RagnarRelay to the advisory board! This guy is a machine!
	Our founder made the cut! Looking forward to April 19 LINK
	Business development secrets, from a startup's perspective LINK
	How Can Local Businesses Avoid The Horror And Structure More Effective Daily Deals? LINK
	Growing Profits and Sales with a Smarter Sales Compensation Plan LINK
	Any investors out there looking to sponsor a seed round? ;)
	We're excited to have closed a seed round of funding! This will allow us to keep improving InstaEDU for students
Technology	A great NYTimes article on how technology can improve education through personalization LINK
	Mobile Devices Have Eclipsed the Desktop Experience; Get Over It LINK
	Our servers are now back up. We preserved completed games, though we might have lost a few in progress
	Hey folks - we're currently working through a connectivity outage - we're working on the issue and will have an update soon!
	Sign up to be an AnyMeeting Beta Tester, only 50 spots left LINK
	Nokia launches one of the most beautiful #WP7 phones yet - thinking of #WPDev? Let Buddy.com shortcut your app development! LINK
	Kaplan launches Testive's rapid test technology to speed up testing LINK
	Microsoft's Surface: bright & shiny, but unlikely to rule us all LINK
Advertising	6 Ways to Enhance Your Credibility LINK Favorite is #4 Listen actively, consider carefully, and respond succinctly.
	What is the best way to acquire new customers? Through satisfied customers! #goviral #referrals LINK
	Did you know that you can customize your flowers? It's called hybridization. Read more on @eHow LINK
	Calling all Musicians: check out hearo.fm! LINK
Media presence	Check out @priyahaji's first article on @huffpostmoney LINK
	Check us out on the front page of the #BCHeights. !!! LINK
	TrustEgg has some exciting announcements on the way! Stay tuned, and follow us on Facebook!
	VoloMetrix and our collab data mentioned in SFGate article LINK
Recruitment	Check out our Seedcamp experience! RT @dessaigne: Seedcamp: Tips and Advice From a Finalist LINK
	Ubiquity is now hiring for our global operations hub in Manila! LINK Please send credentials to careers@ubiquitygs.com
	Loved taking part in @OgilvyYouth Startup University today with @sweetlorens + @TeamFeelday + Violet Health. Amazing advice, amazing team! LINK
	Playdek is hiring Programmers. Click link or send cover letter and resume to admin@playdekgames.com #jobs LINK

Note: RT stands for Retweet; hyperlinks have been replaced with LINK for space reasons.

Life cycle phase. In order to analyze the new venture's identity development across the different life cycle stages, we distinguished between the conception phase that starts with the month of the first tweet and the commercialization phase that starts six months prior to the first funding round and goes up to the month prior to the next funding round. We decided for this timely separation based on prior studies showing that a median duration of closing a professional financing round is 6 months (e.g., Davila et al., 2003), when ventures are expected to increasingly professionalize and gear up for 'business' conversations. Discussions with VC investors validated our approach. We used a dummy variable to separate both phases.

Control variables. We considered both legitimation studies in entrepreneurship and extant Twitter communication studies to integrate further variables that have been associated with increased audience recognition on Twitter. To control for the venture's overall volume of

activity on Twitter, we first used the total number of tweets posted by the venture's Twitter account (Chen et al., 2017; Obschonka et al., 2017). We also controlled for the venture's tweet replies to their own followers (i.e., tweets that target another Twitter account by using "@" before the account name), as more responsive ventures may be more liked by their followers. While we would had preferred to control for the actual number of Twitter followers over time, this information is only available for the date of data retrieval. However, Huberman and his colleagues (2008) state that the number of direct messages of a Twitter's account is a better predictor for the size of the actual social network than the number of often times passive followers. In addition, Kwak and his co-authors (2010) revealed that the number of tweets and followers are strongly correlated, which increases the confidence in our selection of this control variable. Next, because affective language (positive and negative emotions) is expected to trigger greater audience reactions (Stieglitz & Dang-Xuan, 2013), we controlled for *tweet sentiment* that takes the range between -1 (only negative) and +1 (only positive) calculated on the basis of all keywords in a tweet.[23] Next, we included the *startup's twitter account age* (Stieglitz & Dang-Xuan, 2013)*,* which is highly correlated with the startup's actual age since its founding date. We further collected the startup's media coverage in terms of *news issued* (Petkova, 2014; Petkova et al., 2013) to control for any effects that may have been triggered by information or legitimation from traditional media sources (Chen et al., 2017). For this, we filtered all industrial media articles (Petkova et al., 2013) containing the startup's name from the Factiva media database on a monthly basis.

With regard to the different taxonomies a tweet can be assigned to, we calculated the *topic concentration* degree of those taxonomy categories to better understand the distribution among the different contents. For this, we applied the Herfindahl-Hirschman Index (HHI) (Rhoades, 1993) that is commonly used for the market concentration in an industry, but is equally useful for our purpose. The index is defined as

$$HHI = \sum_{i=1}^{n}(TS_i)^2 \qquad , \tag{1}$$

---

[23]Contrary to most natural language processing software based on dictionaries (such as LIWC), that are usually only able to determine binary polary (negative, neutral or positive), the sentiment output for tweets from AlchemyLanguage has a much higher variation in valence within the range of -1 (only negative) and 1 (only positive) expressing the true sentiment *intensity*. This sentiment score is calculated based on all keywords used in a tweet, such as subjects or composite words that have a meaning on a standalone basis.

where *n* is the number of taxonomies raised by a venture in a month and TS_j the taxonomy share of each topic *i* relative to the total number (*n*) of taxonomies. The *HHI* takes on values between $1/n$ and 1, where 1 describes the concentration on one topic only.

On the venture's team level, we included the *number of founders* and control for the *team's prior founding experience*, which we measured by the number of founder positions in previous startups. Both factors are positively associated with capabilities and networks the team has access to (e.g., Obschonka et al., 2017; Petkova, 2014; Vanacker & Forbes, 2016), which could affect Twitter followership and validation. Importantly, we included a dummy if one of the founding team members has taken the role as CMO since this could be a source of increased marketing know-how for getting audiences' attention (Homburg et al., 2014). For this, we reviewed the founders' educational and business background on various sources, such as LinkedIn, press articles and company websites. Moreover, we control for *the venture's business model (B2C vs. B2B)* and *Internet industry category*. As most startups registered in Crunchbase have an IT or Internet background (Alexy et al., 2012), we relied on the same classification system of USA Today's Internet 100 index employed in earlier studies (Pollock et al., 2009; Pollock & Gulati, 2007). We categorized the ventures into *E-Advertising, E-Finance, E-Infrastructure, E-New Media, E-Retail, E-Services/Solutions* and *others*. Finally, we controlled for the venture's home base, because some U.S. regions may have higher social media adoption rates of social media usage due to their technological patronage: *San Francisco area, New York area, Los Angeles, Boston, Seattle* and *other* (e.g., Sorenson & Stuart, 2001). Finally, in order to capture investment-specific characteristics, we included the *year of the first funding round, the raised amount* (e.g., Kirsch et al., 2009) and the *syndicate size* (e.g., Dimov et al., 2007; Ma et al., 2013). These external factors may mitigate Twitter audience's uncertainty, such as those of financial resource providers, related to the new venture (e.g., Jääskeläinen, 2012).

3.3.3. Dependent variable and model specification

As our dependent variable, we considered the recognition by the digital audience, exemplified with venture's followers' *liking* behavior (i.e., favorites of a tweet) over time. We particularly focused on the active validation of the audience as it is found to be more effective in eliciting affirmations than passive behavior (such as following a Twitter account) (Fischer & Reuber, 2014; Marwick & Boyd, 2011). We employed a longitudinal study design on a monthly basis. We have an unbalanced panel, because the Twitter account opening date is not the same for all startups and some also have not posted anything in a month. We have aggregated the Twitter information on a monthly level for several reasons: First, this is in line with past studies on

media legitimation that operationalize new venture's media attention on a monthly level in order to capture dynamics in high tech ventures' fast-changing development (Petkova et al., 2013). Second, because our research question concentrates on the change in identity claims over time, we felt that studying acknowledgement on the level of any single tweet would be too much of a micro view to capture an evolving nature of online narratives. Aggregation on a monthly level is more appropriate to capture the change across a new venture's early lifetime. Finally, because many posts do not receive a like (an average of 34 tweets a month received an average of only 9 likes, sometimes distributed over even fewer tweets), this could result in excessive zeros. Aggregating tweets on a monthly level alleviated issue of high overdispersion and resulted in a wide span of maximum 64 periods. In addition to our choice of monthly aggregation, we applied the more conservative method for analyzing count data of the negative binomial regression model (*xtnbreg* in Stata), which adds a parameter (i.e., random error) to allow the conditional variance of the dependent variable to exceed the conditional mean. This random error can be understood as the combined effects of unobserved heterogeneity or even contagion of the model.[24] We report the results using random effects, because fixed effects in the negative binominal regression are difficult to implement (Allison & Waterman, 2002).

3.4. Results

In Table 8, we present the descriptive statistics and correlations. The average startup in our sample is 15 months old and has two founders. Approximately 32% of the startups have a CMO and 41% operate a B2C business model. With regard to the Twitter statistics, on average a startup provides 34 tweets a month, whereof approximately one third are identified as self-referential tweets and one fourth are replies to Twitter followers. On average three tweets are about tech-related content, one is about a business-related content and a new venture covers three different topics per month. As expected, many of the Twitter variables are highly correlated with correlations ranging from 0.71 to 0.84, which is because multiple tweets can be categorized simultaneously in more variables. Because our main variable self-referential tweets may cause multicollinearity issues with the total number of tweets, we followed prior literature (e.g., Pollock & Rindova, 2003) and orthogonalized both variables, with the total number of tweets being the reference variable. Orthogonalization is helpful in transforming a set of variables to a set of uncorrelated (orthogonal) variables. By using a modified Gram-Schmidt

---

[24]We follow the recommendations by Long and Freese (2014) for statistical analyses with count dependent variables using Stata.

procedure (Golub & Van Loan, 2013), each successive variable (in our case self-referential tweets) is replaced by its residuals resulting from the OLS regression on the previous variable (here total number of tweets).

Table 8: Descriptive statistics and correlations of variables for twitter analysis

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Venture-related																
1. Startup age (months)	15.20	11.66														
2. No. of founders	2.12	1.12	-0.08													
3. Team's prior founding exp.	6.68	7.57	0.09	0.28												
4. B2C	0.41	0.49	-0.16	-0.05	0.04											
5. Startup news	0.36	0.82	0.06	-0.07	0.08	-0.04										
6. CMO	0.32	0.47	0.08	0.11	0.30	-0.02	0.08									
Twitter-related																
7. No. of tweets	33.66	54.89	0.09	-0.01	-0.01	0.07	0.12	0.03								
8. Tweet replies	7.64	21.88	0.05	-0.02	0.03	0.06	0.17	0.05	0.71							
9. Tweet sentiment	0.22	0.23	0.00	-0.04	0.01	-0.04	0.01	-0.07	-0.06	-0.01						
10. Topic concentration	0.64	0.29	-0.09	0.02	-0.05	0.08	-0.06	-0.07	-0.08	-0.08	0.02					
Main variables																
11. Phase	1.82	0.38	0.49	0.00	0.04	-0.17	0.10	0.03	0.09	0.09	0.03	-0.10				
12. Tweet self-referentials	11.95	21.13	0.07	-0.01	-0.01	0.08	0.05	0.06	0.86	0.41	-0.04	-0.07	0.06			
13. Tech-related content	2.62	5.50	0.19	-0.05	-0.02	-0.07	0.04	0.14	0.56	0.32	-0.05	-0.20	0.10	0.54		
14. Business-related content	1.44	3.14	0.10	-0.04	-0.01	0.05	0.05	0.06	0.50	0.31	-0.06	-0.23	0.08	0.55	0.47	
15. No. of topics	2.20	1.23	0.12	-0.05	-0.03	-0.02	0.08	0.09	0.49	0.27	-0.08	-0.40	0.15	0.49	0.46	0.49

Startup Internet industries and years of first financing rounds are excluded from this table.

