Does it matter how you tell it? On how Entrepreneurial Storytelling Affects the Opportunity Evaluations of Early-Stage investors

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ABSTRACT

This research examines whether and how entrepreneurial storytelling can influence early-stage investors' evaluations of new venture opportunities, by articulating and empirically testing a theoretical model that specifies a set of potential mechanisms by which this influence could be exerted. The theoretical model is tested with a field experiment involving 188 active business angel investors across different regions in the United States. Results from the experiment suggest that storytelling exerts a number of specific indirect effects on investors' evaluations, but that these effects operate in opposite directions, effectively cancelling each other out, so that the final outcome of the manipulation on investors' evaluative judgments is unobservable.

The findings of the experiment thus suggest that entrepreneurial storytelling *does* affect investors' evaluative judgment, but that it does so in an inconsistent manner, which implies that entrepreneurs seeking to influence investors' evaluations by communicating their opportunities in the form of a story will have to find ways of capitalizing on the positive effects that storytelling seems to provide, while avoiding some of its pitfalls. The balance of this research shows that entrepreneurial stories *can* influence the evaluative judgments of early-stage investors, and opens the door for further research on the role of communication strategies in the entrepreneurial resource acquisition process.

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CHAPTER 1: INTRODUCTION

It is widely believed that entrepreneurs need a "good story" to succeed, or at least to successfully raise capital for their ventures. This idea has not only become increasingly common among venture capitalists, angel investors, entrepreneurs, consultants, educators and even the general press, but also increasingly accepted by management and entrepreneurship scholars. Is this widespread belief warranted? There is some promising evidence suggesting that entrepreneurial stories (the stories that entrepreneurs tell about their ventures) may positively affect the ability of new ventures to raise capital from investors (Martens, Jennings & Jennings, 2007; O'Connor, 2004), but this is a relatively recent and underdeveloped area of inquiry. Much needs still to be learned before drawing any conclusions about the effects of storytelling on the entrepreneurial process in general, and on the ability of new ventures to raise capital from investors in particular.

The potentially positive effects of storytelling on the ability of entrepreneurs to raise capital from investors have been attributed to the capability that stories have in shaping investors' perceptions, beliefs and assessments regarding new venture opportunities, thus ultimately influencing their propensity to invest in them. This attribution makes logical sense, given that extensive research in many fields of inquiry, including the humanities, the social sciences and even medicine, suggests that stories have the capability of affecting people's perceptions, assessments and decision making (Winterbottom, Bekker, Conner & Mooney, 2008). Obviously, the more

positively investors evaluate a given new venture, the more likely they will be to invest in it so, to the extent that they can influence investors' assessments, stories will influence the entrepreneurial resource acquisition process.

However, we know very little about how investors actually react to entrepreneurial stories, if at all. Initial empirical research in this area only suggests a positive relationship between storytelling and the ability of firms to raise capital (Martens et al., 2007), but does not empirically examine the mediating role of investors' assessments, or how they might be influenced by stories. Our current theories are thus based on reasonable (albeit conceptually incomplete) assumptions regarding the effects of storytelling on investors' new venture evaluations, rather than on empirical evidence. Furthermore, assuming that stories do affect investors' new venture evaluations, we do not fully understand *how* this effect is exerted. In other words, we do not fully understand the mechanisms by which storytelling might affects how potential investors evaluate new venture opportunities. In this dissertation, I examine the effects of entrepreneurial storytelling on early stage investors' evaluations of new venture opportunities. Specifically, I examine (1) *whether* entrepreneurial stories influence the evaluations of potential investors regarding the attractiveness of a given new venture opportunity, and (2) *how* entrepreneurial stories affect these evaluations, i.e. what are the specific mechanisms by which storytelling affects how investors evaluate new venture opportunities.

The underlying assumption, which is concordant with current literature, is that investors' evaluations will have an important effect on a new venture's ability to raise

capital (i.e. the more positive the evaluation, the higher the likelihood to raise capital from an investor), hence my intention to focus on the effects of storytelling on investors' evaluations, as key explanatory variables in the entrepreneurial resource acquisition process. It is also important to point out (given some conceptual misunderstandings in the current literature about what constitutes an entrepreneurial story) that I focus on examining the effects of entrepreneurial storytelling as a *form* of communication. That is to say, I examine the effects of storytelling that are above and beyond those of conveying any given factual information about the new venture opportunity per se. In other words, I examine how a specific *form* of communication (storytelling) affects how investors evaluate a new venture opportunity when the factual information that is transferred about the new venture (i.e., the *content* of the communication) is held constant. My research question can thus be formally articulated in the following manner: *Ceteris paribus*, how do entrepreneurial stories influence investors' evaluations of new venture opportunities?

I posit that this is a relevant and timely research question that merits attention for both theoretical and practical reasons. It is relevant to theory because entrepreneurship and management researchers, following the 'narrative turn' experienced in the social sciences, have increasingly turned their attention to the role that stories play in the entrepreneurial process in general (Hjorth & Steyaert, 2004; Gartner, 2007), and in the ability of new ventures to acquire external resources in particular (Lounsbury & Glynn, 2001; Martens et al., 2007). There is some empirical evidence suggesting that a positive link between storytelling and entrepreneurial

resource acquisition may exist, but the evidence presented to date is still sparse and inconclusive. With the notable exception of Martens and colleagues (2007), extant research in this area consists mainly of theoretical or single-case studies (e.g. Lounsbury & Glynn, 2001; O'Connor, 2004). Furthermore, the key assumption in the literature; that entrepreneurial stories, in any way, influence investors' perceptions, beliefs, assessments or behavioral intentions regarding new ventures, not only lacks empirical support, but the mechanisms underlying these causal relationships have never been fully articulated. Finally, inconsistencies in extant literature regarding what constitutes storytelling as a *form* of communication create conceptual problems and mar the interpretation of empirical results. In this dissertation, I contribute to advance theory on the role of storytelling in the entrepreneurial resource acquisition process by addressing these problems head on. Specifically, I articulate and empirically test a number of specific mechanisms by which entrepreneurial stories affect how investors evaluate new venture opportunities. In so doing, I also clarify the concept of what constitutes entrepreneurial storytelling as a form of communication and shed light on the role of investor's evaluations in the resource acquisition process.

This research question is also relevant to practicing entrepreneurs and potential investors, given that external resource acquisition is such a central activity in the process of new venture creation; an activity that, for most entrepreneurs, is as important as it is difficult (Villanueva, Van de Ven & Sapienza, 2012). New ventures, being initially unable to generate the necessary resources to pursue a given opportunity, must often rely on external parties for capital and other resources.

Persuading external parties to provide resources, however, is such a difficult endeavor, that most new ventures do not succeed in attracting the basic level resources that they would need to grow, or even to survive (Baker & Nelson, 2005).

Therefore, from the perspective of an entrepreneur in the process of starting a new venture, it should be of great practical interest to gain a better understanding of a *communication strategy* that could potentially increase the odds of gaining access to external resources. In fact, if entrepreneurial storytelling would be shown to constitute a potentially effective communication strategy for raising capital, a very broad audience of practicing entrepreneurs should be greatly interested in the topic, given that the ability of telling a story is, in principle, a resource available to any aspiring entrepreneur. If entrepreneurs can actually influence their ability to raise capital from investors by merely the *way* in which they communicate their new venture opportunities (something over which they have a higher and more immediate level of control than many of the specifics of the new venture opportunity itself), the implication is that entrepreneurs have a virtually universal tool at their disposal to help them positively influence their external resource acquisition efforts.

Addressing this research question is also relevant to practicing early stage investors, as it sheds some light on the process by which they evaluate new ventures as investment opportunities. The process by which early stage investors evaluate potential opportunities is currently not very well understood, especially in its critical initial stages, which are characterized by a high degree of uncertainty and ambiguity. Early stage investors do themselves not seem to have a very good insight into their

own evaluation processes given that, when making investment decisions, they often admit to follow their "gut feels" rather than more objective evaluation criteria that they claim to espouse (Zacharakis & Shepherd, 2007). Thus, gaining a better understanding of how entrepreneurial storytelling may affect investors' evaluations of new venture opportunities would help investors to better understand their own evaluation processes and could inform the development of best practices in early stage investing. The potential for developing best practices based on the findings of this study was precisely what motivated several organized groups of early stage investors to get involved in this research project, which demonstrates their perception about the relevance of the topic

In this dissertation, therefore, I am implicitly adopting the perspective of two key stakeholders in the entrepreneurial resource acquisition process. That is to say, by posing and addressing this particular research question, I am adopting both the perspective of the entrepreneur who is faced with the difficult task of raising capital to pursue a given opportunity, as well as the perspective of the early-stage investor making initial evaluations of new venture opportunities in an environment of extreme uncertainty and lack of information. I am adopting the perspective of these two important constituencies because I subscribe to the notion that a research question, in order to be meaningful, not only must be aimed at advancing theory, but it must also be grounded on the reality of a problem that has practical implications for specific stakeholders in a real situation (Van de Ven, 2007).

Building on our current understanding of how entrepreneurial stories might influence the resource acquisition process, in this dissertation I develop a theory of entrepreneurial storytelling that articulates the mechanisms by which stories specifically influence how investors evaluate new venture opportunities. Our *status quo* understanding of the matter, as extant literature indicates, is that entrepreneurial stories probably function as legitimating devices. This makes sense because lack of legitimacy is, of course, a big problem for new ventures seeking external resources. By virtue of their 'newness,' new ventures are unfamiliar to potential stakeholders, lack a previous track record, and may even offer products or services that are new in the marketplace (Stinchcombe, 1965). Our current understanding is that entrepreneurial stories can help new ventures gain legitimacy vis-à-vis potential investors because a story can be an effective tool for a new venture to convey its identity, explain its *raison d'être*, and embed its activities in an institutional context that is familiar to potential investors, thus reducing investors' perceived risk and uncertainty and increasing their motivation to commit capital to a new venture (Lounsbury & Glynn, 2001; Martens et al., 2007). To be effective, entrepreneurial stories must thus contain certain explanations about the new venture's identity, the logic of its endeavors, and how it all fits with the known state of the world. Specifically, explanations that fit with investors' ideas of what is desirable, proper and appropriate (i.e. legitimate). Entrepreneurial stories are thus conceptualized and operationalized in extant literature as vehicles for new ventures to convey a certain kind of *informational content* to potential investors; specifically content that is

supposed to affect investors' perceptions regarding the legitimacy of a new venture. In other words, content that is proper and acceptable to potential investors, given their socially constructed system of norms, values, beliefs and definitions (Suchman, 1995).

Our current understanding, that stories merely function as legitimating devices, makes logical sense, but is problematic in several ways. First, it rests on the assumption that an entrepreneurial story will, in and by itself, have the capability of producing a distinct effect on investors' evaluations and, more specifically, on whether and how investors perceive a new venture as more legitimate, and therefore more attractive as investment opportunity. Yet, empirical evidence supporting this assumption is lacking. Existing research suggest that there might be a link between entrepreneurial storytelling and the ability of firms to raise capital (Martens et al., 2007) but it offers very little empirical evidence supporting the notion that stories affect investors' assessments in general and, with the exception of observational single-case studies (O'Connor, 2004), investors' legitimacy assessments in particular.

More problematic is our current conceptualization and operationalization of what constitutes an entrepreneurial story, which in extant research often focuses more on *what* entrepreneurs tell rather than *how* they tell it, and which creates difficulties in interpreting empirical results and it limits our ability to draw conclusions regarding the role of entrepreneurial storytelling as a *form* of communication. This is because telling a story involves more than the mere transfer of information. It involves the transfer of information in a specific form (i.e. the narrative form). Any conclusions about the effects of a given form of communication should be drawn independently of the

content of the factual information that is being transferred. It is obvious that any relevant information about the new venture (for example, the entrepreneur's previous background or professional connections), whether conveyed as a story or not, is likely to affect how investors evaluate the opportunity. It is less obvious, however, that the same factual information conveyed in the form of a story should affect investors' evaluations. In short, I suggest that, in order to be able to draw conclusions about the effects of a given form of communication, these effects must be examined independently of the factual information being transferred.

Finally, by focusing solely on investors' legitimacy assessments as potential mediating mechanism (potential in the sense of assumed, rather than articulated and tested) to explain the positive link between storytelling and entrepreneurial resource acquisition, researchers have adopted an unnecessarily narrow approach to theory development; an approach that is likely to yield, at best, an incomplete view of how storytelling might influence the entrepreneurial resource acquisition process. Such approach is unnecessarily narrow because it implies (1) making an oversimplification of what constitutes an evaluative judgment, especially under conditions of high uncertainty, and (2) adopting a view of storytelling that is too focused on normative adaptation and too passive as a form of persuasive discourse (Green, 2004). I briefly explain these two issues and their implications below.

Contemporary research on judging and decision making (JDM) across a wide span of disciplines suggests that evaluative processes, especially in conditions of high uncertainty, are complex and multidimensional phenomena involving cognitive,

affective, mindful and automatic elements (Weber & Johnson, 2009). Therefore, treating investors' evaluative judgments as one-dimensional affairs (i.e. reducing them to legitimacy assessments) constitutes an unnecessary oversimplification of the process by which investors develop the mental representations that form the basis for their propensity to invest in a given new venture. This overly parsimonious approach diminishes the potential explanatory power of our theories because it unnecessarily sacrifices their accuracy. I posit that this sacrifice is unnecessary because the accuracy of a theory does not necessarily imply an automatic tradeoff with its simplicity, but may represent instead a shift in the theoretical level of abstraction that makes it more appropriate for examining the specific problem under consideration (Van de Ven, 2007; Weick, 1999). Similarly, research in a wide array of disciplines suggests that, given the way humans make sense the world, stories influence individuals' mental representations in a variety of significant ways, not only at the cognitive, but also at the affective and behavioral levels (Hsu, 2008). But, by focusing only on what stories may do to influence investors' legitimacy assessments, researchers are focusing on the potential effects of storytelling on a rather narrow evaluative outcome, rather than fully taking into consideration the epistemological function of storytelling in everyday life. In so doing, researchers are, again, unnecessarily constraining the explanatory power of current theories on the role that entrepreneurial storytelling plays in the resource acquisition process.

In this dissertation, I invoke contemporary theories on judging and decision making to expand the notion of what constitutes an investor's evaluative judgment of a

new venture opportunity; a notion that goes beyond assessments of a new venture's legitimacy. Investors' evaluative judgments (the kind of evaluative judgments that form the basis for their propensity to invest) should be conceptualized not only as psychological processes that are cognitive and mindful in nature, but also as involving affective and automatic processes (Weber & Johnson, 2008). In fact, under conditions of high uncertainty and ambiguous information such as those faced by early stage investors, the affective and automatic components of the evaluative process play a more important role than in conditions of low uncertainty (Finucane, Alhakami, Slovic & Johnson, 2000; Loewenstein, Weber, Hsee & Welch, 2001). This idea is consistent with the picture that emerges from the literature on business angels and venture capitalists, which suggests that early stage investors are intuitive decision makers who often invoke the notion of "gut feel" to explain their use of subjective or even unknown evaluation criteria (Zacharakis & Shepherd, 2007). "Gut feel" is a colloquial term that denotes the concept of an *intuitive judgment*, i.e. an affectively charged judgment that arises through rapid, nonconscious and holistic associations (Dane & Pratt, 2007). Therefore, to better examine whether and how stories affect the entrepreneurial resource acquisition process by influencing how investors evaluate new ventures, I conceptualize investors' new venture evaluations as general in nature (in the sense of global, or holistic) and including intuitive as well as cognitive components.

I invoke theories from a broad array of areas, such as social psychology, literary theory, linguistics, narratology, persuasive communication and rhetoric, to first

clarify the concept of entrepreneurial storytelling as a *form* of communication and then make predictions on its effects on how investors evaluate new venture opportunities. One of my contributions in this dissertation is thus to provide a conceptual clarification of what constitutes an entrepreneurial story as a *way* of transferring information about a new venture opportunity. Providing this conceptual clarification is important because, in order to understand how the act of telling a story influences investors' evaluations, the effects of storytelling need to be examined independently of the opportunity under consideration (i.e. *ceteris paribus*), which is not a distinction that is consistently made in extant literature . Given that the purpose of this dissertation is to explore the effects of entrepreneurial storytelling as a way of presenting investors with information about a new venture opportunity (versus transferring the same information in some other way), the focus of this research, to put it in more formal communication theory terms, is on the *style*, rather than the *content* of the message (i.e. the information being presented to investors).

I focus on the two main classic components of a message's style: the choice of syntactical structure (taxis) and choice of language (lexis). I focus on these stylistic choices as they relate to entrepreneurial storytelling and their effects on investors' evaluations. More specifically, I examine the effects of a specific kind of structure (i.e. the *narrative* structure, or story) and of a specific type of language (i.e. intense language). Formally, to examine whether investors' evaluations are influenced by entrepreneurial storytelling, it would suffice to consider the effects of the narrative structure alone (i.e. seeing the effects of having a message structured as a story vs. not

having it structured as a story). However, given that the overarching purpose of this research is to discern whether entrepreneurs can influence investors evaluations by the *way* in which they present their new venture opportunities, I also consider as a complementary explanation the effects language, an element of style with a long history of inquiry in the field of persuasive communication that seems particularly suited for influencing intuitive judgments and evaluations.

To the extent that early-stage investors are intuitive decision makers (Zacharakis & Shepherd, 2007), their evaluations of new ventures are not only likely to be influenced by cognitive and conscious, but also by automatic and affective, processes (Dane & Pratt, 2007). I argue that entrepreneurial stories will influence how investors think and feel (both consciously and unconsciously) about new venture opportunities. In other words, I argue that the narrative structure and the choice of language in which a given new venture opportunity is communicated, will affect an investor's holistic evaluation (or 'gut feel') about that given opportunity. I posit that these effects will be indirect, i.e. that they will occur through a set of intervening mechanisms. More specifically, I argue that entrepreneurial stories will affect a number of intermediate psychological states, both cognitive and affective in nature, which will ultimately influence the formation of investors' intuitive overall judgments. In other words, in this dissertation, I develop an *intervening variables* model (Hayes, 2009) or, more specifically, a *multiple mediator model* that specifies several *indirect effects* (Preacher & Hayes, 2008), which is aimed at testing not only *whether* entrepreneurial stories affect investors' evaluations of new venture opportunities, but

also *how* these effects might take place (i.e. what are some of the potential intervening mechanisms at play).

Each of the two elements of style examined in this dissertation (narrative structure and language) is likely to affect a different set of intervening mechanisms in the formation of investors' perceptions and assessments. I argue that stories are likely to affect how investors react to and evaluate the entrepreneur or the entrepreneurial team, whereas language intensity is likely to affect how investors evaluate the situation of market need being addressed by the new venture's product or service offerings. The choice of these two elements of style, narrative and lexical structure, is thus appropriate because I expect each of them to affect a distinct and theoretically important set of intervening mechanisms in the formation of investors' evaluations. In contemporary entrepreneurship literature, an entrepreneurial opportunity is generally conceptualized as a set of conditions that occur at the intersection of two distinct dimensions: an enterprising person and a favorable context, or market situation (Shane & Venkataraman, 2000). Each set of intervening mechanisms that I propose in the model addresses thus a distinct element of what is generally accepted to constitute an entrepreneurial opportunity. While the narrative structure of the message (i.e. the story) is likely to affect how investors react to the enterprising person or group of persons behind the new venture opportunity, the intensity of the language is likely to affect how investors perceive the market situation being addressed by the new venture. Furthermore, the underlying premise, supported by evidence from the literature on venture capital and angel investing, is that considerations regarding the entrepreneur

or the entrepreneurial team, along with considerations about the perceived degree of market need that is addressed by the new venture's products or services, are the two main types of considerations reported by early stage investors considering potential opportunities.

I argue that entrepreneurial stories will affect investors' considerations regarding the entrepreneur or the entrepreneurial team because one of the key features of stories is that they convey not only the experiences of one or more focal actors (i.e. the characters in the stories), but also the *meaning* of these experiences from the focal actor/s' perspective (Bruner, 1990). For this reason, a story has the capability of influencing how an audience interprets, or makes sense of, the involvement of one or more characters in the sequence of events that is being presented in the story which, in turn, affects the audience's emotional response to the characters, as well as the attributions that it makes about them. In other words, a story has the capability of influencing not only investors' emotional response to, but also its beliefs about, a given focal actor/s. I therefore predict that entrepreneurial stories will influence how investors think and feel about the founding entrepreneurs of a new venture. More specifically, I predict that when a new venture opportunity is communicated to potential investors in the form of a story, these investors will experience higher levels of empathetic identification with the founding entrepreneur/s, which in turn will lead to a higher overall assessment of the attractiveness of the opportunity. Furthermore, I predict that when a new venture opportunity is communicated to potential investors in the form of a story, these investors will assess some key personal characteristics of the

founding entrepreneurs, such as their level of competence or motivation, more favorably, which in turn will also lead to a higher overall assessment of the attractiveness of the opportunity.

I argue that intense language (which is a type of language that is high in both emotionality and specificity) will affect investors' considerations regarding the market need being addressed because intense language has the capability of influencing how a target audience thinks and feels about a given situation that is being communicated. This is because intense language not only gives affective cues, makes people pay more attention to a given sequence of events presented in a story, but also because language intensity has the capability of evoking mental imagery, which in turns influences people's ability to imagine themselves in a given situation (Andersen & Blackburn, 2004; Perloff, 2003). For these reasons, the use of intense language has the potential to influence how a target audience perceives the existence and severity of a problem being communicated in a story or a message. In other words, language intensity has the capability of influencing investors' perceptions about a given market situation that is presented in a story or message, such as what is colloquially known as the "market pain" being addressed by a new venture's product or service offerings. I therefore predict that the use of intense language when describing the market problem being addressed by a new venture, and its proposed solution, will influence how investors' perceive the relevance of the market need being addressed by the new venture. More specifically, I predict that when a new venture opportunity is communicated to potential investors using intense language, these investors will assess the market need

being addressed by the new venture's products or services as more severe, which in turn will lead to a higher overall evaluation of the attractiveness of the opportunity.

The hypotheses were tested by conducting a field experiment with a sample of 188 angel investors in the United States. In this experiment, investors were asked to review a written description of a new venture opportunity (a business opportunity being developed by a new venture seeking financing) and were asked to make a series of assessments about the opportunity by filling a questionnaire. The new venture opportunity was the same for all investors, but the form in which the opportunity was presented varied (in terms of narrative structure and language intensity) across investors and it was randomly assigned. To analyze the data in the context of a multiple mediation model, I used a multivariate test that involves bootstrapping the sampling distribution of the specific and total indirect effects (Preacher & Hayes, 2008; Hayes, 2009), which allows for reliably testing specific indirect effects together and in isolation.

The results showed that entrepreneurial storytelling does indeed affect a number of mechanisms that intervene in the formation of investors' initial "gut feel" evaluations. These effects, however, did not always operate as predicted in the theoretical model. In fact, the findings suggest that some of these intervening mechanisms operate in opposite directions, effectively cancelling each other out, to the extent that their aggregate effect on investors' evaluations is not quantitatively significant. More specifically, I found that when an entrepreneurial opportunity is presented in the form of a story, potential investors report higher levels of empathetic

identification with the entrepreneurial team, and they also tend to provide higher assessments regarding the motivational disposition of the entrepreneurial team, which leads them to provide a more favorable evaluation of the overall opportunity. However, opposite of what I predicted in the model, I found that investors tend to provide lower assessments regarding the competence of the entrepreneurial team when the opportunity is presented in the form of a story.

The balance of the empirical test on the effects of narrative structure suggests thus the existence of an inconsistent mediation model with suppression effects (MacKinnon, Krull & Lockwood, 2000). That is, a model in which one or more of the intervening mechanisms operate in opposite directions, suppressing each other's effect on the outcome variable. More specifically, results show that the positive effects of storytelling on investors' evaluations that operated through the mechanisms of the experience of empathetic identification and assessments of motivation were suppressed by the negative effects that operated through the mechanism of competence assessments. Put simply, when investors were exposed to one of the narrative versions of the new venture opportunity description, they tended to empathetically identify more with the entrepreneurial team and to rate some of its personal qualities, such as its level of motivation, more favorably, which positively influenced how investors evaluated the opportunity overall. However, in this case investors also tended to view the entrepreneurial team as less capable, which negatively influenced how they evaluated the opportunity overall. In sum, the results of the analysis showed that the lack of an observable total effect of storytelling on

investors' intuitive evaluations could be attributed to the negative effect of the narrative manipulation on competence assessments suppressing the positive effects of the narrative manipulation on empathetic identification and motivation assessments.

In terms of complementary language effects, I found that when an entrepreneurial opportunity was communicated with intense language, investors perceived the degree of market need being addressed by the new venture's offerings to be moderately higher. However, I found no relationship between investors' specific assessments of the market need being addressed by the new venture's proposed solution and their overall assessment of the opportunity. Given that I used a proxy measure to capture this effect, a measure that seemed to capture more the level to which investors understood and identified with the plight of customers prior to the introduction of the new products and services, I probably cannot claim that I found, or did not find, empirical support for the notion that investors' specific assessments of the market need addressed by the new venture operate as intervening mechanisms that positively mediate the relationship between the use of intense language and investors' evaluations of an entrepreneurial opportunity. Put simply, I found that when an opportunity was presented using intense language, investors seemed to have a greater appreciation for the market problem that the new venture is trying to solve, and a greater level of understanding for the plight of current users, but that does not seem to have influenced how investors evaluated the opportunity overall.

Although no total, or aggregate, effects of storytelling on investors' assessments were found, the experiment still provided a number of valuable insights

on how storytelling can affect investors' intuitive evaluations and, more generally, on how these intuitive evaluations are formed. An important implication of these findings is that the narrative manipulation *did* have an indirect effect on the intuitive evaluations of investors, albeit in unexpected ways. This means that entrepreneurial storytelling has the capability of positively influencing investors' evaluations, provided that its negative effects can be isolated and minimized, or its positive effects enhanced, at least to the point that the positive effect of telling as story outweighs the negative effect to the point that a total effect is observable in the outcome variable. Whether this is possible remains to be seen. Going forward, the goal for researchers and practitioners (especially entrepreneurs seeking external resources) should be on finding ways of capitalizing on the potential positive effects of entrepreneurial storytelling on investors' intuitive evaluations of new venture opportunities, while trying to avoid some of its potential negative effects.

In summary, in the following pages I will present my research, which examined whether and how entrepreneurial storytelling is capable of influencing investors' evaluations of new venture opportunities. I will articulate and empirically test a theoretical model that explicates the specific mechanisms by which this potential influence could be exerted. Results from a field experiment, the first of its kind, involving 188 active business angels in the U.S., will show that storytelling is capable of exerting a number of specific indirect effects on investors' evaluations, but that these effects may suppress each other by operating in opposite directions. Despite a lack of an observable effect on the outcome variable, the findings indicate that

storytelling does affect investors' evaluations, but in an inconsistent manner, which implies that entrepreneurs seeking to influence investors' evaluations by communicating their opportunities in the form of a story will have to find ways of capitalizing on the positive effects of storytelling while avoiding its pitfalls. The balance of this study will thus show that stories can influence investors' evaluative judgments, and will open the door for further research on the role of communication strategies in the entrepreneurial resource acquisition process.

CHAPTER 2: LITERATURE REVIEW

Entrepreneurial storytelling is a relatively new, albeit emerging, area of study. The role that stories play in the entrepreneurial process in general and, more specifically, in the external resource acquisition efforts of new ventures, is an area of inquiry in which previous literature is not yet abundant. Nevertheless, the impact of storytelling on the ability of entrepreneurs to acquire external resources is a topic of study that can be informed by the literature from a wide ranging set of disciplines. In this section, I review previous literature that applies to questions that are relevant for this dissertation including, but not limiting myself to, the literature on entrepreneurial storytelling.

I start by reviewing the literature on the entrepreneurial resource acquisition process from both the perspective of the early stage investor (the resource provider) and the perspective of the entrepreneur (the resource seeker) to illuminate our current understanding of how investors arrive at their investment decisions and what are the ways in which entrepreneurs can influence these decisions and improve their chances of obtaining the resources they need. First, I review the literature on business angels and venture capitalists to address the following question: How do early stage investors evaluate entrepreneurial opportunities and make their investment decisions? Then, I review the literature on the external resource acquisition strategies of entrepreneurs, including storytelling, to address the following question: What can entrepreneurs do to influence the resource acquisition process in general and, in particular, the evaluative

judgments of potential investors and their propensity to invest in a given new venture? Finally, I review some of the literature on storytelling more generally in the fields of management and entrepreneurship, to clarify some specific questions regarding the potential role of stories in the entrepreneurial resource acquisition process. At the end of the chapter, I will discuss the research opportunities that emerge from previous literature and how I intend to pursue them in this dissertation.

How early-stage investors evaluate opportunities and make investment decisions

The bulk of the literature on the decision processes of venture investors revolves around the activities of professional ("institutional") venture capitalists and, to a lesser extent, of informal private equity investors (also known as "business angels"). Although research on the activities of business angels has increased substantially in recent years, most of the literature on investors' decision processes can be found in the area of professional venture capital, where it was originated. For example, the majority of existing models that describe business angels' investment process are based on models that were originally developed to explain the investment process of professional venture capitalists (Riding, Madill & Haines, 2007). This is not surprising, since professional venture capitalists are more visible, easier to find and to study than informal investors, who are naturally more anonymous and private about their investment activities.

In the early days of venture capital research (60's-80's), when the original investment process models were developed, professional venture capitalists engaged

in earlier-stage investment activities than they do today. In recent decades, however, professional venture capitalists have shifted their focus away from seed, startup and first stage deals and have instead moved toward later-stage investments (Parhankangas, 2007). Although some professional venture capitalists still engage in early stage activities, most of the early-stage space has been filled by business angels, especially with the advent and rise, in recent years, of formally organized business angel groups, which have allowed individual informal investors to pool their resources to finance larger sums. With this in mind, one can understand how venture capital investment decision models that were developed with early-stage opportunities in mind apply to the decision processes of business angles, who mostly engage in early-stage deals.

To be clear about what it is meant by "early stage" investment opportunities, it is worth noting that the literature refers in such terms to the developmental stage of the ventures that are targeted for investment. Typically, the literature classifies the stage of development of a given new venture targeted for investment in one of the following categories: seed, startup, first-stage, second-stage, third-stage and mezzanine, or bridge financing (Rhunka & Young, 1987), depending on how far along it is in the process of developing a viable business. Seed financing involves providing funds to an entrepreneur who may not have yet started the process of creating a venture, but who has an idea or a concept that is worth pursuing. Typical goals at this stage involve proving technical feasibility, creating a prototype or conducting initial market assessment (Parhankangas, 2007). Startup financing involves providing funds to an

entrepreneur who is starting a venture based on the feasibility of a business concept that has been analyzed (usually to the point of having a business plan). Typical goals at this stage include product development for manufacturing feasibility and initial marketing activities (Rhunka & Young, 1987). First-stage financing involves providing funds for new ventures that have market-ready products and services that need to be manufactured and sold effectively and cost-efficiently. Typical goals at this stage involve initiate commercial manufacturing, obtain organizational capabilities and human resources, and initiate sales activities (Rhunka & Young, 1987). These three stages of financing (seed, startup and first-stage) are what the literature usually considers early-stage investing (Parhankangas, 2007). Later stage investments involve financing ventures that have already established a market presence and that typically need to increase market share, profitability, or have other developmental goals geared toward reaching valuations that make it possible for investors to exit.

Investment stage distinctions matter for the purpose of this dissertation because these stages have been found to differ not only in developmental goals or typical uses of funds, but also in the types of risk they involve and, more importantly, in their levels of overall risk and uncertainty. Because early-stage investments not only have a higher level of overall risk and uncertainty than later-stage investments but also present different types of risks, investors apply different evaluation criteria and follow different decision processes for early- and later-stage investment decisions (Parhankangas, 2007; Zacharakis & Shepherd, 2007).

Since the focus of this dissertation is on the evaluative judgments and decision processes of early stage investors, I start this literature review by with introducing the literature on business angels, who are the particular type of investor most often involved in early stage deals and who constitute the sample for this study. Then, to further clarify the picture of how early stage investors evaluate opportunities and make investment decisions, I present complementary insights from the literature on formal venture capital, with special attention to the early stage segment of the market.

The investment decision process of Business Angels

Business angel research is a particularly difficult area of study for a varied number of reasons, but two specific problems stand out above all others. First, there seems to be a lack of agreement in the literature as to what constitutes a "business angel" and how it differs from other types of investors. Second, definitional issues notwithstanding, angel investors are very difficult to identify and locate due to their (often intentional) anonymous and invisible nature, which typically creates sampling problems for researchers (Avdeitchikova, Landström & Månsson, 2008).

The definitional problems in the literature create some conceptual confusion and stem from a lack of consistency on the part of researchers. For example, it is common to see the terms "business angel" and "informal investor" used interchangeably as synonyms. It is just as common, however, to see important distinctions being made between these two terms (as well as similar others) to denote different categories of investors, with different goals, processes and outcomes (Riding

et al., 2007). In general terms, business angels are commonly understood to be high net worth individuals who invest their own money in new ventures and who contribute with their expertise and knowledge, usually by taking an active role as advisors or board members (Wiltbank, Read, Dew & Sarasvathy, 2009). This idea of what constitutes an angel investor can be traced back to the origins of the field and to the seminal work of William Wetzel in the early 80's (e.g. Wetzel, 1983), who was the first researcher to tackle the hitherto rather obscure topic of informal venture capital markets, discovering that angel investors, although usually anonymous and difficult to identify, shared a number of common traits: they were wealthy self-made middle-aged white males with new venture experience of their own, who invested locally and early on, who relied on their network to uncover investment opportunities and who were (which is particularly interesting for the purpose of this research), motivated by both the prospect of financial returns as well as by non-financial motivations (Kelly, 2007). Wetzel's pioneering work initiated the first wave of business angel research, which to a large extent focused on demographic studies aimed at gaining a better understanding of the characteristics of angel investors both in the US and worldwide (Avdeitchikova et al., 2008; Kelly, 2007).

Over time, however, it became apparent that the current informal venture capital market is quite heterogeneous and that, besides the archetypical business angel described in the first wave of studies, there are many more varieties of informal early stage equity investors with varying degrees of involvement in the ventures they invest in (including those that contribute small amounts of resources and do not get involved

in the new ventures they invest in any capacity). For this reason, many researchers have adopted the more general term “informal investor” to refer to any private investors who provide risk capital to a new venture in which he/she has no family connections (Mason & Harrison, 1995, Mason & Harrison, 2000). This definition, which in essence includes any private investor that is not a family member or a professional venture capitalist, is less stringent because it makes no assumptions regarding the personal involvement of the investor in the activities of the ventures in which he/she invests. In other words, the term “informal investor” encompasses not only those individuals who fit our classic understanding of a business angel (i.e. an informal version of a formal, or professional, venture capitalist), but also those individuals that simply invest risk capital directly into a new venture without getting involved (Avdeitchikova et al., 2008). This would not be so confusing if the term “informal investor” would not sometimes be used interchangeably with the term “business angel” and sometimes a specific distinction would be made between the two. In the end, and this is the position that I adopt for this dissertation, I agree with Avdeitchikova and colleagues (2008), among others, who suggest that many of these definitional issues are mostly caused by cultural and institutional differences across countries and that it may not be too beneficial to try to reach a definitional consensus. As long as researchers are conscious that any given definition is more or less appropriate depending on the research question being raised, I see no point in fine-tuning definitions to the point of parsing every single possible category of informal investor. Since I am not aware of any clear differences between the evaluative and

decision processes of business angels and a broader category of informal investors, I use both terms interchangeably.

After this initial wave of research helped shed some light on the informal venture capital market in general and on the figure of the angel investor in particular, researchers turned their attention towards the mechanisms that operate in these markets, such as the decision-making processes of angel investors (Kelly, 2007). The literature on how business angels make their investment decisions consists of three main categories of studies: investment process studies, investment criteria studies and comparative studies, in which angel investors' decision-making is compared to that of other types of investors (Smith, Mason & Harrison, 2010).

Most angel investment process models have been adapted from models that were originally developed in the field of formal venture capital (e.g. Fried & Hisrich, 1994; Tyebjee & Bruno, 1984). These angel investment process models usually consist of a number of discrete steps (typically 5) that are often, but not always, explicitly identified. These steps are the following: deal origination, deal evaluation (which is a step that sometimes is divided into initial screening and detailed evaluation), negotiation and contracting, post-investment involvement and exit (Smith et al., 2010). There are some variations of this basic 5-step pattern. Some researchers offer a more detailed and nuanced process model, in which a (sometimes higher) number of steps or sub-steps are made explicit (Haines, Madill & Riding, 2003). Others offer simpler and more succinct models in which some of these steps can only be implicitly inferred (Van Osnabrugge, 2000). In any case, despite some minor

differences and varying levels of detail, most process models of angel investment are very similar to the generic 5-step model presented above (Riding et al., 2007).