Table 9: Results of negative binominal panel regression predicting the incident rate ratio of Twitter likes per month

Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	IRR	SE	IRR	SE	IRR	SE	IRR	SE	IRR	SE	IRR	SE	IRR	SE	IRR	SE
Venture-related																
Startup age (months)	1.013**	0.00	1.013**	0.00	1.013**	0.00	1.013**	0.00	1.013**	0.00	1.013**	0.00	1.013**	0.00	1.013**	0.00
No. of founders	1.118*	0.05	1.113*	0.05	1.115*	0.05	1.115*	0.05	1.113*	0.05	1.112*	0.05	1.113*	0.05	1.113*	0.05
Team's prior founding exp.	0.989*	0.01	0.989*	0.01	0.989*	0.01	0.989*	0.01	0.989*	0.01	0.989*	0.01	0.989*	0.01	0.989*	0.01
B2C	3.146**	1.09	2.961**	1.02	2.952**	1.02	2.952**	1.02	2.959**	1.02	2.953**	1.02	2.965**	1.03	2.956**	1.02
Startup news	1.102**	0.03	1.104**	0.03	1.102**	0.03	1.102**	0.03	1.106**	0.03	1.108**	0.03	1.104**	0.03	1.103***	0.03
CMO	0.682**	0.07	0.678***	0.07	0.675***	0.07	0.675***	0.07	0.665***	0.07	0.673***	0.07	0.677***	0.07	0.678***	0.07
Twitter-related																
No. of tweets	1.246**	0.04	1.349***	0.05	1.365***	0.05	1.365**	0.05	1.371***	0.05	1.389***	0.05	1.350**	0.05	1.352***	0.05
Tweet replies	0.999	0.00	0.998	0.00	0.998	0.00	0.998	0.00	0.997	0.00	0.997+	0.00	0.998	0.00	0.998	0.00
Tweet sentiment	1.293*	0.16	1.278*	0.16	1.273*	0.16	1.273*	0.16	1.271*	0.16	1.277*	0.16	1.279*	0.16	1.279*	0.16
Topic concentration	1.042	0.11	0.988	0.11	0.990	0.11	0.991	0.11	0.980	0.11	0.979	0.11	0.986	0.11	0.986	0.11
Main variables																
Commercialization (com phase)	1.804**	0.20	1.701**	0.18	1.834**	0.21	1.836**	0.21	1.551***	0.18	1.669***	0.18	1.494+	0.20	1.505+	0.33
Tweet self-referentials (self-ref.)	0.987	0.02	0.876**	0.04	0.859***	0.04	0.862**	0.05	0.923*	0.04	0.953	0.04	0.883+	0.06	0.814	0.33
Tech-related content (tech-rel.)	1.002	0.00	0.998	0.00	1.036*	0.01	1.037*	0.02	0.996	0.00	0.996	0.00	0.998	0.00	0.998	0.00
Business-related content (bus-rel.)	1.026**	0.01	1.019**	0.01	1.019**	0.01	1.019**	0.01	0.956	0.04	1.020	0.04	1.019**	0.01	1.019**	0.01
No. of topics (no. topics)	1.375***	0.03	1.343***	0.03	1.338***	0.03	1.338***	0.03	1.336***	0.03	1.332***	0.03	1.273***	0.10	1.277**	0.11
Hypotheses																
Com. phase # self-ref.			1.190**	0.06	1.202***	0.06	1.199**	0.07	1.152**	0.06	1.106	0.05	1.190**	0.06	1.291	0.53
Com. phase # tech-rel.					0.962**	0.01	0.961*	0.02								
Tech-related # self-ref.					1.001	0.00	1.000	0.01								
Com. phase # self-ref. # tech-rel.							1.001	0.01								
Com. phase # bus-related									1.070+	0.04	1.001	0.04				
Bus-rel. # self-ref.									0.998	0.00	0.986*	0.01				
Com. phase # self-ref. # bus-rel.											1.013*	0.01				
Com. phase # no of tax.													1.058	0.09	1.054	0.09
No. topics # self-ref.													0.998	0.01	1.024	0.13
Com. phase # self-ref. # no. topics															0.974	0.13
Wald χ²	1497.39		1528.85		1517.33		1517.28		1551.76		1555.30		1537.40		1537.25	
N	139 / 1980		139 / 1980		139 / 1980		139 / 1980		139 / 1980		139 / 1980		139 / 1980		139 / 1980	

*** $p < .001$; ** $p < .01$; * $p < .05$; + $p < .10$

Startup Internet industries and years of first financing round are included from this table.

No. of tweets and self-referential tweets are orthogonalized with no. of tweets being the reference variable.

The results of our analysis are presented in Table 9, which shows the Model 1 with the controls and main effects only, and Models 2 to 8 with the stepwise integration of the two- and three-way interaction terms. We report the incidence rate ratio (IRR), which is the exponent of the coefficients. In Hypothesis 1, we stated that the number of self-referential tweets would be more positively related to audience recognition when the venture is in the commercialization phase. We can draw from Model 2 that the direct effect of self-referential tweets appears to be negatively related to Twitter likes (IRR = 0.88, p < .05), whereas the interaction coefficient of self-referential tweets and the phase dummy is significant and positive (IRR = 1.19, p < .01). Figure 2 illustrates the finding with the y-axis representing the number of Twitter likes and the x-axis showing the self-referential tweets at their mean and plus/minus one standard deviation. As can be seen in Figure 2, a higher number of self-referential tweets is associated with a higher number of Twitter likes in the commercialization phase. We calculated the marginal effects for self-referential tweets in phase 1 (beta = -0.60, p < .01) and phase 2 (beta = 0.33, p = .13) and computed the test of difference in the two slopes using the *pwcompare(effects)* option for *margins* in Stata. We found the slopes for the different phases to be significantly different at p < .01. We can confirm Hypothesis 1.

Figure 2: Difference in the impact of self-referential tweets between the early life cycle phases
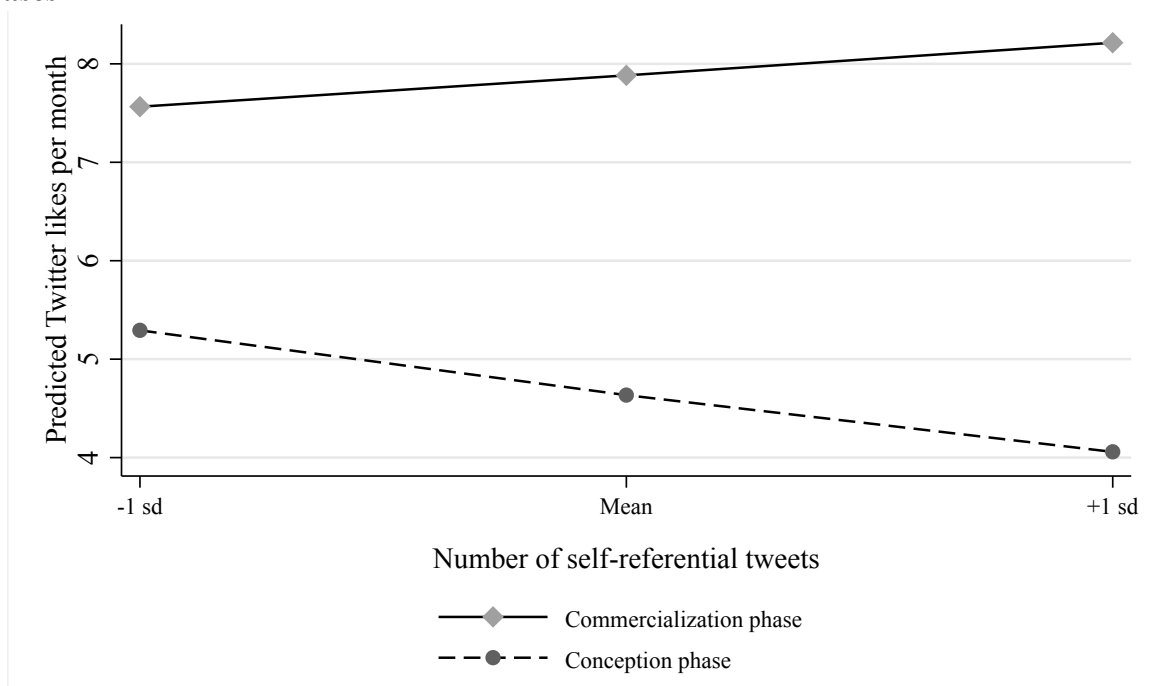
In Hypothesis 2, we argued that the more positive effect of self-referential tweets on audience recognition in the commercialization phase compared to conception phase is less positive in the commercialization phase when the tweets narrative covers more tech-related content. The

separate inclusion of the different interaction terms (Model 3) reveals that tech-related content is indeed negatively associated with Twitter likes in the commercialization phase (IRR = 0.96, $p < .01$), but the interaction term between self-referential tweets and tech-related tweets is not significant (Model 3). The three-way interaction in Model 4 is also insignificant, thus we cannot confirm Hypothesis 2. Further, we hypothesized that business-related tweets may have a positive reinforcing effect on the relationship of self-referential tweets and audience recognition in the commercialization phase compared to conception phase. We infer from Model 5 that business-related tweets have a positive and significant impact on Twitter likes in the commercialization phase (IRR = 1.07, $p < .10$), whereas in combination with self-referential tweets, they do not seem to make a difference. However, the positive impact of self-referential tweets on Twitter likes in the commercialization phase becomes stronger when the tweet is related to business content (IRR = 1.01, $p < .05$) (Model 6). Figure 3 displays the results with the y-axis again representing the number of Twitter likes and the x-axis showing the self-referential tweets at their mean and plus/minus one standard deviation. Here, we calculated the marginal effects for self-referential tweets at the mean value of business-related tweets in phase 1 (mean: beta = -0.27, $p < .10$) and phase 2 (beta = 0.40, $p = .13$) and computed the test of difference in the two slopes using the *pwcompare(effects)* option for *margins* in Stata. We found the slopes across the different phases to be significantly different at $p < .05$. Thus, we can confirm our Hypothesis 3.

Figure 3: Difference in the impact of business-related topics on self-referential tweets between the early life cycle phases
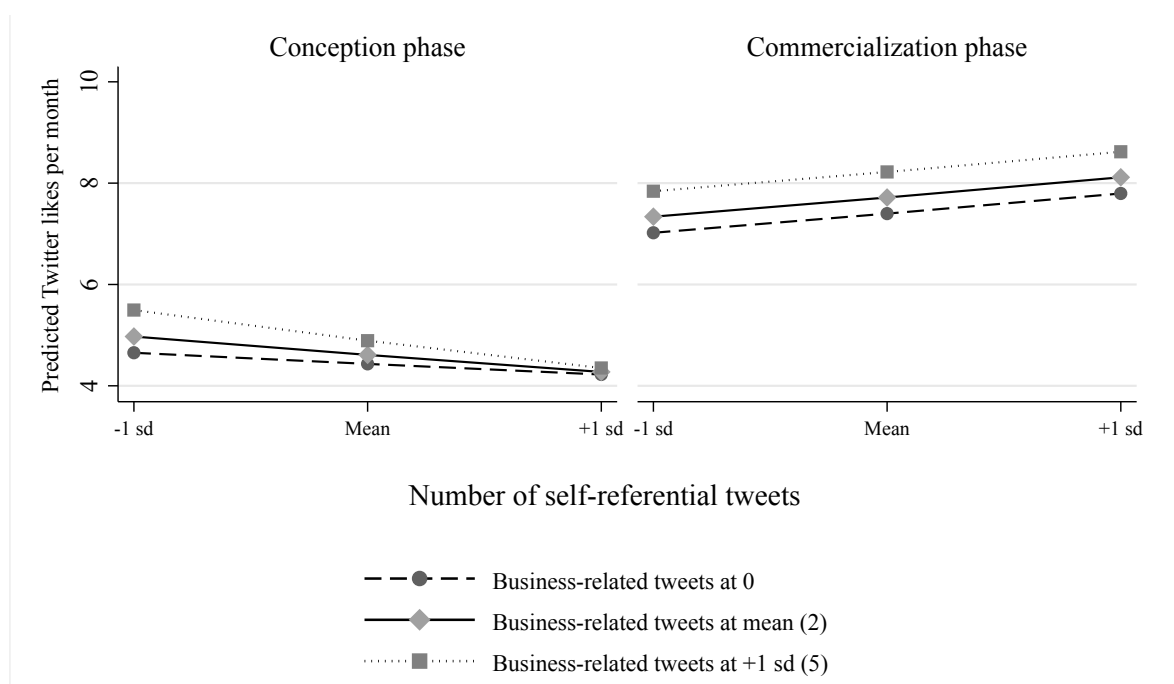
Finally, we were interested in the impact that the amount of different topic coverage has on audience reactions. We can draw from Models 7 and 8 that addressing a higher number of topics is generally beneficial (Model 8: IRR = 1.28, p < .01), but not more so in the commercialization phase than in the conception phase and that this also does not change in combination with self-referential tweets. We therefore reject Hypothesis 4.

3.4.1. Additional analyses and robustness checks

Our empirical strategy including the choice of our dependent variable was designed to minimize the risk of endogeneity. Specifically, although choosing Twitter likes as a dependent variable is arguably more theoretically proximate to a startup's Twitter behavior than a more distant theoretical variable, such as a startup's financial outcome (Jin et al., 2017), we still completed steps to ensure robustness of our findings. To further increase the confidence in our results, we applied fixed effects with the poisson model.[25] The poisson estimator with robust standard errors can deal with overdispersion and is therefore recommended as a possible alternative to the negative binominal method (Cameron & Trivedi, 2010; Wooldridge, 1999). When applying the poisson method (both random and fixed effects) with robust standard errors, our findings from the negative binominal regressions remain robust if not enforced. In Table 10, we only report the more conservative findings with fixed effects. With regard to Hypothesis 2, tech-related content is still negatively related to Twitter likes in the commercialization phase (IRR = 0.97, p < .001), however, together with self-referential tweets they now seem to have a positive significant impact on Twitter likes (IRR = 1.01, p < .001). Jointly, the three-way interaction becomes significantly positive (IRR = 1.01, p < .05).[26] Furthermore, in Model 7 we witness that the number of different topics addressed significantly benefits from self-referential tweets (IRR = 1.05, p < .001), as partly argued in Hypothesis 4. We discuss the implications of these findings below.

---

[25]As explained by Allison and Waterman (2002), the negative binomial model allows for individual-specific variation in the dispersion parameter, but not in the conditional mean, which is however what the fixed-effect would control for. One solution is to include dummy variables for each venture, which we were not able to do due to computational limitations.

[26]When standardizing all variables that enter the interaction term (Aiken et al., 1991), this three-way interaction remains insignificant as reported in our main models.

Table 10: Results of fixed-effects poisson panel regression predicting the incident rate ratio of Twitter likes per month

Variables	Model 1 IRR	SE	Model 2 IRR	SE	Model 3 IRR	SE	Model 4 IRR	SE	Model 5 IRR	SE	Model 6 IRR	SE	Model 7 IRR	SE	Model 8 IRR	SE
Venture-related																
Startup age (months)	1.097***	0.00	1.095***	0.00	1.094***	0.00	1.094***	0.00	1.086***	0.00	1.085***	0.00	1.096***	0.00	1.096***	0.00
Startup news	1.080***	0.01	1.080***	0.01	1.075***	0.01	1.075***	0.01	1.077***	0.01	1.078***	0.01	1.092***	0.01	1.092***	0.01
Twitter-related																
No. of tweets	1.819***	0.03	1.941***	0.03	1.865***	0.03	1.864***	0.03	1.825***	0.03	1.846***	0.03	1.895***	0.03	1.893***	0.03
Tweet replies	0.982***	0.00	0.981***	0.00	0.984***	0.00	0.984***	0.00	0.985***	0.00	0.985***	0.00	0.983***	0.00	0.983***	0.00
Tweet sentiment	1.950***	0.12	1.898***	0.12	1.823***	0.11	1.823***	0.11	1.949***	0.12	1.965***	0.12	1.917***	0.12	1.917***	0.12
Topic concentration	1.258***	0.07	1.185**	0.06	1.165**	0.06	1.166**	0.06	1.126*	0.06	1.117	0.06	1.069	0.06	1.07	0.06
Main variables																
Commercialization (com phase)	1.216**	0.08	1.113	0.07	1.240**	0.09	1.264***	0.09	0.955	0.07	1.139+	0.08	0.972	0.13	0.968	0.13
Tweet self-referentials (self-ref.)	0.833***	0.01	0.715***	0.02	0.702***	0.02	0.731***	0.02	0.791***	0.02	0.873***	0.02	0.617***	0.02	0.685	0.16
Tech-related content (tech-rel.)	0.983***	0.00	0.981***	0.00	1.009	0.01	1.022*	0.01	0.988***	0.00	0.987***	0.00	0.981***	0.00	0.981***	0.00
Business-related content (bus-rel.)	1.044***	0.00	1.039***	0.00	1.053***	0.00	1.053***	0.00	0.854***	0.02	1.005	0.03	1.038***	0.00	1.038***	0.00
No. of topics (no. topics)	1.346***	0.01	1.318***	0.01	1.318***	0.01	1.319***	0.01	1.361***	0.01	1.355***	0.01	1.215***	0.06	1.212***	0.06
Hypotheses																
Com. phase # self-ref.			1.210***	0.03	1.057*	0.03	1.014	0.03	0.995	0.03	0.901***	0.02	1.185***	0.03	1.067	0.26
Com. phase # tech-rel.					0.967***	0.01	0.954***	0.01								
Tech-related # self-ref.					1.010***	0.00	0.996	0.01								
Com. phase # self-ref. # tech-rel.							1.013*	0.01								
Com. phase # bus-related									1.197***	0.03	1.015	0.03				
Bus-rel. # self-ref.									1.009***	0.00	0.980***	0.00				
Com. phase # self-ref. # bus-rel.											1.029***	0.00				
Com. phase # no of tax.													1.062	0.05	1.065	0.06
No. topics # self-ref.													1.053***	0.01	1.018	0.08
Com. phase # self-ref. # no. topics															1.034	0.08
Startups / Observations	132 / 1958		132 / 1958		132 / 1958		132 / 1958		132 / 1958		132 / 1958		132 / 1958		132 / 1958	

*** p < .001; ** p < .01; * p < .05; + p < .10

Startup Internet industries and years of first financing round are included from this table.

No. of tweets and self-referential tweets are orthogonalized with no. of tweets being the reference variable.

As another precautionary measure, we standardized the variables that enter the interaction terms in order to reduce the risk of multicollinearity issues (Aiken et al., 1991). All our results reported in the main models remain qualitatively unchanged. In addition, we applied different cut-offs to the separation of the conception and commercialization phase, such as 'starting' the commercialization phase one year ahead, three months prior the first funding round, and 'ending' it already six months after the first funding round to have a more balanced observational time period (six months prior and after the funding round). The results remained stable (and can be requested from the authors), with the exception of the models with the cut off specified at one year prior to the first funding round for the commercialization phase. We infer from our findings that there may be differences in audience expectations between the time period of 12 and 6 months prior the funding round. This is supported by the fact that our results with a cut-off at three months prior the funding round are comparable in strength and significance to the reported ones.

3.5. Discussion

In this study, we were interested to understand new ventures' identity development facing an increasingly diverse audience over its early life cycles. In particular, we contrasted the validation of identity claims of new ventures on the social media platform Twitter across their early days (i.e., conception phase) to the first funding round and beyond (i.e., commercialization phase). In doing so, we particularly sought to address both how frequently ventures engage in identity work (examining the self-referential messages), and the specific content of those identity claims (discussing technology and business topics, and more generally, the number of topics addressed across phases) as influencing audiences' validation across phases.

In informing our theorizing, we particularly drew on research on narrative identity work in that an increased communication about the 'self' is necessary during major changes to make sense of the change for oneself but more importantly for the audiences involved (Ibarra, 1999; Ibarra & Barbulescu, 2010). We found that new ventures transferring to the commercialization phase benefit from self-referential claims since they facilitate the understanding of the venture's new activities. Surprisingly, we also find that self-referential tweets seem to have a negative impact on audience recognition in the conception phase. It may be that in the early days of a new venture's lifetime, a high reliance on self-referential claims might be considered misleading or even inappropriate. At that time, the new venture's identity is in fragile formation stage, and the use of explicit self-referrals may be interpreted as premature boasting. Adding to that, a new

venture that already talks about itself before the audience could categorize it into an existing market category, for example by relating it to a particular industry field, may be less understood and ultimately validated (Lounsbury & Glynn, 2001; Navis & Glynn, 2011)

Further, we analyzed how the change in the content of the venture's identity claims moderates the relationship between self-referential messages and audiences' recognition over the different life cycle phases. We found that tech-related tweets make no difference for the positive effect of self-referential statements on Twitter reactions in the commercialization phase compared to the conception phase. We further hypothesized that new ventures benefit from exhibiting greater professionalization in their identity development when transferring to the commercialization phase. Our findings show that business-related tweets further strengthen the positive impact of self-referential tweets on audience recognition. Our results partly support prior work of Fisher and his colleagues (2016, 2017) in that audiences place different weight to tech- and business-related content over the different life cycle phases.

Beyond the new venture's tech- and business-related aspects, there are more topics of the new venture that are of interest to other audience groups, such as customers, investors, employees and journalists. Inspired by the research on multiple identities (Foreman & Whetten, 2002; Pratt & Foreman, 2000), we looked at how the number of topics the venture discusses moderates the relationship between self-referential narratives and audiences' validation of the venture's tweets. Interestingly, it seems that touching upon different topics is indeed beneficial to engage multiple stakeholders at the same time, but not more so in the commercialization than in the conception phase.