The key insight offered by these process models of angel investing is that the activities, behaviors and concerns of angel investors vary as the process unfolds, i.e. that they are not uniform across different stages of the investment process. Each stage of the investment process has its own particular set of relevant issues and it is often governed by different sets of concerns and behaviors. It is reasonable to expect, therefore, that investment decision criteria, and the formation of evaluative judgments in general, are also likely to vary across investment stages. Yet, many research studies (indeed most) do not take into consideration the stage of the investment process, including most studies addressing the decision criteria of angel investors (Riding et al., 2007).

The key stage of the angel investment process from the perspective of this dissertation is the deal evaluation stage, which is often further divided into two sub-stages, an initial screening stage and a subsequent deeper evaluation (or due diligence) stage. This is the key stage for the purposes of this dissertation because it is when angel investors form their initial evaluative judgments about the merits of a potential new venture opportunity that has successfully emerged from the deal origination stage. It is important to point out that many potential deals never go beyond the origination stage, often because they do not fit investors' basic criteria in terms of geographic location, size of investment or type of industry, among other factors. Decisions at origination stage are not so interesting for the purpose of this dissertation because of

their automatic nature, rarely requiring the investors to engage in a meaningful process of evaluative judgment or even screening. It is generally accepted that angel investors learn about opportunities through referrals from business associates (Riding et al., 2007), and increasingly through their participation in business angel networks or groups, in which deal flow information is shared among members (Kelly, 2007). These actors play thus an instrumental role in screening whether a potential opportunity fits the personal investment profile of a given business angel (such as geographic location, amount of fund sought, industry or sector) at the deal origination stage.

Provided that a given opportunity fits the investment profile of a business angel and that it was referred by a reliable source, it is likely that the business angel will then screen it at some level (usually not in great depth), often by attending an initial short presentation (Clark, 2008) or by reading an executive summary of the investment opportunity. Angels approach the initial screening stage with a negative mindset and looking for reasons to reject the opportunity (Smith et al., 2010). At this point, a decision to make the investment is very unlikely and there is a high probability that the opportunity will be rejected outright. In fact, research suggests that 70% of the rejections occur at first sight, i.e. after the first time that the investor takes a look at the opportunity (Riding et al., 2007). The aim of angel investors at this initial screening stage is merely to assess whether an opportunity has enough merit to justify further investment of time and resources in a more detailed evaluation that generally involves engaging in some form of due diligence (Smith et al., 2010).

What criteria do angel investors use to evaluate potential investment options during this initial screening stage? Most studies on business angels' investment decision criteria do not distinguish between criteria across different stages of the investment process, but some patterns do emerge from current research. The literature on business angels' investment criteria can generally be divided into three categories of studies. First, there are studies that retrospectively ask investors about the evaluation criteria they used in a given investment decision or set of decisions, usually via survey (Mason & Harrison, 2002). The problem with this type of studies, besides common recollection and post-hoc rationalization biases, is that it is hard to determine which criteria came into play at which stage of the investment decision process (Smith et al., 2010). Second, there are case studies that examine in depth a given investment decision, or set of investment decisions, for example with qualitative data collected via phone interviews with business angels (Mason & Harrison, 1996). The problem with this type of studies, besides the common difficulty of generalizing from single cases, is that they also suffer from the potential of recollection and post-hoc rationalization biases, including the potential for confounding decision criteria across different stages of the investment process. Third, there are studies that have attempted to circumvent the problems of the retrospective approach by gathering information about the decision process in real time, for example via verbal protocols or conjoint analysis, or by observing how angel investors react to the initial presentations of entrepreneurs (Clark, 2008; Mason & Harrison, 2003). This type of studies offer insights into the different components of the decision process, such as evaluation criteria, in real time,

thus largely avoiding problems associated with recollection bias. They also offer the opportunity to focus on what happens at a given stage in the angel investment process.

All in all, the findings in the literature are quite consistent across studies and suggest that the two most important factors for business angels in evaluating a potential opportunity at the initial screening stage are (1) characteristics of the entrepreneur, or entrepreneurial team and (2) the market potential of the opportunity, while product/service and financial factors are less significant (Smith et al., 2010). These are quite relevant findings, considering that a substantial number of other factors that could also plausibly constitute a set of relevant investment decision criteria have also been proposed and have not been found to have the same degree of importance. The proposed list of other potentially relevant factors is extensive, including characteristics of the investment opportunity such as the level of intellectual property protection, various product/service attributes, considerations about competitive positioning, and assessments of market structure or financial projections, among many others (e.g. Maxwell, Jeffrey & Lévesque, 2009; Sudek, 2006; Haines et al., 2003; Feeney, Haines & Riding, 1999; Landström, 1998). Yet, at least at the initial evaluation stage, what seems to determine the attractiveness of a given investment opportunity can, to a large extent, be explicated by these two broad categories of criteria: the “qualities” of the people involved in the firm and the “potential” of the market opportunity (Mason & Harrison, 1996). The most interesting of these two factors (at least for research purposes) is the “quality” of the people associated with the new venture (i.e. the founding entrepreneur or entrepreneurial team), not only

because some researchers contend that it is the quality of the entrepreneur that is the single most important issue driving angel investors' evaluations in this early stages of the process (Mason & Stark, 2004), but also because assessing the quality of an entrepreneur, or an entrepreneurial team, involves a complex set of evaluation criteria that encompasses both objective and subjective components (Clark, 2008).

When evaluating the quality of an entrepreneur or a team of entrepreneurs, angels do not restrict themselves to issues of competency, which tend to be more objective and measurable (for example based on the entrepreneur's credentials or past experience), but also evaluate other human qualities that are less measurable on paper, such as honesty and trustworthiness, and even quite subjective ones, such as the entrepreneurs' level of enthusiasm and passion. For example, Mason and Harrison (1996), in a study about the factors that attract angel investors to opportunities found that, for business angels, the most attractive qualities of entrepreneurs are expertise, honesty, trustworthiness and enthusiasm. In a similar vein, other researchers have found that many angel investors look primarily for entrepreneurs that are honest and exhibit a strong work ethic (Haines et al., 2003), or that, according to many business angels, the best attributes of entrepreneurs are personal characteristics of a rather intangible nature such as honesty, integrity, realism or openness (Feeney et al., 1999). Recent findings bolster the argument that highly subjective and perceptual characteristics of entrepreneurs, such as the level of excitement and enthusiasm (which is perceived as passion by angel investors) make a difference when angels evaluate the potential of new opportunities (Mitteness, Sudek & Cardon, 2012). Interestingly,

business angels seem to form their opinions about some of these rather difficult-to-assess characteristics of entrepreneurs very quickly. For example, research shows that business angels can develop assessments about the honesty and trustworthiness of entrepreneurs in a matter of a few minutes (Harrison, Dibben & Mason, 1997), which suggests that angel investors (and research in the formal venture capital field confirms that this is also true for venture capitalists) judge some of the qualities of entrepreneurs quite intuitively.

Even in terms of skills and competencies, business angels often look for (or let themselves be influenced by) qualities that are less tangible and less substantive that the standard espoused criteria for evaluating human capital (typically the entrepreneur's previous track record or task-specific competencies), such as social, impression management and communication skills. A small but, for the purpose of this dissertation, extremely interesting body of research suggests that the communication and presentation skills of entrepreneurs influence angel investors' decisions and evaluations (Clark, 2008; Mason & Harrison, 2003). Mason and Harrison (2003), for example, analyzed the reactions of 30 business angels to the taped presentation of a real investment opportunity and found that the lack of presentation skills by the entrepreneur presenting the opportunity was one of the top reasons why most angels rejected the opportunity, suggesting that social and impression management skills, such as the ability to communicate and present well, could play a role in the formation of investors' impressions about the entrepreneur and the opportunity. Mason and Harrison (2003) invoke the dramaturgical perspective

(Goffman, 1959) to suggest that entrepreneurs are like any social actor engaging in impression management and self-presentation strategies, especially when presenting to an audience that has shared and accepted role expectations. At the core of this argument is the notion that investors' evaluations and decision making are driven not only by rational but also by symbolic elements and that, in order to be successful at creating a shared understanding in a given audience, entrepreneurs need to skillfully manage symbols as well as information. What is interesting about this argument, for the purposes of this dissertation, is that the supposedly rational decision making process of investors may be also informed by symbolic elements of the interaction with the entrepreneur (such as presentation-related issues) rather than only by substantive information about the venture itself. In other words, business angels' evaluative judgments may be formed not only by content but also by style. In their study, Mason & Harrison's (2003) raised some thought-provoking questions that, unfortunately, could only be addressed empirically in a very limited fashion. The problem with this study is not only that is a single case study and that all the investors saw the same presentation but, more importantly, that the research design makes it difficult to draw inferences regarding whether it was the content, the structure or rather the style of the presentation that put investors off.

A more compelling test of the notion that entrepreneurs' communication skills may influence business angels' decision making is provided by Clark (2008). In an exploratory study in which 24 angels evaluated both the presentational and the non-presentational aspects of 3 entrepreneurs oral pitch presentations, Clark found that the

investors' level of interest in a given opportunity was related to how they assessed the quality of the presentation. Furthermore, Clark made participants distinguish between presentational factors (related to the entrepreneurs' style of delivery) and substance oriented non-presentational criteria (e.g. product, market, financial issues, etc.) in their evaluations, in order to test the relative impact of style and content in the post-presentation screening decisions of angel investors. Clark found that presentational factors tended to have the highest level of relative influence on the overall score an entrepreneur received, as well as on their post-presentation interest in a given opportunity. Interestingly, however, the participating business angels did not recognize the influence of presentational factors on their investment-related decisions and focused instead on substance oriented non-presentational factors when explaining their decision process. Business angels could have been unaware of the importance of presentational factors in their evaluative judgments or, just as likely, they could have been reluctant to acknowledge the influence of non-substantive factors in what is believed to be a rational process of evaluation. Clark speculates that angels' scoring of the entrepreneurs and the opportunities may have captured more accurately "the tacit, gut-reaction, inference process angels engage in when making screening decisions" (Clark, 2008: 273), than their stated substantive evaluation criteria.

The notion that subjective factors such as intuition, gut feel, or personal chemistry, play a role in the evaluative process of angel investors is reinforced by studies that focus on the following stage of the angel investment process model, namely the due diligence stage. The objective of angel investors at this stage, which

involves a more in-depth evaluation of the investment opportunities that have survived the initial screenings stage, is to gather sufficient information to determine whether or not to enter into negotiations with the founding entrepreneurs regarding the conditions of a potential investment (Riding et al., 2007). Most of the few opportunities that survive the initial screening stage do not make it through the due diligence stage, and only very few enter into negotiations with potential investors. It is estimated that yet another 20% of the initially screened investment opportunities are rejected at this stage of the process (Riding et al., 2007), which means that business angels enter into negotiations with less than one in ten of the opportunities they originally screen (recall that roughly 70% of potential opportunities are rejected at the initial screening stage). Indeed, most studies estimate the cumulative rejection rate pre-negotiation stage at 90-95% (Smith et al., 2010).

During the due diligence stage, since the goal is to gather information about the investment opportunity, business angels will engage in a number of information-gathering activities, such as reading business plans in detail, go over financial information, visit the premises, talk to external stakeholders and, most importantly according to many business angels, personally get to know the founders (Riding et al., 2007; Smith et al., 2010). Yet, despite the stated emphasis on information gathering and in-depth evaluation activities at this stage of the investment process, extant literature clearly indicates that most business angels' approach to due diligence is quite informal and ad-hoc (Haines et al., 2003). Furthermore, many angel investors indicate that they emphasize their "intuition" and their "gut feeling" rather than

performing formal analysis or relying on comprehensive research (Riding et al., 2007), and that they rely on subjective factors such as trusting and liking the people they get involved with, a construct that is often referred to as developing "personal chemistry" with the founders (Kelly, 2007). Therefore, when researchers refer to the due diligence approach of business angels as "informal" or "ad-hoc" they are not only suggesting that the process is unstructured or unprofessional, but also that it explicitly relies on subjective and intuitive elements.

Their informal approach to due diligence is precisely one of the characteristics that differentiates business angels from formal venture capitalists, who approach their due diligence activities in a more structured and sophisticated fashion (Riding et al., 2007; Van Osnabrugge, 2000). A reason for this difference in due diligence approaches between business angels and venture capitalists might be that business angels invest their own funds (unlike formal venture capitalists) and, therefore, they do not need to justify to the same extent their investment decision processes to other stakeholders and are less subject to external pressures to conform with institutionalized professional standards of practice. Van Osnabrugge (2000), in an empirical study of both business angels and venture capitalists, used the theoretical framework of agency theory to support the "own money" vs. "other people's money" argument of why the due diligence approach of business angels is less formal and more ad-hoc than that of venture capitalists. Van Osnabrugge (2000) hypothesized that business angels have more incentives to reduce agency risks *ex post* investment (e.g. to adopt the incomplete contract approach), while formal venture capitalist have more

incentives to reduce their agency risks *ex ante* investment (e.g. to adopt the principal-agent approach). The rationale for this hypothesis rests on the argument that business angels and formal venture capitalists differ significantly in terms of structure and agency pressures. While formal venture capitalists operate as agents of other fund providers, and must thus demonstrate and signal competent and professional behavior, business angels do not.

It is important to note, however, that the fact that formal venture capitalists' due diligence approach is more sophisticated, structured and formalized than that of business angels' does not mean that venture capitalists' decision processes are exempt from subjective and intuitive components. As I discuss in more detail in the next section, extant literature provides ample evidence that, despite their stated formal procedures, venture capitalists' decision making process appear to be based also on highly subjective factors such as intuition, gut feel, or personal chemistry (Zacharakis & Shepherd, 2007).

The investment decision process of Venture Capitalists

What additional insights on the evaluative processes and decisions of early-stage investors does the literature on professional venture capital offer? To address this question, it is most appropriate to draw on the literature that specifically studies the activities of professional venture capitalists who engage in early-stage deals. In the early days of venture capital research (70's and 80's) this distinction might have not been so important because most professional venture capitalists engaged, to some

degree, in early stage investment activities. In recent decades, however, responding to competitive and institutional pressures to seek lower risk investments (Gupta & Sapienza, 1992; Parhankangas, 2007), professional venture capitalists have shifted away from early-stage to later-stage investments (Gompers & Learner, 2001), to the extent that the majority of deals backed by venture capitalists fall today in in the category of later-stage investments. Parhankangas (2007) illustrates this trend by reporting that early-stage investments constituted at least half the value of all venture capital deals in the 60's, whereas in 2005 the share of early-stage deals was only 15%. Therefore, it is no longer appropriate to consider all extant literature on venture capitalists as representative of the activities of early-stage investors. Instead, it makes sense to focus on the literature that specifically addresses the activities of professional venture capitals who engage in early-stage activities.

Research on the activities of venture capitalists is vast and goes back more than four decades. There were some early contributions to venture capital research in the 70's, mostly in the form of unpublished dissertations, but the seminal articles that pioneered the field were published in the 80's, and addressed fundamental questions about the venture capital investment process and the activities of venture capitalists at different stages of the process. For example, Tyebjee and Bruno (1984) developed a process model of venture capital investment (discussed in the previous section as the origin for similar models developed for the investment process of business angels) that involves 5 steps: deal origination, deal screening, deal evaluation, deal structuring and post-investment activities. Other seminal work focused on specific steps of the

investment process. MacMillan and colleagues (1985, 1987), for instance, studied pre-investment activities, analyzing the criteria by which venture capitalists make their investment decisions, whereas others focused on the post-investment stages, by trying to shed light into the activities of venture capitalists once the investment in the portfolio company is made (Gorman & Sahlman, 1989). Researchers rooted in the disciplines of finance and economics also produced seminal work during the same time period, but their initial focus was instead on more macro-oriented issues, such as the functioning of the venture capital markets, the impact of the venture capital on economic development and similar policy-oriented questions (e.g. Timmons & Bygrave, 1986).

Research on early stage venture capital has been informed by scholars from many different disciplines, but especially by two broad categories of research with very different theoretical orientations, one rooted in the field of financial economics and the other one rooted in the fields of management and entrepreneurship. These two streams of research have addressed different types of questions from different theoretical lenses and have thus illuminated different aspects of the venture capital investment process. Researchers rooted in the fields of finance and economics have applied theoretical constructs from those domains, notably agency theory, to explain the relationship between investors and new ventures, and to examine how venture capitalists cope with the risks of investing in early-stage deals by alleviating problems associated with asymmetric information and moral hazard (e.g. Gompers, 1995; Amit, Glosten & Muller, 1990; Lerner, 1994). Researchers from the “managerial”

perspective have also borrowed concepts from economic theory, including agency theory, to examine the venture capital investment process, but have also drawn from other disciplines such as strategy, sociology or cognitive psychology, as well as conducted atheoretical exploratory studies, to address questions that go beyond the alleviation of the principal-agent problem or the risks associated with uncertainty and asymmetric information. Perhaps one of the most significant differences between researchers from these two theoretical orientations, given their assumptions, is that financial economists have focused on risks and problems, i.e. the "dark side" of venture capital, whereas management and entrepreneurship researchers have focused on value creation, growth and innovation, i.e. the "sunny side" of venture capital (Parhankangas, 2007). More important for the purpose of this dissertation is that researchers from the "managerial" tradition have studied more specifically how venture capitalists evaluate opportunities and make investment decisions, so the bulk of this review addressed that particular stream of research.

Also for the purpose of this dissertation, it makes sense review the literature on the pre-investment stages of the venture capital cycle, particularly the initial stages when new venture opportunities are first screened and evaluated. Within Tyebjee and Bruno's (1984) process model framework, that means focusing on the deal screening stage, in which venture capitalists engage in a quick review of a business plan or oral presentation, and on the deal evaluation stage, in which venture capitalists engage in due diligence investigation to evaluate more in-depth those deals that survive the initial screening process. The deal origination stage is less interesting for the purposes

of this dissertation, as venture capitalists often manage risks by focusing on particular industries or geographical areas and other automatic selection criteria (Gupta & Sapienza, 1992).

Extant literature addresses the topic of how venture capitalists evaluate opportunities during the screening and evaluation stages from the perspective of both content and process. I.e., researchers have studied both the criteria that venture capitalists use for evaluating investment opportunities and, increasingly, have also paid attention to the mental processes at play during their decisions. The study of venture capitalists' decision criteria goes back to the origins of venture capital research itself. From the beginning, scholars have tried to understand what it is that venture capitalists pay attention to when they evaluate investment opportunities. In recent years, however, research in this area has become increasingly sophisticated in both methods and theoretical frameworks, shedding some light on the notion that investors' "espoused" evaluation criteria (i.e. what venture capitalists say they pay attention to) differs substantially from their criteria "in use" (i.e. what venture capitalists actually pay attention to), suggesting that venture capitalists do not have a very good understanding of their own evaluative and decision processes (Zacharakis & Shepherd, 2007).

Some of the relevant questions that extant research on venture capitalists' investment criteria has attempted to address include the following: What are the common sets of investment criteria? What sets of investment criteria matter the most? Are the sets of relevant investment criteria different depending on the stage of the

evaluation? Are the sets of relevant investment criteria different depending on the stage of the investment? What methods should be used for identifying and analyzing relevant investment criteria? (Khanin, Baum, Mahto & Heller, 2008). Although we have learned a good deal about venture capitalists' evaluative and decision processes as a result of almost 40 years of research, the literature has arrived at somewhat contradictory conclusions about the relative importance of different sets of investment decision criteria and how they vary across contexts, suggesting that there might a high degree of heterogeneity across investors and situations in what appears to be an increasingly complex area of study.

Initially, research on venture capitalists' evaluation criteria focused on deriving lists of criteria and assessing their relative importance by asking venture capitalist themselves about their decision processes, usually via surveys or interviews (Zacharakis & Shepherd, 2007). This is how researchers derived the first sets of categories of investment criteria (often ranging from four to six) revolving around the entrepreneur or the entrepreneurial team, the market, the product, and financial considerations. The two better-known and influential sets of investment criteria, for example, include the following categories: market potential, management, competition and product feasibility (Tyebjee and Bruno, 1984), or the entrepreneur's personality, the entrepreneur's experience, characteristics of the product or service, characteristics of the market and financial considerations (MacMillan, Siegel & Subba Narasimha, 1985; MacMillan, Zeman & Subba Narasimha, 1987; Khan, 1987). Perhaps the most notable conclusion that was derived from this early wave of research was that the

characteristics of the entrepreneur, or entrepreneurial team, constitute the most important set of investment decision criteria. MacMillan et al. (1985), for example, famously concluded that it was the "jockey" (the entrepreneur) who determined whether venture capitalists invested in a new venture, rather than the "horse" (the product), the "race (the market) or the "odds" (the risk). This conclusion, although it became deeply engrained in both research and practice to the point of becoming an axiom in venture capital investing (exemplified by the common adage "venture capitalists invest in A teams with B ideas rather than in B teams with A ideas"), has been challenged by more recent findings and still is at the center of the fundamental debate about what are the dominant sets of investment criteria (Khanin et al., 2008).

The problem with this first wave of research on venture capitalists' investment criteria is that, because it was based on survey and interview data, and thus derived from venture capitalists' own assessments, it was prone to post-hoc rationalization and recollection biases (Zacharakis & Shepherd, 2007). In other words, it reflected what venture capitalists' thought their investment criteria were (i.e., their "espoused" criteria), rather than the information they actually used to make decisions. In order to overcome these shortcomings, some researchers started applying "real time" methodologies, to try to capture the elements of the evaluation process as it happens. The first of these methods to be applied was the verbal protocol analysis methodology (Hall & Hofer, 1993; Sandberg, Schweiger & Hofer, 1988), in which the participants "think aloud" as they review investment proposals. Three insights emerged from this first wave of verbal protocol studies, which spurred further research with "real time"

methodologies. First, it became evident that venture capitalists evaluate investment proposals very rapidly. Hall & Hofer (1993), for instance, found that the venture capitalists in their sample made a decision in an average of less than six minutes on initial screening and less than 21 minutes on proposal assessment. Second, the findings suggested that venture capitalists may not be very good at understanding, or at least introspecting, about their own decision processes, a finding that was repeatedly replicated in subsequent research using other "real time" methods (e.g. Shepherd, 1999; Zacharakis & Meyer, 1998). Third, the findings seemed to contradict prior studies suggesting that the entrepreneur or entrepreneurial team was the most important factor in venture capitalists' investment decision criteria, as researchers reported a "surprising" lack of importance of entrepreneur-related criteria throughout the decision process (Hall & Hofer, 1993). Some researchers, however, questioned the subjectivity of the interpretation involved in the verbal protocol analysis, suggesting that verbal protocol analysis is "more an art than a science" and advocating a move to experimental methods like conjoint analysis (Riquelme & Rickards, 1992).

Indeed, the next wave of research on venture capitalists' investment criteria examined the decision processes of venture capitalists in real time using conjoint analysis (Shepherd, 1999; Shepherd & Zacharakis, 1999) and similar decision policy-capturing methodologies (Zacharakis & Meyer, 1998). The conjoint analysis technique, which was pioneered in the use for researching venture capitalists' investment decisions by Muyzka, Birley & Leleux (1996), involves investors to make judgments based on a set of attributes from which the underlying structure of their

cognitive system can be investigated by decomposing their evaluations into a multi-linear equation that separates the weights of each attribute (Shepherd, 1999). Using conjoint analysis, "the attributes that were significantly used in the judgment, how those attributes were used, and the relative importance of each attribute in the judgment can be determined" (Shepherd & Zacharakis, 1999: 207). Studies using conjoint analysis support the findings of verbal protocol research, providing further evidence that venture capitalists may not fully understand their own investment decision processes and that the importance the entrepreneur's characteristics as investment criteria may have been overstated by prior research (Zacharakis & Shepherd, 2007).

While recognizing the methodological advantages of studies designed to analyze decision processes in real time, some comments need to be made about this the limitations, the findings and the further implications of this stream of research. First, some researchers point out that, for all the advantages of real-time methods of collecting information in overcoming post-hoc recall and rationalization biases, these methods are not without some limitations of their own. In the case of experiment-like methodologies, such as conjoint analysis, a serious limitation may be that researchers provide a controlled decision environment that may differ from the naturally occurring decision context, thus threatening the external validity of the results (Petty & Gruber, 2011). It is also possible that, given the intuitive nature of venture capitalists' investment decisions (Hisrich & Jankowicz, 1990), a set of pre-established criteria into

which the decision is decomposed may not capture all, or even the main, elements of the decision.

Second, while the findings of the "real-time" research stream regarding the relative importance of specific decision criteria (most notably characteristics of the entrepreneur or the entrepreneurial team) differ from prior research, the findings regarding the set of common decision criteria employed by venture capitalists (notwithstanding their relative importance) revolves around the same, or similar, five decision criteria identified by early researchers, such as Tyebjee and Bruno (1984), i.e.: the entrepreneurial team, the market, the product or service and the financial potential (Muyzka, Birley & Leleux, 1996; Zacharakis & Meyer, 2000).

Third, it is possible that the contradictory findings regarding the relative importance of different decision criteria, and especially the importance of the entrepreneur or the entrepreneurial team, may reflect differences in the stage of the evaluation process, differences in the stage of the venture opportunity under consideration, or differences in the life-stage of the venture fund, rather than fundamental differences across the board. Although research on how investment criteria change depending on the stage of the evaluation process is sparse (Petty & Gruber, 2011), there is some evidence suggesting that that venture capitalists' evaluation criteria change across the stages of the evaluation process (Zacharakis & Meyer, 1998; Zacharakis & Meyer, 1995). Zacharakis & Meyer (1998; 1995) show that venture capitalists emphasize characteristics of the entrepreneur or the entrepreneurial team, such as managerial competence and dedication, in the early

stages of their evaluation process, to make sure that the entrepreneurs meet the minimum qualifications during the screening stage, switching their attention to features of the market and the competition at later stages of the due diligence process. Other studies, however, have arrived to the opposite conclusion, suggesting that venture capitalists initially pay attention to market criteria and then move on to management team considerations (Fried & Hisrich, 1994). Petty & Gruber (2011), in what constitutes the only longitudinal investigation of venture capitalists' decision making, examined the decisions of two venture capital funds over a period of 11 years and concluded that the venture's capitalists' decision criteria vary over time. They found that the reasons for rejecting a proposal in the early stages of the venture fund are not the same as the reasons for rejection later on in the life of the venture fund. Furthermore, they found that during the first 6 months of the evaluation process, product characteristics were among the top reasons for rejection, whereas criteria related to financial valuation and deal structure were the top rejection reasons in latter stages. Interestingly, the quality of the management team was not a primary criterion for rejection at any phase of the evaluation process (Petty & Gruber, 2011). To add to the confusion, there some evidence suggesting that venture capitalists do not use different evaluation criteria depending on the stage of development of the venture under consideration (Carter & Van Auken, 1994), although it is known that investors face different types of risk and have different concerns in early and later stage deals (Parhankangas, 2007). In any case, it is clear that these inconclusive and even contradictory results contribute to fuel the central debate about the relative importance

of entrepreneur vs. product/market considerations, and justify a call for further research into the topic of what criteria matter most at what stage of deal and venture development. Under what conditions is the jockey, the race, the horse, the odds, or something else that matters most?

Fourth, the contribution of this research stream using real-time methods goes beyond overcoming the methodological shortcoming of survey and interview-based post-hoc studies in attempting to understand venture capitalists' investment criteria. Verbal protocol and conjoint analysis studies also helped in drawing researchers' attention to the decision processes of venture capitalists, shifting part of the focus from the study of decision content (criteria) and outcomes, to decision processes (Zacharakis & Meyer, 1995). This is an important contribution because, to understand how venture capitalists evaluate opportunities and make investment decision, it is necessary to examine not only the information that is evaluated during the decision process, but also how this information is mentally processed by investors, especially in such a highly uncertain and ambiguous context. This insight explains the increased interest of researchers in applying cognitive and information processing theories to help explicate how venture capitalists navigate the complex, uncertain and ambiguous terrain of early stage investing. Cognitive science suggests that decision makers are not perfectly but, rather, boundedly rational (Simon, 1955), as they economize informational processing efforts by satisficing, rather than optimizing, their choices, and by using shortcuts and rules of thumb rather than thinking through every decision. Venture capitalists engaged in evaluating new venture opportunities operate in an

extremely uncertain and ambiguous environment and are faced with high levels of "information noise" (Zacharakis & Meyer, 1998), which explains why it is particularly appropriate, in order to understand how they arrive at their decisions, to study how venture capitalists process and interpret complex and ambiguous information. Extant literature addresses some of the information processing mechanisms at play when venture capitalists evaluate new venture opportunities and how these impact the investment decision making process. For example, researchers have explored the use of sensemaking frameworks and cognitive maps as means to put some order into the informational chaos that venture capitalists are subjected to while evaluating new venture opportunities. Sensemaking is the process of making sense of one or more environmental cues that are discrepant, i.e. the cues are not initially subject to an automatic interpretation. Some researchers suggest that venture capitalists may operate within pre-established sensemaking frameworks that function as cognitive maps that aid the interpretation of information (Moesel, Fiet & Busenitz, 2001; Moesel & Fiet, 2001). In a similar vein, researchers have posited that venture capitalists, as expert decision makers, filter information through a multitude of mental models, which they summon depending on the familiarity of the situation (Zacharakis & Shepherd, 2001). Researchers have also looked at the effects of mechanisms to conserve cognitive resources, such as heuristics and biases, on venture capitalists' decision processes. For example, research shows that venture capitalists use simple heuristic mechanisms and decision rules to assess the future performance of a venture (Zacharakis & Shepherd, 2001), or to quickly dispatch it as a poor investment choice (Zacharakis & Meyer,

2000), and that they are prone to cognitive biases such as overconfidence or homophily. Homophily implies choosing or favoring individuals similar to oneself, even when this similarity is based on non-relevant criteria. For example, research shows that venture capitalists tend to favor teams that are similar to themselves in type of training and professional experience, regardless of whether these skills and experience are relevant for the task at hand (Franke, Gruber, Harhoff & Henkel, 2006). Similarly, there is some evidence suggesting that venture capitalists are overconfident decision makers, which negatively affects their decision accuracy and triggers automatic information processing routines, rather than elicit information search and conscious reasoning (Zacharakis & Shepherd, 2001). Heuristics, biases, mental models or any other cognitive resource-saving mechanisms, per se, do not necessarily lead to wrong decisions and, in fact, are necessary in situations when decision must be made in a complex, ambiguous and overloaded information environment, but they do not necessarily lead to optimal outcomes either. Indeed, evidence from the literature clearly demonstrates that venture capitalists' evaluations and investment decisions are far from optimal. Researchers have pointed out that venture capitalists decision making could be improved, from a rational standpoint, by the use of decision aids such as bootstrapping or actuarial models, and several of these have been proposed in the literature (Mainprize, Hindle, Smith & Mitchell, 2003; Zacharakis & Meyer, 2000; Shepherd & Zacharakis, 2002; Shepherd, Ettenson & Crouch, 2000). In reality, however, venture capitalists are very reluctant to use any decision making tools, which suggests that, in practice, they are less rational than intuitive decision makers, as

further evidence from the literature corroborates. In any case, there are calls for further research in this area, as scholars have only started scratching the surface of how cognitive processes affect the evaluations and decisions of venture capitalists (Zacharakis & Shepherd, 2007).

Fifth and, from the perspective of this dissertation, most interesting implication of this stream of research is that it provides further evidence for the role of intuition and subjectivity in the decision processes of venture capitalists. Both verbal protocol and conjoint analysis studies clearly suggest that venture capitalists do not understand very well their own decision processes, or at least that they are not very good at introspecting about them, given that their "espoused" decision criteria is often not the criteria they actually use to make decisions (Shepherd, 1999; Zacharakis & Meyer, 1998). Venture capitalists do not have a comprehensive understanding of how they make decisions and have a difficult time introspecting about their decision processes because much of it is intuitive and subjective in nature (Zacharakis & Shepherd, 2007). Venture capitalists are intuitive decision makers who invoke "gut feel" as a criterion that plays a role in their evaluations and decisions (Hisrich & Jankowicz, 1990; Khan, 1987). Furthermore, some of the information that they use for their decision processes is subjective in nature, especially in regards to evaluating the entrepreneur or the entrepreneurial team. For example, venture capitalists talk about "personal chemistry" between them and the entrepreneur as an important investment decision criterion (Zacharakis & Meyer, 1998). Extant research on venture capitalists' investment decision criteria has in fact shown that venture capitalists not only pay

attention to objective characteristics of the entrepreneur, such as education, prior experience or industry/functional background, but also to subjective characteristics such as drive, flexibility and creativity (Khan, 1987), or the ability to sustain effort and attention to detail (MacMillan et al., 1985). The use of intuition and subjectivity in the evaluative process is consistent with the notion that venture capitalists' decision making fits the "expert model" of information processing, which posits that experts (venture capitalists are considered experts at picking investment opportunities) develop a series of mental models based on past experience, which allow them to make evaluations and decisions with a limited use of cognitive capacity. The decision models of experts are based on pattern recognition, rather than information processing (Klein & Calderwood, 1991), so only relevant information is processed and interpreted, although that occurs most often at an unconscious level, i.e. intuitively (Zacharakis & Shepherd, 2007). Surprisingly, however, there seems to be a curvilinear relationship between the level of experience and the quality of venture capitalists' investment decisions. Novice venture capitalists who gain some experience make better decisions but, beyond a certain point of experience, decision performance declines suggesting that, as venture capitalists become experts, they increasingly rely on intuition and automatic information processing (Shepherd, Zacharakis & Baron, 2003), in other words, they become "lazy" evaluators. There is evidence supporting the notion that, as venture capitalists gain more experience, they tend to rely more on intuitive and subjective elements in their evaluative and decision processes. For instance, research shows that novice venture capitalists tend to focus on the

qualifications of individual team members, while experienced VCs focus more on more subjective issues like team cohesion (Franke, Gruber, Harhoff & Henkel, 2008). The use of intuition and subjectivity by venture capitalists seems thus to be a double-edged sword. While expert models (which are in large part intuitive) provide venture capitalists with the ability to make good decisions with less cognitive resources, some researchers suggest that it is precisely the use of intuition and subjective criteria that leads venture capitalists to make suboptimal decisions, because the lack of understanding of their own decisions prevents them from learning and improving their decision processes (Zacharakis & Shepherd, 2007).

For all the evidence in the literature suggesting that venture capitalists are intuitive decision makers (Khan, 1987; MacMillan et al., 1987; Fried & Hisrich, 1994; Zacharakis & Shepherd, 2007), there is surprisingly very little research on the role of intuition in the decision processes of venture capitalists. With the exception of the study by Hisrich & Jankowicz (1990), in which they use a repertory grid technique to identify how venture capitalists ascribe personal meaning to different investment proposals, I am not aware of other studies that specifically address the issue of venture capitalists' intuitions. In their study, however, Hisrich & Jankowicz (1990) adopt the view of "gut feeling", or intuition, as a type of holistic judgment or a "felt awareness for the situation as a whole" (Bastick, 1982), but pay less attention to the subconscious components of intuitive judgments. This is reflected in their data collection procedures in which they elicit information from venture capitalists' intuitions by asking them directly about their assessments: "what aspects of the proposals contribute to this

overall assessment: what intuitions or gut feelings lead you to make this assessment?" (Hisrich & Jankowicz, 1990: 51). Given that intuitive judgments, to a large extent, occur at the unconscious level, it does not seem likely that venture capitalists will be able to meaningfully introspect about them. In addition, Hisrich & Jankowicz's Jankowicz (1990) study relied on the recollection of investors about past decisions (making them vulnerable to post hoc recollection and rationalization biases) and the sample was constituted by only 5 respondents. For all its limitations, this study remains the one specific attempt at gaining a better understanding about the intuitions of venture capitalists.

In sum, the literature on early-stage professional venture capital suggests that venture capitalists evaluate new venture opportunities and make investment decisions in an environment rife with ambiguity, uncertainty and information noise. It also suggests that, because venture capitalists spend most of their time monitoring their investments, rather than selecting new ones (Gorman & Sahlman, 1989), they do not have much time to evaluate new opportunities and do so quite rapidly, adding time pressure to an already complex and ambiguous decision environment. Finally, despite institutional pressures to signal professional behavior, for example by using more structured methods for evaluating opportunities than informal investors, professional venture capitalists' do not seem to have a very good insight into their own decision processes. Venture capitalists seem to be intuitive decision makers, who often invoke such subjective concepts as "gut feel" or "good chemistry" to explain why they override their own espoused decision criteria (Zacharakis & Shepherd, 2007). The

overall risk-return picture of the venture capital market is not well understood not only by researchers but also by venture capitalist themselves (Gompers & Learner, 2001).

Resource acquisition strategies of entrepreneurs

New ventures often depend on external capital because many of them are unable to generate enough resources, through the production and sale of their own products and services, to get started, grow, or even survive, (Oviatt & McDougall, 1994; Van de Ven & Walker, 1984). Yet, gaining access to capital and other external resources is an extremely difficult endeavor for most new ventures, and many of them never get the resources they need (Baker & Nelson, 2005). This is why external resource acquisition is recognized as one of the most important and difficult endeavors that any entrepreneur faces and why it constitutes one of the key components of the entrepreneurial process. Even the very definition of entrepreneurship as a human activity is sometimes framed in terms of acquiring or mobilizing external resources to create something out of nothing. For example, two very well-known definitions of entrepreneurship in the literature that capture this idea are: “the pursuit of opportunities without regard to resources currently controlled” (Stevenson & Jarillo, 1990: 23) or “the ability to create something out of nothing” (Timmons, 1989). Yet, despite the apparent recognition in the entrepreneurship literature of the importance that external resource acquisition activities have for new ventures, research on what entrepreneurs actually do to obtain external resources is not as abundant as could be expected given the importance and the magnitude of the problem.

To understand how the problem of external resource acquisition from the entrepreneur's perspective has been framed and studied in extant literature, it is important to understand the fundamental premise that dominates research in this area. The fundamental idea underlying most research on entrepreneurial resource acquisition is that new ventures are challenged by extraordinary levels of uncertainty. Though uncertainty is prevalent in other contexts, established firms and even social settings, it is considered to be particularly prevalent in the entrepreneurial context, which means that potential investors and other resource providers will be reluctant to commit their resources to endeavors with highly uncertain future outcomes. The reasons why new ventures face higher levels of uncertainty than more established firms are almost always associated with variations of the "liability of newness" concept (Stinchcombe, 1965). Although the idea put forward by Stinchcombe (1965), who in his seminal piece adopted a macro perspective to examine the effect of societal variables on organizational forms, was not aimed specifically at individual firms, it is often invoked in the literature to explain the disadvantages that any new venture faces relative to more established firms because of their very "newness." New ventures lack a previous track record, the quality and the future demand for their products or services is difficult to establish and outsiders are unfamiliar with them and their activities. From an institutional theory perspective, which has been very influential in shaping the field, it can be said that new ventures suffer from problems associated with a general "lack of legitimacy" (Lounsbury & Glynn, 2001). Drawing from economic theory, researchers have added that these difficulties are exacerbated by the

“information asymmetry” problem between entrepreneurs and resource providers. In other words, the problem is that entrepreneurs have unique information about their ventures that they may not be willing to share with potential resource providers, which creates investment disincentives due to conditions of informational disadvantage that can be used opportunistically (Shane, 2003). That entrepreneurs may have an informational advantage vis-à-vis potential resource providers, which could be opportunistically exploited, is a legitimate risk that adds to the general uncertainty picture. However, I posit that this is a second-order concern given that, unlike risk, uncertainty implies that the future state of the world is not only known, but also unknowable (Knight, 1921), even by the entrepreneurs.

In sum, new ventures need external resources, but, because of the high level of uncertainty surrounding their endeavors, they usually have great difficulties acquiring them. This problem is particularly acute in the case for high-growth, high-technology ventures (Parhankangas, 2007), which often need substantial resources for their research and development activities and have a high level of uncertainty associated with their activities. Fortunately for them, this is precisely the type of organization in which early-stage equity investors, such as business angels and professional venture capitalists, are most interested in investing due to their growth potential. Most new organizations are not in these high growth sectors, however, and must instead operate in resource-poor environments where access to significant external resources is not a likely possibility (Baker & Nelson, 2005). Thus, many new ventures engage in resource “bricolage,” i.e. they recombine the resources at hand for new purposes

(Baker & Nelson, 2005), as well as other bootstrapping strategies to take maximum advantage of the available resources (Winborg & Landström, 2001). In any case, even the very small proportion of new ventures with high-growth potential that have access to private equity investors often find it difficult to attract the resources they need. What can they do to improve their chances?

Extant literature presents a handful of strategies that entrepreneurs can use to overcome the challenges of entrepreneurial resource acquisition. These strategies revolve around ways of reducing the perception of uncertainty on the part of potential resource providers, often by methods of increasing the legitimacy of new ventures, thus reducing their liability of newness. That this is the main approach in the literature makes sense, considering that research on the entrepreneurial resource acquisition process has been, since the contribution of Stinchombe (1965), highly influenced by the tenets of institutional theory. Institutional theory, of course, suggests that organizations must act in ways that conform to prevailing socially constructed system of norms, values, beliefs and definitions, or otherwise they risk failing to obtain sufficient resources because of a perceived lack of legitimacy (Pfeffer &Salancik, 1978).

I distinguish between two broad categories of resource acquisition strategies available to entrepreneurs discussed in extant literature. Each addresses a fundamentally different question. The first category of strategies pertains to the social ties of the entrepreneur (i.e. *who* does the entrepreneur know?) and focuses on the impact of social capital and network effects on resource providers' perception of

uncertainty and new venture legitimacy (Stuart & Sorenson, 2007; Shane & Cable, 2002). The second category of strategies pertains to specific actions of the entrepreneur (i.e. what does the entrepreneur *do*?) and focuses on the effects of behaviors such as impression management (Baron & Markman, 2003), symbolic actions (Zott & Huy, 2007), or persuasive communication efforts (Chen, Yao & Kotha, 2009), including storytelling (Martens et al., 2007), on resource providers' perceptions of uncertainty and legitimacy.

The literature on the effects of entrepreneurs' social relations suggests that network ties, and social capital more generally, have the potential of increasing the ability of new ventures to raise financial capital and gain access to external resources (Florin, Lubatkin & Schulze, 2003). Social ties, for instance, provide a mechanism by which investors can obtain information about the new venture opportunities under consideration, thus reducing the problem of information asymmetry (Shane & Cable, 2002). Another way social ties function is by conferring reputation, and thus increasing legitimacy, to those entrepreneurs endowed with the "right" network connections. Having the right social ties may signal that the new venture has positive characteristics associated with quality (Shane & Cable, 2002). An even more straightforward way in which the reputational effect takes place is by direct endorsements, especially by prominent market players (Stuart, Hoang & Hybels, 1999). The positive effect social ties is not limited to direct connections, since research suggests that indirect ties, in the form of referrals, are also likely to influence investment selection decisions (Batjargal & Liu, 2004). Social ties also provide

entrepreneurs with the capability of coopting resources through a process of social contracting, in which entrepreneurs can exchange their social assets for resources. Social assets (a concept akin to social capital) are a set of obligations, expectations and mutually developed norms and sanctions which evolved from prior social interactions. In other words, entrepreneurs who have developed social relations with other parties who have resources can capitalize on these relations, often in the form of favors, to gain access to these resources (Starr & MacMillan, 1990).

In sum, extant literature provides evidence indicating that network ties and social capital positively influence the ability of new ventures to gain access to external resources. The problem with this approach is the lack of practical relevance for most entrepreneurs seeking external resources, given that new ventures cannot easily change the strategic composition of their social ties, at least in the short-medium term. Most research on the social ties of entrepreneurial firms has focused on the outcomes of networks and social capital, rather on how new ventures develop their social ties and their initial network positions. Fortunately, there has been a recent increase in research in this area, and what this research shows is that there are two main paths by which new organizations establish their initial network positions, one involving the social ties of the founders (for those organizations establishing their network positions early), and the other one involving the accomplishments of the new organization since its founding (Hallen, 2008). In other words, there is no easy way for a new venture in its early days to improve its network position or to create social capital, above and beyond that previously possessed by its founders.

Attempts to explain how entrepreneurs acquire resources through specific activities and behaviors have focused on the effects of social skills and social influence strategies, especially those aimed at increasing the legitimacy of the new venture in the eyes of potential resource providers. Baron and Markman (2003), although did not study the entrepreneurial resource acquisition process per se, found that financially successful entrepreneurs scored high in key dimensions of social competence, including skills such as impression management, persuasive communication and emotional intelligence (the ability to regulate one's emotions). Although these are still emerging areas of study, evidence supporting the idea that social influence strategies, such as impression management, the regulation of emotions (e.g. demonstrating passion) or persuasive communication attempts, impact entrepreneurial resource acquisition, is mixed. While there is some evidence supporting the notion that impression management and persuasive communication efforts influence the perceptions of potential resource providers about the legitimacy of a new venture, regulating emotions does not seem to have much influence (again, research in this area is still incipient). Chen and colleagues (2009), for example, found that venture capitalists' perceptions of entrepreneurial passion, which they conceptualize as an intense affective state accompanied by cognitive and behavioral manifestations of high personal value, did not impact venture capitalists' investment decisions.

On the other hand, there is some evidence supporting the notion that impression management behaviors can affect legitimacy perceptions. Zott & Huy

(2007) empirically demonstrate that entrepreneurs are more likely to acquire resources if they perform symbolic actions (actions in which the actor draws attention to the meaning of an object rather than its intrinsic or functional use). They suggest that these symbolic actions positively affect the legitimacy of the new venture vis-à-vis resource providers and facilitate entrepreneurial resource acquisition. They identify four types of symbolic actions that legitimize the new venture by conveying positive information about the entrepreneurs' personal credibility, capacity to organize professionally, past achievements and quality of his/her relationships. Because symbolic management is focused on conveying certain features, and not others, of entrepreneurs, through actions with symbolic meaning, it could be conceptualized as a form "active signaling" (i.e. the active production of quality signals). Symbolic management can thus be considered, in effect, a form of communication.

Other, more specific, communication strategies that have been examined in the entrepreneurial resource acquisition literature include the crafting and presentations of business plans and the practice of engaging in storytelling, both of which have been linked to increased legitimacy perceptions. Business planning has been criticized by many researchers as a fruitless activity, but there is some evidence showing that crafting a business plan can positively impact the ability of new ventures to grow and survive (Delmar & Shane, 2003). The positive impact of business planning on the resource acquisition process, however, seems to be restricted to that of a legitimacy-conferring artifact, rather than a vehicle for the transfer of information. Recent research suggests that business planning documents merely fulfill a ceremonial role

(Kirsch, Goldfarb & Gera, 2009). Kirsch and colleagues (2009), in a study involving the evaluation of 722 business plans by venture capitalists, found that the content of business plans did not fulfill a communicative role and was not predictive of investment decisions. The actual existence of a business plan, however, did fulfill a ceremonial role, although this role was not predictive of investment decisions. In other words, the crafting of a business plan does not seem to serve to transfer any relevant information (or at least information that investors cannot obtain by other means), but it may provide a cue to investors about the new venture's ability to conform to a prevailing socially constructed system of norms, values and beliefs. In a sense, then, business plans can be conceptualized as symbolic artifacts that may convey information about the legitimacy of the new venture.

A communication strategy that has also drawn some attention in the literature on entrepreneurial resource acquisition is the use of storytelling as means of communicating information about the new venture. This is obviously the area of study that relates most directly with the topic of this dissertation and merits a dedicated section for discussion. In the subsection below, I present the literature on storytelling with special emphasis on research that relates to the entrepreneurial resource acquisition process. I complement this overview with additional insights from the storytelling literature in the fields of entrepreneurship and management more generally.

Storytelling in entrepreneurial resource acquisition

Following the (relatively) recent 'narrative turn' in the social sciences, entrepreneurship scholars have increasingly paid attention to the role of storytelling in entrepreneurship (Hjorth & Steyaert, 2004; Gartner, 2007), and in the entrepreneurial resource acquisition process (Lounsbury & Glynn, 2001; Martens et al., 2007). Extant literature on how storytelling influences the ability of new venture to secure access to external resources is only emerging and does not yet offer much in terms of empirical evidence, but it does suggest that entrepreneurs that engage in storytelling may increase their chances of gaining access to external resources. Lounsbury & Glynn (2001) provided the first contribution to this area of study with their seminal article on entrepreneurial storytelling as a form of "cultural entrepreneurship." In their theoretical piece, Lounsbury & Glynn (2001) proposed the notion that entrepreneurs use stories to legitimate their new ventures. They suggested that stories can help frame and make sense of complex and equivocal situations as long as they are crafted so that they appeal to the audience's interests and normative beliefs. Entrepreneurial stories direct the audience's attention to stocks of resource and institutional capital controlled by the entrepreneur, such as venture-specific unique and valuable resources, as well industry-level resources such as industry legitimacy, industry norms and rules and industry infrastructure. In other words, by concocting stories about how their new ventures possess unique characteristics but also conform to institutional norms, entrepreneurs can reduce the perception of uncertainty and can gain legitimacy vis-à-vis potential resource providers. The implication of Lounsbury & Glynn's (2001)

propositions is that entrepreneurs need to be cultural operatives who can develop stories about who they are and how their resources or ideas will lead to future benefits.

Martens and colleagues (2007) tested Lounsbury & Glynn's (2001) propositions empirically, in the only large-scale study to date that has specifically examined the validity of the idea of the entrepreneur as a "raconteur" that positively influences the resource acquisition efforts of entrepreneurial firms. With the exception of O'Connor's (2004) single-case study, which documented how the founders of a new venture deliberately and successively reshaped their company story to enhance the likelihood of securing investment capital in a process of legitimacy building, nobody else had previously attempted to empirically examine the effects of entrepreneurial storytelling on the resource acquisition process.

Martens and colleagues (2007) built on Lounsbury & Glynn's (2001) propositions to develop and test three arguments about how entrepreneurial stories may affects new ventures' resource acquisition efforts. They found a positive link between storytelling and the ability of new ventures to get external capital and suggested that stories can increase the legitimacy of the new venture in the eyes of potential investors because stories can: (1) convey a comprehensible identity for the new venture, which helps potential resource providers comprehend the stock of capital that the new venture possesses, (2) explain the logic underlying the proposed means of exploiting the business opportunity, which helps resource providers understand the potential value that can be created, and (3) embed the endeavors of the new venture in a broader contextual discourse, while keeping some of the new venture's

distinctiveness. In sum, they found that successful entrepreneurs are successful storytellers and that narratives influence resource providers in a way that goes above and beyond the effects of purely factual information transfer.

When interpreting these findings, however, it should be taken into consideration how Martens and colleagues (2007), among others, conceptualize and operationalize the notion of "entrepreneurial story," because it raises some conceptual issues. In Chapter 3, as I develop the arguments for the theoretical model that I present in this dissertation, I address these conceptual issues in more detail, and propose my own definition of what constitutes and entrepreneurial story as a form of communication. As a preliminary background, nevertheless, I offer here a brief review of how the entrepreneurship literature has hitherto conceptualized the notion of what constitutes and entrepreneurial story, and then complement it with some insights from the management literature more generally.

The emerging literature on entrepreneurial storytelling, whether or not in the context of resource acquisition, offers several variations of what constitutes an entrepreneurial story. At the most simple level, the main idea is that *entrepreneurial stories* are narratives that entrepreneurs tell about their ventures, which can be told through a wide variety of formats, both verbally and in writing (Martens et al., 2007). The idea of the entrepreneurial story as a kind of story that is about a specific topic (usually the entrepreneur or the new venture's founding) is naturally quite pervasive. Several researchers define what entrepreneurial stories are based on the informational content contained in the story. For example, Smith & Anderson (2004) refer to

entrepreneurial stories with the label of “entrepreneurial tales” (or the catchier version, “e-tales”), as entrepreneurial narratives that stress the virtues of morality, hard work and success. O’Connor (2004), in her qualitative analysis of how a new venture engaged in a successful legitimacy building effort through storytelling, utilized Burke’s pentad (1969), which is a rhetorical device that asks five fundamental questions of any given discourse to tease out the underlying motive, as the method for analyzing how the story line changed as the situation developed . She found that the entrepreneurs’ founding story changed in terms of intertextual references to draw attention to different themes (e.g. from customer focus to profit focus). It makes sense that entrepreneurial stories are stories about entrepreneurs and the founding of new ventures, but conceptualizing an entrepreneurial story only in terms of the content it conveys does not contribute much to the analysis of a story as a form of communication. What happens when the same information is conveyed in a bullet-point memo? Is it still an entrepreneurial story? What is it that makes an entrepreneurial story a story? Some researchers do conceptualize entrepreneurial stories not only in terms of content but also in terms of narrative structure, for example, as “communication devices structured in time-based components with transitions and event sequences propelled by plot lines and shaped by characters” (Lounsbury & Glynn, 2001). Similarly, Martens and colleagues (2007) offer a definition of entrepreneurial story that includes some structural components: a narrative subject, a set of forces that impede or facilitate the subject from attaining the goal, and temporal sequencing that provides a sense of plot. Not all of these

components are actually structural (I discuss their conceptualization in more detail in Chapter 3, in the context of my theory development) but, in any case, entrepreneurial stories are operationalized in terms of IPO prospectus content in their empirical study.

More generally, there is a certain degree of inconsistency, not only in the emerging literature on entrepreneurial storytelling but in the management literature more broadly, about the meaning of "story." For example, the term "story" is often used interchangeably with the term "narrative." The term "narrative" in turn, is often used interchangeably with the term "text", "text" if often used as "discourse," etc. (Gabriel, 2004). A brief review of some of the essential literature on narratives and stories in the fields of management, organization theory and beyond, can be helpful in clarifying what it is generally meant by the term "story", how it differs from other types of narratives, and why.

The management and organization literatures have a long tradition of using narrative epistemological approaches to address process questions and to describe how events unfold over time (Van de Ven, 2007; Van de Ven & Poole, 1995). That is, in the domain of process theory, stories are constructs that explain the relationships between events in a process (Pentland, 1999). Bruner's identification of narrative thinking as a distinct mode of thought by which individuals order their experiences and construct reality (Bruner, 1986), has had significant impact in the field of organizational studies and in the development of process theories. For Bruner, however, the distinction between narrative and story is not very important. A story is simply an account of a "human plight" and does not differ from other forms of

narrative that also have the capability to create verisimilar versions of reality, such as myths or excuses. According to Bruner (1991), narratives are *temporal* sequences of *particular* events that have specific *meanings* to the *intentional* actors involved in these events, they involve a *verisimilar breach* of a canonical *normative* script that can be identified within in a *generic* category (e.g. boy-meets-girl), and they are *contextually* relevant so that their meaning can be negotiated and incorporated into an *accumulating* body of collective representations. Polkinghorne (1988) built on the idea of a realm of *meaning* as a distinct realm of human existence governed by narrative explanations (the concept of human experience as narrative) and suggested that stories are narrative configurations that provide meaning to past events. Pentland (1999) distinguished between different levels of structure in a narrative, of which story is one them. According to Pentland (1999), a generic description of a set of events and their relationships is a *fabula*, i.e. an objective version of the basic events and characters required to identify a particular story at the deepest level (for example, how a person was hired). A *story* is a version of a fabula from a specific point of view, i.e. a narrative voice and an evaluative (subjective) context enter the narrative structure. Finally, at the surface level, there is the specific *text* of the story as it is told by a specific narrator. There are infinite ways in which a story can be told, even from a specific point of view, with variations at different levels of the structure. For Pentland (1999), a narrative text requires at a minimum a progression or a sequence of events, but he indicates that most narratives include also a focal actor or actors, an identifiable

narrative voice, a canonical frame of reference and other indicators of content and context.

Gabriel (2004) in his work on organizational storytelling suggests that stories have in common with other narratives that they involve temporal chains of interrelated events or actions, undertaken by characters, but that differ from other types of narratives (e.g. a report, or a prospectus) in that the *plot* of the story has the capability to convey feelings and experiences that other narratives cannot. Gabriel (2004) compellingly articulates the particular characteristics of stories and what makes them such a powerful type of text:

> "As we move from narrative to story we are forced to recognize the increasing importance of plot, which knits events together, allowing us to understand the deeper significance of an even in the light of others…By claiming that do not merely happen but that they happen in accordance with the requirements of a plot…stories are not merely fictions (although they may be fictions), nor are they mere chronologies of events as they happened. Instead, they represent poetic elaborations of narrative material, aiming to communicate facts as experience, not facts as information. This accords the storyteller a unique narrative privilege, poetic license…a feature of a psychological contract between a storyteller and his/her audience, that allows a storyteller to poetically mold the material for effect, to exaggerate, to omit, to draw connections where none are apparent, to silence events that interfere with the storyline, to embellish, to elaborate, to display emotion, to comment, to interpret, while he/she claims to be representing reality. All of these poetic interventions are justified in the name of giving a voice to experience. Thus, poetic license enables the storyteller to buy the audience's suspension of disbelief in exchange for pulling off a story which is verisimilar." (p.64)

The key idea that can be drawn from this discussion is that the poetic license accorded by a narrative in the form of a story, allows for the entrepreneurial storyteller to convey a sense of experience that is much more difficult to convey in other forms of text.

Research opportunities

Existing literature on how business angels and venture capitalists arrive at their investment decisions, suggests that early-stage investors are intuitive evaluators who do not fully understand their own decision processes, who often do not follow their espoused investment evaluation criteria and who often invoke “gut feels” and “personal chemistry as important criteria informing their decision processes (Zacharakis & Shepherd, 2007). Even when able to convey some insight into their conscious decision processes, early-stage investors, and business angels in particular, are quite informal in their procedures and seem to consider characteristics of the new venture opportunity that can be rather subjective and ambiguous in nature. Yet for all the importance that subjective and intuitive elements seem to have in early stage investors’ decision processes, there is not much in terms of empirical research exploring these topics, perhaps for the inherent difficulties of empirically examining unobservable unconscious and affective process, particularly in a natural setting outside the laboratory, and with a sample of actual investors assessing real investment opportunities. One of the main thrusts of this research is to probe into the concept of investors’ “gut feel” evaluations, in order to better understand what they imply, how they form and, especially, whether and how they can be influenced.

Being able to influence investors’ evaluations of new venture opportunities is, of course, of great importance to new ventures seeking external resources. Existing literature on the entrepreneurial resource acquisition process suggests that very few entrepreneurs succeed in obtaining the resources they need and that they do not have

many tools at their disposal to influence the outcome of the process. One of the few tools at the disposal of entrepreneurs trying to gain access to external resources is their ability to persuade potential resource providers to grant them access to them. Persuading others involves communicating some kind of message. Research indeed suggests that entrepreneurs with good communication skills are more successful at gaining access to external resources (Baron & Markman, 2003), and that the communication and presentation skills of entrepreneurs influence angel investors' decisions and evaluations (Clark, 2008; Mason & Harrison, 2003). There are several ways in which entrepreneurs can convey their messages to potential resource providers, including engaging in impression management strategies or performing symbolic actions (Zott & Huy, 2007). Simply telling them a story, however, seems to be an effective and straightforward way for entrepreneurs to convey their message to potential investors. Existing literature suggests that new ventures that engage in entrepreneurial storytelling might be more successful in attracting external resources because stories may function as a legitimating devices (lack of legitimacy being the big problem for new ventures seeking external resources), i.e. storytelling may help new ventures gain legitimacy in the eyes of investors (Martens et al., 2007). However, beyond the (inferred) notion that stories may help entrepreneurs legitimate themselves, we seem to know very little on what entrepreneurial stories do in terms of affecting the beliefs and perceptions of investors, if anything. And yet we know, from other areas of research and disciplines such as communication, narratology or literary theory, that stories have the capability of affecting what people think and feel, and thus to

influence their intuitive judgments. The legitimacy argument, while reasonable, seems narrow and incomplete as explanatory mechanism of why entrepreneurial stories may help entrepreneurs persuade potential resource providers to give then the resources they need. Another of the main thrusts of this research is thus to explore the notion of what constitutes an entrepreneurial story and what could it do in terms of influencing the perceptions, beliefs, and ultimate the evaluations of potential investors.

In sum, in this dissertation, I capitalize on the research opportunities brought about by integrating insights from the literature on investors' decision making process and the literature on entrepreneurial resource acquisition, particularly the literature focusing on entrepreneurial storytelling as a resource acquisition device. I probe into the concepts of investors' "gut feels" and of "entrepreneurial story," examining what they are and how they might relate to each other. Using available theoretical frameworks, not only from the entrepreneurship and management literatures, but also from more distal areas such as social psychology, communication, rhetoric, narratology, psychonarratology or literary theory, I illuminate the nature of this relationship, and propose a series of specific mechanisms by which stories may influence investors' new venture opportunity evaluations, and thus the outcome of the resource acquisition process.

CHAPTER 3: THEORY AND HYPOTHESES

By recognizing that early-stage investors are intuitive decision makers who are likely to use subjective, or even unknown, evaluation criteria when initially assessing new venture opportunities in an environment characterized by high levels of uncertainty and ambiguity, we can begin to understand how entrepreneurial stories have the potential of substantially influencing investors' perceptions and evaluations. That is to say, to the extent that investors' evaluations are intuitively derived, these are particularly susceptible to the influence of peripheral cues (i.e. informational or affective cues that are not directly associated with the central argument or issue under consideration), such as the *way* in which a given new venture opportunity is communicated. This is because intuitive judgments, which are what we commonly understand by the colloquial term "gut feelings" (Shirley & Langan-Fox, 1996; Hayashi, 2001), are affectively charged judgments that arise through rapid, non-conscious, and holistic associations (Dane & Pratt, 2007; Miller & Ireland, 2005), and hence not necessarily related to the substantive information that is central to the argument.

Therefore, it is reasonable (and particularly relevant in the context of this dissertation) to expect that different potential investors, even when presented with the same substantive information about a given new venture opportunity, can potentially have different reactions to it if the information is communicated in a different form (e.g. varying its language and narrative structure), provided that the differences in

communication forms provide different informational and affective cues that affect the formation of intuitive judgments. It needs to be clarified, given that stories are such an important part of how humans make sense of the world, that I am not positing that storytelling affects only evaluative judgments and decisions processes that are intuitive in nature, or made in conditions of high uncertainty. I am simply suggesting that these conditions are particularly fertile ground for the power that stories have to affect automatic and affective processes.

In this chapter, I argue that entrepreneurial storytelling will influence how investors initially evaluate new venture opportunities from a global perspective (i.e. their initial "gut feelings" about a given new venture) and will explain the mechanisms by which this influence is exerted. In other words, I will develop a theory on *how* entrepreneurial stories influence investors' "gut feels," or initial global evaluations, of new venture opportunities. I do not argue that entrepreneurial stories will influence investors' evaluations *ipso facto*, i.e. only by virtue of their mere existence. Instead, I propose that entrepreneurial storytelling will influence a set of intervening mechanisms that, in turn, will influence investors' evaluations. More specifically, I propose that the effect of entrepreneurial stories on investors' evaluations is likely to be indirect, i.e. through a number of intermediate psychological states that will play an important role in the formation of investors' initial evaluations. In other words, I posit that entrepreneurial storytelling will influence how investors cognitively and affectively respond to a given new venture opportunity. The implication is that the way in which a given opportunity is communicated to potential investors, in terms of

language and narrative structure, will affect how investors think and feel regarding the opportunity, and will influence their intuitive evaluations.

This chapter proceeds as follows: I begin by clarifying what constitutes the concept of an investor evaluation and how it relates to an intuitive judgments, or "gut feel," and why investors' initial evaluations are relevant for subsequent investment decisions. It is important to note at the offset that the initial evaluations that investors make of new venture opportunities are far from definitive and that they change over time, as investors engage in the process of due diligence. That being said, first impressions do matter a great deal for subsequent assessments and decision making. Research in several disciplines, particularly in psychology and behavioral economics, suggests that investors are likely to be exposed to the distorting effects of common heuristic biases, such as the 'confirmatory' bias, when assessing new information. That is, rather than using new information to reconfigure their beliefs, investors often misinterpret new information as supporting previously held hypotheses (Rabin & Shrag, 1999). First impressions are even more important in the assessments of people or interpersonal relationships, both of which are key components in the formation of investors' intuitive judgments regarding the entrepreneur presenting the opportunity. Because first impressions set the pattern for subsequent social interactions, further evaluations of people become partially path-dependent. Research suggests that we can form long lasting impressions of others almost immediately, without having much information or having interacted much with the other person in question (Casciaro &

Lobo, 2008). For these reasons, initial impressions matter a great deal in the formation of investors' global evaluations, even if these change over time.

I then continue by clarifying what constitutes entrepreneurial storytelling as a *form* of communication, identifying and explaining key components of stories, such as their narrative and lexical structures. I emphasize the notion of storytelling as a *form* of communication, i.e. as a specifically designed way of communicating any given information, to explicitly distinguish it from the conceptualization of stories in terms of their specific informational content, which is also a common conceptualization not only in the literature but in everyday life. Indeed, the very word 'story' is often used to refer to *what* is being transferred in a given communication (the facts) rather than to the *way* in which a given content is transferred (how the facts are presented). The distinction between form and content is crucial for the purpose of this research. Recall that the stated purpose of this dissertation is to examine whether and how entrepreneurial storytelling affects investors' evaluations of new venture opportunities, and that the intention underlying this purpose is to better understand whether entrepreneurs are able to influence the resource acquisition process by merely altering the way in which they present the facts about their new venture endeavors (which is more feasible strategy for most entrepreneurs, at least in the short run, than changing the substantive facts underlying the new venture opportunity). In other words, the main goal of this research is to gain a better understanding of how the investors' impression formation process is influenced, if at all, by the *way* in which entrepreneurs present their new venture opportunities, with the premise that a given new venture will

be more likely to obtain external resources the more positively it is evaluated by potential investors.

The distinction between the form and the content of a given communication, which I am hereby trying so adamantly to emphasize, is hardly new. It has in fact been made since antiquity. Aristotle already made a clear distinction between *what* is said in a given communication (i.e. the type of arguments being presented, or *heuresis*) and *how* it is said in terms of syntactical and lexical styles (i.e. in terms of *taxis* and *lexis*). Classic rhetoric adapted to the Roman variety of Cicero and Quintilian also indicated a clear separation of *inventio*, a term that clearly evokes the creation (or invention) of *what* is said in a given communication, from matters of style that involve choices of sentence structure (*dispositio*) and language (*elocutio*) (Smith, 1998). Since antiquity, many scholars have continued to make similar distinctions and have coined alternative concepts to tackle the content vs. form dichotomy. The Russian formalists, for example, distinguished between *fabula*, or the events as they happen in their chronological order, and *sjuzet*, or the events as they happen in a given narrative (Bortolussi & Dixon, 2003), to distinguish *what* happens from *how* it is told (i.e. the actual sequence of events vs. the sequence in which the storyteller brings up the events).

Given that the purpose of this dissertation is to better understand the role that storytelling, as a *form* of communication, plays in the formation of investors' evaluative judgments, it is logical to conclude that the key relevant dimensions of what is understood as *form*, should be taken into account when developing a

theoretical model that intends to reflect its effect. Thus, in this dissertation, I focus on the two main elements of *form*, or what has often been classically known as *style*: (1) the choice of syntactical structure, or how to arrange the information being conveyed (*taxis* in classic Aristotelian rhetoric, or *dispositio* in its Roman variety) and, (2) the choice of language style, or how to choose the appropriate words (*lexis* in classic Aristotelian rhetoric, or *elocutio* in its Roman variety).

More concretely, in this research I examine the effects of a specific type of structure, i.e. the *narrative* structure (or *story*), and a specific kind of language, i.e. *intense* language (or language that is high in emotionality and specificity), on the formation of investors' initial evaluations. Formally, the effect of storytelling on investors' evaluations could be examined by only taking into account the narrative structure of what entrepreneurs convey to potential investors, which is in fact what determines whether any given information is being conveyed as a story or not. However, the overall purpose of this research is somewhat broader, in that it is concerned with the effect of storytelling as communication form (or style) more generally. Therefore, I also pay attention to the lexical structure of a story because language has long been considered to be an important dimension of discourse, with a long tradition of inquiry in the fields of communication and rhetoric, especially as it relates to persuasion and impression formation.

Furthermore, I posit that these two classic dimensions of style, namely narrative structure and language, are both worthy of examination because each of them is likely to affect investors' perceptions regarding distinct components of what is

generally considered to constitute an entrepreneurial opportunity. An entrepreneurial opportunity is generally conceptualized in contemporary entrepreneurship literature as a set of conditions that occur at the intersection of two distinct dimensions: An enterprising person and a favorable contextual or market situation (Shane & Venkataman, 2000). The conceptualization of an entrepreneurial opportunity as a set of conditions and circumstances that lie at the nexus of the person-situation implies that any given opportunity will be evaluated along at least these two dimensions (person and situation). Indeed, research in the decisions of early-stage investors, particularly business angels (which constitute the sample for this dissertation) and especially in the initial stages of the opportunity evaluation, indicates that two most important evaluation factors relate to the characteristics of the entrepreneur and to the market potential of the opportunity (Mason & Harrison, 1996).

The idea that entrepreneur and market are the two key elements of the decision process has consequences for the choices of potential communication strategies aimed at influencing investors' evaluations of new ventures as entrepreneurial opportunities. In this chapter, I will argue that, while a specific type of narrative structure (the story) is likely to affect how investors will perceive the 'person' dimension of a given opportunity (the entrepreneur), a specific type of lexical style (intense language) is likely to affect how investors will perceive the 'situation' dimension of a given opportunity (the market need). The reasons of why this is the case will be explained in detail below but, in short, it is because one of the key features of stories is that they convey the experience of a focal actor/s (Bruner, 1990), which in turn affects how an

audience will interpret the information about the focal actor/s and how it develops personal responses to him/her. A key feature of intense language (language high in emotionality and specificity) is that it helps an audience imagine and understand a given situation (Perloff, 2003), which is likely to influence how an audience will interpret the market need for a given product or a service (i.e., a market situation). For these reasons, I examine the effects of two key dimensions of *form* (i.e. narrative structure and language), each one aimed at influencing a distinct element of what constitutes an entrepreneurial opportunity.

First, I will explain what a 'story' is, in terms of a specific form of communication, and will then relate this form of communication to the indirect formation of investors' initial evaluations. I will then proceed by articulating each of the specific mechanisms that mediate this indirect relationship. I will argue that stories influence how investors think and feel about the storytelling entrepreneurs as individuals (or, more generally, about the entrepreneurial team as a group of individuals). Specifically, I will argue that stories influence investors' own affective responses to the entrepreneurs and their new venture endeavors. In other words, that stories influence how potential investors emotionally connect with entrepreneurs as individuals and with entrepreneurial teams more generally, and that these responses affect investors' intuitive assessments. In addition, I will argue that stories influence how investors assess some key personal characteristics of entrepreneurs related to their capabilities or, put differently, that stories will influence the beliefs that investors hold about specific personal attributes of entrepreneurs that are relevant for the future

success of a new venture, and that these assessments will also influence investors' initial intuitive judgments.

After addressing the specific indirect effects of entrepreneurial stories on investors' initial evaluations of new ventures, I will explain the concept of intense language as a specific type of lexical style and will then relate it to the indirect formation of investors' evaluations. I will then articulate the specific mechanisms by which this indirect effect takes place. I will argue that the use of intense language will influence how investors assess a key characteristic of the market, namely the perceived market need, or what is colloquially known as the market 'pain' being addressed by the new venture's offerings. Given that the market need being addressed by a new product or service is an important evaluation criterion espoused by investors, I suggest investors' perception of the severity of the problem being addressed by the new venture will in turn have an effect on the intuitive evaluations of investors regarding the new venture opportunity at hand.

The balance of this chapter will show a theoretical model that explains how entrepreneurial storytelling indirectly influences investors' initial evaluations, by influencing a number of cognitive and affective states that are important in the formation of intuitive judgments. In other words, it will show how storytelling, as a communication *form*, affects how investors perceive and react to specific aspects of the person (in the case of narrative structure) and of the situation (in the case of language). In sum, in this chapter I will propose a theoretical model that explains how entrepreneurial storytelling influences the initial gut feel level evaluations that

potential investors make about new venture opportunities. In this model, storytelling influences the evaluations of investors indirectly, through a set of intervening variables related to a number of intermediate mental and emotional states that play a role in the impression formation process.

The rationale for proposing these relationships relies on a number of theories from a diverse set of disciplines and traditions, such as social psychological theories of persuasion and attitude change, theories of communication and rhetoric, and theories of narrative impact from the fields of literary theory and educational psychology, which suggest that affect and cognition interact in the formation of evaluative judgments and appraisals. In the remainder of this chapter, I will present these theoretical backgrounds and explain how they relate to the development of specific hypotheses regarding the effects of storytelling. First, however, I explain the concept of investors' initial *intuitive evaluations* (the outcome variable in the presented model) and why this concept is important in the entrepreneurial resource acquisition process.

Investors' intuitive evaluations of new venture opportunities

The *status quo* assumption in the literature is that entrepreneurial stories affect investors' perceptions regarding the legitimacy of new ventures. The small but emerging body of research on storytelling in entrepreneurial resource acquisition proposes that, and finds some evidence for, the notion that entrepreneurial stories positively affect the ability of new ventures to acquire resources from external parties, such as investors (Martens et al., 2007). In other words, it presents some empirical

evidence suggesting that the use of stories by entrepreneurs seeking external resources is positively correlated with the level of resources they get. The general assumption underlying the reasons for why this is the case rests on the notion that entrepreneurial stories influence how investors think about a new venture and, more specifically, how they *think* about aspects of the new venture that relate to its perceived legitimacy. In other words, the power that is ascribed to stories in extant literature is that of helping new ventures seem more legitimate in the eyes of potential investors (Lounsbury & Glynn, 2001; Martens et al., 2007; O'Connor, 2004; Smith & Anderson, 2004).