Limitations and future research directions

In this study, we suggest that a new venture's identity development is reflected in its Tweeting communication on the social media platform Twitter. While this is also in line with qualitative research studying new ventures' social media activity (Fischer & Reuber, 2014), some scholars could argue that identity is something unique and enduring about an organization, where identity claims define a "self-determined unique social space" (Whetten, 2006: 220). We acknowledge this point of view, but follow the perception of other scholars that have questioned the existence of lasting and distinctive traits of organizations and opted for their continuous adaption to external circumstances (e.g., Gioia & Thomas, 1996; Rindova & Kotha, 2001). Practically, there exist few companies that stand out with self-owned identity claims that are not also occupied, at least partly by other organizations (cf. Lounsbury & Glynn, 2001; Navis

& Glynn, 2011), which implies that a venture's identity has to be continuously refined to meet different audiences' expectations (Bamberg & Georgakopoulou, 2008; Ibarra & Barbulescu, 2010). Some could further critique Twitter postings to be similarly embellished or unrepresentative of a venture's 'offline' identity. There are several reasons why the difference between online and offline identity is quite blurred, if not inexistent. First, new ventures typically own a proprietary Twitter account in whose name messages are disseminated. Second, the online world is increasingly seen as a sort of an extension to the social exchange happening in the offline world (Ellison, Steinfield, & Lampe, 2007). Third, online claims can be reviewed by at least some of the followers, placing a reality check on possible misrepresentations.

As concerns our study design, we acknowledge the following shortcomings: The time horizon of our study encompasses the conception and commercialization phases, but neglects the growth phase, which is defined by public ownership (Fisher et al., 2017). With the limitation of the Twitter API to 3,200 tweets per Twitter account (i.e., startup), it is difficult to get access to all tweets of a startup over such a long period of time, or even from the beginning of their tweeting activity – if not tracked over time. That said, we encourage further research to start where we stopped, and continue tracking startups' online communication over a longer period of time, to portray a more complete picture of a venture's identity development.

In addition, we only consider the new venture's official Twitter account, meaning that we disregard other Twitter accounts that independently tweet about the venture, such as founders or employees. However, given the nature of the dependent variable, the proximate relationship between what is said and the extent to which it is validated should remain fairly robust. Still future research could look at whether the logic of narratives and their effects is in some ways reinforced or diluted by others' tweets about the venture.

One of our study design's biggest limitations is that we do not distinguish between the different audience groups' reactions in our analysis. Because of the computational complexity to trace back and categorize each Twitter user that has liked or commented on a new venture's account over time into a distinct audience group, we could only consider a small subsample. We retrieved all "liking" Twitter followers (in total 820 likes) of ten randomly chosen startups and manually classified them into different audience groups, from the more tech-savvy (tech-enthusiast, entrepreneur) to the more professional audiences (business contacts, customers, journalists and investors). Obviously, this sample is too small to draw broadly valid inferences from, but in this subsample we could observe the tendency that professional audiences join later in the commercialization phase to express their recognition in form of likes.

Importantly, we cannot know the underlying cause of phase change, i.e., if it is the founders seeking to address VCs by communicating more professionally or VCs themselves that force the change of communication. Still, by studying a sample of successful ventures in their first funding round, we can point to the importance of managing the identity claims for broader audience validation as the ventures transition from one phase to the next. Therefore, we would encourage a comparison with both ventures that tried but did not succeed in getting the first VC funding, as well as the implications of audiences' approval of identity claims following the first funding for the future resource acquisition.

We consider the starting point of attaining legitimation, namely social approval of a new venture's online identity development. Yet, we have to acknowledge that because somebody "likes" online messages does not necessitate the provision of fundamental resources, or 'hard legitimation facts', such as financial means (Hsu, 2007; Martens et al., 2007) or real customer acquisitions, needed to survive. Although we are already witnessing emergence of studies that claim a connection between Twitter audience recognition and investment decisions (Chen et al., 2014; Chen et al., 2017; Jin et al., 2017), we encourage other scholars to better understand in what ways social approval on social media platform translates to different kinds of resource provisions.

Theoretical contribution

We contribute to ongoing research at the intersection of organizational legitimacy, entrepreneurship and identity building (e.g., Cardon et al., 2009; Fisher et al., 2016; Fisher et al., 2017; Garud et al., 2014; Lounsbury & Glynn, 2001; Navis & Glynn, 2011). To our knowledge, this study is the first systematic large-scale attempt to analyze a new venture's identity development over time - in particular in the context of social media platforms (e.g., Fischer & Reuber, 2014; Vaast et al., 2013). Only several studies have considered new venture identity development (for exceptions see Fisher et al., 2016; Fisher et al., 2017; Lounsbury & Glynn, 2001; Navis & Glynn, 2011) and work is even more scarce on the temporal dimension of new venture identity development over its life cycle (Fisher et al., 2016; Fisher et al., 2017). By transferring theory from narrative identity work during role changes to the context of new ventures (Ibarra, 1999; Ibarra & Barbulescu, 2010), we advance our understanding of how new ventures can navigate their identity development during the transition between their early life cycles. In addition, we show that besides the "how", the content of the messages matters too - and differently across the distinct life cycle phases due to a change in a new venture's audiences' expectations. In particular, we state that new ventures receive greater social validation with an increasing

professionalization in their identity development in the commercialization phase. Further, we build on extant research on multiple identities (Pratt & Foreman, 2000) and find that targeting multiple audiences by addressing their interests matters too, and not only in the commercialization phase, but from a new venture's early days. With this study, we thus respond to calls for a better understanding of identity building in entrepreneurship (Cardon et al., 2009; Grégoire, De Koning, & Oviatt, 2008).

In addition, we add to the growing research stream that investigates the impact of social media on legitimation outcomes, for example by reducing stakeholders' uncertainty regarding the new venture's quality and differentiation (Fischer & Reuber, 2014), or improving the information environment in the context of investor decisions (Blankespoor et al., 2014; Chen et al., 2014; Chen et al., 2017; Jin et al., 2017; Jung et al., 2017; Prokofieva, 2014). In our study, we particularly argue that preceding 'any' legitimation outcome is the need for comprehension followed by social validation, which can be measured in form of Twitter likes.

Further, we contribute to the growing stream of entrepreneurship research that advocates a linguistic approach in that it allows management scholars to study important phenomena from a different angle (e.g., Gartner, 2007; van Werven, Bouwmeester, & Cornelissen, 2015). In particular, we address suggestions made by Navis and Glynn (2011) to investigate online communication modalities with respect to "minimal narratives" (Czarniawska & Wolff, 1998). Although we do not compare between offline and online or oral and written communication forms (Navis & Glynn, 2011), we show that new media and in particular social media offers great opportunities to study new ventures in a more dynamic setting distinct from conventional communication channels, such as websites, business plans or IPO prospectuses (e.g., Honig & Karlsson, 2004; Martens et al., 2007). For example, we found that the average startup posts 34 tweets per month. Compared to the average update of a new venture's website once a year, social media presents a more dynamic way to study a new venture's identity construction and change over time.

Managerial implications

This study sensitizes new ventures for the need to carefully construct their online identity when becoming actively engaged on social media platforms. Being different from the offline world, different audience groups have access to the same kind of information, but may associate different meanings and values to it. Whereas in the conception phase, a new venture can tweet about tech-related aspects of its business, it has to quickly professionalize its online

communication once it grows older. That said, tweets should cover more business-related content to signal the venture's market-readiness. We advise new ventures that are in the process to get VC money to make use of self-referential statements as this helps the understanding of the different audiences and how the venture transitions between phases. With that, business-related tweets reinforce the positive impact of self-referential tweets in the commercialization phase. In addition, it seems that rather than taking a focused approach, the new ventures can gain more validation by addressing multiple audience groups and alternating between topics that target journalists', employees' and customers' interests.

References

Abrahams, A. S., Jiao, J., Wang, G. A., & Fan, W. 2012. Vehicle defect discovery from social media. *Decision Support Systems*, 54(1): 87-97.

Abrahamson, E. & Fombrun, C. J. 1994. Macrocultures: Determinants and consequences. *Academy of Management Review*, 19(4): 728-755.

Aiken, L. S., West, S. G., & Reno, R. R. 1991. *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, California, U.S.: Sage.

Albert, S. & Whetten, D. A. 1985. Organizational identity. *Research in Organizational Behavior*, 7: 263-295.

Aldrich, H. E. & Fiol, C. M. 1994. Fools rush in? The institutional context of industry creation *Academy of Management Review*, 19(4): 645-670.

Alexy, O. T., Block, J. H., Sandner, P., & Ter Wal, A. L. 2012. Social capital of venture capitalists and start-up funding. *Small Business Economics*, 39(4): 835-851.

Allison, P. D. 1982. Discrete-time methods for the analysis of event histories. *Sociological Methodology*, 13(1): 61-98.

Allison, P. D. & Waterman, R. P. 2002. Fixed - effects negative binomial regression models. *Sociological Methodology*, 32(1): 247-265.

Amit, R., Brander, J., & Zott, C. 1998. Why do venture capital firms exist? Theory and Canadian evidence. *Journal of Business Venturing*, 13(6): 441-466.

Anderson, N. H. 1981. *Foundations of information integration theory*. New York, U.S.: Academic Press.

Aral, S., Dellarocas, C., & Godes, D. 2013. Introduction to the special issue—social media and business transformation: a framework for research. *Information Systems Research*, 24(1): 3-13.

Ashforth, B. 2001. *Role transitions in organizational life: An identity-based perspective*. Mahwah, U.S.: Lawrence Erlbaum Associates.

Ashforth, B. E. & Gibbs, B. W. 1990. The double-edge of organizational legitimation *Organization Science*, 1(2): 177-194.

Ashforth, B. E. & Humphrey, R. H. 1997. The ubiquity and potency of labeling in organizations. *Organization Science*, 8(1): 43-58.

Bamberg, M. & Georgakopoulou, A. 2008. Small stories as a new perspective in narrative and identity analysis. *Text & Talk*, 28(3): 377-396.

Barry, D. & Elmes, M. 1997. Strategy retold: Toward a narrative view of strategic discourse. *Academy of Management Review*, 22(2): 429-452.

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

Batool, R., Khattak, A. M., Maqbool, J., & Lee, S. 2013. Precise tweet classification and sentiment analysis, *Computer and Information Science (ICIS), 2013 IEEE/ACIS 12th International Conference on*: 461-466: IEEE.

Baum, C. F., Schaffer, M. E., & Stillman, S. 2007. Enhanced routines for instrumental variables/generalized method of moments estimation and testing. *The Stata Journal*, 7(4): 465-506.

Beatty, R. P. & Ritter, J. R. 1986. Investment banking, reputation, and the underpricing of initial public offerings. *Journal of Financial Economics*, 15(1-2): 213-232.

Beckman, C., Eisenhardt, K. M., Kotha, S., Meyer, A., & Rajagopalan, N. 2012. Technology entrepreneurship. *Strategic Entrepreneurship Journal*, 6(2): 89-93.

Beckman, C. M., Burton, M. D., & O'Reilly, C. 2007. Early teams: The impact of team demography on VC financing and going public. *Journal of Business Venturing*, 22(2): 147-173.

Bednar, M. K. 2012. Watchdog or lapdog? A behavioral view of the media as a corporate governance mechanism. *Academy of Management Journal*, 55(1): 131-150.

Biondi, G., Franzoni, V., & Poggioni, V. 2017. A Deep Learning Semantic Approach to Emotion Recognition Using the IBM Watson Bluemix Alchemy Language, *International Conference on Computational Science and Its Applications*: 718-729: Springer.

Bitektine, A. 2011. Toward a theory of social judgments of organizations: The case of legitimacy, reputation, and status. *Academy of Management Review*, 36(1): 151-179.

Blankespoor, E., Miller, G. S., & White, H. D. 2014. The role of dissemination in market liquidity: Evidence from firms' use of Twitter. *The Accounting Review*, 89(1): 79-112.

Blomquist, S. & Dahlberg, M. 1999. Small sample properties of LIML and jackknife IV estimators: Experiments with weak instruments. *Journal of Applied Econometrics*, 14(1): 69-88.