Because investors' actual reactions to entrepreneurial stories have not been empirically examined, it is not possible to determine whether legitimacy perceptions actually mediate the relationship between entrepreneurial storytelling and resource acquisition, although it makes logical sense that this is the case. I do not dispute this assumption but I do posit that, even if true, this assumption probably constitutes, at best, an incomplete explanation of the effect of entrepreneurial storytelling on the entrepreneurial resource acquisition process. By focusing solely on very specific legitimacy considerations, researchers have conceptualized what constitutes investors evaluative judgments unnecessarily narrowly and, in so doing, have not only understated the power of stories in shaping human judgments but have also excessively oversimplified the process by which investors' judgments and evaluations are formed, especially in contexts where there is a high degree of uncertainty. In other words, thinking about investors' evaluations of new ventures only in terms of perceived legitimacy implies examining only a specific type of evaluative judgment

with a very specific evaluation criterion, a type that is mindful and cognitive in nature, but that ignores the affective and non-conscious dimensions that are also important in most processes of appraisal, especially under conditions of uncertainty and ambiguity.

Evaluative judgments engage multiple psychological processes that are both cognitive and affective in nature and that occur both in a mindful and in an automatic manner (Weber & Johnson, 2009). Until relatively recently, research on judgment and decision making (JDM) was dominated by mathematical and normative models, in which the focus was on how people should make judgments in a perfectly rational world, rather than on how they actually make judgments in the real (substantially less rational) world. The cognitive revolution that followed Simon's (1957) conceptualization of humans as satisficers with finite information processing capabilities helped make more realistic models of human behavior (i.e. better equations), but it still kept the field of JDM too focused on analytical and computational processes (Weber & Johnson, 2009). Not until the emotions revolution that has swept the social sciences in the past few years, which has put affective processes on equal footing with cognitive processes, it has become apparent that cognitive processes are not the only factor at play in the formation of evaluative judgments. It has now become mainstream knowledge that people's evaluative judgments are also influenced to a great extent by affective and nonconscious processes (Lerner, Small, & Loewenstein, 2004; Weber & Johnson, 2009), especially under conditions of risk, uncertainty or ambiguity (Finucane, Alhakami, Slovic & Johnson, 2000; Loewenstein, Weber, Hsee & Welch, 2001).

In fact, the intuitive component of evaluative judgments is likely to play a more important role under conditions of uncertainty. Although most evaluative judgments are, to a certain degree, intuitively derived (i.e. are holistic and contain both affective and non-conscious elements), this is especially the case in situations with high ambiguity, uncertainty or lack of objective information. Therefore, early-stage investors' initial assessments of new ventures are particularly likely to be holistic and include affective and nonconscious elements. This is consistent with the picture that often emerges in both the literature as well as in the world of practice, which portrays early-stage investors as intuitive decision makers who often rely on "gut feels" to make their decisions and who do not necessarily stick with their espoused criteria (Zacharakis & Shepherd, 2007).

What are investors talking about when they invoke "gut feels"? The colloquial term "gut feel" is usually associated with the concept of 'intuitive judgment' (Shirley & Langan-Fox, 1996; Hayashi, 2001), and it is often conceptualized as a 'holistic hunch,' for which no rational explanation is readily available (Miller & Ireland, 2005). Intuitions have been specifically defined in the managerial decision making literature as "affectively charged judgments that arise through rapid, nonconscious, and holistic associations" (Dane & Pratt, 2007). Dane & Pratt's definition captures three important features of intuitive judgments that are relevant for the purposes of this study: To the extent that investors' initial evaluations are intuitively derived, as the literature suggests, then these evaluations will be (1) *general* (in the sense of global,

holistic or overarching) and will contain (2) *affective* and/or (3) *nonconscious* elements.

The first implication of considering the intuitive component of investors' evaluative judgments should be to think about them as being more global, or overarching in nature, than specific assessments regarding the legitimacy of a given new venture. If our goal is to understand how initial and intuitive evaluations are formed and how they operate in the entrepreneurial resource acquisition process, it thus makes sense to think about investors' evaluations as including cognitive, affective, mindful and nonconscious elements. We need to conceptualize investors' assessments not only as a way they think about the new venture but also how they feel about it. It is understandable that investors' legitimacy perceptions have been at the center of inquiry in this area, given that problems of lack of legitimacy figure so prominently in the entrepreneurial resource acquisition literature as the main obstacle that new ventures face when seeking external resources (Lounsbury & Glynn, 2001). New ventures with novel, unproven and unfamiliar offerings do face a lack of legitimacy challenge, so legitimacy perceptions are likely to play an important role in investors' global evaluation formation. The general view in the literature is that entrepreneurial stories help convey a sense of appropriateness and verisimilitude to new ventures and their activities. Specifically, that stories containing as series of talking points help provide credibility to the notion that a given new venture's entrepreneurial program is feasible, appropriate, and that the entrepreneurial team will be able to carry it out (Martens et al., 2007). In other words, the literature offers us a

view centered on the idea of storytelling as an uncertainty-reduction strategy. Yet, given what we know about how people make evaluative judgments, especially under conditions of uncertainty and ambiguity, this narrow conceptualization of what constitutes an investor evaluation is likely to lead researchers to build incomplete or underdeveloped theories. If investors' evaluations of new ventures play such an important role in the resource acquisition process as it seems, it is then of great importance to explicitly articulate as accurately as possible what they are and how they come to be, and a more realistic conceptualization of what constitutes investors' evaluative judgments is needed.

To accurately capture the notion of investors' evaluations as intuitive judgments, it is necessary to recognize that perceived value may be derived from affective and/or nonconscious elements not necessarily related to espoused decision criteria. Legitimacy is most often conceptualized as a "generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions" (Suchman, 1995: 574). In other words, legitimacy is a generalized collective perception of what is appropriate and desirable in a given domain of action, that is, a collective belief, or way of *thinking*, about the object being evaluated. In fact, in the context of storytelling in the entrepreneurial resource acquisition process, in which legitimacy perceptions are believed to be triggered by certain words, symbols or other legitimating cues, legitimacy functions as a heuristic mechanism in the evaluation process, i.e. a cognitive shortcut. In this sense, legitimacy is thus not much different than other types

of espoused decision criteria (such as market size, team expertise, etc). Yet we know that investors often do not follow their espoused decision criteria. (Zacharakis & Shepherd, 2007) and we know that other (less 'rational') elements influence the formation of intuitive judgments. For this reason it is more helpful to conceptualize investors' initial evaluations as evaluative psychological constructs that encapsulate a variety of beliefs, feelings and behavioral tendencies that may or may not be mindful. In so doing, we are in effect describing what, by definition, is very similar to the notion of what constitutes a general *attitude* (Eagly & Chaiken, 1993).

The extent to which the initial "gut feel" evaluations of investors can be conceptualized as general attitudes (Eagly & Chaiken, 1993) is significant for subsequent theory development, since then well-known theories of attitude formation and attitude change processes can be applied to explicate the influence of storytelling on the initial evaluations of investors. From a theoretical standpoint, this consideration implies that the concept of value as a component of the attitude formation process, presented above, cannot be restricted to cognitively derived assessments, such as perceived legitimacy. Often, attitudes are derived from affective reactions toward an attitude object that are unrelated to the beliefs held about the object itself (Fazio & Olson, 2003). In other words, individuals can also develop an attitude toward an object based not only on what they think about it, but also on what they feel. Current research on the psychology of evaluations also suggests that cognition and affect interact in processes in which people evaluate or appraise objects, persons and situations, especially under conditions of high uncertainty (Klauer & Musch, 2003).

In other words, it is possible for individuals to make evaluative judgments of objects, persons or situations without being necessarily aware of how these judgments emerged.

The second implication of conceptualizing investors' evaluations to be, at least to a certain degree, intuitively derived, is to recognize that they are particularly susceptible to persuasive appeals in various forms of communication that operate at the affective or nonconscious levels. That is to say, to the extent that the initial evaluations that investors make about any given opportunity are intuitively derived, then they can potentially be influenced by a number of subjective and peripheral factors that may or may not be recognized by investors, for example, such as investors' emotional responses to the opportunity or to the entrepreneurial team. Dual-process theories of persuasion and of affect-infusion (Forgas, 2001) not only suggest that affect interacts with cognition in the formation of evaluative judgments, but also that affect can be processed as relevant information in and by itself, through peripheral routes of persuasion. The notion that stories function merely as a legitimizing risk-reduction strategy seems thus incomplete. Successful stories tend to be not only credible, but also attractive. That is to say, they invoke a vision that is desirable or that has some value to the potential investor. The fundamental idea here is that a story must not only convey credibility, but also has to inspire. Investors, upon hearing about a new venture opportunity, consciously or not, engage in a process of evaluation that involves understanding it, as well as assessing its verisimilitude and its desirability. What affects the desirability of the new venture opportunity does not necessarily need

to be tied to a mindful assessment of a previously espoused evaluation criterion, but can be derived from other sources.

The foregoing discussion suggests that, given what we know about how people make evaluative judgments, investors' evaluations need to be thought of more broadly than in previous literature. This idea reinforces, rather than diminishes, the importance that investors' evaluations play in the resource acquisition process. In order to understand how investors' evaluations really affect the resource acquisition process, researchers need to adopt a broader, more realistic, conceptualization of what investors' evaluations imply. It is for this reason that, in this study, I conceptualize the evaluative judgments that investors initially make to be *intuitive* (in the sense of global or overall assessments, rather than narrow assessments about a single characteristic of the new venture opportunity, as well as including affective as well as non-conscious components).

Although I advocate a change in how much of previous research has addressed the construct of investors' evaluations. I share with extant literature the crucial assumption that investors' evaluative judgments play an important role in the entrepreneurial resource acquisition process. Based on empirical results, researchers studying the effects of storytelling have explicitly associated the level of resource flows from investors to new ventures with the assessments that investors make about the legitimacy of a given new venture (Martens et al., 2007), which illustrates that the idea that investors' evaluations and perceptions (even when narrowly defined) influence investment decision criteria is pervasive. Evidence from the literature on

business angels and venture capitalists further indicates that there is a connection between investors' evaluations and their investment decisions, although the evidence is contradictory as to what kind of evaluations matter. Rather than deny this idea, I posit that "gut feel" evaluations, i.e. the holistic assessments that investors make about a given new venture when exposed to it, are likely to play a larger role in the resource acquisition process than narrow assessments, which makes sense when we take into account that the early-stage investment process is characterized by high levels of uncertainty and ambiguity. This is consistent with the contradictory findings in the venture capital literature regarding the relative importance of specific criteria in venture capitalists' evaluation processes (Zacharakis & Shepherd, 2007), and points to the idea that investment decisions may be driven by more holistic assessments of the investment opportunity.

As it was previously discussed in this chapter, investors' evaluations are bound to change over time, as the process of due diligence unfolds. However, the change in perceptions will be influenced by the starting point, in a path-dependent fashion. This is because investors, like any social actor, are bound to be affected by the distorting effect of cognitive biases, such as the confirmatory bias, which makes humans process new information to mostly confirm the views that they already hold rather than to reconfigure their beliefs (Rabin & Schrag 1999). Therefore, investors' initial assessments are likely to have an impact in the resource acquisition process because they are likely to influence subsequent evaluations, even as new and relevant information becomes available over time. At a minimum, a favorable first evaluation

will increase the odds of a new venture to get through the initial stages of the screening process and into the due diligence stage, which is a milestone that not many new ventures seeking external resources achieve.

In sum, I have argued in this section against conceptualizing the evaluative judgments of early-stage investors as narrow assessments of specific criteria (such as legitimacy assessments), as it has been the case in most previous research. Given that early-stage investors are intuitive decision makers, the type of evaluative judgments that are likely to matter in the resource acquisition process is broader in nature and should also include, besides mindful cognitive elements, affective and automatic components. I base this argument on the current state-of-the-art understanding of how evaluative judgments are formed and how they operate as well as in the portrayal of early-stage investors as "gut-feel" evaluators who make holistic assessments in their investment decisions. Therefore, in this dissertation I use the term *intuitive evaluation* to refer to this type of global "gut feel" assessment, which is the construct of interest for the theoretical model that is being presented and tested.

In the sections below, I explain the notion of entrepreneurial storytelling and will lay out a theoretical framework that explicates how entrepreneurial stories affect investors' *intuitive evaluations* of new ventures. It is for this reason, that I started by presenting the concept of what constitutes an intuitive evaluation, why it is important, and how it is susceptible to the influence of a communication form that also operates at the affective and automatic levels. In other words, I presented the logic underlying

the construction of the dependent variable of interest in this study and how it relates to the mechanisms at play in the theoretical model that I propose in the sections below.

Entrepreneurial stories

The characterization of humans as 'narrative animals' is not only an illustrative metaphor of the importance of storytelling in everyday life, but it also highlights the epistemological function of stories or, in other words, the key role that stories play as humans try to make sense of their world. Bruner (1986) proposed that humans operate in two distinct modes of thought that account for two different ways of knowing, one of which is based on logical arguments that attempt to describe relationships between observable variables, while the other one is based on stories that attempt to ascribe meaning to experience. He refers to the first one as the 'paradigmatic' mode of thought and to the second one as the 'narrative.' While the paradigmatic mode of thought (which he also refers to as the logico-scientific mode) is concerned with establishing formal and empirical proofs based on observable facts, the narrative mode is concerned with ascribing meaning to the vicissitudes of human experience. Although complementary, these two ways of thinking are irreductible and cannot be judged by the same criteria, but each one is necessary in that it offers a different way of knowing. While the paradigmatic mode allows us to understand, and make predictions about, cause and effect relationships of observable realities, the narrative mode allows us to understand the *meaning* of the complex, ambiguous and often unpredictable world of human action. Bruner's narrative epistemology is relevant here

because it sets up the stage for explaining the power that stories have to shape the way humans come to understand collective reality, especially under conditions of uncertainty and ambiguity. It is under these conditions that evaluative judgments are more likely to contain a more significant intuitive component and in which the ascribed meaning of actions and intentions become especially salient.

Humans seem to have a predilection for narrative thinking. In fact, recent and exciting developments in the fields of neuroscience and psychology suggest that our predilection for storytelling may be hardwired in the human brain (Hsu, 2008). Evolutionary psychologists and 'literary Darwinists' have pointed out the fact that storytelling is one of the few human traits that are universal across cultures and that has existed all throughout our known history (Hsu, 2008). Stories from around the world have universal themes (basically food, reproduction and social status), which may be a reflection of a common biological development as well as a common way of making sense of the world (Hsu, 2008). Because *meaning* is embedded in a particular cultural context (Bruner, 1990), the interplay of a story with the canons of a given cultural environment allows people to ascribe meaning to human action. In other words, the idea of a 'narrative construction of reality' (Bruner, 1991) can only be understood when we think of stories as cultural products that are collectively interpreted. If narrative thinking plays such an important role in the way humans interpret the reality that unfolds around them, it follows that entrepreneurial stories are such a pervasive way of communicating, and making sense of, the future states of the world envisioned by entrepreneurs.

What is an “entrepreneurial story”?

At the most general level, entrepreneurial stories are simply the stories that entrepreneurs tell about themselves, their ventures or the founding of a new organization (Martens et al., 2007; Gartner, 2007; O’Connor, 2004). In other words, an entrepreneurial story is simply a type of story that deals with a specific kind of topic. These kind of content-based definitions of entrepreneurial story address the question of what the story is about (entrepreneurship), and are thus based on the assumption that there is a prior understanding of what constitutes a story, much like defining mozzarella as a type of cheese assumes a prior understanding of what cheese is. However, the concept of what constitutes a story is not as straightforward, homogeneous and readily available as the concept of cheese (see Chapter 2 for a review of different interpretations of what constitutes a story). Therefore, empirical research on this topic does not (and should not) rely only on a content-based definition of entrepreneurial story, and it also includes an explanation of what is considered to be a story and how it is operationalized in any given study. The entrepreneurship literature on storytelling, like the literature on storytelling in management more generally, however, is not fully consistent in terms of defining what constitutes an entrepreneurial story in terms of narrative structure, and how it differs from other types of text, or discourse. These inconsistencies generate some conceptual issues that need to be taken into consideration (which I discuss below), but it is not surprising that this field of study suffers from some lack of clarity. As Hsu (2008) points out, defining what constitutes a story can be a tricky proposition because there are so many diverse

varieties of stories, so people tend to avoid doing it. In fact, it is common to see scholars address the issue of what constitutes a story not by attempting to define what a story is, but rather by explaining what it is not (Hsu, 2008). However, researchers studying storytelling, or any other topic, should not be able to avoid defining the object of their study (Hsu, 2008). It is difficult to understand the effects of a construct that is conceptualized differently across research studies, or simply not conceptualized properly.

One of the main conceptual problems that emerge from the literature stems from the difficulty of distinguishing between the content of a story and a story as a form of communication. This distinction needs to be clearly made, to make sense of research examining the effect of storytelling on the resource acquisition process and to advance theory on the topic. To study the effect of storytelling on anything, including the resource acquisition process, it is important to separate the effect of telling something in the form of a story from the effect of telling something at all (in any form). Otherwise it is not possible to discern the effect of what it is said (e.g. a new venture's strategic goals, market positioning, etc.) from the effect of how it is said. For example, the study by Martens and colleagues (2007), which is the only large scale empirical study in this area, serves as a good illustration of the problems that may arise when the construct of entrepreneurial storytelling is not clearly defined as a form of communication. Martens et al. (2007) set out to examine the effect of entrepreneurial storytelling on the resource acquisition process by analyzing the content in initial public offering (IPO) prospectus documents (specifically, certain

types of content that are believed to be associated with investors' perceptions about the legitimacy of a new venture). Is it appropriate to refer to an IPO prospectus as an "entrepreneurial story"? To the extent that the prospectus in question (or any other written or oral communication) matches the basic elements of what constitutes a story, in terms of form of communication, then it is appropriate. However, it is not clear that this is the case in this particular study, as its focus is on *what* the prospectuses say (in terms of specific themes, or 'talking points'), not on *how* they say it. The main point is that the narrative structure of any specific text is what determines whether it constitutes a story or not, not the informational content it conveys. Whether the average IPO prospectus normally meets the narrative structure criterion that should be associated with entrepreneurial stories is a different matter (although I would suggest that this is rarely the case) but, in any case, each prospectus should be examined on an individual basis to determine whether this is the case.

The notion of a 'narrative structure' criterion, to determine what a story is, derives from an analogy with the linguistic description of 'sentence structure' and it assumes that stories have a certain type of structure that can be captured by an appropriate set of rules (Bortolussi & Dixon, 2007). What these rules are, however, can be open to different interpretations. In this dissertation, I offer my interpretation of the basic elements of what constitutes a story, based on what the literature suggests are the essential components of stories. I conceptualize a story as a *form of communication* that presents any given information with a narrative structure that, as a minimum, includes the following components: (1) a *sequence of events* that unfold

over time, which are caused and experienced by (2*)* a *focal actor/s* and which are propelled by (3) a *plot line* that is projected in a specific (4) *narrative voice* (Jahn, 2005; Pentland, 1999; Lounsbury & Glynn, 2001).

The notion that a story is a *sequence of events* that unfold over time is one of the most basic and most commonly cited elements of narrative structure, appearing in almost every definition of story (Bruner, 1991; Hsu, 2008; Jahn, 2005; Pentland, 1999; Polkinghorne, 1988). The fundamental idea underlying this concept is that a story, to be considered as such, must involve temporal chains of events (Gabriel, 2004), that is to say, the events or actions referred to in a narrative are understood to happen sequentially. While chronology is important, one characteristic of stories is that the sequence of events can be rearranged for dramatic effect by the storyteller (Pentland, 1999). In other words, events do not have to be presented in the right chronological order, but a chronological sequence does underlie every story, and it becomes manifest to the audience as the story progresses.

Another fundamental characteristic of stories is that these sequences of events involve intentional focal actors (Bruner, 1991), who are often referred to as *characters*. Characters are involved in stories because they are agents, victims, or beneficiaries of the narrated sequence of events (Jahn, 2005). Stories therefore require verbs denoting what characters did or what happened to them because characters both cause and suffer the consequences of the events in a story. Stories usually have a protagonist, and often also an antagonist (Pentland, 1999), and can have many other types of ancillary characters. These characters are not necessarily individuals; they can

be groups or whole organizations (Pentland, 1999). The main characters, or protagonists, of entrepreneurial stories, can thus be individual entrepreneurs, founding teams, or new venture organizations.

The most important, and yet not always recognized, characteristic of stories is that events do not merely happen, but that they happen in accordance with the requirements of a *plot* (Gabriel, 2004; Bortolussi & Dixon, 2003). "Stories are not mere chronologies of events as they happened." Instead, "they represent poetic elaborations of narrative material, aiming at communicating facts as experience, not facts as information" (Gabriel, 2004: 64). In other words, a storyteller does not present a sequence of random or unrelated events. There is a thread that links these events into a pattern of cause-effect relationships, which is the plot. The plot allows the storyteller to convey the significance of some events and not others, to elaborate on some events while omitting others, to draw connections between events that may not seem related, or to omit making connections between events that appear related. In short, the plot allows the storyteller to imbue meaning into a sequence of events and allows the audience to understand the significance of these specific events or, in other words, to make sense of the story. A narrative structure in the form of a story will thus contain 'poetic tropes,' which are mechanisms aimed at linking the events of a story and to imbue them with meaning. Examples of these mechanisms are: attributions of causal connections, attributions of agency, attributions of responsibility, attributions of motives or attributions of emotion (Gabriel, 2004). These mechanisms are the glue that holds the building blocks of a story together. Without them, a sequence of events

that unfold over time is merely a chronology. The important idea to draw from this discussion is that the poetic license accorded by a story, allows for the entrepreneurial storyteller to convey a sense of experience that is much more difficult to convey in other forms of text. This idea has great implications for how researchers theorize about the effect of storytelling on the perceptions of individuals and therefore it plays a central role in the theoretical model that is developed in this dissertation.

Finally, a story is something that someone tells, so there should always be an identifiable narrative *voice* (Pentland, 1999). The narrative voice reveals who the narrator is, which allows the audience to make attributions about the perspective or point of view that the narrator is taking. This is an important feature of a narrative structure, not only because it helps the audience interpret the experience being conveyed by the narrator, but also because one of the key criteria by which stories are evaluated is their verisimilitude (Bruner, 1986). The same story can be told in many different ways and from many different perspectives, and not only will it be interpreted differently depending on the narrator's point of view, but also the story's verisimilitude will be judged differently.

Having explained how the basic narrative structure of a story is conceptualized in this dissertation, it is important to point out that there are multiple ways in which this could have been done that could also be valid. As Martens et al. (2007) suggest, entrepreneurial stories can be shared through a variety of modes, both orally and in writing, and some of these modes have limitations in their formatting or in their length that make it difficult to fully include all the elements in the basic definition of

narrative structure put forward in this dissertation. Oral extemporaneous stories, or "small narratives," that entrepreneurs share in everyday conversations, or "minimal narratives," which are short texts that may appear on promotional materials or brochures, can also include some of the basic elements of storytelling (Martens et al., 2007) without necessarily including all of them. The key, and difficult, question here is to discern to what extent a given text possess the qualities of a story. I suggest that to best circumvent this problem, researchers should focus solely on the elements of style. Martens and colleagues (2007), for example, propose that IPO prospectuses are stories because, according to them, a story is constituted of three elements: A narrative subject (which they equate with an object or a goal that the subject is in pursuit of, which is not the same as a protagonist), a set of forces that impede or facilitate the subject from attaining the goal, and an "an implicit or explicit temporal sequencing that provides a sense of plot" (Martens et al., 2007: 1110). Given that most IPO prospectuses follow a common script that usually involves stating the goals of the venture as well as the major obstacles/opportunities that the venture faces or has faced in the past, Martens and colleagues' (2007) definition of entrepreneurial story makes it possible to conceptualize IPO prospectuses as stories (even though it is not clear that all of them contain a 'sense of plot'). Comparing this definition of entrepreneurial story to the one I put forward in this dissertation, it is possible to see that they share only one of the three elements proposed by Martens et al. (2007) ("temporal sequencing that provides a sense of plot"). This may be the case because both plot and temporal sequencing (which are in fact two separate concepts) refer to the narrative

structure, or the *way* (i.e. the form of communication) in which the information is being conveyed. The other two elements ("object or goal" and "set of impeding or facilitating forces") could also refer to the subject matter, i.e. to *what* is being told, or to the specific content of the story.

Making a distinction between the structure and content of a story lies at the heart of the idea of storytelling as a *form* of communication, and my argument is that confounding form and content is conceptually problematic. Again, to study the effects of storytelling, it is important to separate the effect of communicating something in the form of a story from the effect of communicating something at all. It is otherwise not possible to distinguish the effects of what it is said from the effects of how it is said, which is actually the purpose of this dissertation. In the example of the study by Martens et al. (2007), it is what the prospectus documents say about certain aspects of a new venture (e.g. explanations about its stated identity, strategic actions and goals, or the use of familiar elements from broader contextual discourses) that it is attributed the capacity of influencing the resource acquisition process, not the way in which this information is communicated. In this discussion, I do not intend to be overly critical of Martens et al.'s (2007) compelling empirical study; these comments are just intended to provide an illustrative example of the problems that may arise in interpreting empirical results when the distinction between the content and the structure of a story is not made.

To develop and test theories around the effects of a given construct, it is imperative to take into consideration the nature of the construct in question, i.e. the

properties that confer it the capacity to have an effect on something else. I argue that ascribing the effects of stories to messages that do not share the basic characteristics of stories is not appropriate. I do not suggest that my definition of what constitutes an entrepreneurial story is the only possible definition. Stories can be (and often are) defined in many different ways and called many different things. My purpose with the foregoing discussion is not to police the use of specific terminology nor to advocate specific definitions, which would be futile endeavors, but rather to clarify what I mean by storytelling as a form of communication and to lay out my proposition of what the basic functional components of stories are in order to develop a consistent theory. I propose a definition of what constitutes an entrepreneurial story to avoid developing and testing a model that ascribes the power associated with stories to a type message that is not communicated in a form that encapsulates at least the basic characteristics of a story. Doing so would not only generate a face validity problem in the empirical test (i.e. theorizing about X but measuring Z), but it would also constitute ad basic conceptual flaw in the theoretical development.

In sum, if theory is developed based on the notion that entrepreneurs' communications of their opportunities will influence investors' assessments in similar ways than they would be influenced by a story, then the message in question must have the basic characteristics of a story. For the purpose of this research, I propose a version of what these basic characteristics are, positing that the presentation of a new venture opportunity, to be communicated as a story, should include a sequence of events that unfold over time, a character or a set of characters, a series of mechanisms

that causally link and provide meaning to these events, and an identifiable narrative voice. I contend that providing a definition of the concept of "entrepreneurial story" as a form of communication, especially one that builds on relevant narrative and storytelling literature, constitutes one of the theoretical contributions of this dissertation.

Given the foregoing discussion, it seems clear that one of the premises in the research on storytelling, including research on entrepreneurial storytelling, is that stories have the power to generate a unique effect, or series of effects, in an audience that is exposed to them. In the section below, I address the power of stories and theorize about their effects on early-stage investors evaluating new venture opportunities. What is that stories can do for entrepreneurs seeking external resources from investors? More specifically, what aspects of storytelling are likely to influence investors' assessments, and how?

The power of stories

So far, researchers have recognized that storytelling has the capability of increasing the legitimacy of new ventures in the eyes of potential resource providers (Lounsbury & Glynn, 2001; Martens et al., 2007). Given that problems stemming from lack of legitimacy is what makes the acquisition of external resources so difficult for new ventures, the conclusion thus is that entrepreneurial stories can, by reducing uncertainty associated to lack of legitimacy, aid new ventures in their external resource acquisition efforts. In other words, the dominant paradigm in extant literature

on entrepreneurial storytelling revolves around the idea of validating, or providing credibility to, the new venture as investment opportunity. But stories can do much more than validate a new venture opportunity, as I will argue in this section.

The focus in extant literature is on the cognitive dimension of stories – i.e. how they help a reasoning audience to process the information being conveyed and interpret its meaning. In the case of the resource acquisition context, the desired meaning relates to how investors asses the uncertainty associated to the profit-making capabilities of the new venture. But this is not, or should not be, the complete story (no pun intended). Stories must be indeed credible, meaningful, and make sense to a given audience. An audience of potential investors will want to believe that achieving the appropriate return seems plausible before committing their resources. But stories can also generate nonconscious and affective responses, i.e. responses that are not rationally reasoned. These responses play a role in addressing the "so what?" question that it is invariably posed by any audience. An audience of potential investors will have to be interested in, attracted to, and inspired to action by, the potential of a new venture opportunity before committing their resources. Stories can (indeed must, to be successful) attract interest of an audience and inspire it to action (Gabriel, 2004; Heath & Heath, 2007).

I posit that extant literature conceptualizes the potential power of stories in influencing evaluative judgments too narrowly, particularly in a context where there is high uncertainty and where intuitive judgments come into play. By thinking about entrepreneurial stories exclusively as legitimation devices, researchers have only

partially articulated the mechanisms by which stories can influence the perceptions, and ultimately the assessments, of potential investors. I argue that neglecting the role of some of the key features of stories provides an incomplete view of the role that stories can play in the entrepreneurial resource acquisition process. In this section, I make the argument that stories, beyond their power to confer legitimacy to new ventures, can also affect how people make assessments and develop attitudes toward a given entrepreneurial opportunity. Two important insights derived from the understanding that stories also fulfill the functions of attracting and inspiring (Heath & Heath, 2007), which have been somewhat overlooked in the literature, underlie my arguments. The first insight is that successful entrepreneurial stories tend to be not only credible, but also attractive. In other words, they must have the capability to draw interest, create positive impressions, and ultimately inspire an audience to act. The second insight is that people often have visceral, and not always fully understood, responses to stories. Besides organizing and conferring meaning to complex information (i.e. affecting how an audience thinks about and processes information), stories can also elicit affective, nonconscious responses, especially in ambiguous situations or in contexts where uncertainty is high.

Effective stories can make people care about someone or something. Heath & Heath (2007), in their book about how to make ideas stick, succinctly articulate what they claim is the twofold power of stories in the following statement: “we have seen that a credible idea makes people believe. An emotional idea makes people care” (Heath & Heath, 2007: p.206). In other words, their simple claim is that (1) successful

ideas are usually those that are credible and also capable of making people care about them and (2) effective stories have the power to convey ideas that elicit both credibility and attraction (as sources of knowledge about how to act and as sources of inspiration or motivation to act). Credibility and attractiveness are not mutually exclusive characteristics, but they are not always necessarily easy to balance. In fact, one of the challenges of the entrepreneurial storyteller is often to generate interest without compromising the credibility of the story, and similarly, to tell a realistic story that is still interesting. Gabriel (2004), points out that a storyteller must usually tread a tightrope between eliciting two dreaded questions from any given audience: (1) "who are you kidding?" which indicates that the story fails to carry verisimilitude, that the story lacks credibility and is thus not legitimate, and (2) "so what?" which indicates that the story fails to carry a meaning that resonates with the audience (Gabriel, 2004).

The notion that an effective story must be attractive to make people care about it is consistent with cognitive social psychological theories that suggest that the orientation of an actor towards a given action, or object, depends not only on how likely the actor deems that a desired outcome will result from a given action or will be mediated by a given object, but also on how much the actor values the outcome or the object itself. This idea underlies well-known theories of attitude formation, such the expectancy-value model (Fishbein & Ajzen, 1975), which posits that an actor's attitude toward a given object is a function of the attributes that the actor ascribes to the object (attribute-expectancy beliefs) and of how the actor values these attributes (attribute-value assessments). The same idea underlies related theories of behavioral

intentions that were subsequently developed, such as the theory of Reasoned Action (Ajzen & Fishbein, 1980) and the theory of Planned-Behavior (Ajzen, 1991). Based on the logic that underlies these theories, it is reasonable to expect that the attitude of investors toward investing in a new venture opportunity will not only depend on how likely they deem that the venture will be able to realize a given set of potential future outcomes, but also on the value that they assign to these outcomes. Nevertheless, given that stories have the power to elicit affective responses (Heath & Heath, 2007), any explanation based exclusively on cognitive arguments will necessarily be incomplete. To provide a more complete perspective, one should to take into consideration the other insight, namely that people often have visceral, and not always fully understood, responses to stories.

Besides organizing and conferring meaning to complex information (i.e. affecting how an audience thinks and processes information), stories can also elicit affective, nonconscious responses, especially in ambiguous situations or in contexts where uncertainty is high. From a theoretical standpoint grounded in the theories of attitude formation presented above, this consideration implies that the attitude formation process is not likely to be restricted to value appraisals that are necessarily cognitive in nature. Often, attitudes are derived from affective reactions toward an attitude object that are unrelated to the beliefs held about the object itself (Fazio & Olson, 2003). Research on the psychology of evaluations increasingly demonstrates that cognition and affect interact in processes in which people evaluate or appraise objects, persons and situations, especially under conditions of high uncertainty (Klauer

& Musch, 2003). Unimodal and dual-process theories of persuasion (Eagly & Chaiken, 1993; Kruglanski & Thompson, 1999) and of affect-infusion (Forgas, 2001) not only suggest that affect interacts with cognition in the formation of evaluative judgments, but also that emotional cues can be processed as relevant information in and by themselves. In other words, it is possible for individuals to make evaluative judgments of objects, persons or situations without being necessarily aware of how these judgments emerged and that that they were influenced by emotional cues. In a sense, extant literature on entrepreneurial storytelling, which conceptualizes stories as legitimating tools, takes the cognitive aspect of the attitude formation process (i.e. assessing whether future outcomes or other objects of appraisal are legitimate), but neglects that there may be other, perhaps affective or nonconscious, elements that play a role in determining the value of these objects or outcomes.

To really grasp the potential power that entrepreneurial stories may have for entrepreneurs seeking external resources, consider what communicating a business opportunity to potential investors implies. When pitching their new venture opportunities to investors or other potential resource providers, entrepreneurs are essentially conveying their vision about a *future state of the world*, i.e. a state of the world that exists in their imagination but that has not yet occurred. To evaluate a new venture as investment opportunity, investors must thus not only *understand* the vision of the future that is being conveyed to them by the entrepreneur, but they also need to assess its *verisimilitude* (i.e. assess how credible this vision is) and its *attractiveness* (i.e. assess how desirable this vision is). In addition, these comprehension and

appraisal processes are usually rapid and happen in an environment fraught with uncertainty and ambiguity. As investors try to comprehend the vision that is being presented to them and to evaluate how likely and desirable it is, they are influenced at the unconscious and affective levels by peripheral cues and other inputs not necessarily related to the opportunity under evaluation per se. While the legitimacy construct is a valuable proxy for explaining how investors understand and assess new opportunities, it does not fully capture the complexity and richness of the mental process that can be triggered by stories, especially those that occur at the affective or unconscious level. Below, I briefly elaborate on the power of stories to make people *understand, believe and desire* an outcome mediated by an entrepreneur or the creation of a new venture. Then, in the next section, I will present a theory of narrative persuasion to explicate how entrepreneurial stories affect investors' evaluative judgments.

In terms of stories helping understand what the new venture is doing or trying to do, I refer to the discussion at the beginning of the chapter on the epistemological role of stories, and how they aid humans in making sense of the world. In essence, the main argument is that stories are an effective sense-making device, since facts rarely speak for themselves, and never in isolation (Gabriel, 2004). Stories help us make sense of them, identify their significance and infuse them with meaning (Bruner, 1986). The capability of stories to convey meaning is a very useful feature for entrepreneurs communicating their visions to potential investors who need to make sense of the new venture opportunity. But stories are not only tools to communicate

with others. They are also sense-making devices that help people understand and interpret their own thoughts, actions and intentions. For entrepreneurs, for example, stories are an excellent medium not only to convey, but even to conceive, one's vision of a future state of the world. In the fields of literary theory and narrative semantics, the concept of "possible worlds" has long been linked to narratives about imaginary states of affairs that could be actual (i.e. do not contain impossible propositions that conflict with the actual world) and, as such, are held to their own ontological truth (Ryan, 1992). Possible worlds that are imagined, believed or wished by the storyteller are captured by the plot of narrative texts (Herman, Jahn, & Ryan, 2005). As Herman and colleagues (2005: 448) point out, the narrative plot of stories can convey "dynamic-model worlds, or intention worlds...which capture how the actual world should or will be (obligations, desires, predictions), project courses of events leading to goal states (the active plans of characters), and fantasy worlds which outline new systems of reality, complete with their own actual and possible worlds (dreams, acts of imagination, fictions-within-fictions)." In other words, stories can serve as vehicles for generating possible future states of the world that only exist in the mind of the storyteller. Similarly, managers in organizations often use scenarios (which are a tool to describe different future states of the world in a narrative fashion) to think about the future and to prepare for its challenges (Marcus, 2009). The purpose of creating scenarios is to try to anticipate change and to be better prepared to make decisions about different courses of action that may or may not arise. Managers and organizations thus create alternative stories about the future to be able to 'experience'

an imagined future before it arrives, to imagine the actions that can be taken before these actions become irreversible. In this sense, stories have thus the capability to function as ‘flight simulators for the brain’ (Heath & Heath, 2007). Nurses, pilots, mechanics and other professionals exchange work stories for entertainment and as a form of socialization, but also for learning and instruction purposes. Stories have the power of simulation, and thus can help people know and understand how to act in certain situations that still have not happened to them (Heath & Heath, 2007). Shared narratives in the form of stories, full of seemingly insignificant details, facilitate thus the exchange of practice and tacit experience and form one of the bases for the creation of social capital within firms (Nahapiet & Ghoshal, 1998).

In terms of stories making the vision of the entrepreneur more believable, much of the main underlying argument relates to the idea of legitimacy espoused in extant literature, since stories have the capability of embedding the new venture’s endeavors in a set of norms, beliefs and expectations (Lounsbury & Glynn, 2001). In addition, the capability of stories to simulate reality has also an impact on their credibility. In fact, imagining future scenarios has been found to influence not only beliefs, but also attitudes and behavior toward a given situation. Gregory, Cialdini & Carpenter (1982) found that subjects who were led to imagine themselves experiencing certain events would believe more strongly that these events would take place. More importantly, imagining future scenarios was shown to influence not only their probability assessments, but also their future behavior. This is known as the “imagining makes it so” effect (Gregory, Cialdini & Carpenter, 1982). The key insight

here is that, by providing meaning to imagined experiences, stories can make something that has not yet happened feel more like a real experience (Fazio & Zanna, 1981). Related to this notion are the somewhat counterintuitive findings showing that labeling a story as factual (as opposed to fictional) does not necessarily make it more persuasive to an audience (Green, Garst, Brock, & Chung, 2006). Green et al. (2006) found that presenting a story as a factual heightened the level of critical processing and scrutiny in the audience but did not make it more persuasive than a story that was labeled as fiction. These findings corroborate the positive effects that imagining something has on the beliefs people develop about its plausibility. These findings are also in agreement with the idea that stories generate a lower resistance to persuasive attempts than explicit arguments because, as people let their guard down, they do not automatically invoke rebuttals and counterarguments (Heath & Heath, 2007).

In terms of stories making more attractive or desirable for investors the idea of getting involved in the vision presented by the entrepreneur, the main argument revolves around the notion is that stories have the capability of generating emotional responses. Emotional responses that, in turn, create personal resonance, buy-in and ultimately inspire to action (Heath & Heath, 2007). Indeed, research shows that audiences recall emotional aspects of stories more easily (Sadoski & Quast, 1990) and rate them as more important (Sadoski, Goetz & Kangiser, 1988). But what is the emotional aspect of a story, and how can emotional responses be generated and maintained? These are, of course, timeless questions that have been addressed by many a bright literary mind throughout the ages (e.g. Poe, 1850); questions of

seemingly unresolvable complexity. Yet, if emotional responses play a significant role in generating interest in a new venture opportunity, these questions cannot be completely dismissed in a discussion about the power of entrepreneurial stories. Some researchers suggest that the shortest path to generate emotional responses than can make a business idea more attractive, i.e. to address the "who cares?" question, is to appeal to the basic human motives in an audience (Heath & Heath, 2007). In the case of equity investors, for instance, the obvious motive that entrepreneurial stories may appeal to is the financial return on the investment, which perhaps invokes emotional responses related to greed or fear (of letting a great opportunity pass by). However, given that individuals, whether consciously aware or not, are driven by multiple motives (Lawrence & Nohria, 2002), appealing to motives other than profit-seeking could also influence investors' emotional responses and sway their evaluations, even in the context of private equity investing. In fact, research shows that business angels invest in startups for more than just financial returns (although that is an important factor). Among other reasons, they also invest in new ventures for "the fun and excitement of being involved in the early stage growth of a new business, job creation, urban renewal, and assisting women and minority entrepreneurs." (Freear, Sohl & Wetzel, 2002). Beyond appealing to the motives or drives of the audience to generate an emotional response, storytellers can also establish a connection between the audience and the characters of the story. As I will argue in the next section, one of the effects of entrepreneurial stories is that they can trigger a personal response to the entrepreneur or the entrepreneurial team on the part of investors.

To summarize, the question of what drives emotional responses to entrepreneurial stories is complex and needs further exploration, but it makes sense to assume that the emotional "aspects" of a story are related to its structural components, especially the plot and the characters of the story. It is important to emphasize the importance of plot both in invoking human motives and in making connections with characters. It is through the plotline that the meaning of a sequence of events involving characters is conveyed, and it is through the plotline that an audience makes attributions of characters' intentions and motives. Stated differently, it is the meaning that an audience attaches to the vicissitudes that the characters go through, as the sequence of events unfolds, which generate emotional responses. Hopefully these responses will be aligned with what the storyteller intends (Bartunek, 2007), but whether and how the story will succeed in generating the desired response is obviously far from certain.

Having presented an overview of some of the key features of stories; features that confer them the power to make people *understand*, *believe* and *care for*, as well as some of the underlying arguments by which these effects take place, I proceed by explaining the power of stories to specifically *persuade*. Building on theories of narrative persuasion in the fields of communication and social psychology, I lay out a set of mechanisms by which stories can function as persuasion devices, capable of influencing evaluative judgments. I then set up a theoretical model that explicates the specific mechanisms by which entrepreneurial storytelling influences investors' intuitive evaluations of new venture opportunities.

Narrative persuasion

To date, the dominant paradigm in persuasion research involves the use of advocacy messages (i.e. persuasive messages that are specifically aimed at influencing through arguments), to predict the effects that their format and content produce on cognitive, attitudinal an emotional outcomes (Cappella, 2006). Increasingly, however, more researchers are turning their attention toward the persuasive effects of narrative forms of communication, such as storytelling, claiming an unwarranted historical displacement of poetics by rhetoric in the scientific study of persuasion – which is what they call the bias of rhetoric over poetics (Green & Brock, 2000). Narrative communication forms, which have been shown to be effective persuasion tools in a number of different settings, have been studied in several areas such as public discourse (Green & Brock, 2000), cancer communications (Green, 2006), health behavior change (Hinyard & Kreuter, 2007), group advocacy messages (Green et al., 2006), or entertainment-education (Moyer-Gusé, 2008).

There are a number of theoretical explanations for the persuasive effects of narrative communications, but two theoretical perspectives stand out in terms of explanatory utility as well as in terms of how frequently they are used in the literature: (1) an extended version of classic dual-models of persuasion – the so-called extended elaboration likelihood (E-ELM) model (Slater, 2002), and (2) models derived from the notion of narrative immersion, most notably Green and Brock's transportation-imagery model of narrative persuasion (Green & Brock, 2002; Green & Brock, 2000). Although these constitute two different perspectives, stemming from two different

theoretical traditions, they share the common characteristic that they are both based on the idea that an audience's *narrative involvement* in a story is the driver of the persuasive effect of narrative messages. The notion of narrative involvement has been given different labels across the literature. The two better-known terms are transportation (Green & Brock, 2000) and absorption (Slater & Rouner, 2002), but other terms have also been used to describe similar constructs, such as engagement, immersion or engrossment (Moyer-Gusé, 2008). The basic idea is that an audience, by being primarily engaged in the storyline, experiences vicarious cognitive and emotional responses to the narrative as it unfolds, and that these responses can affect their attitudes and beliefs. The involvement of the audience with the characters in the story plays a prominent role in the overall effect of narrative involvement and on the audience's cognitive and emotional responses.

Classic dual-process theories of persuasion, such as the Elaboration Likelihood Model – ELM (Petty & Cacioppo, 1986) or the Heuristic-Systematic Model – HSM (Chaiken, 1980; Eagly & Chaiken, 1993) posit that there are two distinct routes to persuasion: a central route that requires high levels of thought elaboration and a peripheral route that relies more on situational cues than on mental cognitive processing of relevant arguments. According to these theories, the factors determining the level of thought elaboration of an actor depend on two factors: (1) the motivation of the actor to actively process and elaborate the message (what is often referred to in the literature as personal involvement) and (2) the ability of the actor to process and elaborate the message. In other words, when an actor is exposed to a message about

something that he/she is interested and/or cares about, the actor is likely to engage in thought elaboration and is likely to process the central arguments in the message. For example, messages that can impact a person's salary, grades or workload are likely to trigger central, or systematic, information processing, but this can also be true of messages about topics such as the latest N.Y. Yankees recruit, if a person is a baseball and a N.Y. Yankees fanatic. But, in order to engage in systematic processing, actors must have the ability to do so. It is clear that early-stage equity investors have interest in systematically processing the central arguments presented to them by the entrepreneur in order to evaluate a given opportunity, but it is also true that the early-stage investment environment is characterized by high levels of uncertainty, ambiguity and rapid-decision making. In situations with high levels of uncertainty, the central arguments available for cognitive elaboration may not be available, reliable, or even known, so individuals are more likely to process peripheral cues as information. Subsequently developed single-process (also called unimodal) models of persuasion (Kruglanski & Thompson, 1999), in fact, do not even make the distinction between the central and the peripheral routes to persuasion and posit that actors process whatever type of evidence and information is available to them. From the unimodal perspective then, peripheral cues, such as the affective response of an investor to the entrepreneur or the entrepreneurial team are just another type of evidence that may or may not be relevant depending on the situation at hand.

Traditional dual-process theories have produced mixed results and have been criticized as being less suitable to examine the persuasive effects of narrative

messages than to explain responses to argument-based persuasive messages (Hinyard & Kreuter, 2007), which is what they were originally developed for. The main criticism of using these theories for narrative messages revolves around the idea that a story does not attract the attention of an audience because of its persuasive content or its arguments, but because of its compelling drama; "if the persuasive content and intent is so obvious as to become more salient than the narrative itself, then the narrative may fail and so should the persuasive effort. This does not mean that recipients must be unaware of persuasive intent, but simply that the drama must be compelling enough to cause such awareness to fade into the background while reading or viewing the story" (Slater & Rouner, 2002: 176). Thus, the personal involvement of an audience in a narrative message will not depend on the centrality of the arguments, but on the quality of the story and the interest of the audience in that specific type of story (Slater & Rouner, 2002).

The extended elaboration likelihood model, or E-ELM (Slater, 2002), expands on the traditional ELM model to explain a greater range of persuasive situations, especially those related to narrative messages (Hinyard & Kreuter, 2007). The idea of personal issue involvement in the classic ELM is replaced with the concept of absorption in the E-ELM. According to E-ELM, it is through absorption (sometimes referred to as engagement) in the storyline that individuals come to identify with characters, counterargument is reduced, peripheral processing is enhanced, and individuals are more open to persuasive messages contained in the narrative (Hinyard & Kreuter, 2007).

The other significant theoretical framework applied in the context of narrative persuasion is the transportation-imagery model (Green & Brock, 2002; Green & Brock, 2000), which focuses on attitude and belief changes based on the effects of becoming immersed in a story, i.e. being "transported into a narrative world." Transportation is conceptualized as a "convergent mental process, a focusing of attention that may occur in response to either fiction or nonfiction. The components of transportation include emotional reactions, mental imagery, and a loss of access to real-world information; the resulting transportation may be a mechanism for narrative-based belief change" (Green & Brock, 2000: 703). The essential idea is thus that when an audience gets immersed in a story, it "lives it" – i.e. it is exposed to vicarious social relationships and experiences that will influence its believes and attitudes. There is empirical evidence suggesting that individuals who are transported into a narrative are more likely to change their real-world beliefs in response to the information, claims or events in the story (Green, 2006). Interestingly, both factual and fictional narratives have been shown to change real-world beliefs, as transported individuals have reported story-consistent beliefs regardless of the factual status of a narrative (Green & Brock, 2000).

The transportation-imagery model posits that transportation may lead to persuasion through three main types of mechanisms: (1) creating connections with the characters of the story – transported individuals may identify with or develop affective bonds with the characters of the narrative, making their perspective have greater influence on their beliefs; (2) reducing counterarguments – transported individuals are

absorbed in the plot of the story rather than focused on the persuasive arguments embedded in it, so they are less likely to generate counterarguments and more likely to believe the story's premises; (3) making the events in the story seem more like a real experience –transportation involves mental simulation, mental imagery, and other mental processes that aid in the formation of vicarious experiences, helping give concrete form to abstract ideas and making the premises of the story more believable (Green & Brock, 2000; Green, 2006).

In sum, both the E-ELM and the transportation-imagery model share the idea that the persuasive power of stories is based on their capability to generate narrative involvement. Both perspectives also coincide in terms of the mechanisms that underlie the persuasive effect of getting immersed in a narrative: developing cognitive and emotional connections with the characters in the story, reducing counterarguments in an audience that is paying more attention to how the story unfolds than to the persuasive attempt, and making the events in the story seem more real and believable.

Taken together, these arguments suggest that an entrepreneurial opportunity presented in the form of a story will have the capability of generating narrative involvement in an audience of early-stage investors. Furthermore, I posit that an audience of early-stage investors who are narratively involved in an entrepreneurial story will be vulnerable to the persuasive opportunities that narrative involvement presents. Specifically, I hypothesize that an entrepreneur trying to persuade an audience of investors that his/her vision of a future state of the world is credible and

attractive is more likely to succeed in his/her persuasive attempt if the opportunity is communicated in the form of a story.

> *H1: Entrepreneurial opportunities that are communicated in the form of a story (i.e. entrepreneurial stories) will be evaluated more positively than entrepreneurial opportunities that are not communicated in the form of a story.*

More specifically, I hypothesize that there is a positive relationship between the presence of a story-form narrative structure in the communication of an entrepreneurial opportunity and the intuitive evaluations that investors initially develop about the opportunity. I hypothesize a *total effect* of storytelling on the evaluations of investors to address one of the research questions articulated in this study, namely *whether* stories have an effect on investors' evaluations. However, I do not expect storytelling to have a *direct effect* on investors' evaluations. Rather, I expect that the effect of storytelling on investors' evaluation will be *indirect*, i.e. that this effect will be exercised through a set of *intervening variables*. In the sections below, I develop an intervening variable model in which these indirect effects are conceptualized, in order to address the other research question of interest in this dissertation, namely *how* storytelling affects investors' evaluations. Given that I am conceptually setting up what amounts to a multiple *indirect effects model*, I believe that it is appropriate to explain the reason why I explicitly articulate a total effects hypothesis, since this type of models do not require a total effect of the independent variable on the outcome variable to be specified.

Although many researchers suggest that postulating a total effect of the independent variable on the final outcome is not a prerequisite for investigating specific indirect effects, I explicitly formulate this total effect hypothesis in order to be consistent with one of the stated purposes of this dissertation, namely examining whether investors' evaluations are ultimately influenced by entrepreneurial stories. That being said, it is entirely possible to find specific indirect effects to be significant in the presence of a non-significant total indirect effect, as indirect effects can, for example, suppress each other if they operate in opposite directions (Preacher & Hayes, 2008; Hayes, 2009). In fact, many experts recommend that researchers not require a significant total effect before proceeding with tests of indirect effects (Hayes, 2009; MacKinnon, Kroll & Lockwood, 2000; Shrout & Bolger, 2002). The notion of a meditation model in which the outcome variable is not affected by the independent variables can seem confusing to some, but any confusions that may arise are usually due to terminology or semantic problems. Different authors define causal relationships involving intervening variables in different ways, often using terms such as "indirect" or "intervening" effects (just to mention two common ones) interchangeably with "mediation" (Mathieu & Taylor, 2006). The broader term intervening variable model, in which an independent variable is postulated to exert an effect on an outcome variable through one or more intervening variables, which sometimes (and only sometimes) are called mediators (Hayes, 2009), captures a broader spectrum of relationships that the classic conceptualization of meditation, which requires a total effect for meditation to exist (Baron & Kenny, 1986). I address the particulars of

testing multiple meditation models in Chapter 4. At this point, it suffices to point out that the reason for explicitly postulating and testing a total effects hypothesis is to be consistent with the stated objective of examining whether entrepreneurial stories influence investors' general evaluations (that is, making them more favorable). One of the main underlying reasons for this research is to discern whether communicating the opportunity as a story increases the chances of new ventures to gain access to external resources.

In the rest of this chapter, to address the question of *how* storytelling influences investors' assessments, I present a multiple mediation model with four mediating variables organized into three categories of indirect effects (see Figure 1).Two categories of indirect effects relate to how the narrative structure of the entrepreneurial story affects investors' person-specific responses to the entrepreneurial team. Specifically, these two sets of intervening variables relate to how investors personally connect with the entrepreneurial team and how they assess some of its characteristics. The third type of indirect effect relates to how language affects investors' assessment of the market need, as expressed by their understanding of the plight of potential customers or end users. In a model with two or more intervening variables, the indirect effect through a given intervening variable is called a *specific* indirect effect and the sum of the specific indirect effects is called the *total* indirect effect (Hayes, 2009). Thus, the conceptual model that I propose and test in this dissertation is a model in which four specific indirect effects are hypothesized to occur, each adding to the total effect of the independent variables on the outcome variable, which in effect constitutes

a multiple mediation model. The total effect of the independent variables on the outcome variable is hypothesized to occur through these intervening variables. In other words, I do not hypothesize a direct effect of the independent variables on the outcome variable. I proceed by conceptually laying out each of these indirect effects in the remainder of this chapter. I start with the indirect effects of the narrative structure that relate to investors' cognitive and affective responses to the entrepreneurial team, and then proceed to the indirect effects of the choice of language that relate to investor's assessment of the market situation.

I first argue that entrepreneurial stories will have an indirect effect on how investors judge and relate to the characters in the story (the founding team). In other words, I posit that the story will affect what investors think and feel about the entrepreneurial team, which in turn will positively affect their intuitive evaluation of the opportunity. More specifically, I posit that stories affect a number of person-specific cognitive and affective states that subsequently influence the formation of the general intuitive judgments.

It is thus apparent that I focus on only one of the persuasive mechanisms of narrative involvement proposed by both the E-ELM and the transportation-imagery models, namely that of establishing a connection with the characters of the story, to develop an intervening variable model that explicates the effect of storytelling on investors. The main reason for focusing exclusively on the personal responses of investors to the characters of the story, besides the fact that stories are primarily accounts of social information (Slater & Rouner, 2002) in which characters are the

main driving force (Green & Brock, 2000), is that the entrepreneur and the founding team play such an important role in how new opportunities are evaluated. In the case of entrepreneurial stories, of course, the main characters are often the entrepreneur or the founding team pitching their new venture opportunity. Literature on early-stage investors, particularly on business angels, indicates that assessments about the quality of the entrepreneurial team is the single most important issue driving business angels' evaluations, particularly at the initial stages of the evaluation process (Mason & Stark, 2004; Mason & Harrison, 1996). The literature on venture capitalists is somewhat contradictory about the relative importance of founding team considerations, but clearly suggests that the entrepreneur and the founding team matter for how investors evaluate opportunities (Khanin et al., 2008). Furthermore, extant literature suggests that early-stage investors, both business angels and venture capitalists, are intuitive evaluators who consider subjective characteristics of the founders or their relationship with them (e.g. "personal chemistry") as important evaluation criteria (Kelly, 2007; Zacharakis & Shepherd, 2007). Even the very concept of what constitutes and entrepreneurial opportunity is most commonly defined in the literature as the intersection between enterprising individuals and favorable market conditions (Shane & Venkataraman, 2000). That is to say, the figure of the entrepreneur and/or the founding team features prominently not only in how opportunities are evaluated but even conceptualized. For these reasons, it is reasonable to conclude that early-stage investors' cognitive and affective reactions to the founding team are one of the key drivers influencing their intuitive overall assessments. Furthermore, by focusing on

investors' reactions and assessments of the entrepreneurial team, I intend to speak to the storytelling literature in the context of entrepreneurial resource acquisition and the entrepreneurial process more generally, in which assessments of the quality of the entrepreneurial team are so relevant. To achieve this goal in a parsimonious manner, I do not explicitly hypothesize the effects of the other two mechanisms featured in extant models of narrative persuasion, namely reducing counterarguments and increasing realism; but, to the extent that they occur, their effect should be captured in the model in the form of a *direct* effect of storytelling on investors' evaluations (i.e. in an effect not going through my proposed mediators).

In the next sections, I will present and explain in more detail the arguments supporting the effects of these person-specific mediating variables on investors' initial gut feel evaluations of new venture opportunities. First, I will address a mediating variable related to how investors personally connect with the entrepreneurial team, namely investors' degree of empathetic identification with the entrepreneurial team. Then I will address a set of mediating variables related to how investors assess two key personal characteristics of the entrepreneurial team associated with their capability as entrepreneurs, namely the entrepreneurial teams' degree of competence and their level of motivation (i.e. a desirable attitudinal disposition). In so doing, I will be addressing both cognitive (investors' beliefs about the entrepreneurial teams' capability) as well as affective components (investors personal and emotional connection with the entrepreneurial team) of the impression formation process, both of which are the key building blocks of intuitive judgments.

In summary, I have so far hypothesized that entrepreneurial opportunities that entrepreneurs present in the form of a story will more positively evaluated than those that are not presented in the form of a story. I argue that this effect is indirect, and I will explain the underlying arguments in the sections below, where the complete intervening variables model, with all the specific indirect effects, will be presented.

Investors' personal connection with the founding team

The personal connection that an audience forms with the characters of a story plays a fundamental role in the narrative-based theories of belief change. This "connection" that an audience develops with the characters of a story can be referred to in many different ways in the literature. Terms such as personal "involvement" with the characters, "attachment" to the characters, "affinity" with the characters, "feelings" towards the characters, "parasocial interaction" with the characters, personal "relationship" with the characters, or personal "response" to the characters (Green & Brock, 2000; Green, 2006; Slater & Rouner, 2002), are just some of the most common terms used to describe this idea.

The notion of forming a personal "connection" with the characters of a story not only has many variations in nomenclature, but it also refers to an overarching category of different concepts and ideas associated to how an audience may relate to the characters of a story. Clearly, the most common of these is the concept of "identification" with the characters of the story (e.g. Green, 2006; Slater & Rouner, 2002; Hinyard & Kreuter, 2007), but other concepts invoked in this context include

“empathy,” “similarity,” “parasocial interaction,” “positivity toward sympathetic characters” or, simply, “liking” (Green, 2006; Moyer-Gusé, 2008), to name just a few.

“Identification” with the characters of a story refers to an emotional and cognitive process whereby the audience takes on the role of a character in a narrative (Moyer-Gusé, 2008). According to Moyer-Gusé (2008), this process involves at least three dimensions: empathic (shared feelings with the character); cognitive (sharing the character’s perspective); and motivational (internalizing the character’s goals). The idea that identification with characters includes emotional as well as cognitive components is widespread in the literature on narrative persuasion, both in the transportation-imagery (e.g. Green, 2006) and the E-ELM varieties (e.g. Slater & Rouner, 2002). Green (2006) conceptualizes identification as including putting oneself in the character’s place, but also as caring about and relating to the character. Slater & Rouner (2002) acknowledge that identification with characters, to have a persuasive effect, must include an empathetic response dimension, in addition to a perceived similarity dimension (the emotional involvement being the main driver of belief change).

In sum, the concept of “identification” with story characters, in the context of the narrative persuasion literature, is composed of at least two distinct dimensions. One the one hand, there are the notions of similarity and of *perspective adoption*, i.e. being able to adopt the character’s perspective and goals, which can be thought of primarily as a cognitive process. On the other hand, there is the notion of *empathy*, i.e. experiencing an empathetic response to the character, which can be thought of

primarily as an emotional process. Although there is some overlap between these two dimensions, there are nevertheless some conceptual differences. In narrative terms, the process of perspective-taking can be thought of as an experience in which the audience adopts the perspective of a character and sees what happens through the character's eyes (Cohen, 2001), and eventually even adopting the character's goals and plans. The audience can then experience empathy as an emotional response to how the success or failure of these goals and plans develop through the vicissitudes of the story or simply as an empathetic response to the plights of the characters (Oatley, 1994). In other words, the experience of identification, as conceptualized in the literature, includes a cognitive element, mainly in the form perspective-taking, and an emotional element, in the form of empathetic responses, or shared feelings. Calls have been made to examine the effects on narrative persuasion of the different dimensions that constitute the concept of identification separately (Green, 2006). But the concept of identification in the sense of perspective-taking is very hard to disentangle from the concept of identification as empathetic response, not only conceptually but also empirically (the concept of empathy itself is often conceptualized as including a cognitive perspective-taking component as well) . This is why the concepts of identification and empathy often overlap and are confounded in existing literature (Moyer-Gusé, 2008).

To emphasize the dual nature of the concept of "identification" in the narrative persuasion literature, while at the same time acknowledging the interrelatedness of its constitutive components, I propose to use a related term from the discipline of

philosophy, a term that is used in the social sciences, at least in the fields of sociology and criminology, namely *empathetic identification* (Wiseman, 1978). Empathetic identification is a particularly appropriate term to describe the phenomenon of an audience's identification with the characters of a story as conceptualized in the narrative persuasion literature, not only because it explicitly invokes the dual dimension of the mechanisms at play (cognitive and emotional) but also because it better describes the process by which the audience builds a personal connection with the character in a story. To experience empathetic identification with someone else is said to involve imagining having the experiences of another person (Wiseman, 1978). In other words, when we feel empathetically identified with someone else, we are imagining what this person is experiencing at a given moment in time (i.e. what this person is thinking and feeling). One of the main points of the various narrative persuasion theories is precisely that getting absorbed in a story plot allows an audience to vicariously live, or imagine, the experiences of the characters in the story, so the concept of empathetic identification helps capture one of the main ideas underlying the theories on the persuasive effects of narratives. Although the term empathetic identification is only a label that describes a phenomenon that does not differ substantially from the concept of identification as described in the narrative persuasion literature, I use it in this dissertation to avoid confusion (other literatures conceptualize identification more narrowly) and because it is a more descriptive term of the process by which individuals personally connect with the characters of a story, a connection that involves shared thoughts as well as shared feelings.

In the section below, I argue that entrepreneurial storytelling influences investors' intuitive evaluations because of the cognitive and affective responses involved in their empathetic identification with the main characters of the entrepreneurial story (i.e. the entrepreneurs). In so doing, I clarify the concept of empathetic identification and lay out the distinct mechanisms at play in its mediating role.

Empathetic identification

As seen above, the concept of identification, as is addressed in extant narrative persuasion literature, usually involves two distinct dimensions operating at the cognitive and emotional levels. In this section, I will explain the concept of identification as understood in the literature, including these two important dimensions. I will start by explaining what experiencing identification means in terms of the cognitive process of adopting someone else's perspective and then I will explain the concept of empathy, and how it fits with the idea of identifying with someone else's feelings . In so doing, I will adopt the more descriptive term of *empathetic identification*, to make more explicit the influence of the emotional component derived from the experience of empathy in the proposed causal mechanism. I will address the questions of how the experience of empathetic identification with the characters in a story can be generated through a narrative, and what are the effects of experiencing empathetic identification on the formation of evaluative judgments. In so doing, I will provide arguments to demonstrate that the experience of empathetic identification is

one of the intervening mechanisms by which entrepreneurial storytelling affects the formation of investors' evaluations of new venture opportunities.

At the most basic level, the notion of identification (feeling identification with someone else) is often related to the idea of perceived similarity (homophily) which refers to the extent to which an audience perceives itself similar to a character in terms of one or several attributes, such as demographic characteristics, personality , beliefs, or values (Moyer-Gusé, 2008). Similarity, however, is not the same as identification, although sometimes is considered a prerequisite (but, confusingly, not always). We have already seen that identification, as understood in the narrative persuasion literature, implies much more than mere similarity. It usually involves concepts such as shared perspectives, shared goals, shared intentions, and even empathetic responses (de Graaf, Hoeken, Sanders & Beentjes, 2011). In fact, some argue that it is fully possible for an audience to identify with the character of a story even when this character is very different in terms of demographic characteristics, personality, or values (i.e. when the character is, on the surface, not very similar). As Slater & Rouner (2002) illustratively put it by invoking the Iliad (arguably the most popular story of all time): "a reader may vicariously experience Agamemnon's envy, Achilles' grief and wrath, and Paris' fear without believing himself or herself to be much like these characters or without being drawn to them as people" (Slater & Rouner, 2002: 178). In short, similarity with the characters may, but not necessarily must, be a prerequisite for identification.

More meaningful is the concept of “personal resonance,” which involves the recollection of past experiences on the part of the audience. Researchers in psychonarratology (an area at the intersection of cognitive psychology, linguistics and narratology dedicated to de study of the mental processing of narratives) use the term “personal resonance” to describe a reader’s sense of identification with a character in a story at the experiential level (Bortolussi & Dixon, 2003). Personal resonance occurs when self-knowledge and memory are activated in the mind of and audience that then projects them on the experiences of the story’s characters (Seilman & Larsen, 1989). I find the term personal resonance particularly appropriate to describe the idea of making a personal connection with a character of a story because it involves the narrative communication of experiences (which is one of the main functions of stories). However, the term identification is more broadly used in the literature on narrative persuasion.

Narrative texts are more likely to produce personal resonance than expository texts because they produce a sense of ‘reminding’ the audience of their own experiences and allows them to draw inferences about the character’s thoughts, beliefs, goals, intentions (Bortolussi & Dixon, 2003).When drawing inferences concerning the character’s attitudes and beliefs, a central component is likely to be the audience’s own knowledge and experience, which is used to construct a personal representation of the character in a story. In other words, an audience does not have to have experienced the same exact situation than the character in the story to be able to experience a sense of identification. A sense of identification can emerge as the

audience constructs representations of the character's experiences that share elements of their own experience and attitudes (Bortolussi & Dixon, 2003). An entrepreneurial story is thus more likely to elicit identification with the entrepreneur and/or the entrepreneurial team than an expository presentation of the new venture opportunity. This is because a narrative conveys richer information about the experiences, beliefs, and behaviors of the entrepreneur and/or the entrepreneurial team and thus makes it more likely to resonate with an audience at the personal level. Because the audience of investors is likely to project its own experiences into the characters of the story, i.e. the entrepreneurial team, it can be expected that their level of identification will be higher than in the case of an opportunity not presented as a story.

While a story character's thoughts, beliefs, goals and intentions may personally resonate with an audience that may be more inclined to see things from the perspective of the character, the experience of identification, as understood in the literature, is not complete without an emotional response from the audience. Indeed, emotional responses to the characters in a story, and more specifically empathetic responses, constitute one of the main mechanisms proposed in all models of narrative persuasion. The transportation-imagery model of narrative persuasion (Green & Brock, 2000), for instance, which postulates that narratives will be more persuasive when they elicit from recipients a state of psychological transportation, conceptualizes narrative involvement as an integrative melding of attention, imagery, and emotion focused on story events (Mazzocco, Green, Sasota & Jones, 2010). The original transportation-imagery model does not explicitly mention the experience of empathy, but it makes

the emotional response to the characters in the story one of the main mechanisms underlying transportation, referring to this idea in terms of "attachment to a protagonist" or "liking for a sympathetic protagonist" (Green & Brock, 2000: 702). The idea that one of the ways in which an audience emotionally connects with the characters in a story is through the experience of empathetic feelings is explicitly made in the E-ELM model of narrative persuasion (Slater & Rouner, 2002) and later also in the transportation-imagery model (Green, 2006). The experience of empathy has also been proposed as causal mechanism in studies on the persuasive effect of narrative involvement (Mazzocco et al., 2010; Busselle & Bilandzic, 2009).

But, what does an empathetic response imply? Empathy is a vicarious sharing of affect that can be provoked by witnessing, hearing or reading about another's emotional state or condition (Keen, 2006). Empathy is sometimes described as an emotion in its own right, but is generally considered to be both affective and cognitive in nature, given that empathy involves feeling what people believes are the emotions of others, and therefore involves both feeling and thinking (Keen, 2006). Some argue that affect and cognition are layered in the experience of empathy – this is what is called the "Russian doll model" (de Waal, 2008). According to this model, the higher cognitive levels of empathy build upon the initial emotional layer, which is hardwired in the human brain. The most basic level of empathic response occurs when one party is affected by another's emotional state in an automatic manner, for example by experiencing sadness when seeing someone cry. The next step involves appraisal of the other's situation and the attempt to understand the cause of the other's emotions

(this is what researchers refer to as “cognitive empathy”). Another common conceptualization of the cognitive experience of empathy is that of perspective-taking, which involves the understanding and the adoption of the other’s point of view – i.e. “putting oneself in someone else’s shoes.” (It is easy to see the overlap between the concept of identification, understood as the ability to adopt someone else’s perspective or point of view, and the concept of cognitive empathy as presented in the literature on empathy from other disciplines). In sum, the concept of empathy in the context of narrative persuasion can be thought as the mental process by which the audience is capable of taking the perspective of the characters in a story, understanding and sharing their emotional states.

Stories are more likely to produce empathetic responses in an audience than non-narrative forms of communication. There are several mechanisms by which stories can produce the experience of empathy in an audience. A mechanism that has been proposed in the literature is *emotional contagion*, which is defined as “the tendency to automatically mimic and synchronize expressions, vocalizations, postures, and movements with those of another person's and, consequently, to converge emotionally” (Hatfield, Cacioppo & Rapson, 1993: 96), in other words, the human innate capability of “catching” another person’s emotion subconsciously and automatically. A broader conceptualization of emotional contagion involving conscious processes suggests that people also use emotional cues provided by others as social information, especially in ambiguous situations (Barsade, 2002). Although the notion of emotional contagion was developed in the context of human social

interactions, it also comes into play in in people's reactions to narratives (Keen, 2006). In fact, some researchers suggest that the communication of emotions through storytelling is one of the most effective ways not only for communicating the full range of emotional states, but also of infusing them with meaning and activating people's culturally expected emotional responses. Keen points out that "narratives in prose and film infamously manipulate our feelings and call upon our built-in capacity to feel with others (Keen, 2006; 209).

I propose that the story plot is another mechanism by which stories can generate the experience of empathy in an audience. The plot is the thread that links the events in the story into a pattern of cause-effect relationship and is what, to a large extent, imbues these events with meaning. To do so, a story contains "poetic tropes," or mechanisms that allow the storyteller to convey different types of attributions, such as attributions of causal connections, agency, responsibility, motives and even emotions (Gabriel, 2004). In other words, the plot allows the storyteller not only to attribute emotions to the characters of the story (emotions that the audience can potentially empathize with), but also to attribute them with motives and intentions. Understanding the motives and intentions of the characters in the story provides an audience with information laden with emotional content, as it can interpret how the events and vicissitudes of the story, as they develop, impact the characters emotionally. For example, if the plot reveals that the true intention or motive of character X is to marry character Y, then when Y marries someone else, the audience

can understand what X feels, even if it was not made explicit or demonstrated by X (thus not fulfilling the premises of the emotional contagion mechanism).

The role of the plot in unveiling the motives of the characters in a story is pertinent in a discussion on the emotional responses of an audience to a story because, appealing to human motives has been identified as one of the key mechanisms by which stories can be infused with emotion (Heath & Heath, 2007). In their review of the literature on what makes ideas stick and survive over time, Heath & Heath (2007) identify one strategy that has been consistently shown to be capable of infusing an idea with emotional content (and emotional content is, according to them, what makes people care about an idea in the first place). This strategy consists in appealing to the self-interests of the audience, which means linking human emotions directly to human interests and motives (i.e. to what really matters to people). In the case of an audience of early-stage investors evaluating new venture opportunities, one could think that maximizing financial returns is the only possible motive an entrepreneur could appeal to, so the range might seem quite limited. But humans, whether consciously or not, are of course driven by a variety of motives beyond economic profit, and even self-interest (Van de Ven, Sapienza & Villanueva, 2007). Early-stage investors receiving a story from an entrepreneur are of course economic actors seeking a financial return on their investment, but they are also social actors embedded in a social interaction with another person. The notion that a single motive underlies social, and even economic action has been disputed since before the idea of the ‘economic man’ emerged. Adam Smith himself in The Theory of Moral Sentiments (1759) refutes the notion that

humans are motivated by pure self-interest. Max Weber, in Economy and Society (1914), outlined four alternative motives for social action, only one of which can be conceptualized as economic instrumental rationality (Zweckrationalitet). More recently, Lawrence and Nohria's (2002) have addressed the issue of motive multiplicity underlying social action using an evolutionary biology perspective. They suggest that human motives begin with four subconscious drives (to acquire, bond, defend and learn) that then manifest as emotions influenced by rational calculations. These four primary drives are established in the human brain as a result of Darwinian evolution and compete with each other as we make trade-offs between them.