Boje, D. M. 1991. The storytelling organization: A study of story performance in an office-supply firm. *Administrative Science Quarterly*, 36(1): 106-126.

Boje, D. M., Oswick, C., & Ford, J. D. 2004. Language and organization: The doing of discourse *Academy of Management Review*, 29(4): 571-577.

Breslow, N. 1974. Covariance analysis of censored survival data. *Biometrics*, 30(1): 89-99.

Brewer, M. B. 1988. A dual model of impression formation. In T. K. Strull & R. S. Wyer (Eds.), *Advances in Social Cognition*, vol. 1: 1-36. Hillsdale, NJ: Erlbaum.

Brown, A. D. 2006. A narrative approach to collective identities. *Journal of Management Studies*, 43(4): 731-753.

Bryant, J. & Miron, D. 2002. Entertainment as media effect. In J. Bryant & D. Zillmann (Eds.), *Media Effects: Advances in Theory and Research*: 548-582. Mahwah, US: Lawrence Erlbaum Associates.

Burton, S. & Soboleva, A. 2011. Interactive or reactive? Marketing with Twitter. *Journal of Consumer Marketing*, 28(7): 491-499.

Busenitz, L. W. & Barney, J. B. 1997. Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing*, 12(1): 9-30.

Busse, J. A. & Green, T. C. 2002. Market efficiency in real time. *Journal of Financial Economics*, 65(3): 415-437.

Bystrom, D. & Dimitrova, D. V. 2014. Migraines, marriage, and mascara media coverage of Michele Bachmann in the 2012 republican presidential campaign. *American Behavioral Scientist*, 58(9): 1169-1182.

Cameron, A. C. & Trivedi, P. K. 2010. *Microeconometrics using Stata*. Texas, U.S. : Stata press College Station.

Cardon, M. S. & Stevens, C. E. 2004. Managing human resources in small organizations: What do we know? *Human Resource Management Review*, 14(3): 295-323.

Cardon, M. S., Wincent, J., Singh, J., & Drnovsek, M. 2009. The nature and experience of entrepreneurial passion. *Academy of Management Review*, 34(3): 511-532.

Carroll, G. R. 1985. Concentration and specialization: Dynamics of niche width in populations of organizations. *American Journal of Sociology*, 90(6): 1262-1283.

Carter, R. B., Dark, F. H., & Singh, A. K. 1998. Underwriter reputation, initial returns, and the long-run performance of IPO stocks. *The Journal of Finance*, 53(1): 285-311.

Cavanaugh, L. A., Bettman, J. R., & Luce, M. F. 2015. Feeling love and doing more for distant others: Specific positive emotions differentially affect prosocial consumption. *Journal of Marketing Research*, 52(5): 657-673.

CB Insights; Fame and fortune: The top 22 celebrity startup investors and their investments in one infographic; Retrieved from https://www.cbinsights.com/blog/celebrity-startup-top-investors/; 22 November, 2016.

Chae, B. K. 2015. Insights from hashtag# supplychain and Twitter analytics: Considering Twitter and Twitter data for supply chain practice and research. *International Journal of Production Economics*, 165: 247-259.

Chan, C. S. R. & Park, H. D. 2015. How images and color in business plans influence venture investment screening decisions. *Journal of Business Venturing*, 30(5): 732-748.

Chatterjee, A. & Hambrick, D. C. 2007. It's all about me: Narcissistic chief executive officers and their effects on company strategy and performance. *Administrative Science Quarterly*, 52(3): 351-386.

Chen, H., De, P., Hu, Y., & Hwang, B.-H. 2014. Wisdom of crowds: The value of stock opinions transmitted through social media. *Review of Financial Studies*, 27(5): 1367-1403.

Chen, H., Hwang, B.-H., & Liu, B. 2017. Economic consequences of social media adoption by CEOs and CFOs.

Chen, X.-P., Yao, X., & Kotha, S. 2009. Entrepreneur passion and preparedness in business plan presentations: a persuasion analysis of venture capitalists' funding decisions. *Academy of Management Journal*, 52(1): 199-214.

Cialdini, R. B., Borden, R. J., Thorne, A., Walker, M. R., Freeman, S., & Sloan, L. R. 1976. Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology*, 34(3): 366.

Comm, J. 2010. *Twitter power 2.0: How to dominate your market one tweet at a time*: John Wiley & Sons.

Cooren, F. 1999. Applying socio-semiotics to organizational communication: A new approach. *Management Communication Quarterly*, 13(2): 294-304.

Coupland, C. & Brown, A. D. 2004. Constructing organizational identities on the web: A case study of Royal Dutch/Shell. *Journal of Management Studies*, 41(8): 1325-1347.

Cox, D. R. & Snell, E. J. 1968. A general definition of residuals. *Journal of the Royal Statistical Society. Series B (Methodological)*, 30(2): 248-275.

Cox, P. R. 1972. Regression models and life-tables *Journal of the Royal Statistical Society. Series B (Methodological)*, 34(2): 187-220.

Cumming, D. & Dai, N. 2013. Why do entrepreneurs switch lead venture capitalists? *Entrepreneurship Theory and Practice*, 37(5): 999-1017.

Czarniawska, B. & Wolff, R. 1998. Constructing new identities in established organization fields. *International Studies of Management & Organization*, 28(3): 32-56.

Dailey, S. L. & Browning, L. 2014. Retelling stories in organizations: Understanding the functions of narrative repetition *Academy of Management Review*, 39(1): 22-43.

Davila, A., Foster, G., & Gupta, M. 2003. Venture capital financing and the growth of startup firms. *Journal of Business Venturing*, 18(6): 689-708.

Davis, G. F. & Marquis, C. 2005. Prospects for organization theory in the early twenty-first century: Institutional fields and mechanisms. *Organization Science*, 16(4): 332-343.

De Clercq, D. & Sapienza, H. J. 2006. Effects of relational capital and commitment on venture capitalists' perception of portfolio company performance. *Journal of Business Venturing*, 21(3): 326-347.

Deeds, D. L., Mang, P. Y., & Frandsen, M. L. 2004. The influence of firms' and industries' legitimacy on the flow of capital into high-technology ventures. *Strategic Organization*, 2(1): 9-34.

Deephouse, D. L. 2000. Media reputation as a strategic resource: An integration of mass communication and resource-based theories. *Journal of Management*, 26(6): 1091-1112.

Delmar, F. & Shane, S. 2004. Legitimating first: organizing activities and the survival of new ventures. *Journal of Business Venturing*, 19(3): 385.

DeSantola, A. & Gulati, R. 2017. Scaling: Organizing and Growth in Entrepreneurial Ventures. *Academy of Management Annals*, 11(2): 640-668.

DiMaggio, P. & Powell, W. W. 1983. The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American sociological review*, 48(2): 147-160.

Dimov, D., Shepherd, D. A., & Sutcliffe, K. M. 2007. Requisite expertise, firm reputation, and status in venture capital investment allocation decisions. *Journal of Business Venturing*, 22(4): 481-502.

Downing, S. 2005. The social construction of entrepreneurship: Narrative and dramatic processes in the coproduction of organizations and identities. *Entrepreneurship theory and Practice*, 29(2): 185-204.

Drover, W., Wood, M. S., & Zacharakis, A. 2015. Attributes of angel and crowdfunded investments as determinants of VC screening decisions. *Entrepreneurship Theory and Practice*.

Dutton, J. E., Dukerich, J. M., & Harquail, C. V. 1994. Organizational images and member identification. *Administrative Science Quarterly*, 39(2): 239-263.

Edell, J. A. & Burke, M. C. 1987. The power of feelings in understanding advertising effects. *Journal of Consumer Research*, 14(3): 421-433.

Eisenhardt, K. M. & Schoonhoven, C. B. 1996. Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. *Organization Science*, 7(2): 136-150.

Eisinger, J.; How Mark Zuckerberg's altruism helps himself; https://www.nytimes.com/2015/12/04/business/dealbook/how-mark-zuckerbergs-altruism-helps-himself.html?_r=0 20 April, 2017.

Elitzur, R. & Gavious, A. 2003. Contracting, signaling, and moral hazard: a model of entrepreneurs,'angels,'and venture capitalists. *Journal of Business Venturing*, 18(6): 709-725.

Ellison, N. B., Steinfield, C., & Lampe, C. 2007. The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4): 1143-1168.

Elsbach, K. D. & Kramer, R. M. 2003. Assessing creativity in Hollywood pitch meetings: Evidence for a dual-process model of creativity judgments. *Academy of Management Journal*, 46(3): 283-301.

Epstein, S. 1994. Integration of the cognitive and the psychodynamic unconscious. *American Psychologist*, 49(8): 709.

Ezzy, D. 1998. Theorizing narrative identity. *The Sociological Quarterly*, 39(2): 239-252.

Festinger, L. 1957. *A theory of cognitive dissonance*. Stanford, U.S.: Stanford University Press.

Fischer, E. & Reuber, A. R. 2011. Social interaction via new social media: (How) can interactions on Twitter affect effectual thinking and behavior? *Journal of Business Venturing*, 26(1): 1-18.

Fischer, E. & Reuber, A. R. 2014. Online entrepreneurial communication: Mitigating uncertainty and increasing differentiation via Twitter. *Journal of Business Venturing*, 29(4): 565-583.

Fisher, G., Kotha, S., & Lahiri, A. 2016. Changing with the times: An integrated view of identity, legitimacy, and new venture life cycles *Academy of Management Review*, 41(3): 383-409.

Fisher, G., Kuratko, D. F., Bloodgood, J. M., & Hornsby, J. S. 2017. Legitimate to whom? The challenge of audience diversity and new venture legitimacy. *Journal of Business Venturing*, 32(1): 52-71.

Fiske, S. T. & Taylor, S. E. 1991. *Social cognition*. New York, U.S.: McGraw-Hill.

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

Forbes; Celebrity entrepreneurs on the rise?; Retrieved from http://www.forbes.com/sites/karstenstrauss/2012/05/16/celebrity-entrepreneurs-on-the-rise/#7b55b1445520; 12 September, 2016.

Foreman, P. & Whetten, D. A. 2002. Members' Identification with multiple-identity organizations. *Organization Science*, 13(6): 618-635.

Gabriel, Y. 2004. Narratives, stories and texts. In D. Grant, C. Hardy, C. Oswick, & L. Putnam (Eds.), *The Sage Handbook of Organizational Discourse*: 61-77. London: Sage.

Gartner, W. B. 2007. Entrepreneurial narrative and a science of the imagination. *Journal of Business Venturing*, 22(5): 613-627.

Garud, R., Schildt, H. A., & Lant, T. K. 2014. Entrepreneurial storytelling, future expectations, and the paradox of legitimacy. *Organization Science*, 25(5): 1479-1492.

Gigerenzer, G. & Goldstein, D. G. 1996. Reasoning the fast and frugal way: Models of bounded rationality. *Psychological Review*, 103(4): 650.

Gigerenzer, G. & Gaissmaier, W. 2011. Heuristic decision making. *Annual Review of Psychology*, 62: 451-482.

Gioia, D. A. & Thomas, J. B. 1996. Identity, image, and issue interpretation: Sensemaking during strategic change in academia. *Administrative Science Quarterly*: 370-403.

Gioia, D. A., Schultz, M., & Corley, K. G. 2000. Organizational identity, image, and adaptive instability. *Academy of Management Review*, 25(1): 63-81.

Glynn, M. A. 2000. When cymbals become symbols: Conflict over organizational identity within a symphony orchestra. *Organization Science*, 11(3): 285-298.

Glynn, M. A. & Abzug, R. 2002. Institutionalizing identity: Symbolic isomorphism and organizational names. *Academy of Management Journal*, 45(1): 267-280.