In short, humans are motivated by a variety of drives, motives and interests, and so are early-stage investors. Business angels indeed report that they invest in startups for many other reasons besides financial returns, some of them more instrumental (e.g. for the fun and excitement of being involved in a startup) than others (aiding in regional economic development, spurring job creation, etc.) (Freear, Sohl & Wetzel, 2002). Even if these alternative motives are not consciously operating during their evaluation processes, investors can certainly recognize these motives in the characters of the story (the founding team) and can develop empathetic responses as they relate to these motives. Especially during the formation of a "gut feel" evaluation, it can be expected that appeals not immediately directed toward a rational profit motive can also resonate in an audience of investors, at least at the unconscious level.

In terms of the effects of experiencing higher levels of empathy on evaluative judgments, it has been empirically shown that the experience of empathy is a mechanism through which narratives can change attitudes and beliefs (e.g. Mazzocco et al., 2010). Busselle and Bilandzic (2009), in their studies, had already shown that emotional engagement, which in their scale consisted in a large part of items related to the experience of empathic emotions, was not only correlated with story-consistent attitudes but, in fact, it was correlated more strongly with story-consistent attitudes than other cognitive factors, such as attentional focus. In other words, the empathic response to the characters in the story made the story more persuasive. Mazzocco and colleagues (2010) provide further empirical evidence that the experience of empathy is one of the mediating mechanisms in narrative persuasion. Across two studies that examined the impact of stories in promoting tolerance toward homosexuals, they found that the link between transportability and attitudes was found to be mediated by emotional, empathic responses as opposed to rationalistic appraisals. Their findings not only provide further confirmation that the transportation-imagery model of narrative persuasion provides a plausible explanation for the role of narratives in belief and attitude change, but also that these changes tend to be based on emotional rather than rational responses, which highlights the important role that empathy plays in eliciting attitude change (Mazzocco et al., 2010).

Taken together, this evidence suggests that the experience of empathy with the characters of a story is one of the mechanisms by which storytelling affects attitude formation. In other words, that the story leads an audience to experience an empathic

response to the characters, which in turn leads to persuasive influence effects. Some of the mechanisms that could account for this effect are: emotional contagion, in which the audience "catches" the emotions of the characters in the story, and creating a sense of resonance with the drives and motives of the audience.

Of course, according to the narrative persuasion literature, the experience of empathy is one of the main constitutive components of identification with the characters in a story, but is not the only one. Identification, conceptualized as a more overarching concept that includes both cognitive and emotional components, has also been examined in the literature and it has been found to be linked to attitude formation and change. There is empirical evidence suggesting that identification, conceptualized more broadly, is also a mechanism through which narratives can change attitudes and beliefs (de Graaf et al., 2011). de Graaf and colleagues (2011) demonstrated empirically that identification is one of the mediating mechanisms in narrative persuasion through two experiments that manipulated identification and tested the effects of the manipulation on attitude change. Previous studies had shown that there exists a correlation between identification and persuasive outcomes (Busselle & Bilandzic, 2009; Iguarta, 2010) but correlation alone does not imply causation (e.g. it is equally possible that people tend to identify with people who hold similar attitudes). The experiments conducted by de Graaf and colleagues (2011), however, provide empirical evidence of the existence of this causal link.

Taken together, this evidence suggests that the experience of identification with the characters of a story is one of the mechanisms by which storytelling affects

attitude formation. In other words, that the story leads an audience to experience identification with the characters, which in turn leads to persuasive influence effects. A plausible explanation for this effect is that when an audience gets narratively involved in a story, they vicariously experience the events that happen to the story characters, reproducing them in their own imagination. Because the audience is likely to project their own experiences into the events of the story, they may come to understand what it is like to experience the described events and thus their attitudes may become more consistent with this vicarious experience (de Graaf et al., 2011).

In summary, the experience of identification includes cognitive as well as affective components that translate into distinct but complementary narrative persuasion mechanisms. That is to say, when an audience identifies with the characters of a story, it will not only understand and relate to what the characters think, believe and want, but it will also understand and relate to what the characters experience and how they feel. In other words, when an audience *empathetically identifies* with the characters in a story, it will put itself into the characters shoes both cognitively and emotionally, giving rise to the possibility of persuasive effects to take place through cognitive and affective routes.

For these reasons, I argue that (1) when a new venture opportunity is communicated in the form of a story, an audience of investors is likely to experience a higher degree of empathetic identification with the entrepreneur and/or the founding team than when the opportunity is not communicated in the form of a story, and that (2) the degree of empathetic identification experienced by investors is positively

related to investors' intuitive evaluations of the new venture opportunity (i.e. a higher degree of empathetic identification will lead to more favorable evaluations). Based on these arguments, I hypothesize that the degree of empathetic identification experienced by investors is thus one of variables that mediate the positive relationship between entrepreneurial stories and investors' intuitive evaluations of new venture opportunities.

> *H2: The effect of entrepreneurial stories on investors' intuitive evaluations of new venture opportunities will be positively mediated by investors' degree of empathetic identification with the entrepreneurial team.*

In addition to the personal responses of investors to the entrepreneurial team, and the personal connections that they forge with the entrepreneurial team through their involvement in the narrative, I posit that storytelling also affects the beliefs that investors hold about specific characteristics of the entrepreneurial team. In the sections below, I address the influence of storytelling on specific beliefs of investors that relate to the perceived quality of the entrepreneurial team and how these beliefs affect investors' overall intuitive evaluation of the new venture opportunity.

Investors' assessments of the quality of the entrepreneurial team

Extant literature indicates that one of the most important factors for early-stage investors, especially business angels, at the initial screening stages of evaluating a potential opportunity relates to the characteristics of the founding entrepreneur, or

entrepreneurial team (Smith et al., 2010). In fact, empirical research on the investment criteria of business angels indicates that the "quality" of the people associated with the new venture (this usually refers to characteristics of the founding entrepreneur, or team of entrepreneurs) is the single most important issue driving the evaluations of business angel investors (Mason & Stark, 2004). Although the relative importance of the founding team as investment criteria is a hotly debated issue in the literature on venture capital (Zacharakis & Shepherd, 2007), some researches indicate that, at the early stages of the evaluation process, venture capitalists also emphasize the importance of characteristics of the entrepreneur or the entrepreneurial team as the most important investment decision criteria (Zacharakis & Meyer, 1998).

How early-stage investors, and business angels in particular, evaluate the quality of an entrepreneur or a funding team seems to be a complex process that includes assessing both objective and subjective elements (Clark, 2008), relating to traditional measures of human capital (e.g. education, skills, past experience, etc.) as well as other human qualities or attitudinal dispositions that can be indicative of future behavior, such as honesty, trustworthiness, work ethic, motivation or enthusiasm (Mason & Harrison, 1996; Haines et al., 2003; Feeney et al., 1999). Furthermore, research in both the areas of business angel and venture capital investment suggests that early-stage investors are intuitive evaluators that often rely on subjective factors relating to the entrepreneur or the founding team, such as the "personal chemistry" that they develop with them (Kelly, 2007; Zacharakis & Shepherd, 2007).

In the sections below, I explore how entrepreneurial stories affect two categories of assessments about the entrepreneurial founding team and, in turn, how these assessments affect investors' intuitive evaluations. The first category of assessments refers to the competence of the founding team and it encompasses traditional measures of human capital such skills and prior experience. The second category of assessments refers to other human qualities and attitudinal dispositions of a more subjective nature, such as enthusiasm, commitment or passion. The first category, which I label *competence*, addresses the question of whether the entrepreneurial team will be able (i.e. will have the necessary skills and background) to carry out the new venture project successfully. The second category, which I label *motivation*, addresses the question of whether the entrepreneurial team will be willing (i.e. will have the necessary motivation, work ethic and enthusiasm) to carry out the new venture project successfully. Together, these two categories of assessments address the fundamental questions about the "quality" of a founding team (i.e. the capability of the founding team to successfully carry out the task at hand) namely: Can they do it? Do they want to do it? Will they do it?

Assessments of competence

Assessments of competence address the question of whether the entrepreneurial team has the necessary knowledge, skills or experience to carry out the task at hand (i.e. can they do it?) and typically relates to traditional dimensions of human capital that tend to be quite objective in nature. There are basically two

traditional dimensions of human capital in the literature that represent the possession of expertise in a given domain: formal educational level and prior experience (i.e. learning-by-doing). In other words, the entrepreneur or the entrepreneurial team either has formal expertise that is institutionally sanctioned with a degree and/or expertise that has been accumulated through prior practical experience. Although, in principle, any signal that an individual possesses expertise in a given domain should have a positive effect (as long as the domain is relevant), the literature on venture capital decision making suggests that the possession of an educational degree not always has a positive effect on investors evaluations and that, in fact, sometimes has a negative effect (Matusik, George & Heeley, 2008). For example, while a Ph.D. in molecular biology may indicate that an individual possesses expertise in that specific domain, it does not guarantee that the individual possesses expertise in other areas that may be considered important for the success of the new venture, such as marketing, finance, or managing people. In fact, venture capitalists tend to believe that a high level of education in a technical or scientific field usually tends to signal that the individual lacks business or management skills. For this reason, in this study the assessments of investors regarding the competence of the entrepreneurial team focus on knowledge, skills and general expertise that is not related to a particular education level.

What kind of expertise if valuable for early-stage investors evaluating the competence of an entrepreneur or a founding team? The literature suggests that one of the most valuable types of experience for venture capitalists is prior experience with a startup (Hsu, 2007), but other kinds of experience are also valued, such as industry or

management experience (Hisrich & Jankowicz, 1990; Zacharakis & Meyer, 2000). This suggests that investors value expertise in a given industry or product-market domain, as well as management skills, particularly in the context of a startup.

I argue that storytelling has the capability of influencing investor expertise assessments in these domains, even if these are based on what is seemingly rather objective information (although, admittedly, complete information related to an individual's track record may not always be easy or possible to obtain). There are at least two mechanisms by which this influence can take place. First, as it has already been pointed out in previous sections, there is the epistemological role that stories play in helping people makes sense of available information. A story has the capability of imbuing the experiences of its characters with meaning, which provides relevant information to an audience processing and interpreting the relevance of these experiences. In short, a story has the capability of making a more compelling argument regarding the entrepreneurial team's prior experience and how relevant it is for the future success of the venture.

A second type of argument is related with the ideas developed in the framework of affect-congruence theories, such as the Affect Infusion Model – AIM (Forgas, 1995; 2002), which suggests that affect facilitates the development of thoughts and beliefs in contexts of high ambiguity or complexity. In other words, affective cues can function as valid and relevant information under the appropriate processing circumstances. The AIM built on theories of "affect-as-information," which posit that feelings provide conscious information from unconscious appraisals

of situations, i.e. that feelings serve as affective feedback that guides judgment, decision making and information processing (Clore, Gasper & Garvin, 1994). The AIM further asserts that affect infusion is dependent on the kind of processing strategy that is used, and identifies four potential processing strategies that are susceptible to the influence of affective cues (Forgas & Smith, 2003). One of these is the *substantive* processing strategy, which is adopted in complex, demanding, unusual (in the sense of novel) and personally relevant evaluative judgments, such as those of early-stage investors evaluating new venture opportunities.

To the extent that storytelling generates emotional responses in an audience, for example empathetic identification with the characters of the story (as discussed above); it opens the possibility that the beliefs of the audience will be infused with affective cues and thus develop in congruence with these emotional responses. In other words, it opens the possibility that the beliefs of the audience will be influenced by what they feel as the story develops. This idea is also consistent with the notion that individuals align their beliefs to their attitudinal inclinations to seek psychological balance. The classic theory of cognitive dissonance (Festinger, 1957), for instance, posits that actors are psychologically motivated to align their beliefs and their affective evaluative judgments by modifying either one or the other. According to this theory, early-stage investors could very well modify their beliefs about the competence of the entrepreneurial team to match the affective component of their affective evaluations, rather than the other way around. Casciaro and Sousa Lobo (2008) found that people tend to seek people they like rather than people who are

competent to engage in task-related interactions (i.e. to work with). In their studies of three different organizations they found that people who are less competent but generate positive affect ("lovable fools") are generally preferred as work partners than people who are more competent but generate negative affect ("competent jerks") (Casciaro & Sousa Lobo, 2008; 2005), which suggests that people selectively seek out, notice, and interpret data in ways that reinforce their existing attitudes, or even that their beliefs can be influenced by their overall attitudinal inclination (Festinger, 1957).

Psychological research on social judgment shows that people can judge others as competent based on fleeting glimpses of behavior that not even require direct interaction, and these judgment are formed quite rapidly (Ambady, Bernieri & Richeson, 2000). Narrative theory suggests that interacting with the character in a story, through transportation or other forms of narrative involvement, is not only sufficient to generate enough information for the audience to form an opinion about the character's competence, but it is also sufficient for the mechanisms underlying social psychological theories of social judgment and person perception to operate (Bortolussi & Dixon, 2003). In other words, participating in the experiences of the characters in the story merely through narrative involvement is sufficient for all the social psychological mechanisms related to social judgment and person perception described above to take place.

Taken together, this evidence suggests that an entrepreneurial story can positively affect investors' assessments about the competence of the founding entrepreneur or entrepreneurial team, which in turn can be reasonably expected to

affect the overall evaluation of the opportunity (given the importance that entrepreneurial team characteristics have as investment decision criteria). Plausible explanations for these effects include: the epistemological power of stories (to convey the full meaning of the entrepreneurial team's experience), the interaction of affect and cognition in the formation of evaluative judgments, attitudes and beliefs (Forgas, 2001), and the capability of people to adjust their beliefs to match their intuitive judgments (Festinger, 1957). Especially in the context of early-stage investors, actors are highly motivated to rationalize their choices (venture capitalists have the fiduciary duty to maximize return on investment), even if their general evaluative judgment were derived intuitively and thus involved affective and nonconscious elements. In this type of situations, individuals have a tendency to rationalize beliefs to make them congruent with their attitudes and evaluative judgments. To put it in simpler terms, if investors evaluate positively a new venture based on, for example, their empathetic response to the plight of the entrepreneur, or on some other criteria not directly connected rationally with the decision at hand, they can conclude that there is a rational basis for this preference and they will adjust their beliefs that are linked with rational investment criteria, such as the competence of the entrepreneurial team.

For these reasons, I argue that (1) when a new venture opportunity is communicated in the form of a story, an audience of investors is likely to rate the level of competence of the entrepreneur and/or the founding team higher than when the opportunity is not communicated in the form of a story, and that (2) the level of competence of the entrepreneurial team as assessed by investors will positively

influence investors' intuitive evaluations of the new venture opportunity (i.e. a higher level of assessed competence will lead to more favorable evaluations). Based on these arguments, I hypothesize that the level of competence of the entrepreneurial team as assessed by investors is thus one of variables that mediate the positive relationship between entrepreneurial stories and investors' intuitive evaluations of new venture opportunities.

H3a: The effect of entrepreneurial stories on investors' intuitive evaluations of new venture opportunities will be positively mediated by investors' assessments of the entrepreneurial team's level of competence

I hypothesize that assessments of entrepreneurial team competence are thus one of the types of cognitive states that mediate the relationship between storytelling and investors' evaluations. But, as previously stated, investors' assessments of the quality of an entrepreneur or entrepreneurial team are not limited to assessments of relatively objective characteristics such as their level of competence or expertise in a given industry, sector or functional role (objective in the sense that can be inferred from an individual's observable track record, degrees, past employment, references, etc.). Early-stage investors also evaluate entrepreneurial teams on more subjective and harder-to-assess dimensions of their personal characteristics, which I address in the following section.

Assessments of motivation

Assessments of an entrepreneur's personal qualities, which can include personal characteristics as well as attitudinal dispositions, often address questions related to whether an entrepreneur or an entrepreneurial team has the necessary motivation, work ethic, or enthusiasm to carry out the task at hand (i.e. do they want to do it?), can be relied upon to carry out the task at hand (i.e. will they do it?) and can be expected to behave appropriately, or according to investors' appropriate cannons of behavior (e.g. do they have a good work ethic?). In other words, they are assessments of personal attributes of the entrepreneurial team that are generally considered relevant for the future success of the new venture, but that are not related to competence or expertise. These personal characteristics, or attitudinal dispositions, are thus implicitly expected to lead to specific behaviors that will contribute to the success of the new venture; behaviors such as such as hard work, persistence, not giving up, etc. In short, these are personal characteristics and dispositions that help investors in evaluating the overall capabilities of the entrepreneurial team. Neither high levels of competence without motivation or commitment, nor high levels of motivation and commitment without competence, make for very capable teams. In fact, some early stage investors, particularly business angels, emphasize the personal qualities of entrepreneurs and founding teams over issues of domain competence and expertise. These personal characteristics and attitudinal dispositions, however, tend to be more subjective and harder to assess than traditional human capital measures such as skills, previous experience or educational level. The difficulty and subjectivity of these assesments

does not prevent early-stage investors, however, from making them and, in fact, from making them rather quickly and based on very limited information (Harrison et al., 1997).

What are the personal characteristics and attitudinal dispositions of the entrepreneurial team that matter for investors? Business angels seem to believe in the old adage that perseverance and honest, hard work is what pays off at the end, given that they often mention issues related to honesty, trustworthiness (Feeney et al., 1999), strong work ethic (Haines et al., 2003), enthusiasm (Mason & Harrison, 1996), and passion (Mitteness et al., 2012), as types of personal attributes that they look in founding entrepreneurs and/or entrepreneurial teams. In other words, early-stage investors seem to appreciate entrepreneurs who are motivated (preferably enthusiastic, even passionate) about what they are doing, as well as committed to the success of the new venture (which are two attributes that speak to the motivation of entrepreneurs to work hard and persevere, i.e. to an attitudinal disposition). Investors also appreciate entrepreneurs who are honest and trustworthy (which are attributes that speak to the propensity of entrepreneurs to behave according to appropriate norms of behavior), and who have a strong work ethic.

I argue that storytelling has the capability of influencing investor assessments of these personal attributes and dispositions of entrepreneurs, especially since these include a significant subjective component. There are several mechanisms by which this effect could take place. First, as in the case of competence assessments discussed above, there is the epistemological role that stories play in helping people makes sense

of available information. That is to say, a story has the capability of making a more compelling argument regarding the entrepreneurial team's personal characteristics or dispositions, and how these relate to the success of the new venture. Again, since a story has the capability of imbuing with meaning a sequence of events in which the characters of the story participate, it is a valuable way of conveying information about the personal attributes and dispositions of the characters in the story. Even more so, I argue, if these attributes and dispositions are largely subjective and open to interpretation. Recall that one of the key features of the story plot is that it offers mechanisms to aid in making attributions of causality, agency, intentionality, or responsibility (Gabriel, 2004), which seems a particularly useful tool to influence perceptions about a character's nature, motivations or attitudinal dispositions as the events in the story unfold.

Social psychological theories of attribution and person-perception, although grounded in a different research tradition, offer additional complementary arguments on how a story can influence how an audience draws inferences about the personal characteristics and dispositions of the characters in a story. Attribution and person-perception research investigates the process of how people form their mental representations about other people's traits, abilities, goals or dispositions, based on their observed behavior (Trope & Gaunt, 2003). People have a tendency to attribute an actor's behavior to the actor's traits and dispositions, rather than on the situation or the context in which the actors finds itself in – this is idea is known as the fundamental attribution error (Heider, 1958). For example, if we observe someone helping an old

lady across the street, it is likely that we will think that this is a nice, helpful or polite person (i.e. we are likely to automatically attribute the person's behavior to some personal trait or disposition, which this particular person may or may not have). In fact, people believe that certain types of behavior are unlikely to occur unless the actor possesses a certain trait or is disposed in a certain way (Reeder, 1997): "people assume immoral dispositions are necessary for committing immoral behaviors and certain competencies are necessary for succeeding" (Trope & Gaunt, 2003: 192). Another important insight from theories of social perception is that people can make attributions about the traits and dispositions of others unintentionally and without conscious awareness (Trope & Gaunt, 2003).

In sum social psychological theories of how people perceive others suggest that an audience is capable of attributing traits and dispositions to the characters in a story based on their interpretation of these characters' behavior in the story. Given that the story plot is an excellent medium to infuse the behavior of the characters in a story with meaning, it follows that stories have the capability of influencing how an audience interprets these behaviors, and thus how it makes attributions about the characters' traits and dispositions. Again, narrative processing and literary interpretation theories suggest that the involvement of an audience with the characters in a story through the story itself (i.e. through narrative involvement) suffices in terms of a level of interaction that is capable of providing an audience with the capability of "observing" the behavior of the characters in a story and to make attributions about their traits and dispositions (Bortolussi & Dixon, 2003). In any case, it does not seem

to take much for people to make lasting judgments about someone's traits and dispositions. Research suggests that people can make initial judgments about subjective and hard-to-assess facets of the character of others in less than 150 milliseconds, and lasting judgments within 30 minutes (Elsbach, 2003). Research in the field of organizational behavior indicates, for example, that subordinates form impressions of a new boss's judgment, fairness, receptiveness and interest in developing others (i.e. both traits and dispositions) very rapidly and that these judgments are very hard to change over time (Manzoni & Barsoux, 2009).

Some empirical evidence supports the notion that stories can influence an audience's attributions about the traits and dispositions of story characters. For example, there is evidence suggesting that storytelling shapes lending decisions through fostering perceived trustworthiness (Sonenshein, Herzenstein & Dholakia, 2011). Perhaps more significantly, research in the process by which people assess the creativity of others (a highly subjective trait to assess) in Hollywood pitch meetings suggests that studio executives and producers base their creativity assessments partly on relational cues (Elsbach & Kramer, 2003). Specifically, Elsbach & Kramer (2003) found that Hollywood executives rated the creativity of the pitcher higher when they felt that they were participating in the idea's development, i.e. they based their assessments on relational cues. These findings are particularly interesting considering that theories of narrative involvement, such as the transportation-imagery model (Green & Brock, 2000), posit that the immersion in a narrative is a form of participation of the audience in the story and a vicarious form of social interaction. If

subjective assessments of traits and dispositions can be influenced by relational cues, then the narrative involvement in a story has the capability of providing relational cues of vicarious interactions and thus of influencing subjective assessments of traits and dispositions.

Taken together, these arguments suggest that an entrepreneurial story can positively affect investors' assessments of the motivational disposition of the founding entrepreneur or entrepreneurial team, which in turn can be expected to affect the overall evaluation of the opportunity, given that assessments about the quality of the entrepreneurial team play such an important role in investors' evaluative judgments, especially in the early stages of the evaluative process. A plausible explanation of the mechanisms underlying this effect is that stories, given their capability to provide meaning and thus help people make sense of events, can influence an audience's interpretations of the behavior of the characters in a story, thus influencing the attributions that the audience will make, based on these behavioral interpretations, about the characters' traits and dispositions. The storyteller has thus a tool for influencing investors' assessments about traits and dispositions that are expected to lead to behaviors associated with new venture success, such as motivation, enthusiasm, persistence or passion.

For these reasons, I argue that (1) when a new venture opportunity is communicated in the form of a story, an audience of investors is likely to rate the level of motivation of the entrepreneur and/or the founding team more favorably than when the opportunity is not communicated in the form of a story, and that (2) the higher the

level of motivation of the entrepreneurial team is assessed by investors, the more they will positively influence investors' intuitive evaluations of the new venture opportunity (i.e. a more favorable assessment of the entrepreneurial team's motivation will lead to more favorable overall evaluations). Based on these arguments, I hypothesize that the level of motivation of the entrepreneurial team as assessed by investors is thus one of variables that mediate the positive relationship between entrepreneurial stories and investors' intuitive evaluations of new venture opportunities.

> *H3b: The effect of entrepreneurial stories on investors' intuitive evaluations of new venture opportunities will be positively mediated by investors' assessments of the entrepreneurial team's level of motivation*

I thus hypothesize that assessments about the motivational disposition of the entrepreneurial team is one of the cognitive states that mediate the relationship between storytelling and investors' evaluations..

Intense language and market need perceptions

Words matter. That is at least what can be inferred from the literature on language and persuasion, which has a long tradition of examining the impact of various forms of language on persuasive messages. It is important to point out that, by language, I am referring to the manipulation of the message at the *lexical* level (i.e. choice of specific words), and not to other structural components of the message. In

the previous sections, I have addressed the persuasive effects of storytelling, which implies manipulating the message at the *syntactical* level, i.e. the rules that govern the construction of larger chunks of discourse (Hosman, 2002).

At the lexical level, there is research that has examined the effects of different types of word choices in persuasive messages. For example, researchers have examined the effects on persuasion of lexical diversity (Bradac, Davies, Courtright, Desmond & Murdock, 1977), which refers to the richness of the vocabulary used in the message, of equivocal language (Hamilton, 1998), which refers to the vagueness of the language choices, or of figurative language, which refers to the use of metaphors and other types of figurative speech (Sopory & Dillard, 2002). Of particular interest for this study is research in the area of lexical choices aimed at generating mental imagery and a sense of a simulated experience in the target audience. Original research in this area focused on the effects of vivid language (Nisbett & Ross, 1980), but contradictory results and, more importantly, conceptual problems with the construct of "vividness," made researchers turn to other conceptualizations of imagery-invoking language, such as language *intensity* (Hamilton & Stewart, 1993), a concept discussed in more detail below.

I consider the effect of a particular type of language for the purpose of further exploring the effect of storytelling as a *form* of communication on investors' intuitive evaluations of new venture opportunities. As its title indicates, the underlying motivation for this dissertation is to explore the notion whether the *form* in which a new venture opportunity is communicated makes any difference for the chances of a

new venture to obtain external resources. Formally, manipulating a message at the lexical level does not influence its narrative structure, and thus does not directly address the question of whether storytelling influences the resource acquisition process. A story, however, can be told in many different ways, which involves making choices about the words that are used and the meaning that they convey. In other words, a story can perhaps be embellished, adorned, amplified, attenuated, weakened, or its effects otherwise transformed by the use of language. Indeed, there is a long tradition in the persuasion literature to examine the effects of different types of language on people's reactions to persuasive messages (Hosman, 2002). In short, the purpose of examining the effect of a particular type of language is simply to complement our understanding of the potential effect of storytelling on the formation of evaluative judgments.

I specifically focus on the effects of a type of language that has the capability of invoking mental imagery because the formation of mental imagery is one of the key causal mechanisms involved in the effectiveness of narrative persuasion (Green & Brock, 2002; 2000). The very name of the transportation-imagery model of narrative persuasion indicates that the role of visual imagery is paramount in the experience of transportation (Green & Brock, 2002; 2000). In other words, I focus on a type of language that has the capability of generating mental imagery because it potentially has the capability of enhancing the effects of storytelling on investors' evaluations. Recall that I invoke the mechanism of involvement with the characters in the story to explicate how investors' develop their assessments of, and personally connect with,

the entrepreneurial team, but do not make any predictions about the effects of stories in generating mental imagery on person-specific assessments. In this section, I explore the notion that mental imagery may operate in a different dimension of the new venture opportunity evaluation, namely in the assessment of a situation rather than a person, more specifically, in how investors assess the degree of market need for the product and services offered by the new venture. Recall also that, in additions to the quality of the entrepreneurial team, the other key set of criteria by which early-stage investors evaluate new venture opportunities at the initial stages of the evaluation process relates to market considerations (Smith et al., 2010; Mason & Stark, 2004).

In this section I propose that a specific type of language (intense language) can indirectly affect investors' intuitive evaluations of new venture opportunities. I propose a specific mechanism by which this indirect effect might take place. I argue that the use of intense language will influence how investors assess a key characteristic of the market situation, specifically what is colloquially known as the severity of the market "pain" being addressed by the new venture's products and services, which is a way of expressing the perceived market need for what the new venture is offering. Given that the degree of perceived market need is an important evaluation criterion espoused by investors, I suggest that the perception of market "pain" will in turn have an effect on the overall intuitive evaluations of investors regarding the new venture opportunity. Note that I am not proposing the generation of mental imagery as a meditating variable in the formation of investors' evaluations, but that I am only offering it as a potential explanatory mechanism by which the

perceptions of investors regarding specific characteristics of the market can be influenced by a specific type of language, i.e. by an intrinsic message feature. This distinction is important because, to advance our understanding on how the features of a message influence persuasive outcomes (or in this case the formation of evaluative judgments) the variables of interest should be defined in terms of intrinsic message features, rather than in terms of the effects that the message is expected to generate. This is precisely one of the problems of extant research on message "vividness" effects on persuasive outcomes (O'Keefe, 2003).

Research on message vividness has a long tradition in the literature on persuasive message features. Vividly presented information is generally thought to be more persuasive and to have more impact on judgments than information that is not presented vividly. This is because vivid language is more memorable, accessible and, because it invokes mental imagery, it attracts and holds people's attention and excites their imagination (Nisbett & Ross, 1980). However, empirical research using experiments has demonstrated little empirical support for it this hypothesis (Taylor & Thompson, 1982). These disappointing results have been partially attributed to definitional problems, as authors have proposed many different conceptualizations and operationalizations of vividness, which include problematic elements related to the effects of the message rather than to the message's intrinsic qualities. Vividness, according to the perhaps better known definition of the concept, refers to the extent to which a message is "emotionally interesting, concrete and imagery provoking, proximate in a sensory, temporal, or spatial way" (Nisbett & Ross, 1980: 45). Note

that this definition involves some expected effects of the message as well as intrinsic features of the message. Defining vivid messages in terms of the vividness they generate is analogous to defining fear appeals as appeals that produce fear, which does not say anything about the particular features of the message that actually produce fear (i.e. it does not speak to the effect of message features, and thus does not help message designers aiming at creating a certain effect). Defining a message in terms of its effects, at best, allows for the prediction of a mental state that mediates the message and the persuasive outcome. For example, in the case of a vivid message defined in terms of vividness, it allows for testing whether the experience of vividness will lead to a given persuasive outcome, but it does not speak to what features of the message created the experience of vividness. Furthermore, such a definition requires a manipulation check to make sure that the expected effect took place, something that is not necessary when a message is defined in terms of its intrinsic features (O'Keefe, 2003).

For these reasons, although I invoke the generation of mental imagery as a potential mechanism by which message language features influence the perceptions of investors regarding the market, I avoid effect-based definitions of message features and focus instead on an intrinsic feature of the message, namely *intense language*. Language intensity is a stylistic feature of language that is expressed through emotionality and specificity (Hamilton, Hunter & Burgoon, 1990; Hamilton & Hunter, 1998; Buller, Borland & Burgoon, 1998; Andersen & Blackburn, 2004), in which "emotionality is the degree of affect expressed in the source's language, specificity is

the degree to which a source makes precise reference to attitude objects in a message" (Hamilton & Stewart, 1993: 231). Language intensity is thus usually conceptualized as including emotion-laden words (e.g. horrible, freedom, beauty, grotesque, death, or suffering) and specific graphic language (as opposed to abstract language) (Hosman, 2002; Perloff, 2003). Based on the insights in extant literature, I define intense language, for the purpose of this dissertation, as language that is (1) specific (vs. abstract) (2) graphic (alludes to an image) and (3) emotionally laden. I explain in more detail how I define and operationalize this particular feature of the message in Chapter 4, where I address the methods of the study. At this point, to illustrate what intense language implies in practice, I offer an example of intense vs. non-intense language from an experimental manipulation in the study by Buller and colleagues (1998): "treatment of skin cancer, which is an unusual growth of skin cells, involves removing tumors from the skin" vs. "treatment of skin cancer, which is a grotesque growth of skin cells, involves cutting or burning tumors from the skin" (Buller et al., 1998: 450). The second sentence constitutes the intense language manipulation. Note that "grotesque" is as more emotionally-laden word than "unusual" and that "cutting and burning" is both more graphic and more specific than "removing."

What are the mechanisms that can make the use of intense language affect evaluative judgments? Several theories have been employed to explain and predict the effects of language intensity on attitude change such as information processing theory (Hamilton & Hunter, 1998) and language expectancy theory (Bradac, Bowers & Courtright, 1979). Information processing theory has provided the most encompassing

explanation for the persuasive effects of language intensity (Andersen & Blackburn, 2004). There are two main arguments that emerge from the information processing perspective. The first is that graphic, concrete and emotional language simply makes people pay more attention to the message. The second is that intense language makes the message clearer or, at least, that it helps people understand it. There is a third category of arguments relating to the effect of intense language on perceived source's credibility, based on how extreme a position the source takes to the issue (Hosman, 2002), but these are beyond the scope of the argument that I put forward in this research.

Underlying the core argument that language intensity makes people understand and pay more attention to a message is the notion that intense language has the capability of generating mental imagery and emotional responses. Mental imagery generation is a process by which sensory information is represented in working memory (Petrova & Cialdini, 2008). A mental image is thus a representation of a particular stimulus that is formed by activation of the sensory system or, in other words, images are considered mental contents that possess sensory qualities (Dadds, Bowberg, Reed & Cutmore, 1997). Consider then what the main features of intense language are and how they may affect an audience's sensory system in the generation of mental imagery. Graphic words, by definition, involve alluding to a visual mental representation (hence the adjective "graphic"), for example, "covered in blood." Words that are simply concrete (but do not allude to a specific image), however, have also been shown to stimulate greater generation of mental imagery than words that are

abstract (MacInnis & Price, 1987). In the example offered above from Buller et al. (1998), for instance, “cutting and burning” is a more concrete description than “removing,” and is thus more likely to activate the sensory system in working memory to generate a visual mental representation. Finally, emotion-laden words are expected to generate mental imagery because emotion speaks to the personal experiences of people and thus invokes mental representations of the sensory experiences stored in their working memory. Again from the example offered above from Buller et al. (1998), “grotesque” is a word laden with more emotion than “unusual,” and it is thus more likely to invoke a mental representation of the experiences stored in working memory.

Mental imagery, in turn, can have the capability of influencing beliefs and evaluative judgments for a number of reasons. Research on narrative response indicates that the mental imagery that we experience while reading, either spontaneous or intentionally induced, has powerful effects on comprehension, memory and appreciation of the text (Sadoski, 1998). Research also indicates that the experience of mental imagery is correlated with affective responses to a text as well as ratings of its importance (Sadoski et al., 1988). A theoretical explanation for the role of imagery in readers’ comprehension and affective responses is offered by dual coding theory (Paivio, 1986; Sadoski, Goetz & Fritz, 1993). Dual coding theory suggests that cognition consists of the operations of two separate but interconnected mental coding systems: a verbal system for language and a nonverbal system that deals primarily with imagery (Sadoski, 1998). The basic idea is thus that mental imagery is capable of

accessing cognitive and affective processes of appraisal and evaluation that are off limits to verbal stimuli.

More specifically, there is some evidence suggesting that mental imagery, and thus the language capable of invoking it, can play a role in investment decisions. Research in the finance literature suggests that mental imagery is associated with the affective responses of investors to different types of investment classes and that is has a strong influence on investors' judgments about the attractiveness of different investment options (MacGregor, Slovic, Dreman & Berry, 2000). MacGregor and colleagues (2000) asked a sample of security analysts to evaluate a number of industry groups represented on the New York Stock Exchange in terms of a set of judgmental variables. After providing imagery and affective evaluations for each industry group, the participants judged the likelihood that they would invest in companies associated with each industry. They found that imagery and affective ratings were highly correlated with one another and with the likelihood of investing. There is also some evidence suggesting that language that is emotionally interesting and image-provoking influences investors' judgments, especially when investors hold positions contrarian to the general tenor of the market (i.e. are bullish in a bear market or vice versa), which helps sway investors' evaluations toward the general market trend (Hales, Kuang & Venkataraman, 2011).

Taken together, these arguments and evidence suggest that the use of intense language in an entrepreneurial story could be capable of positively influencing investors' comprehension, appreciation and emotional response to one or several

aspects of a new venture opportunity being communicated to them. A plausible mechanism for the effect of intense language on how investors perceive, affectively react to and appreciate the new venture opportunity is the capability of intense language to generate mental imagery and affective responses. Furthermore, I posit that if an audience of early-stage investors better appreciates, understands, or emotionally reacts to one or more aspects of a new venture opportunity, it will be more likely that they will intuitively evaluate the new venture opportunity more favorably overall. Specifically, I hypothesize that an entrepreneur trying to persuade an audience of investors by conveying information about his/her new venture opportunity is more likely to succeed in his/her persuasive attempt if the opportunity is communicated with intense language.