Golant, B. D. & Sillince, J. A. 2007. The constitution of organizational legitimacy: A narrative perspective. *Organization Studies*, 28(8): 1149-1167.

Golden-Biddle, K. & Rao, H. 1997. Breaches in the boardroom: Organizational identity and conflicts of commitment in a nonprofit organization. *Organization Science*, 8(6): 593-611.

Golub, G. H. & Van Loan, C. F. 2013. *Matrix Computations* (4th ed.). Baltimore, U.S.: John Hopkins University Press.

Graefe, A. & Armstrong, J. S. 2012. Predicting elections from the most important issue: A test of the take-the-best heuristic. *Journal of Behavioral Decision Making*, 25(1): 41-48.

Graffin, S. D., Bundy, J., Porac, J. F., Wade, J. B., & Quinn, D. P. 2013. Falls from grace and the hazards of high status: The 2009 british MP expense scandal and its impact on parliamentary elites. *Administrative Science Quarterly*, 58(3): 313-345.

Green, M. C. & Brock, T. C. 2002. In the mind's eye: Transportation-imagery model of narrative persuasion. In M. C. Green, J. J. Strange, & T. C. Brock (Eds.), *Narrative Impact: Social and Cognitive Foundations*: 315-341. Mahwah, NJ: Erlbaum.

Green, M. C. 2008. Transportation theory. In W. Donsbach (Ed.), *International Encyclopedia of Communication*: 5170-5175. Oxford, UK: Wiley-Blackwell.

Grégoire, D. A., De Koning, A. J., & Oviatt, B. M. 2008. Do VCs evaluate 'live'presentations like they evaluate business plans? *Frontiers of Entrepreneurship Research*, 28(3): 1.

Greiner, L. E. 1972. Evolution and revolution as organizations grow. *Harvard Business Review*, 50(4): 37-46.

Gruenfeld, D. H. & Wyer, R. S. 1992. Semantics and pragmatics of social influence: How affirmations and denials affect beliefs in referent propositions. *Journal of Personality and Social Psychology*, 62(1): 38.

Gulati, R. & Higgins, M. C. 2003. Which ties matter when? The contingent effects of interorganizational partnerships on IPO success. *Strategic Management Journal*, 24(2): 127-144.

Haans, R. F. J., Pieters, C., & He, Z.-L. 2016. Thinking about U: Theorizing and testing U- and inverted U-shaped relationships in strategy research. *Strategic Management Journal*, 37: 1177-1195.

Hall, G.; Ronny Conway raising a $140M second early stage investment fund; Retrieved from http://www.bizjournals.com/sanjose/blog/techflash/2015/12/ronny-conway-raising-a-140m-second-early-stage.html; 5 May, 2017.

Hallen, B. L. & Eisenhardt, K. M. 2012. Catalyzing strategies and efficient tie formation: how entrepreneurial firms obtain investment ties. *Academy of Management Journal*, 55(1): 35-70.

Hanlon, D. & Saunders, C. 2007. Marshaling resources to form small new ventures: Toward a more holistic understanding of entrepreneurial support. *Entrepreneurship Theory and Practice*, 31(4): 619-641.

Harrison, R., Mason, C. M., & Robson, P. 2003. Determinants of long-distance investing by business angels. In W. D. Bygrave (Ed.), *Proceedings of the Twenty-Third Annual Entrepreneurship Research Conference*. Massachusetts, U.S.: Frontiers of Entrepreneurship Research 2003.

Hayward, M. L., Rindova, V. P., & Pollock, T. G. 2004. Believing one's own press: The causes and consequences of CEO celebrity. *Strategic Management Journal*, 25(7): 637-653.

Heath, C. & Tversky, A. 1991. Preference and belief: Ambiguity and competence in choice under uncertainty. *Journal of Risk and Uncertainty*, 4(1): 5-28.

Hellmann, T. & Puri, M. 2000. The interaction between product market and financing strategy: The role of venture capital. *The Review of Financial Studies*, 13(4): 959-984.

Hellmann, T., Lindsey, L., & Puri, M. 2008. Building relationships early: Banks in venture capital. *The Review of Financial Studies*, 21(2): 513-541.

Henkel, J., Schöberl, S., & Alexy, O. 2014. The emergence of openness: How and why firms adopt selective revealing in open innovation. *Research Policy*, 43(5): 879-890.

Higgins, M. C. & Gulati, R. 2003. Getting off to a good start: The effects of upper echelon affiliations on underwriter prestige. *Organization Science*, 14(3): 244-263.

Hirsch, P. M. 1972. Processing fads and fashions: An organization-set analysis of cultural industry systems. *American Journal of Sociology*, 77(4): 639-659.

Hisrich, R. D. & Jankowicz, A. D. 1990. Intuition in venture capital decisions: An exploratory study using a new technique. *Journal of Business Venturing*, 5(1): 49-62.

Hite, J. M. & Hesterly, W. S. 2001. The evolution of firm networks: From emergence to early growth of the firm. *Strategic Management Journal*, 22(3): 275-286.

Hjorth, D. & Steyaert, C. 2004. *Narrative and discursive approaches in entrepreneurship*. Northampton, U.S.: Edward Elgar.

Hoffman, A. J. & Ocasio, W. 2001. Not all events are attended equally: Toward a middle-range theory of industry attention to external events. *Organization Science*, 12(4): 414-434.

Hoge, P.; Exclusive: Benioff, Conway slam 'covert' critics of Warriors arena plan; Retrieved from http://www.bizjournals.com/sanfrancisco/blog/2015/04/marc-benioff-warriors-arena-salesforce.html; 30 Apr, 2017.

Homburg, C., Hahn, A., Bornemann, T., & Sandner, P. 2014. The role of chief marketing officers for venture capital funding: Endowing new ventures with marketing legitimacy. *Journal of Marketing Research*, 51(5): 625-644.

Honig, B. & Karlsson, T. 2004. Institutional forces and the written business plan. *Journal of Management*, 30(1): 29-48.

Hsu, D. H. 2004. What do entrepreneurs pay for venture capital affiliation? *Journal of Finance*, 59(4): 1805-1844.

Hsu, D. H. 2006. Venture capitalists and cooperative start-up commercialization strategy. *Management Science*, 52(2): 204-219.

Hsu, D. H. 2007. Experienced entrepreneurial founders, organizational capital, and venture capital funding. *Research Policy*, 36(5): 722-741.

Hsu, D. H. & Ziedonis, R. H. 2008. Patents as quality signals for entrepreneurial ventures *Academy of Management Proceedings*, vol. 2008: 1-6: Academy of Management.

Hsu, D. K., Haynie, J. M., Simmons, S. A., & McKelvie, A. 2014. What matters, matters differently: A conjoint analysis of the decision policies of angel and venture capital investors. *Venture Capital*, 16(1): 1-25.

Huang, L. & Pearce, J. L. 2015. Managing the unknowable. *Administrative Science Quarterly*, 60(4): 634-670.

Huberman, B. A., Romero, D. M., & Wu, F. 2008. Social networks that matter: Twitter under the microscope.

Hung, A. A. & Plott, C. R. 2001. Information cascades: Replication and an extension to majority rule and conformity-rewarding institutions. *The American Economic Review*, 91(5): 1508-1520.

Hunter, E. & Davidsson, P. 2007. Celebrity entrepreneurship: Communication effectiveness through perceived involvement. *International Journal of Entrepreneurship and Small Business*, 4(5): 505-527.

Hunter, E. J., Burgers, J. H., & Davidsson, P. 2009. Celebrity capital as a strategic asset: Implications for new venture strategies. In G. T. Lumpkin & J. A. Katz (Eds.), *Entrepreneurial Strategic Content*, vol. 11: 137-160. West Yorkshire, UK: Emerald Group Publishing Ltd.

Hutto, C. J. & Gilbert, E. 2014. Vader: A parsimonious rule-based model for sentiment analysis of social media text, *Eighth international AAAI conference on weblogs and social media*.

Ibarra, H. 1999. Provisional selves: Experimenting with image and identity in professional adaptation. *Administrative Science Quarterly*, 44(4): 764-791.

Ibarra, H. & Barbulescu, R. 2010. Identity as narrative: Prevalence, effectiveness, and consequences of narrative identity work in macro work role transitions *Academy of Management Review*, 35(1): 135-154.

Itule, B. D. & Anderson, D. A. 1994. *News writing and reporting for today's media*. New York, U.S.: McGraw-Hill.

Jääskeläinen, M. 2012. Venture capital syndication: Synthesis and future directions. *International Journal of Management Reviews*, 14(4): 444-463.

Jain, S., George, G., & Maltarich, M. 2009. Academics or entrepreneurs? Investigating role identity modification of university scientists involved in commercialization activity. *Research Policy*, 38(6): 922-935.

Jansen, B. J., Zhang, M., Sobel, K., & Chowdury, A. 2009. Twitter power: Tweets as electronic word of mouth. *Journal of the Association for Information Science and Technology*, 60(11): 2169-2188.

Jin, F., Wu, A., & Hitt, L. 2017. Social is the new financial: How startup social media activity influences funding outcomes.

Johnson, E. J. & Tversky, A. 1983. Affect, generalization, and the perception of risk. *Journal of Personality and Social Psychology*, 45(1): 20.

Johnson, J., Ellstrand, A., Daily, C., & Dalton, D. 2005. Board reputation and stockholder wealth: The influence of the financial press. *Strategic Management Journal*, 26(5): 461-471.

Jonsson, S. & Buhr, H. 2011. The limits of media effects: Field positions and cultural change in a mutual fund market. *Organization Science*, 22(2): 464-481.

Jung, M. J., Naughton, J. P., Tahoun, A., & Wang, C. 2017. Do firms strategically disseminate? Evidence from corporate use of social media. *The Accounting Review*, Forthcoming.

Kahneman, D. & Frederick, S. 2005. A model of heuristic judgement. In K. Holyoak & R. G. Morrison (Eds.), *The Cambridge Handbook of Thinking and Reasoning*: 267-294. Cambridge, UK: Cambridge University Press.

Kaplan, S. N. & Lerner, J. 2016. Venture capital data: Opportunities and challenges. *Harvard Business School*, Working Paper 17-012.

Kazanjian, R. K. 1988. Relation of dominant problems to stages of growth in technology-based new ventures. *Academy of Management Journal*, 31(2): 257-279.

Kennedy, M. T. 2008. Getting counted: Markets, media, and reality. *American Sociological Review*, 73(2): 270-295.

Khaire, M. 2010. Young and no money? Never mind: The material impact of social resources on new venture growth. *Organization Science*, 21(1): 168-185.

Khatri, N. & Ng, H. A. 2000. The role of intuition in strategic decision making. *Human Relations*, 53(1): 57-86.

Khoury, T. A., Junkunc, M., & Deeds, D. L. 2013. The social construction of legitimacy through signaling social capital: Exploring the conditional value of alliances and underwriters at IPO. *Entrepreneurship: Theory & Practice*, 37(3): 569-601.

Killeya, L. A. & Johnson, B. T. 1998. Experimental induction of biased systematic processing: The directed-thought technique. *Personality and Social Psychology Bulletin*, 24(1): 17-33.

Kirsch, D., Goldfarb, B., & Gera, A. 2009. Form or substance: the role of business plans in venture capital decision making. *Strategic Management Journal*, 30(5): 487-515.

Knittel, C. R. & Stango, V. 2013. Celebrity endorsements, firm value, and reputation risk: Evidence from the Tiger Woods scandal. *Management Science*, 60(1): 21-37.