> *H4: Entrepreneurial opportunities that are communicated with intense language will be evaluated more positively than entrepreneurial opportunities that are not communicated with intense language*

My hypothesis is that there is a positive relationship between the presence of intense language in the communication of an entrepreneurial opportunity to investors and the intuitive evaluations that investors initially develop about the opportunity. I thus hypothesize that there is a *total effect* of intense language on the evaluations of investors. Again, as in the case of narrative structure effects, however, I expect that the effect of intense language on investors' evaluation will be *indirect*, i.e. that it will be exercised through one or more *intervening variables*. Again, as I explained earlier, in

connection with the storytelling portion of the model, it is not necessary to articulate a total effect hypothesis in an intervening variables model (Preacher & Hayes, 2008; Hayes, 2009). And, again, I do it for the same reason, i.e. to be consistent with one of the key goals of this study, which is to examine *whether* a given form of communication is capable of influencing investors' evaluations. The other research question is, of course, *how* the form of communication in question affects these investors' evaluations. Next, to address the *how* question, I will propose an intervening variable that relates to how investors' assess a dimension of the market situation, by which the effects of intense language on investors' intuitive evaluations might take place.

The underlying argument for the hypothesis that intense language affects investors evaluations is that intense language has the capability of not only making people pay more attention to what is being communicated, but also to better understand a given situation that is being communicated. An entrepreneur communicating his/her opportunity with intense language may expect thus that an audience of potential investors is more likely to experience mental imagery and affective responses than if the new venture opportunity were conveyed using pallid language. In turn, the experience of mental imagery and affective responses on the part of potential investors is likely to help these investors in gaining a better understanding of, and appreciation for, the vision that is being conveyed by the entrepreneur. In other words, as investors viscerally react to and invoke visual representation from their working memory of the situation that is being conveyed to them, it is more likely that

they will understand and react to the situation from the perspective of the entrepreneur. That is to say, it is more likely that the message will have persuasive effects and that it will affect the evaluative judgments of investors.

I propose that the persuasive effects of intense language can take place when entrepreneurs convey their vision of the market need that their product or services. I posit that this is the case because when investors are conveying their version of a given market situation to potential investors, they are in effect describing and calling attention to a situation that they have identified and addressed with their new venture, but that is not immediately obvious to everyone else. Any means that can help investors understand and appreciate the situation (from the entrepreneur's perspective) will aid the entrepreneur in his/her persuasive effort. For example, if an entrepreneur is trying to convey the magnitude and severity of a problem that exists in the marketplace (a problem that the creation of his/her new venture is addressing), any tool that helps investors understand and appreciate the problem will aid the entrepreneur in his/her persuasive efforts. In fact, market need, or what venture capitalists and other early-stage investors colloquially refer to as "market pain" is a commonly espoused investment evaluation criterion. This metaphor refers to the notion that a product or service that solves a marginal problem that is experienced by a few people is not likely to be very profitable, whereas a product or service that solves a big problem (preferably for a lot of people) is more likely to be a success – e.g. a cure for cancer. The "market pain" metaphor addresses a market situation from both a problem and a solution perspective. That is to say, there are big problems that already

have many solutions, so the idea of market pain captures the idea of a problem that is currently not well solved by existing solutions.

I propose that using intense language to communicate the problem that the new venture is addressing and the solution that the new venture is providing will help entrepreneurs in conveying their vision to potential investors of the "market pain" that the new venture is tackling. Intense language can help entrepreneurs invoke mental imagery and create affective responses that could influence investors' mental representations of problem at hand, helping investors in understanding the magnitude and severity of the problem and in gaining appreciation for the consequences of a proposed solution, i.e. it can influence investors' assessments of a specific market situation. For example, by gaining a better understanding and appreciation of the plight that potential customers are now suffering by not having the proposed solution available to them, investors may gain a better appreciation for the vision of the entrepreneur in terms of market need for its products or services. In turn, the greater the market need that investors believe that the new venture is addressing with its solutions, the better the overall intuitive assessment of the business opportunity will be. In other words, I posit that intense language will affect what investors believe about the problem-solution dichotomy addressed with the creation of the new venture, which in turn will affect what they feel about the opportunity.

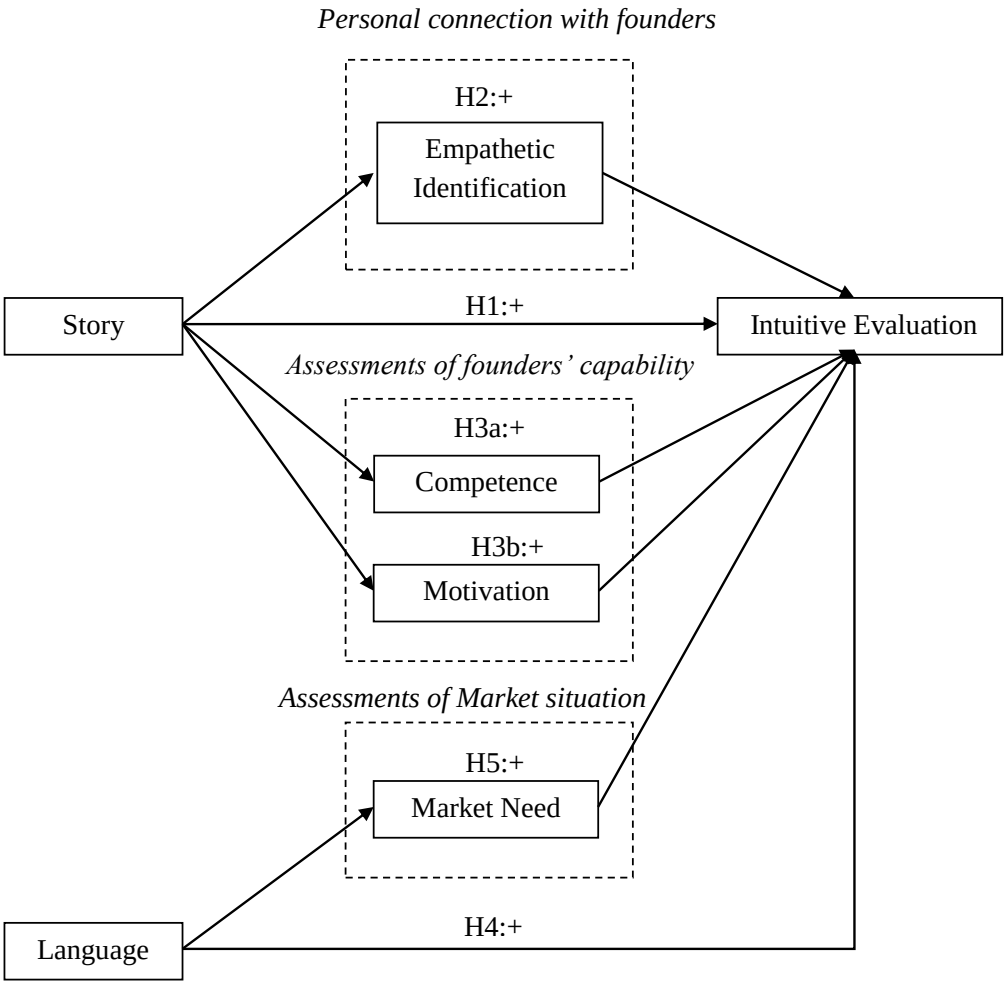
H5: The effect of intense language on investors' intuitive evaluations of new venture opportunities will be positively mediated by investors' assessments of the degree of market need being addressed by the new venture

In other words, I hypothesize that assessments about the market need addressed by the new venture's products and services is a cognitive mental state that mediates the relationship between intense language and investors' evaluations. That is to say, I hypothesize that the relationship between the language in which the opportunity is communicated and investors' evaluations is mediated by their beliefs about a specific market situation conceptualized in terms of a problem-solution dichotomy.

In this chapter, I have delineated a multiple mediation model in which the choices of a specific kind of narrative structure (story) and a specific kind of language (intense) in new venture opportunity communications influence early-stage investors' intuitive evaluations of opportunities. I hypothesize that this influence occurs through series of intervening cognitive and affective mental states related to how investors assess and react to the founding entrepreneurial team as well as the market situation. Figure 1 below depicts the hypothesized model. Note that the choice of a story as a form of communication is hypothesized to influence investors' intervening mental states that relate to the founding entrepreneurial team, namely how investors personally connect with the entrepreneurial team in terms of empathetic identification as well as how they rate the overall capability of the entrepreneurial team, both in

terms of competence and motivation. The choice of intense language as a form of communication is hypothesized to influence investors' intervening mental states that relate to market situation assessments, namely how investors rate the degree of market need being addressed by the creation of the new venture and the introduction of its products or services. In other words, the model includes two distinct paths by which the effects of two different forms of communication affect investors' evaluations of new venture opportunities. It is important to point out that the emphasis in this dissertation is to discern the effect of storytelling as a form of communication, so the focus of this research is on the path depicting the story effects in the model, where three of the four intervening variables are hypothesized. Modeling and testing the effect of a choice of language is simply intended to provide a more complete understanding of how forms of communication can affect new venture opportunity assessments and to complement our theoretical understanding of the power of stories in shaping evaluative judgments. In the following chapter, I describe how the model was tested, including the sample, the experimental procedure, the variables and the analytic approach.

Figure 1: Hypothesized model



CHAPTER 4: METHOD

To test the hypotheses put forward in this dissertation, I conducted a field experiment with 188 active business angel investors across different regions in the United States. In this experiment, these early-stage investors were presented with a short written description of a new venture opportunity and were asked to make a series of assessments and evaluations by filling a questionnaire. All angel investors were presented with the same new venture opportunity, but the form in which the opportunity was communicated was manipulated and randomly assigned across investors. There were four variations of the form in which the opportunity was communicated, involving manipulations at the narrative (story) and lexical (language) levels. To test the proposed multiple indirect effects model, I used a multiple mediation test with bootstrapping of indirect effects (Preacher & Hayes, 2008; Hayes, 2009), which allows for testing specific indirect effects in the most reliable manner.

Sample and data collection

The study participants were 188 angel investors in the US, the majority of which belonged to California or Midwestern angel investment networks. 70 participants were associated with the Tech Coast Angels network (Southern California), 42 with the RAIN source network (Minnesota, the Dakotas and Montana) and 11 with the Sand Hill Angels network in Menlo Park (Silicon Valley). The remaining 65 participants were distributed across the rest of the US and were associated to national networks, i.e. networks which have a presence at the national

level, such as the National Angel Capital Association (40) or the Golden Seeds Network (20).

I focused on a sample of business angels, rather than venture capitalists, as the object of study in this dissertation for a number of reasons. First, because the intended focus of this study is on early-stage investors' evaluative judgments at the early stages of the evaluation process. Given that venture capitalists have shifted the focus of their activities to later-stage deals in recent years (Parhankangas, 2007), it makes more sense to examine the investment decisions processes of business angels, who still mainly invest in early-stage deals. Second, because the informal venture capital market is the most important source of private equity financing for startups worldwide (Kelly, 2007), the practical implications of understanding the investment processes of business angels are more significant to many more new ventures seeking external resources, and thus more relevant from a perspective of engaged scholarship (Van de Ven, 2007), than those of venture capitalists. In 2011, for instance, while business angels invested $22.5 billion in a total of 66,230 entrepreneurial ventures in the US, of which 42% were seed and early-stage investments (Sohl, 2011), venture capitalists invested "only" $919 million in 396 companies at the seed or early-stage (PWC Moneytree, 2011). And this is in the country with the most developed venture capital industry in the world. Internationally, the relative weight of informal venture capital is even greater (Mason & Harrison, 2002). Third, business angels report that they invest in startups for a variety of motives above and beyond that of obtaining financial returns (Freear et al., 2002) and admit (at least more explicitly than venture capitalists)

that their evaluations contain a substantial subjective and intuitive component (Riding et al., 2007). These factors open the door for more varied sources of persuasive influence to take place, potentially making their overall evaluations more susceptible to the influence of persuasive attempts based on communication, and thus potentially making more likely that entrepreneurial storytelling might have an effect on their evaluative judgments

The data was collected during a 6-month period (between November 2009 and May 2010). All participants were approached, directly or indirectly, by the then chairman of the Tech Angels network, Richard Sudek, who graciously agreed to collaborate in this research, and who solicited business angels to participate in a doctoral thesis research project via a letter or email. The Chairman of the Tech Angels network requested the participation of many subjects directly, even to angels outside his group, usually by sending them an email, but sometimes relied on coordinators of the different angel groups to forward the request to their members on his behalf. Overall, I estimate that about 850 business angels were solicited to participate in the experiment. 217 participants logged into the website to initiate the process, but some of them did not complete it, either because they got bored with it, because they did not intend to log on in the first place (some participants left it all blank), or simply because they misunderstood what the process implied. After discarding the responses that were grossly incomplete or invalid, the sample was reduced to 188 participants. This constitutes a response rate of approximately 22%, which is similar to that of prior

work investigating business angels and venture capital investors (Wiltbank et al., 2009).

In addition to their association to a particular business angel network, which provides information about the geographic location in which they operate, I collected some additional demographic information about the participants. This information matched the prototypical profile of the accredited informal investor. The majority were males (149, for only 39 females) with at least a graduate-level education. 39 held Ph.D. degrees, 90 held a Master's degree and 53 held a Bachelor's degree as their highest level of education, whereas only 5 reported having a high school degree as their highest level of education, and only one person reported a grade school education level.

Following IRB guidelines, participation was completely voluntary and confidential. The request was framed as an opportunity to contribute to a doctoral thesis research project that could potentially shed some light on the process of how angel investors initially evaluate opportunities. The vast majority of the request letters were delivered electronically, via an email message that included a web link directing participants to a brief written description of the opportunity and to an online questionnaire (See Appendix A for copies of participation request letters in both email and regular mail formats). Most of the data was therefore collected online. Only 3 of the 188 participants provided their responses in a hard-copy version of the questionnaire. In these cases, participants were either mailed or presented with the materials in person by Richard Sudek during personal meetings. The pre-testing of the

instrument was conducted in both paper and online formats by me using a sample of business students at the University of Minnesota, and by Richard Sudek using a very small sample of business angels that piloted the study (I provide more information on the development of the instrument below).

Due to their anonymous and invisible nature, sampling business angels is notoriously difficult and many studies have relied on very small samples and less than ideal sampling techniques (Avdeitchikova et al., 2008). Typical ways in which angel investors have been sampled in different studies include several types of convenience sampling: sending questionnaires to a large number of individuals believed to be investors, identify investors through the deals in which they have been involved, relying on other angels for information about their peers, and contacting members of investor groups and associations, typically business angel networks (Harrison & Mason, 1992). Each of these sampling techniques has different types of problems that can make the samples non-representative and biased in one way or another (Avdeitchikova et al., 2008). The problem with sampling from the general population is that a very small portion of people engage in informal venture capital activities, so random samples from the general population is a very ineffective way of sampling business angels (Avdeitchikova et al., 2008). Inevitably (and this is also the case in formal venture capital research), investors must rely on convenience sampling techniques, such as peer referrals or business angel group membership, and to the extent that is possible try to deal with potential issues of bias and representativeness in some other way. Such a way is adopting a multi-sample approach. One of the

problems of sampling from registers, or membership lists of business angel networks, angel syndicates or other groups of self-selected members, is the risk of obtaining a biased sample, given that only certain types of investors usually choose to join certain groups and formal networks (groups and networks for which they have some type of affinity). However, since different business angel groups and networks have different member profiles and attract different types of people, sampling from different groups and networks may offset some of the similarity bias, and it is a recommended sampling method when possible (Avdeitchikova et al., 2008).

For these reasons, I used a convenience sampling technique for this study, as is the case in most empirical studies on business angels, but I tried to mitigate potential bias problems by using a very large sample drawn from different business angel networks distributed across different regions in the US. By sampling a large number of investors from different angel groups that operate in different geographic regions, I expect to increase the diversity of participants and thus make the sample more representative than if I had sampled from only one business angel group operating in one geographical market. I would like to point out that 188 participants is a large sample for the standards of empirical research in the business angel literature, and in the literature on the investment process of business angels in particular, which often relies on smaller samples, e.g. 64 (Mitteness et al., 2012), 12 (Smith et al., 2010), 24 (Clark, 2008), or 30 (Mason & Harrison, 2003), to mention a few representative studies that reached out to business angels to learn about their opportunity evaluation processes. The sample is also large for the standards of formal venture capital

research, particularly for studies involving experiments. Zacharakis, Meyer and Shepherd in their series of experimental studies about different aspects of venture capitalists' decision making processes also relied on smaller samples, e.g. 51 (Zacharakis & Shepherd, 2001; Zacharakis & Meyer, 1998), 53 (Zacharakis & Meyer, 2000), or 66 (Shepherd & Zacharakis, 2002; Shepherd, 1999).

Experimental procedure

Subjects were thus asked (most of them via email) to assess a "real world" new venture opportunity by Richard Sudek, the chairman elect of one of the largest business angel networks in the US (see Appendix A). Specifically, they were asked to read a short (less than one page) explanation of the opportunity and to provide answers to a brief questionnaire afterwards. Participants were told that the entire process should not take more than 15 minutes. Once a subject agreed to participate in the study, he/she would click on a link that would take him/her to a University of Minnesota hosted website in which participants were presented with brief instructions, a short text depicting the opportunity and an online questionnaire in which they could provide their responses.

There were four different web links, each corresponding to a different version of the online instrument, each with a different version of the new venture opportunity description. Each participant was provided with only with one web link, so each participant was exposed to only one version of the new venture opportunity description. In fact, as far as the participants knew, there was only *one* version of the

new venture opportunity description. The version of the link that was embedded in each participant's email request was randomly assigned. The random assignment procedures were based on the alphabetical order of the participant's last names, and were adjusted across business angels groups to get a good distribution of participants across the different versions of the instrument. The initial instructions and the online questionnaire at the end were the same for all participants. Thus, the only element of the data collection instrument that varied across participants was the version of the opportunity description.

In sum, besides the letter requesting their participation, the online instrument used for data collection consisted of three parts: (1) a short explanation of the background of the new venture and of some assumptions that participants should make about it, (2) a written description of the new venture opportunity, and (3) a questionnaire used to collect the data. These materials were developed following well-established protocols for online survey research (Dillman, 2000). The process of instrument development started from a theoretical background standpoint but it eventually also included the input from discussions with practitioners and angel investors. I conducted meetings with members of business angel networks in the Twin Cities area and in Barcelona, Spain to discuss and get feedback on drafts of the new venture opportunity description as well as on pilot versions of the questionnaire. I had personal discussions with members of the RAIN network and the Sofia Angel Fund in Minneapolis, and members of the Business Angel Network of Catalonia and the BCNHighGrowth group in Barcelona, which provided input to develop and fine-tune

the instrument. The first two versions of the instrument were piloted with a sample of 89 undergraduate entrepreneurship students at the University of Minnesota distributed in three different class sections during the spring and fall semesters of 2009. The opportunity description versions and the questionnaire where then further fine-tuned through feedback from additional pilot testing with an initial sample of 5 angel investors from the Tech Angels network in California during the fall of 2009. The final instrument was deployed in November of 2009 for large scale data collection.

The introductory paragraph (see Appendix B) describing the venture's background and the assumptions that investors should make before proceeding to read the new venture opportunity description was developed based on direct feedback from angel investors. The rationale for having such introductory paragraph was that the brief description of the opportunity did not address some underlying concerns that are typical of the deal origination stage in a new venture investment evaluation process. The first cut of potential deals occur at the deal origination state in a rather automatic manner, as investors only consider screening opportunities that match their investment preferences such as the type of industry, the size of the investment, the stage of the investment, the geographic location of the new venture, etc. Deals that do not match basic initial investment criteria and/or that have not been referred by a reliable source usually do not get evaluated, even superficially (Riding et al., 2007). Of course, given that I presented them with only one new venture opportunity that was unlikely to match all investors' initial screening criteria, they were instructed to assume that they would invest in that particular industry (medical devices for the cardiovascular

market), that this was a first-round funding and that there were no other investors involved (to take syndication issues off the table), that the amount sought by the venture was in the range of their previous investments (without disclosing the amount not to exclude any investors *a priori*), and that the valuation was fair. In addition, they were told that the deal was referred by a reliable source with whom they had worked in the past. In short, they were given basic information and told to assume certain dimensions of the opportunity that in normal circumstances would have been screened by the people administering and managing the angel groups at the deal origination stage.

Because of the type of industry in which the new venture was operating, some angels raised concerns about FDA approval and other regulatory issues pertaining to health care and life sciences products. So they were told to assume that FDA approval would not be a problem. Finally investors complained about the repetitiveness of the questions, the brevity of the opportunity description, and expressed a general desire for having more information, especially about amount of money sought, the valuation, and the financial commitment of the founders : "There was not enough meat to make an intelligent decision," as one of them put it. To mitigate these concerns, in this introductory text, investors were warned about the repetitiveness of the questions, were provided additional information regarding amount of money sought, valuation and other deal-specific issues and were told to provide their gut reaction, knowing that the amount of information provided was not enough to make a fully informed evaluation (though it never is in the real world either).

The investment opportunity was a new venture, named "Oxycool," that had come up with a new, faster, simpler and less invasive way of inducing hypothermia in human patients. Induced hypothermia is widely used in open-heart surgeries but it cannot always be induced quickly and efficiently enough with existing methods, so the new solution presented a good opportunity to create value in a large market. All participants in the study were presented with the same investment opportunity; the only thing that varied was the *way* in which it was presented to them. Consequently, the substantive information about the opportunity, such as the estimated size of the market or the track record of the entrepreneurial team, for example, remained unchanged across narrative and lexical manipulations.

The challenge of creating a baseline scenario for the new venture opportunity was to generate a set of facts, i.e. of substantive information, that was attractive enough for at least some investors not to reject the opportunity outright, given that angel investors usually approach the initial evaluation stage with a negative mindset and looking for reasons to reject the opportunity (Smith et al., 2010). In fact, business angels reject most opportunities at the initial stage of the process, with 70% of them getting rejected at first sight (Riding et al., 2007). For the experiment to make sense and to be able to draw any conclusions from it, I needed some variation in the evaluative judgments of investors, so I had to be very careful in trying to create an opportunity that could generate at least some level of interest. For that, I grounded the construction of the baseline scenario on the existing literature on early stage investors'

evaluation criteria (see Chapter 2 for a review) to be theoretically sound, but I also sought feedback from investors as the description was developed, as mentioned above.

Based on an extensive review of the literature, I came up with a short list of basic elements, related to the entrepreneurial team, the market, the product and financial considerations, that should be included in the description of an attractive opportunity (Maxwell et al., 2009; Haines et al., 2003; Feeney et al., 1998; Mason & Harrison, 1996; Tyjebee & Bruno, 1984; Shepherd & Zacharakis, 1999; Shepherd, 1999; Kirsch et al., 2009; Mason & Stark, 2004**;** MacMillan et al., 1985; MacMillan et al., 1987; Khan, 1987; Khanin et al., 2008; Hall & Hofer, 1993, Sandberg et al., 1998; Hisrich & Jankowicz, 1990; Muyzka et al., 1996; Fried & Hisrich, 1994; Petty & Gruber, 2011; Zacharakis & Meyer, 2000; 1998; 1995). Based on this literature, ideally, the opportunity description should include some (positive) information about the following elements:

- The quality of the entrepreneurial team: background, experience, track record, managing skills, qualifications, educational background, technological or industry-specific knowledge, personal qualities.
- The attractiveness of the market: Size, growth potential, competitive situation
- The uniqueness of the product: Solves a problem better, or at least differently, enjoys patent protection
- Financial considerations: Costs, pricing, revenue streams, value of equity/worth of business, potential rate of return/cash out potential (exit)

These elements were generated for the baseline description of the business opportunity in such a way as to make them attractive to potential investors (again, based on what the literature indicates): e.g. a big market, an entrepreneurial team with very distinguished and relevant background, a novel product with intellectual property protection, a profitable business, etc. In addition, to make the opportunity more attractive, these elements were structurally organized around problem-solution dichotomy, which is a pitching strategy widely known and accepted by early-stage investors and entrepreneurs. These elements were thus organized according to the following sequential logic:

1. There is a big problem
2. This problem is not currently well addressed with existing solutions
3. This company has a better solution
4. This solution is protected against competitors
5. This solution is profitable (revenues>costs) and will create value
6. The entrepreneurial team behind this opportunity is competent and has relevant background

Please see Appendix C-2 for a detailed explanation of the informational content of the opportunity description and its organizing logic. Note that the sequential distribution of the arguments presented above does not strictly constitute a story, as defined in this dissertation. That is to say, this sequence of arguments does not constitute a sequence of events that unfold over time, which are caused and experienced by focal actors, and which are propelled by a plotline that is projected in a

specific narrative voice (see Chapter 3 for a definition of what constitutes a story). The arguments are organized in a sequential logic to make the overall exposition persuasive from a rhetorical perspective: i.e. first state a claim, and then provide reasons and evidence to support that claim (Toulmin, 1958). In other words, it constitutes a persuasive attempt based on expository appeals rather than on narrative persuasion (Green & Brock, 2000). Please see Appendix C-1 for the baseline version of the new venture opportunity description that was presented to participating business angels. This version was randomly assigned to 46 of the 188 participants.

Independent variables and experimental manipulations

Two independent variables capture the effects of the experimental manipulations of the opportunity descriptions in terms of narrative and lexical structure: *story* and *language*. These are two dummy variables, indicating whether a given participant was exposed to one, the other, neither, or both of these variables in the version of the new venture opportunity description that was randomly assigned to him/her.

Story: is a dummy variable that indicates that the new venture opportunity description evaluated by a given participant was communicated with the narrative structure of a story. If the respondent was exposed to a version of the new venture opportunity description that was constructed as a story, this variable took a value of 1. If not, it took a value of 0.

Language: is a dummy variable that indicates that the new venture opportunity description evaluated by a given participant was communicated with intense language. If the respondent was exposed to one of the two versions of the new venture opportunity description that were constructed with intense language, this variable took a value of 1. If not, it took a value of 0.

There were four versions of the new venture opportunity description: a baseline version, which was communicated with neither a narrative structure nor with intense language; a narrative version, which was communicated with a narrative structure but without intense language; an intense language version, which was communicated with intense language but without a narrative structure, and a version in which the opportunity was communicated with both a narrative structure and with intense language. In short, the independent variables could take the following values depending on the version of the new venture opportunity being presented to each participant:

- Baseline scenario (Story=0, Language=0)
- Narrative version (Story=1, Language=0)
- Baseline scenario with intense language (Story=0, Language=1)
- Narrative version with intense language (Story=1, Language=1)

This, in effect, constitutes a two-by-two between-subjects factorial design, which allows for testing the main effects of the independent variables, as well as the effects of their interaction, with a two-way analysis of variance (ANOVA). Such test was conducted as an additional analysis, but the empirical focus of this dissertation is

not on discerning the interaction of story and language, but rather on testing the indirect effects of a set of mediating mechanisms that have been specified in the theoretical model. In other words, I follow an analytical strategy designed to test the specific effects of multiple mediators in order to test the hypotheses specified in the model. However, I also conducted additional analysis to explore whether there is an interaction effect of the two independent variables to better understand the role of language in entrepreneurial storytelling.

The narrative manipulation involved changing the baseline version of the new venture opportunity description to a version with a narrative structure, but keeping the basic informational elements of the description intact. In other words, it involved changing the *way* in which the information was conveyed without altering substantive information about the new venture opportunity. By substantive information, I mean information that can be especially relevant to investors' evaluation criteria, as reflected in the literature, such as information related to market size, entrepreneurial team's background and competence, intellectual property protection, or any other aspect of the opportunity related to any of the commonly espoused criteria dimensions (see Appendix C-2 for a detailed explanation of all the informational elements related to investors' espoused criteria that were introduced in the baseline version of the opportunity description).

Based on the definition of narrative structure that I propose in this dissertation (see Chapter 3), the narrative manipulation consisted thus in communicating the same substantive information than in the baseline version, but embedding it in a sequence of

events that unfold over time. These events are experienced by focal actors and are knitted together by a plot that is projected in a specific narrative voice (Pentland, 1999; Polkinghorne, 1988; Jahn, 2005; Bortolussi & Dixon, 2003; Gabriel, 2004). The focal actors are, of course, the entrepreneurs that are engaged in starting the new venture, including Dr. Fuller (the main founder). The plot is very simple, involving an initial state in which the focal actor experiences dissatisfaction with the status quo (a problem), followed by a series of events that result in actions by the focal actor that lead to a resolution of the problem. The plot, albeit simple, makes attributions of cause-effect relationships, agency, intentionality and responsibility. The identifiable narrative voice is that of Dr. Fuller himself, who tells the story in the first person. Please see Appendix D-2 for a detailed explanation of the elements of the story and the development of the plot involved in the narrative manipulation. To see the narrative version that was presented to angel investors, please see Appendix D-1. This version was randomly assigned to 44 of the 188 participants.

The lexical manipulation involved changing the baseline version of the new venture opportunity description to a version with intense language. In other words, it involved using language that is higher in emotionality and specificity (Hamilton et al., 1990; Hamilton & Hunter, 1998; Buller et al., 1998; Hosman, 2002; Perloff, 2003; Andersen & Blackburn, 2004) than the language used in the baseline version. Recall that “emotionality is the degree of affect expressed in the source's language; specificity is the degree to which a source makes precise reference to attitude objects in a message” (Hamilton & Stewart, 1993: 231). In other words, intense language

involves the use of words that are laden with emotion (e.g. freedom, beauty, grotesque, death) and words that invoke concepts that are concrete and specific (even graphic, if possible), rather than concepts that are abstract (please see Chapter 3 for a more detailed discussion on characteristics of intense language). In the case of OxyCool's opportunity description, this implied replacing emotionally neutral words such as "inconvenient" with more emotionally-laden words such as "painful," as well as replacing abstract language such as "cold fluids" with more specific language such as "ice cubes submerged in ice water." Please see Appendix D-4 for a detailed explanation of all the word substitutions that were made for the lexical manipulation, and the rationale underlying each of the changes.

Language manipulation changes were only implemented in the relevant parts of the opportunity description, i.e. in the arguments related to the sequential logic of the problem-solution dichotomy. Recall that the underlying theoretical argument is that using intense language will help entrepreneurs in conveying their vision to potential investors of the market need that the new venture is tackling with the introduction of its products and services. In other words, that it will help entrepreneurs clarify and draw attention to the severity of the problem and to the inadequacy of current solutions. In addition, entrepreneurs will want to clarify and draw attention to the value of their solutions, to make the argument that their products and services provide value to the market.

It is important to point out that manipulating language across the board, without a specific strategy or without a specific idea in mind, is not only likely to fail

to produce the desired persuasive effects, but may in fact produce effects that are directly contrary to the desired outcome. Language aimed at invoking imagery and creating emotional responses should be relevant to the central message being conveyed (Green, 2006). Research shows that vivid imagery that is not central to the main message themes may be a distraction rather than an enhancement and thus may actually reduce persuasive impact (Smith & Shaffer, 2000). Green (2006), in her study on the persuasive impact of narratives on cancer communication gives a specific example by suggesting a story that should encourage imagery related to the joy of a family after the mother is cured after a successful treatment of breast cancer (i.e. related to the central message of cancer prevention), rather than creating imagery and emotional responses of the family's hometown (i.e. not related to the central message, and thus distracting). Therefore, the language manipulation centers on the sections of the opportunity description that address the current market situation (framed in terms of a problem) and the products and services that the new venture is introducing in the market (framed in terms of solution). Please see Appendix D-3 for the intense language version of the baseline opportunity description that was presented to participating business angels. This version was randomly assigned to 48 of the 188 participants.

The fourth version of the new venture opportunity was presented with a narrative structure and with intense language, i.e. it involved both manipulations described above. Please see Appendix D-5 for the narrative version with intense language of the opportunity description that was presented to participating business

angels. This version was randomly assigned to 50 of the 188 participants. Appendix D-6 depicts the master documents that integrate all the manipulations that were carried out and which were used to create the versions presented to participating investors.

Dependent variable

An investor's *intuitive evaluation* of the new venture opportunity is the outcome variable of interest. This measure intends to capture how investors initially evaluate the opportunity from a "gut feel" perspective. Or, in other words, the extent to which their holistic initial impressions are favorable. This measure can thus be conceptualized in terms of an intuitive judgment, in the sense that is holistic and that it includes both cognitive and affective or nonconscious components. The measure is intended to capture both what angel investors broadly think and feel about the opportunity in evaluative terms (i.e. good-bad). The measure also captures what in essence is a rapid assessment, since investors were asked to provide their evaluative judgments immediately after reading the opportunity description.

Given that multiple-item scales have greater reliability than single-item scales for constructs that are multidimensional, the variable was created by combining 4 responses in the questionnaire that related to the overall impression of angel investors in regards to the opportunity. The scale was constructed by averaging the scores of 4 items that could take the possible value of any integer between 1 and 5 (1=strongly disagree, 2=somewhat disagree, 3=neither agree nor disagree, 4=somewhat agree, 5=strongly agree). Specifically, these are the 4 items included in the scale:

1. “Overall, this seems to be a good investment opportunity”
2. “Overall, I have a good impression of this new venture”
3. “I feel that this opportunity could become a good business”
4. “I have a positive gut feeling about this opportunity”

Given that the goal of this measure was to capture investors’ “gut feel” (i.e. intuitive) assessments, it had to contain elements related of their holistic and subjective opinions. Recall that intuitive judgments are often conceptualized as “affectively charged judgments that arise through rapid, nonconscious, and holistic associations” (Dane & Pratt, 2007). It is of course impossible to determine whether the measure captures any nonconscious elements of the evaluation (although given what we know about how people make evaluative judgments, it could be assumed that this is the case). In any case, given that the measure does capture first impressions in evaluative terms (e.g. good vs. not good investment opportunity, good vs. not good impression); that these evaluative impressions are also broad in nature (two are labeled as “overall”), and that they explicitly include subjective elements (i.e. “gut feeling,” “I feel,” “it seems”), I make the argument that the scale constitutes a reasonable measure of what constitutes an intuitive judgment. At a minimum, this measure represents a quick, general opinion about a new venture as a potential investment opportunity, which includes subjective components. The scale is internally consistent, as suggested by very good estimated measures of reliability (Cronbach’s Alpha = .90, see Table E-1 in Appendix E).

Mediating variables

The proposed model has three types, or categories, of variables which are postulated to mediate the relationship between the way an entrepreneurial opportunity is communicated and the intuitive assessments of investors in regards to the opportunity. Two of these types of variables are postulated to mediate the effects of narrative structure, and relate to investors' personal reactions to and beliefs about the entrepreneurial team, and the other type of variable is postulated to mediate the effects of intense language, and relates to investors' assessments of the market situation. Specifically, these three main categories of variables pertain to: (1) how angel investors personally connect with the entrepreneurial team, (2) assessments that angel investors make about certain characteristics of the entrepreneurial team, and (3) assessments that angel investors make about certain characteristics of the market situation, specifically the perceived degree of market need that the new venture is addressing with its products and services.

Given the multidimensional nature of these constructs, I developed a series of multi-item measures (3 to 4 items each), to make the variables in question more meaningful and reliable. For each variable, a scale was constructed by averaging the scores of the items in question which, in all cases, could take the possible value of any integer between 1 and 5 (1=strongly disagree, 2=somewhat disagree, 3=neither agree nor disagree, 4=somewhat agree, 5=strongly agree).

In the category of how investors personally connect with the entrepreneurial team, there is one variable that was hypothesized to mediate the relationship between

entrepreneurial storytelling and investors' evaluations: The degree of *empathetic identification* that investors' experience with the members of the founding entrepreneurial team. This variable is explained in more detail below.

Empathetic Identification. This measure intends to represent a mental state reflecting an assessment of how investors personally relate to the entrepreneurial team, and it thus intends to capture the extent to which the participating investor identifies with the members of the entrepreneurial team both at a cognitive and at an emotional level. In other words, it represents an assessment of how investors both take the perspective of the entrepreneurial team as well as experiences an empathetic concern for it, and it thus includes both the cognitive as well as an emotional component inherent in the notion of empathetic identification. To capture the essence of this idea, a scale was constructed by averaging the scores of the following 4 items:

1. "I feel affinity with this group of entrepreneurs"
2. "I am like this group of entrepreneurs in some ways"
3. "I appreciate what the entrepreneurs are trying to accomplish"
4. "I understand how the founding team feels about its endeavors"

Recall that the concept of identification, as understood in the literature on narrative persuasion, usually involves two distinct dimensions that are said to operate at the cognitive level. First, there is the idea of perceived similarity, which refers to the extent that an investor perceives that he/she is similar to the members of the entrepreneurial team in terms of one or several attributes, e.g. values, beliefs or personality traits (Moyer-Gusé, 2008). In addition, there is the idea that identification

implies more than mere similarity, even at the cognitive level, and that it also involves sharing or adopting the perspective, behavioral intentions or goals of the characters in a story (de Graaf et al., 2011). Researchers in the field of literary and narrative response have framed this idea in terms of "personal resonance" (Bortolussi & Dixon, 2003). Personal resonance happens when self-knowledge and memory are activated in the mind of and audience that then projects them on the experiences of the story's characters (Seilman & Larsen, 1989). In this measure I thus tried to capture the extent to which participants perceived themselves similar to the group of entrepreneurs ("I am like"), as well as the degree of cognitive perspective-sharing (see below), perceived shared values and general affinity.