Kraatz, M. S. & Block, E. S. 2008. Organizational implications of institutional pluralism. *The Sage handbook of organizational institutionalism*, 840: 243-275.

Kreiner, G. E., Hollensbe, E. C., & Sheep, M. L. 2006. Where is the "me" among the "we"? Identity work and the search for optimal balance. *Academy of Management Journal*, 49(5): 1031-1057.

Kwak, H., Lee, C., Park, H., & Moon, S. 2010. What is Twitter, a social network or a news media?, *Proceedings of the 19th international conference on World wide web*: 591-600: ACM.

Landry, L.; Zuckerberg Makes First Ed-Tech Investment, Leads $4M Round for Cambridge Startup; http://www.bizjournals.com/sanjose/blog/techflash/2015/12/ronny-conway-raising-a-140m-second-early-stage.html; 25 May, 2017.

Lariscy, R. W., Avery, E. J., Sweetser, K. D., & Howes, P. 2009. An examination of the role of online social media in journalists' source mix. *Public Relations Review*, 35(3): 314-316.

Laura, H. & Knight, A. P. 2017. Resources and relationships in entrepreneurship: An exchange theory of the development and effects of the entrepreneur-investor relationship *Academy of Management Review*, 42(1): 80-102.

Lavine, H., Thomsen, C. J., Zanna, M. P., & Borgida, E. 1998. On the primacy of affect in the determination of attitudes and behavior: The moderating role of affective-cognitive ambivalence. *Journal of Experimental Social Psychology*, 34(4): 398-421.

Lee, J. M., Hwang, B.-H., & Chen, H. 2017. Are founder CEOs more overconfident than professional CEOs? Evidence from S&P 1500 companies. *Strategic Management Journal*, 38(3): 751-769.

Lee, K., Oh, W.-Y., & Kim, N. 2013. Social media for socially responsible firms: Analysis of Fortune 500's Twitter profiles and their CSR/CSIR ratings. *Journal of Business Ethics*, 118(4): 791-806.

Lee, P. M., Pollock, T. G., & Jin, K. 2011. The contingent value of venture capitalist reputation. *Strategic Organization*, 9(1): 33-69.

Lerner, J. 1994. The syndication of venture capital investments. *Financial Management*, 23(3): 16-27.

Lerner, J. S. & Keltner, D. 2000. Beyond valence: Toward a model of emotion-specific influences on judgement and choice. *Cognition & Emotion*, 14(4): 473-493.

Levie, J. & Lichtenstein, B. B. 2010. A terminal assessment of stages theory: Introducing a dynamic states approach to entrepreneurship. *Entrepreneurship Theory and Practice*, 34(2): 317-350.

Long, J. S. & Freese, J. 2014. *Regression models for categorical dependent variables using Stata* (3. ed.). Texas, U.S. : Stata Press.

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

Ma, D., Rhee, M., & Yang, D. 2013. Power source mismatch and the effectiveness of interorganizational relations: The case of venture capital syndication. *Academy of Management Journal*, 56(3): 711-734.

Malhotra, A., Malhotra, C. K., & See, A. 2012. How to get your messages retweeted. *MIT Sloan Management Review*, 53(2): 61-66.

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.

Marwick, A. E. & Boyd, D. 2011. I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience. *New Media & Society*, 13(1): 114-133.

Marwick, A. E. 2013. Online Identity, *A Companion to New Media Dynamics*: 355-364: Wiley-Blackwell.

Mason, C. & Stark, M. 2004. What do investors look for in a business plan? A comparison of the investment criteria of bankers, venture capitalists and business angels. *International Small Business Journal*, 22(3): 227-248.

Mason, C. M. & Harrison, R. T. 2002. Is it worth it? The rates of return from informal venture capital investments. *Journal of Business Venturing*, 17(3): 211-236.

Maurer, I. & Ebers, M. 2006. Dynamics of social capital and their performance implications: Lessons from biotechnology start-ups. *Administrative Science Quarterly*, 51(2): 262-292.

McCartney, H. P. 1987. Applying fiction conflict situations to analysis of news stories. *Journalism Quarterly*, 64(1): 163-170.

McCombs, M. E. & Shaw, D. L. 1972. The agenda-setting function of mass media. *Public Opinion Quarterly*, 36(2): 176-187.

McCombs, M. E. 1992. Explorers and surveyors: Expanding strategies for agenda-setting research. *Journalism & Mass Communication Quarterly*, 69(4): 813-824.

McQuail, D. 1985. Sociology of mass communication. *Annual Review of Sociology*: 93-111.

Meek, G. K., Roberts, C. B., & Gray, S. J. 1995. Factors influencing voluntary annual report disclosures by US, UK and continental European multinational corporations. *Journal of International Business Studies*, 26(3): 555-572.

Metcalfe, J. & Mischel, W. 1999. A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, 106(1): 3-19.

Meuleman, M., Lockett, A., Manigart, S., & Wright, M. 2010. Partner selection decisions in interfirm collaborations: The paradox of relational embeddedness. *Journal of Management Studies*, 47(6): 995-1019.

Milanov, H. & Shepherd, D. A. 2013. The importance of the first relationship: The ongoing influence of initial network on future status. *Strategic Management Journal*, 34(6): 727-750.

Navis, C. & Glynn, M. A. 2010. How New Market Categories Emerge: Temporal Dynamics of Legitimacy, Identity, and Entrepreneurship in Satellite Radio, 1990-2005. *Administrative Science Quarterly*, 55(3): 439-471.

Navis, C. & Glynn, M. A. 2011. Legitimate distinctiveness and the entrepreneurial identity: Influence on investor judgments of new venture plausibility. *Academy of Management Review*, 36(3): 479-499.

Obschonka, M., Fisch, C., & Boyd, R. 2017. Using digital footprints in entrepreneurship research: A Twitter-based personality analysis of superstar entrepreneurs and managers. *Journal of Business Venturing Insights*, 8: 13-23.

Ozmel, U., Reuer, J. J., & Gulati, R. 2013. Signals across multiple networks: How venture capital and alliance networks affect interorganizational collaboration. *Academy of Management Journal*, 56(3): 852-866.

Pahnke, E. C., Katila, R., & Eisenhardt, K. M. 2015. Who takes you to the dance? How partners' institutional logics influence innovation in young firms. *Administrative Science Quarterly*, 60(4): 596-633.

Park, D.-J. & Berger, B. K. 2004. The presentation of CEOs in the press, 1990-2000: Increasing salience, positive valence, and a focus on competency and personal dimensions of image. *Journal of Public Relations Research*, 16(1): 93-125.

Pentland, B. T. 1999. Building process theory with narrative: From description to explanation. *Academy of Management Review*, 24(4): 711-724.

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.

Petkova, A. P. 2014. How to judge what can't be seen and touched? The contingent effect of media reputation on young firms' access to venture capital. *Corporate Reputation Review*, 17(4): 273-289.

Petty, J. S. & Gruber, M. 2011. "In pursuit of the real deal": A longitudinal study of VC decision making. *Journal of Business Venturing*, 26(2): 172-188.

Pfarrer, M. D., Pollock, T. G., & Rindova, V. P. 2010. A tale of two assets: The effects of firm reputation and celebrity on earnings surprises and investors' reactions. *Academy of Management Journal*, 53(5): 1131-1152.

Podolny, J. M. 1994. Market uncertainty and the social character of economic exchange. *Administrative Science Quarterly*, 39(3): 458-483.

Podolny, J. M. & Stuart, T. E. 1995. A role-based ecology of technological change. *American Journal of Sociology*, 100(5): 1224-1260.

Podolny, J. M. 2001. Networks as the pipes and prisms of the market. *American Journal of Sociology*, 107(1): 33-60.

Pollock, T. G. & Rindova, V. P. 2003. Media legitimation effects in the market for initial public offerings. *Academy of Management Journal*, 46(5): 631-642.

Pollock, T. G. 2004. The benefits and costs of underwriters' social capital in the US initial public offerings market. *Strategic Organization*, 2(4): 357-388.

Pollock, T. G. & Gulati, R. 2007. Standing out from the crowd: The visibility-enhancing effects of IPO-related signals on alliance formation by entrepreneurial firms. *Strategic Organization*, 5(4): 339-372.

Pollock, T. G., Rindova, V. P., & Maggitti, P. G. 2008. Market watch: Information and availability cascades among the media and investors in the U.S. IPO market. *Academy of Management Journal*, 51(2): 335-358.

Pollock, T. G., Fund, B. R., & Baker, T. 2009. Dance with the one that brought you? Venture capital firms and the retention of founder-CEOs. *Strategic Entrepreneurship Journal*, 3(3): 199-217.

Pollock, T. G., Chen, G., Jackson, E. M., & Hambrick, D. C. 2010. How much prestige is enough? Assessing the value of multiple types of high-status affiliates for young firms. *Journal of Business Venturing*, 25(1): 6-23.

Powell, W. W. & Sandholtz, K. W. 2012. Amphibious entrepreneurs and the emergence of organizational forms. *Strategic Entrepreneurship Journal*, 6(2): 94-115.

Pratt, M. G. & Foreman, P. O. 2000. Classifying managerial responses to multiple organizational identities. *Academy of Management Review*, 25(1): 18-42.

Prokofieva, M. 2014. Twitter-based dissemination of corporate disclosure and the intervening effects of firms' visibility: Evidence from Australian-listed companies. *Journal of Information Systems*, 29(2): 107-136.

Quinn, R. E. & Cameron, K. 1983. Organizational life cycles and shifting criteria of effectiveness: Some preliminary evidence. *Management Science*, 29(1): 33-51.

Rao, H. 1994. The social construction of reputation: Certification contests, legitimation, and the survival of organizations in the American automobile industry: 1895–1912. *Strategic Management Journal*, 15(1): 29-44.

Rao, H., Greve, H. R., & Davis, G. F. 2001. Fool's gold: Social proof in the initiation and abandonment of coverage by Wall Street analysts. *Administrative Science Quarterly*, 46(3): 502-526.

Rhoades, S. A. 1993. The Herfindahl-Hirschman index. *Federal Reserve Bulletin*, 79: 188-189.

Ridout, T. N. & Searles, K. 2011. It's my campaign I'll cry if I want to: How and when campaigns use emotional appeals. *Political Psychology*, 32(3): 439-458.

Rindova, V. P. & Kotha, S. 2001. Continuous "morphing": Competing through dynamic cappabilities, form, and function. *Academy of Management Journal*, 44(6): 1263-1280.

Rindova, V. P., Williamson, I. O., Petkova, A. P., & Sever, J. M. 2005. Being good or being known: An empirical examination of the dimensions, antecedents, and consequences of organizational reputation. *Academy of Management Journal*, 48(6): 1033-1049.

Rindova, V. P., Pollock, T. G., & Hayward, M. L. A. 2006. Celebrity firms: The social construction of market popularity. *Academy of Management Review*, 31(1): 50-71.

Rindova, V. P., Petkova, A. P., & Kotha, S. 2007. Standing out: How new firms in emerging markets build reputation. *Strategic Organization*, 5(1): 31-70.

Rizzo, G. & Troncy, R. 2011. *Nerd: evaluating named entity recognition tools in the web of data*. Paper presented at the Workshop on Web Scale Knowledge Extraction (WEKEX'11), Bonn, Germany.

Rodríguez, G.; Lecture Notes on Generalized Linear Models; http://data.princeton.edu/wws509/notes/ 12 October, 2016.

Rosenbusch, N., Brinckmann, J., & Müller, V. 2013. Does acquiring venture capital pay off for the funded firms? A meta-analysis on the relationship between venture capital investment and funded firm financial performance. *Journal of Business Venturing*, 28(3): 335-353.

Saif, H., He, Y., & Alani, H. 2012. Semantic sentiment analysis of twitter, *The Semantic Web–ISWC 2012*. Heidelberg, Germany

Salancik, G. R. & Meindl, J. R. 1984. Corporate attributions as strategic illusions of management control. *Administrative Science Quarterly*, 29(2): 238-254.

Sallot, L. M. & Johnson, E. A. 2006. Investigating relationships between journalists and public relations practitioners: Working together to set, frame and build the public agenda, 1991–2004. *Public Relations Review*, 32(2): 151-159.

Sauermann, H. & Stephan, P. 2013. Conflicting logics? A multidimensional view of industrial and academic science. *Organization Science*, 24(3): 889-909.

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

SEC; SEC says social media ok for company announcements if investors are alerted; Retrieved from https://www.sec.gov/news/press-release/2013-2013-51htm; 15 January, 2016.

Semadeni, M., Withers, M. C., & Trevis Certo, S. 2014. The perils of endogeneity and instrumental variables in strategy research: Understanding through simulations. *Strategic Management Journal*, 35(7): 1070-1079.

Singh, J. V., Tucker, D. J., & House, R. J. 1986. Organizational Legitimacy and the Liability of Newness. *Administrative Science Quarterly*, 31(2): 171-193.

Sorenson, O. & Stuart, T. E. 2001. Syndication networks and the spatial distribution of venture capital investments. *American Journal of Sociology*, 106(6): 1546-1588.

Starr, J. A. & Macmillan, I. C. 1990. Respurce cooptation via social contracting: Resource acquisition strategies for new ventures *Strategic Management Journal*, 11(4): 79-92.

Stieglitz, S. & Dang-Xuan, L. 2013. Emotions and information diffusion in social media—sentiment of microblogs and sharing behavior. *Journal of Management Information Systems*, 29(4): 217-248.

Stinchcombe, A. L. 1965. Social structure and organizations. In J. March (Ed.), *Handbook of Organizations*: 142-193. Chicago, US: Rand McNally.

Stock, J. H. & Yogo, M. 2004. Asymptotic distributions of instrumental variables statistics with many instruments, *Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg*.

Stuart, T. E., Hoang, H., & Hybels, R. C. 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly*, 44(2): 315-349.

Suchman, M. C. 1995. Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3): 571-610.

Ter Wal, A. L. J., Alexy, O., Block, J., & Sandner, P. G. 2016. The Best of Both Worlds:The Benefits of Open-specialized and Closed-diverse Syndication Networks for New Ventures' Success. *Administrative Science Quarterly*, 61(3): 393-432.

Turner, G. 2004. *Understanding celebrity*. London, UK: Sage Publications Ltd.

Tversky, A. & Kahneman, D. 1973. Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5(2): 207-232.

Tversky, A. & Kahneman, D. 1974. Judgment under uncertainty: Heuristics and biases. *Science*, 185: 1142-1131.

Überbacher, F. 2014. Legitimation of new ventures: A review and research programme. *Journal of Management Studies*, 51(4): 667-698.

Vaast, E., Davidson, E. J., & Mattson, T. 2013. Talking about technology: The emergence of a new actor category through new media. *MIS Quarterly*, 37(4): 1069-1092.

Van Laer, T., De Ruyter, K., Visconti, L. M., & Wetzels, M. 2014. The extended transportation-imagery model: A meta-analysis of the antecedents and consequences of consumers' narrative transportation. *Journal of Consumer Research*, 40(5): 797-817.

Van Maanen, J. 1998. Identity work: Notes on the personal identity of police officers, *Annual Meeting of the Academy of Management, San Diego*.

van Werven, R., Bouwmeester, O., & Cornelissen, J. P. 2015. The power of arguments: How entrepreneurs convince stakeholders of the legitimate distinctiveness of their ventures. *Journal of Business Venturing*, 30(4): 616-631.

Vanacker, T. & Forbes, D. P. 2016. Disentangling the multiple effects of affiliate reputation on resource attraction in new firms. *Organization Science*, 27(6): 1525-1547.

Vohora, A., Wright, M., & Lockett, A. 2004. Critical junctures in the development of university high-tech spinout companies. *Research Policy*, 33(1): 147-175.

Wade, J. B., Porac, J. F., Pollock, T. G., & Graffin, S. D. 2006. The burden of celebrity: The impact of CEO certification contests on CEO pay and performance. *Academy of Management Journal*, 49(4): 643-660.

Walske, J. M., Zacharakis, A., & Smith-Doerr, D. 2007. Effects of Venture Capital Syndication Networks on Entrepreneurial Success, *Babson College Entrepreneurship Research Conference (BCERC)*: Frontiers of Entrepreneurship Research.

Wartick, S. L. 1992. The relationship between intense media exposure and change in corporate reputation. *Business & Society*, 31(1): 313-326.

Wasserman, N. 2003. Founder-CEO succession and the paradox of entrepreneurial success. *Organization Science*, 14(2): 149-172.

Werth, J. C. & Boeert, P. 2013. Co-investment networks of business angels and the performance of their start-up investments. *International Journal of Entrepreneurial Venturing*, 5(3): 240-256.

Whetten, D. A. 2006. Albert and Whetten revisited: Strengthening the concept of organizational identity. *Journal of Management Inquiry*, 15(3): 219-234.

Wolfe, M. T. & Shepherd, D. A. 2015. What do you have to say about that? Performance events and narratives' positive and negative emotional content. *Entrepreneurship: Theory & Practice*, 39(4): 895-925.

Wooldridge, J. M. 1999. Distribution-free estimation of some nonlinear panel data models. *Journal of Econometrics*, 90(1): 77-97.

Wooldridge, J. M. 2002. *Econometric analysis of cross section and panel data* (2 ed.). Cambridge, UK: The MIT Press.

Wynn, E. & Katz, J. E. 1997. Hyperbole over cyberspace: Self-presentation and social boundaries in Internet home pages and discourse. *The Information Society*, 13(4): 297-327.

Zacharakis, A. L. & Meyer, G. D. 1998. A lack of insight: Do venture capitalists really understand their own decision process? *Journal of Business Venturing*, 13(1): 57-76.

Zacharakis, A. L. & Meyer, G. D. 2000. The potential of actuarial decision models: Can they improve the venture capital investment decision? *Journal of Business Venturing*, 15(4): 323-346.

Zacharakis, A. L. & Shepherd, D. A. 2001. The nature of information and overconfidence on venture capitalists' decision making. *Journal of Business Venturing*, 16(4): 311-332.

Zajonc, R. B. 1980. Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35(2): 151-175.

Zanna, M. P. & Cooper, J. 1974. Dissonance and the pill: An attribution approach to studying the arousal properties of dissonance. *Journal of Personality and Social Psychology*, 29(5): 703-709.

Zauberman, G., Diehl, K., & Ariely, D. 2006. Hedonic versus informational evaluations: Task dependent preferences for sequences of outcomes. *Journal of Behavioral Decision Making*, 19(3): 191-211.

Zhou, M., Lei, L., Wang, J., Fan, W., & Wang, A. G. 2015. Social media adoption and corporate disclosure. *Journal of Information Systems*, 29(2): 23-50.

Zillmann, D. 1995. Mechanisms of emotional involvement with drama. *Poetics*, 23(1): 33-51.

Zimmerman, M. A. & Zeitz, G. J. 2002. Beyond survival: Achieving new venture growth by building legitimacy. *Academy of Management Review*, 27(3): 414-431.

Zott, C. & Huy, Q. N. 2007. How entrepreneurs use symbolic management to acquire resources. *Administrative Science Quarterly*, 52(1): 70-105.

Summary

In this dissertation, we have investigated the impact of the media in the context of new ventures – from a more traditional point of view with the media taking the role of the information intermediary to a more modern view with the new venture taking actively control of the information provided. Independently of who the disseminator of information is, the objective stays the same: attracting audience attention since its deemed beneficial for various legitimation outcomes.

In our first study, we reveal the limits of pursuing business angels with media attention and show that beyond sheer quantity of their media attention, there exists a point where media attention can actually become detrimental to a new venture's likelihood to attract resources, such as VC investment. By consulting dual-process theory, we theorized on individuals' different information processing of general news (non-investment-related) vs. specific news (investment-related) and found that the news context where a new venture's affiliated private investor appears in triggers different behavioral outcomes of VC investors. In particular, we observe that general news are negatively associated with the likelihood of VC investment in the subsequent funding round, whereas specific news are positively related to the likelihood of VC investment - at least up to a point. With that, we aim to shed light on both effects media attention can have for the focal actor – beneficial but also detrimental outcomes.

With regard to our second study, we wanted to understand a new venture's identity development when facing an increasingly diverse audience over its early life cycle phases. Because each audience group is characterized by different norms, values and expectations, new ventures are commonly advised to address respective audiences individually in different environments, with tailored information. This is, however, challenged by the immediate and transparent world of social media platforms where audiences are collapsed into a single context. By drawing on narrative identity work, we show that a new venture's increased communication about the self actually helps audiences to make sense of the change between the early life cycle phases. In addition, we find that new ventures benefit from a more professional communication behavior in the commercialization phase in that it strengthens the positive effects of their self-references.

Together, both studies support the power of the media, yet show that this power can have two faces for new ventures seeking resources and attention. Further, we see that past technological developments have enabled focal actors to take increasingly control of the information provision compared to the historic center of power that has almost exclusively lied within traditional media infomediaries, such as media outlets.-With that, however, come new challenges since

new ventures have to actively manage and conceptualize their information provision online to generate sustained audience interest. Future avenues of research are encouraged to concentrate on the changing role of the traditional media and how it may interact or coexist with the new media. Another interesting direction may be the technological development towards individualized news and what this means for both external perception and self-representation of market actors to satisfy individuals' preferences. Instead of targeting the mass, information could be designed for each person individually and thus, the media as we used to know it will not be the catalyst of information anymore, but solely a means to reach each individual with their personal information. This would put into question everything we know so far about the media and how information is used - but also open up a new research era on information provision, which we encourage scholars to embark on.

Final Reflection on the Dissertation

*"The world does not exist dependent upon one's perspective
– but the perspective of the mass." (Friderike Bruchmann)*

While working on the dissertation, I was often reflecting on the most central component to my research topic: *information* - which is when I realized that this is actually the basic component to almost everything we do. I summarize my concluding thoughts below:

Information is what we need to make sense of the world and everything in our world can be captured by information. All our thoughts, decisions and actions are based on information that we digest – consciously, but most of the time it happens unconsciously. We think we act rationally, think objectively and deliberately take decisions, but most of our perceptions, attitudes and actions-taken are the result of specific information that enter the equation. And by information it is not only about the words that compose them, but more importantly the context, timing and framing that define a particular information.

Information can trigger good or bad reactions or both, but who in the end defines what is good or bad? Here comes the problem, because every individual is exposed to different information, there exist just as many perspectives of the world – we even might call it realities – as people exist. Some individuals may even have multiple perspectives themselves. But here is the crux: Some information becomes more widespread than other. Following, more people are exposed to the same information and process it as part of their reality. This is why we have dominant views of the world. Nobody knows what is right or wrong, but we are primed to *know* so. That is also why one says travel broadens the mind: We can escape our common information environment and get exposed to new information, which may change our reality. But in the end, we are always drawn to the predominant information, some more or less than others. In some way, only by taking out the sociocognitive aspects, we may be able to fully rationally process and evaluate all information – but that won't be us, humans, but machines.