The third dimension of the identification construct, which is central to the idea of experiencing empathetic identification, is of course the experience of empathy, which is the emotional component of this multidimensional measure. Recall that empathy is sometimes described as an emotion in its own right, but that is generally considered to be both affective and cognitive in nature, given that empathy involves feeling what people believes are the emotions of others, and therefore involves both feeling and thinking (Keen, 2006). A common conceptualization of the cognitive experience of empathy is that of perspective-taking, which involves the understanding and the adoption of the other's point of view – i.e. "putting oneself in someone else's shoes" (de Waal, 2008), which of course overlaps with the notion of cognitive perspective-taking in the identification construct of the narrative persuasion literature (which is why the concepts are so difficult to disentangle empirically). This is not a

problem here because the concept of empathetic identification (indeed the concept of identification in the narrative persuasion literature) includes perspective taking as one of its components. In any case, empathy can be thought as the mental process by which someone is capable of taking the perspective of others and, in so doing, even be capable of understanding and sharing their emotional states. Although related, these are two somewhat distinct constructs and I mention this distinction in the discussion about the measure because these two concepts have formed part of instruments measuring empathy in counseling psychology since the original empathy scale was published by Robert Hogan (1969). The measurement of empathy (unlike the measurement of narrative identification) has a long history, particularly in the area of counseling psychology, and there have been many different types of multicomponent rating scales, such as the Response Empathy Rating Scale (Elliott, Filipovich, Harrigan, Gaynor, Reimschuessel & Zapadka, 1982) and the better-known Interpersonal Reactivity Index (Davis, 1983), which includes these two dimensions in what Davis (1983) refers to as "perspective taking" (the tendency of adopting the views of others) and as "empathic concern" (the tendency of experience the feelings of others).

To capture the two common dimensions of the traditional measurements of the experience of empathy, which are fully compatible with the notion of empathetic identification that I derived from the narrative persuasion literate, I included items that refer to both perspective-taking (e.g. "appreciate" implies "to judge with heightened perception of understanding" –Merriam Webster), as well as to the experience of

empathy in terms of understanding and sharing the feelings of others. Examples of the latter are “understanding how the founding team feels” or “feeling affinity” with the group of entrepreneurs (affinity involves an emotional component in the sense that it often expresses sympathy, kinship or some other form of affective laden term– Merriam Webster). The reliability of this scale is acceptable (Cronbach’s alpha=.70), despite the rich multidimensional nature of its constitutive components (see Table E-2 in Appendix E).

In the category of how investors develop their beliefs about the quality of the entrepreneurial team, there are two variables that were hypothesized to mediate the relationship between entrepreneurial storytelling and investors’ evaluations: Investors’ assessment of the entrepreneurial team’s level of *competence* and of the entrepreneurial team’s level of *motivation* (i.e. traits and attitudinal dispositions that are associated with desired behaviors and outcomes). These are explained in more detail below.

Competence. This measure intends to capture the level of competence that investors ascribe to the entrepreneurial team based on the information presented in the opportunity description. In other words, it represents an appraisal of certain characteristics of the entrepreneurial team that relate to its capability of carrying out the task at hand, such as knowledge, skills or previous experience in a specific task- or industry domain. Traditional measures of human capital include formal education as one of the indicators of task-specific knowledge and skill, but the literature on the decision making of early-stage investors suggests that formal education not always has

a positive effect on investors evaluations and that, in fact, sometimes has a negative effect (Matusik et al., 2008). For this reason, I focus on the appraisal of skills and knowledge that, although they do not exclude the effect of formal education, revolve around competences gained through prior experience (i.e. learning-by-doing). Valuable competences developed through experience can be of many different types, but the literature suggests that early stage investors especially value prior experience with a startup (Hsu, 2007), industry- or technology-specific experience, and experience managing people (Hisrich & Jankowicz, 1990; Zacharakis & Meyer, 2000). I developed the opportunity description (in all its versions) such as to convey information that signals that the entrepreneurial team is competent and experienced in these domains. To capture the extent to which investors picked it up and assessed the overall level of competence of the entrepreneurial team, I constructed a scale that included the following 3 items:

1. "The entrepreneurial team seems competent"
2. "The entrepreneurial team has a proven track record"
3. "The entrepreneurial team has the necessary expertise"

This scale shows a good level of reliability (Cronbach's Alpha=.772), which suggests that the items are internally consistent (see Table E-3 in Appendix E).

Motivation. This measure intends to capture the extent to which investors believe that the entrepreneurial team possesses desirable personal attributes and attitudinal dispositions that are associated with behaviors perceived to lead to positive outcomes. More specifically, it represents an appraisal of certain characteristics of the

entrepreneurial team that relate to its desire, its drive, to carry out the task at hand. Above and beyond a set of relevant competencies that would make the team capable of carrying out the task at hand, investors look for people who are also motivated and willing to do what it takes to succeed. Early-stage investors value founding entrepreneurs who are motivated and demonstrate a strong work ethic, (Haines et al., 2003), who are enthusiastic (Mason & Harrison, 1996), and even passionate (Mitteness et al., 2012), and who can be trusted to do the right thing (Feeney et al., 1999). Thus, the traits and attitudinal dispositions that early-stage investors seem to value the most in a founding entrepreneurial team are those related to its drive, or motivation (which is expected to lead individuals to work hard and persevere). To capture the multidimensional nature of this construct, I developed a scale that includes the following 3 items:

1. "The entrepreneurial team seems motivated to succeed"
2. "The entrepreneurial team is committed to the new venture"
3. "The entrepreneur seems passionate about the business"

The goal with this scale is thus to capture the extent to which angel investors believe that the founding team is motivated and committed enough to do the hard work necessary to succeed ("seems motivated," "is committed," "seems passionate"). The scale shows a good level of reliability (Cronbach's Alpha=.78), which suggests that the items are internally consistent (see Table E-4 in Appendix E).

Market Need. This measure intends to capture the extent to which investors believe that there is a market need for the product that the new venture, in this case

OxyCool, is bringing to market. The “market pain” metaphor, so often used in entrepreneurial settings, both by investors and entrepreneurs, gets to the notion of how important it is to solve the problem that is being addressed by a new venture. Big “problems,” or big market needs, are what investors often associate to “home run” investments. This colloquial term gets thus to investors’ beliefs of whether a given product or service solves a marginal problem that is experienced by a few people (which, in this case, it is not likely to be a very profitable endeavor), or whether it solves a big problem that is experienced by a lot of people (which is more likely to result in a profitable endeavor). In other words, this construct represents an appraisal by investors of a given characteristic of the market situation in which the new venture is intending to introduce its offerings, and how well the new venture’s products fit this characteristic of the market. The “market pain” metaphor addresses thus a market situation from both a problem and a solution perspective, but the focus of the metaphor is on the market situation, i.e. the “pain,” or how badly a market needs what is being introduced.

To capture the perception of market need with the very limited information about a market that can be given in a brief description of an opportunity is a very difficult endeavor, especially when many of the participating investors may not be familiar with the particular market in question. To address this difficulty, I used the strategy of focusing on the ordeal that potential customers or end users (in this case patients) where experiencing prior to the introduction of OxyCool’s products. In other words, as a proxy of investors’ perception of the current market need, or the severity

of the problem being addressed by the new venture, I tried to capture the perception of investors in regards to the current situation of the patients, and more specifically, I tried to gage how well they understood and could relate with the problems that the patients were experiencing prior to the introduction of OxyCool. To capture this idea, I constructed a scale that includes the following 3 items:

1. "I understand how patients must feel about current treatments"
2. "I can see the problem from the perspective of the patient"
3. "Current treatments put patients through a terrible ordeal"

I thus framed the items in this measure in terms of how well investors could identify and empathize with the patient suffering the current *status quo* situation (i.e. "ordeal," "problem"), probing into their feelings of empathy and identification with the patients suffering the current problems (i.e. the potential user of the product) as a proxy for their assessment of market need. With this strategy I focused on the specific rather than on the general, and thus tried to capture how bad investors imagined that the current situation was, prior to the appearance of OxyCool in the marketplace. The reliability of this measure is borderline acceptable (Cronbach's Alpha=.68), but it has enough internal consistency to use it as intended (see Table E-5 in Appendix E).

Analysis

The hypothesized model was estimated using a multiple mediation test involving bootstrapping of indirect effects (Preacher & Hayes, 2008; Hayes 2009), which allows for simultaneously testing each specific indirect effect and the total sum

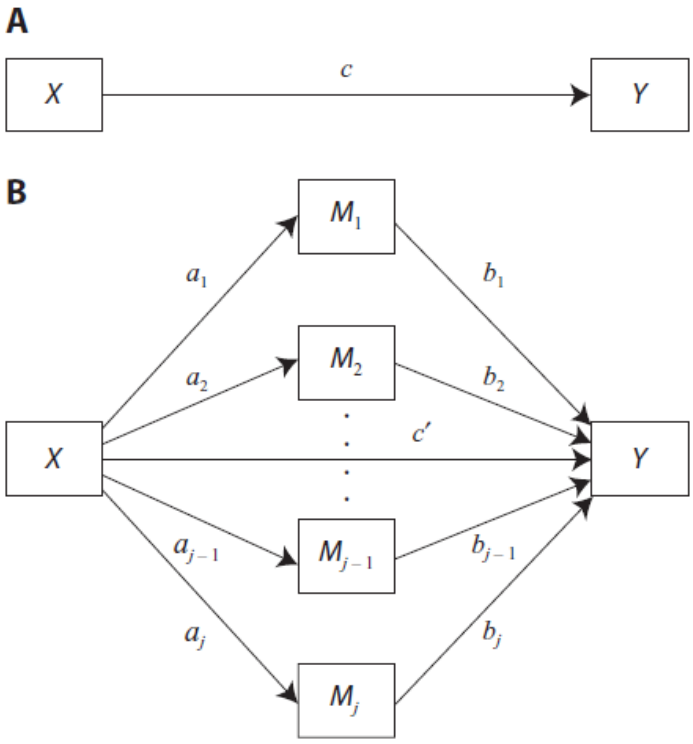
of indirect effect, as well as the direct effect and total effect of the independent variable on the outcome variable.

Testing each specific mediator hypothesized in the model proposed in this dissertation requires a method that allows for the simultaneous testing of several indirect effects, rather than testing each one in a separate procedure, as is the case in the more traditional (and despite its flaws still widely used) causal steps approach (Baron & Kenny, 1986). Testing a single multiple mediation model, as opposed to a multitude of single mediation models, has several advantages. First, it allows for a better understanding how all the mediators constitute the total indirect effect in the model. In that sense, it is analogous to running a regression analysis with several predictors to determine the overall effect. Second, it allows for testing the mediating effect of a mediator controlling for the other mediators and other variables in the model. A given mediating effect in a multiple mediation model represents the ability of this specific effect to mediate conditional of the inclusion of the other mediators in the model. That is to say, unless the mediating variables are uncorrelated, the presence of other mediators should affect the effect of each mediator. Third, it reduces the risk of parameter bias due to omitted variables, since more variables of interest are included in the model. Finally, it allows researchers to understand the relative importance of each specific indirect effect in the model, as they can be more easily compared (Preacher & Hayes, 2008).

To better understand what specifying and testing a multiple mediation model implies, a well-known graphical representation of the relationships underlying it can

be useful. Figure 2 depicts a multiple mediation model with *j* mediators (Preacher & Hayes, 2008: 881), in which *c* represents the total effect of *X* on *Y*, *c′* represents the direct effect of *X* on *Y* and $a_i b_i$ represents the specific indirect effect of *X* on *Y* via M_i. The *specific indirect effect* of *X* on *Y* via the mediator *i* is defined as the product of the two paths linking *X* with *Y* via M_i (i.e. the path a_i, which links *X* with M_i , and path b_i, which links M_i with *Y*). For example, the specific indirect effect of *X* on *Y* through M_3 is quantified as $a_3 b_3$ .The *total indirect effect* of *X* on *Y* is the sum of the specific indirect effects, $\Sigma_i(a_i b_i)$, $i = 1$ to *j*, and the total effect of *X* on *Y* is the sum of the direct effect (*c′*) and the sum of all the specific indirect effects: $c = c' + \Sigma_i(a_i b_i)$, $i = 1$ to *j*. The total indirect effect can thus also be calculated as $c - c'$.

Figure 2: Multiple-mediator model design (Preacher & Hayes, 2008: 881)



Many researchers suggest that, to specify and test a multiple mediator model, it is not necessary to specify and test *c* (i.e. the relationship depicted in **A**), which represents the total effect of *X* on *Y* (Hayes, 2009; MacKinnon et al., 2000; Shrout & Bolger, 2002). Recall that, in this dissertation, however, I do explicitly hypothesize a total effect of both story and language on investors' evaluations, but that I do so to be rhetorically consistent with one of the main objectives of the research, which is to examine *whether* (in addition to *how*) a given form of communication can affect investors' assessments.

Besides the previously explained reasons regarding the advantages of conducting a single test of multiple mediators rather than multiple tests of single mediators, another reason why the traditional causal steps approach (Baron & Kenny, 1986) is usually inappropriate to test a multiple mediation model is that it requires to first test for *c* (i.e. to check that total effect of *X* on *Y*) before proceeding to test any mediation effects. When two or more mediators are included in the same model, the possibility arises that the effects of these mediators will compete with each other and, in fact, they may even completely *suppress* each other (MacKinnon et al., 2000). It is thus possible to have specific indirect effects that are significant going in opposite directions, creating an insignificant total indirect effect. In other words, in a multiple mediation model, the fact that *X* does not affect the total value of *Y* does not necessarily mean that the mediators have no effects, i.e. *X* still can affect M_i, and in turn M_i can still affect *Y* in the absence of a total effect of *X* on *Y*. The causal steps approach, however, requires that the researcher must first establish a series of criteria,

including testing for *c*, before proceeding to test mediation effects (Baron & Kenny, 1986). Another problem with the popular causal step approach is that the existence of an indirect effect is inferred logically, rather than statistically tested. That is to say, the statistical probability that the $a_i b_i$ paths differ from zero is not formally tested, but rather logically inferred from a series of regression equations (Hayes, 2009). The SOBEL test, which is how the product of coefficients testing strategy is popularly known as, was develop with the purpose of addressing this particular issue, and is often used as a complementary analysis to the causal steps approach. The SOBEL is an inferential test that does actually test whether $a_i b_i$ statistically differs from zero by comparing the ratio of $a_i b_i$ with its standard error with a p-value derived from the standard normal distribution. Besides the fact that the SOBEL test used in conjunction with the causal steps approach still tests indirect effects individually, rather than in the context of a multivariate model, the test itself has the major flaw that it assumes that the sampling distribution of indirect effects is normal, which is not a reasonable assumption to make except in the case of very large samples (Preacher & Hayes, 2008).

There are more powerful tests that do not make any assumptions about the sampling distribution of indirect effects, which provide stronger protection against type II errors than the SOBEL test, in addition of providing an efficient way for formally testing multiple mediators simultaneously. Extensive simulation results provide empirical evidence that *bootstrapping* constitutes the most powerful and reasonable method of obtaining confidence limits for specific indirect effects under

most conditions (MacKinnon, Fairchild & Fritz, 2007; MacKinnon, Lockwood & Williams, J. 2004). Therefore, researchers who study mediation from a statistical methodology perspective increasingly recommend the use of bootstrapping to test mediation hypotheses (Preacher & Hayes, 2008; Hayes, 2009; Shrout & Bolger, 2002; MacKinnon et al., 2004). Following this advice, I test the model in this dissertation with a well-known bootstrapping methodology, specifically with the aid of macros for SPSS developed and provided by Preacher and Hayes (2008). These SPSS macros have been used for testing multiple mediation models across a wide range of disciplines.

Bootstrapping a sampling distribution of indirect effects essentially consists in generating an empirical representation of the sampling distribution by treating the obtained sample of size *n* as a representation of the population in miniature, and then resampling it repeatedly (thousands of times) with the purpose of mimicking the original sampling process (Hayes, 2009; Preacher & Hayes, 2008). Hayes (2009) provides a very clear and precise explanation of the process of resampling with replacement to bootstrap an empirical approximation of the sampling distribution: "a new sample of size *n* is built by sampling cases from the original sample but allowing any case once drawn to be thrown back to be redrawn as the resample of size *n* is constructed. Once a resample is constructed, *a* and *b* are estimated in this resampled data set and the product of the path coefficients recorded. This process is repeated for a total of *k* times, where *k* is some large number (typically at least 1000, although I recommend at least 5000). Upon completion, the analyst will have *k* estimates of the

indirect effect, the distribution of which functions as an empirical approximation of the sampling distribution" (Hayes, 2009: 412). The distribution of these k samples of $a_i b_i$ serves as an empirical approximation of the sampling distribution of $a_i b_i$, which can be then used to infer its standard error so that a confidence interval for $a_i b_i$, can be derived by sorting the *k* values of $a_i b_i$, from low to high. The null hypothesis that there is no indirect effect is tested by determining whether zero is a value within the confidence interval. If zero is not within the confidence interval, it means that the indirect effect is different from zero.

The software implementation of these procedures via macros in SPSS that was developed by Preacher and Hayes (2008) allowed me to test for total and specific indirect effects by bootstrapping confidence intervals, also permitting me to statistically control for the effect of one or more covariates that were not modeled as mediators (e.g. other independent variables). The recommended procedure for testing a model that includes more than one independent variable is to run the test once for each independent variable specifying the other independent variables as covariates. Covariates are mathematically treated exactly like independent variables in the estimation with paths to all mediators and to the outcome, so that their effect will be captured. However, the test provides no information on the combined indirect effect of all the independent variables. In other words, in a situation in which the researcher has *k* independent variables, the estimation can be run *k* times, each time with one of the independent variables functioning as independent variable and the other independent variables functioning as covariates. The researcher will not get a single estimate of the

total indirect effect across all independent variables, but will get estimates for each independent variable controlling for the effects of the others.

To test the hypothesized model in this dissertation I thus ran the bootstrapping procedure twice, first to test the effects of story controlling for the effects of language and then to test the effects of language controlling for the effects of story. Although story and language are hypothesized to influence investors' evaluations through two distinct paths, the model is postulated as a single model, in which the effects occur simultaneously, so the effects of the treatment variables on mediators and outcome variables should be taken into consideration and controlled for, even when the relationships are not specifically hypothesized. Given that investors are exposed to the effects (or absence of effects, depending on the version) of both story and language when reading the new venture description, it is preferable to control for the effects of the other treatment.

The first of the bootstrapping procedures, in which I specified story as independent variable and language as control, effectively estimated the following equation:

$$\boldsymbol{c_{story}} = c'_{story} + a_{iden}b_{iden} + a_{comp}b_{comp} + a_{pers}b_{pers} + a_{need}b_{need} + c'_{lang}$$

In which $\boldsymbol{c_{story}}$ represents the total effect of narrative structure (*story*) on investors' evaluations of the new venture opportunity and each of the $a_i b_i$ paths represents the specific indirect effects of the mediators empathetic identification (*iden*), competence (*comp*), personal qualities (*pers*) and market need (*need*). The total

indirect effect is simply the sum of the specific indirect effects in question. Although the proposed model does not explicitly include any hypotheses about the direct effect of story on investors' evaluations, the procedure provides an estimation of this direct effect (c'_{story}), as well as an estimation of the direct effect of the control variable.

The second of the bootstrapping procedures, in which I specified language as independent variable and story as control variable, simply switched the total and direct effects elements of the equation, effectively estimating the following relationships:

$$\boldsymbol{c_{lang}} = c'_{lang} + a_{iden}b_{iden} + a_{comp}b_{comp} + a_{pers}b_{pers} + a_{need}b_{need} + c'_{story}$$

In which $\boldsymbol{c_{lang}}$ represents the total effect of intense language (*lang*) on investors' evaluations of the new venture opportunity and, again, each of the $a_i b_i$ paths represents the specific indirect effects of the mediators empathetic identification (*iden*), competence (*comp*), personal qualities (*pers*) and market need (*need*). The total indirect effect is of course the sum of all the specific indirect effects in question. The procedure also provides an estimation of the direct effect of intense language on investors' evaluations (c'_{lang}), as well as an estimation of the direct effect of the control effect

I also conducted three supplemental analyses not directly addressed at testing the hypothesized relationships in the model. First, given the bootstrapping procedures do not provide specific information on whether there is a combined indirect effect of the independent variables, I used a classic two-way analysis of variance (ANOVA) to confirm that there was no interaction effect of story and language on investors'

evaluations of the new venture opportunity. Whether there were any total effects that could be accounted by the interaction of the two independent variables was not formally part of the hypothesized model, but a related question of interest for the purpose of this study is whether there might be the possibility that these interaction effects might take place. For instance, it would be interesting to see whether the effect of narrative structure could somehow be changed by the choice of language or, in other words, whether a story could be effectively "embellished" with a specific kind of language. I also conducted a factor analysis with the items that were used to construct the mediating variable scales, to gain a better understanding of how the different items relate to each other and to learn about the pattern of these interdependencies, given the relatively high correlations that I found between some of the mediating variables. To explore the risk of collinearity problems due to these high correlations, I also tested the variance inflation factors (VIF) of the meditating variables regressed on the outcome variable.

CHAPTER 5: RESULTS

In this section, I report descriptive statistics, the results of the hypotheses tests and the results of some supplemental analyses.

Descriptive statistics

A summary of descriptive statistics showing means and standard deviations for the dependent and the mediating variables is shown in Table 1 below.

Table 1: Summary of descriptive statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Intuitive Evaluation	186	1.25	5.00	3.5470	.77947
Empathetic Identification	185	1.00	5.00	3.3878	.56076
Competence	183	1.00	5.00	3.4517	.75428
Motivation	183	2.00	5.00	3.6885	.63727
Market need	187	1.33	5.00	3.3832	.70745
Valid N (listwise)	175				

Given that the possible values of the variables are bounded by the design of the scales (i.e. they have a minimum value of 1 and a maximum value of 5), it is interesting to note that all the measures reach the maximum score but not all the measures reach the minimum. The lowest score for the assessment of the personal qualities of the entrepreneurial team is 2.00. This is the minimum score that is most proximate to its mean score for any of the variables. The empathetic identification variable shows the lowest measure of dispersion of all variables (sd=.56), whereas the variable with the highest level of dispersion is the outcome variable, i.e. the intuitive

evaluation variable (sd=.78). In general, the level of dispersion for all the variables is not very high, as reflected in the standard deviation scores. Listwise deletion of cases with missing responses in one or more items that constitute the variables of interest result in 13 cases eliminated from the original sample, reducing the number of cases from which the hypotheses are tested to 175.

Bivariate correlations (Pearson correlations) between the dependent, mediating and independent variables (i.e. all the variables in the model) are shown in Table 2 below. As can be seen, all the mediating variables, except assessments of market need, are significantly correlated with the dependent variable (i.e. investors' "intuitive evaluations"). Neither of the independent variables, "story" and "language," is correlated with the dependent variable. The independent variable "story" is negatively correlated with assessments of competence, but positively correlated to all the other mediating variables except assessments of market need. The independent variable "language" is not correlated with any of the mediating variables except for assessments of market need. As can also be seen, there are some bivariate correlations between several of the mediating variables in the model that are somewhat high (see Table 2). These high correlations prompted both collinearity concerns as well as questions about the underlying structure of the data. To examine the potential risk of collinearity problems and to learn more about the structure of the data, I conducted collinearity diagnostic tests and factor analysis, which are reported in the additional analyses section below.

Table 2: Bivariate correlations

Correlations

		Intu Eval	Emp Ide	Compet	Motivat	Mkt Need	Story	Lang
Intu Eval	Pearson Correlation	1						
	N	186						
Emp Ide	Pearson Correlation	.411**	1					
	N	183	185					
Competence	Pearson Correlation	.559**	.401**	1				
	N	182	180	183				
Motivation	Pearson Correlation	.381**	.467**	.308**	1			
	N	182	181	179	183			
Mkt Need	Pearson Correlation	.115	.540**	.220**	.238**	1		
	N	185	184	182	182	187		
Story	Pearson Correlation	-.043	.168*	-.250**	.287**	.061	1	
	N	186	185	183	183	187	188	
Language	Pearson Correlation	-.101	.015	.077	.027	.169*	.021	1
	N	186	185	183	183	187	188	188

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

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

Hypotheses tests

To test the hypothesized model, I ran the bootstrapping procedure twice, first to test the effects of story controlling for the effects of language and then to test the effects of language controlling for the effects of story. In addition to the results of the bootstrap analysis (which represents the formal test of the model in terms of total and specific indirect effects), the software implementation of the procedures with Preacher and Hayes' (2008) SPSS macro, also reports the results of regressing the mediators on the independent variables (*a* paths), of regressing the outcome variable on the mediators (*b* paths), as well as the results of regressing the outcome variable on the independent variable (what is known as the total effect of the independent variable on the outcome variable, or *c* path). With the exception of the latter, i.e. the results of the total effects tests (the significance of the *c* paths), which are of course relevant for empirically testing the model proposed in this dissertation, the additional analyses of the *a* and *b* paths do not constitute a formal statistical test for any of the hypotheses in the model, but do provide some interesting insights about the relationships at play.

Table 3 below shows the results of the first estimation, with "story" as independent variable and "language" as control variable, which indicate that the total effect of narrative structure (story) on investors' intuitive evaluations was not significant (β=-.1099, p=.350). In other words, the test shows that storytelling did not significantly affect the intuitive evaluations of investors and it thus it implies the rejection of H_1.

Table 3: Multiple-mediator model with Story as IV

```
----------------------------------------------------------------
Dependent, Independent, and Proposed Mediator Variables:
DV =   Intuitive Evaluation
IV =   Story
MEDS = Empathetic Identification (EmpIden)
       Competence (Compet)
       Motivation (Motivat)
       Market Need (MktNeed)

Statistical Controls:
CONTROL= Language

Sample size
        175

IV to Mediators (a paths)
             Coeff        se         t         p
EmpIden      .1701     .0841    2.0227     .0447
Compet      -.3992     .1106   -3.6106     .0004
Motivat      .3733     .0922    4.0505     .0001
MktNeed      .1063     .1066     .9966     .3204

Direct Effects of Mediators on DV (b paths)
             Coeff        se         t         p
EmpIden      .2878     .1145    2.5127     .0129
Compet       .4628     .0749    6.1808     .0000
Motivat      .2014     .0892    2.2572     .0253
MktNeed     -.1258     .0798   -1.5771     .1166

Total Effect of IV on DV (c path)
          Coeff        se         t         p
Story    -.1099     .1171    -.9383     .3494

Direct Effect of IV on DV (c' path)
          Coeff        se         t         p
Story    -.0359     .1072    -.3346     .7383

Partial Effect of Control Variables on DV
             Coeff        se         t         p
Language    -.1808     .0947   -1.9099     .0578

Model Summary for DV Model
      R-sq  Adj R-sq         F       df1       df2         p
     .3913     .3695   17.9980    6.0000  168.0000     .0000
----------------------------------------------------------------
```

Although not a formal test of the significance of the *ab* paths (i.e. of each specific indirect effect) , the regression equations in Table 3 show a series of interesting relationships between the mediating variables and the dependent and independent variables that are worth reporting. For example, they show that being presented with a narrative version of the opportunity description was positively related (as seen in the tests of the *a* paths) to the experience of empathetic identification (β=.1701, p=.045) and to favorable assessment of the level of motivation of the entrepreneurial team (β=.3733, p=.000), while it was negatively related to the assessment of entrepreneurial team competence (β=-.3992, p=.000). In turn, all of the proposed mediating variables were shown to be positively related to the outcome variable (as seen in the tests of the *b* paths). Assessments about both the competence (β=.4628, p=.000) and motivation (β=.2014, p=.025) of the entrepreneurial team were positively related to the intuitive assessments of investors, as was the experience of empathetic identification with the entrepreneurial team (β=.2878, p=.013). In order to see whether these relationships formally constitute significant indirect effects, it is necessary conduct a formal test of the significance of the *ab* paths, i.e. to look at the results of bootstrapping the sampling distributions of the *ab* paths. Table 4 below shows the results of bootstrapping for the indirect effects of the first estimation (using story as independent variable and language as control), and displays the point estimates and the bias corrected and accelerated confidence intervals. An indirect effect is considered significant if its 95% confidence interval from the 5,000 bootstrapped samples does not include the value of zero.

Table 4: Bootstrapping test of indirect effects with Story as IV

```
------------------------------------------------------------------
           BOOTSTRAP RESULTS FOR INDIRECT EFFECTS

Indirect Effects of IV on DV through Proposed Mediators
(ab paths)
              Data      Boot      Bias        SE
TOTAL       -.0740    -.0776    -.0036     .0924
EmpIden      .0490     .0497     .0007     .0342
Compet      -.1848    -.1858    -.0010     .0626
Motivat      .0752     .0726    -.0025     .0364
MktNeed     -.0134    -.0142    -.0008     .0205

Bias Corrected Confidence Intervals
             Lower     Upper
TOTAL       -.2538     .1061
EmpIden      .0028     .1416
Compet      -.3242    -.0788
Motivat      .0186     .1674
MktNeed     -.0860     .0081

Level of Confidence for Confidence Intervals:
  95

Number of Bootstrap Resamples:
  5000
------------------------------------------------------------------
```

The results displayed in Table 4 show that the total indirect effect (i.e. the sum of all specific indirect effects) was not significant, as the estimate of the total indirect effect was -.0740, with a 95% confidence interval ranging from -.2538 to .1061. Given that zero is a value within the confidence interval, it cannot be claimed that the total indirect effect differs from zero. However, the three specific indirect effects in the model were significant. Two of them, were positive as expected (empathetic identification and motivation), whereas one of them was negative (competence). The point estimate for the specific indirect effect of empathetic experiencing identification was .0490, with a 95% confidence interval of .0028 to .1416. Given that zero was not

a value within the confidence interval, the results were consistent with the claim that entrepreneurial storytelling has an indirect influence on the intuitive assessments of investors that goes through their experience of empathetic identification with the entrepreneurial team. Furthermore, it can be concluded that this indirect influence is positive, since the values in the confidence interval are greater than zero. H_2 predicted that the experience of identification would positively mediate the relationship between entrepreneurial storytelling and the intuitive evaluations of investors, so this hypothesis is supported by the empirical results.

Because I claim that H_2 is empirically supported by the data in the absence of a total effect of the independent variable on the outcome variable, I propose a brief parenthesis at this point in the reporting of the results to offer what I consider is an important clarification about what it implies to testing mediation hypotheses in an indirect effects model. I refer the reader to the theoretical discussion in Chapter 3 for a more detailed explanation of why it is not inappropriate to talk about mediation effects in the absence of total effects of the independent variable on the outcome variable. In essence, I argue that any potential problems in conceptualizing the notion that mediating effects can occur in the absence of total effects are likely to be mostly semantic in nature. Different authors define causal relationships involving intervening variables in different ways, often using terms such as “indirect” effects, or “intervening” effects, interchangeably with the term “mediation” (Mathieu & Taylor, 2006). Perhaps the term “intervening variable model,” in which an independent variable is postulated to exert an effect on an outcome variable through one or more

intervening variables, which sometimes (and only sometimes) are called mediators (Hayes, 2009), is a more appropriate term for what I am testing in this dissertation. However, given that I am also interested in postulating total effects in the proposed model (for theoretical reasons that I explained above), I used the terms “mediation” when articulating my hypotheses in order to be consistent with a more common rhetorical convention. Given that it is entirely possible to find specific indirect effects of intervening variables that are significant even in the absence of a total significant effect of the independent variable on the outcome variable (as it is indeed the case in this study) –because specific indirect effects can compete against each other to the point of suppression (Preacher & Hayes, 2008), it is thus inappropriate to dismiss indirect effects that are significant on the grounds that they cannot mediate a non-existing total effect. One of the essential purposes underlying the proposed model is to examine whether the independent variable exerts some kind of indirect effect on the dependent variable. In other words, it is to test whether a set of variables “mediate” the relationship between the independent and the dependent variable, regardless how the final outcome of that relationship turns out to be.. That is why I consider mediating hypotheses to be supported with empirical evidence of a significant specific indirect effect.

After this brief clarification, I return to reporting the results of the empirical tests. Table 4 above also shows that the point estimate for the specific indirect effect of the assessment of the level of motivation of the entrepreneurial team was .0752, with a 95% confidence interval ranging from.0186 to .1674. Given that zero was not in

the confidence interval, the results were consistent with the claim that storytelling has an indirect influence on the intuitive assessments of investors that goes through their assessments of the quality of the entrepreneurial team in terms of motivational disposition. Furthermore, it can be concluded that this indirect effect is positive, since the values in the confidence interval were above zero. H_{3b}, which predicted that the assessments about the level of motivation of the entrepreneurial team would positively mediate the relationship between entrepreneurial storytelling and the intuitive evaluations of investors, is thus supported.

The point estimate for the specific indirect effect of the assessment of the level of competence of the entrepreneurial team was -.1848, with a 95% confidence interval ranging from -.3242 to -.0788. As zero was not a value in the confidence interval, the results were in this case also consistent with the claim that storytelling has an indirect influence on the intuitive assessments of investors that goes through their assessments of the entrepreneurial team's level of competence. This indirect influence, however, was in this case negative, given that the values in the confidence interval were lower than zero. H_{3a} predicted that the assessments about the level of competence of the entrepreneurial team would positively mediate the relationship between entrepreneurial storytelling and the intuitive evaluations of investors, so the hypothesis not only is not supported but, in fact, empirical results showed the opposite effect.

As an additional observation, it may be worth to note that investors' assessments of the market need were not shown to mediate the relationship between entrepreneurial storytelling and investors overall intuitive assessments of the

opportunity, given that no significant indirect effects of this specific variable were shown. Its point estimate was reported at -.0134, with a 95% confidence interval ranging from -.0860 to .0081. Given that zero was a value within the confidence interval, it cannot be claimed that this specific indirect effect differs from zero. Recall that investors' market need assessments only function as a control type mediator in this model (i.e. I only included in the test it to control for its potential influence, given that no indirect effects from storytelling were hypothesized to go through it). The control variable "language," however, was shown to have some moderate level of negative influence on investors' intuitive evaluations (see Table 3), given that the partial direct effect of this control variable on the outcome variable was negative, but only marginally significant. (β=-.1808, p=.058). This partial effect of the control variable is analogous to the direct effect of the independent variable on the outcome variable in the second estimate, in which language is specified as the independent variable.

Table 5 below shows the results of the second estimation, with "language" specified as independent variable and "story" specific as control variable. These results indicate that the total effect of intense language on investors' intuitive evaluations was not significant (β=-.1485, p=.207). In other words, the results show that the use of intense language in an opportunity description did not significantly affect the intuitive evaluations of investors. This finding implies thus that H_4 is not supported.

Table 5: Multiple-mediator model with Language as IV

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----------------------------------------------------------------
Dependent, Independent, and Proposed Mediator Variables:
DV =   Intuitive Evaluation
IV =   Language
MEDS = Empathetic Identification (EmpIden)
       Competence (Compet)
       Motivation (Motivat)
       Market Need (MktNeed)

Statistical Controls:
CONTROL= Story

Sample size
        175

IV to Mediators (a paths)
             Coeff        se         t         p
EmpIden      .0220     .0841     .2619     .7937
Compet       .0910     .1106     .8229     .4117
Motivat      .0499     .0922     .5409     .5893
MktNeed      .2087     .1067    1.9568     .0520

Direct Effects of Mediators on DV (b paths)
             Coeff        se         t         p
EmpIden      .2878     .1145    2.5127     .0129
Compet       .4628     .0749    6.1808     .0000
Motivat      .2014     .0892    2.2572     .0253
MktNeed     -.1258     .0798   -1.5771     .1166

Total Effect of IV on DV (c path)
             Coeff        se         t         p
Language    -.1485     .1172   -1.2678     .2066

Direct Effect of IV on DV (c' path)
             Coeff        se         t         p
Language    -.1808     .0947   -1.9099     .0578

Partial Effect of Control Variables on DV
          Coeff        se         t         p
Story    -.0359     .1072    -.3346     .7383

Model Summary for DV Model
      R-sq  Adj R-sq         F       df1       df2         p
     .3913     .3695   17.9980    6.0000  168.0000     .0000
----------------------------------------------------------------
```

The results of the regressions presented in Table 5 show at least one other interesting relationship worth reporting. Namely, the results show moderate support for the notion that investors that were presented with a version of the opportunity description crafted with intense language were more likely to assess the market need being addressed by the new venture as higher (β=.2087, p=.052). As expected, none of the other *a* paths showed any degree of significance. The coefficients of the *b* paths are of course identical as those reported in the previous estimation, given that they reflect the relationship between the mediating variables and the outcome variable, and thus do not involve the independent variable at hand.

Table 6 below shows the results of bootstrapping for the indirect effects for the second estimation, using language as independent variable and story as control, and displays the point estimates and the bias corrected and accelerated confidence intervals. The results show that the total indirect effect of language on investors' intuitive evaluations (i.e. the sum of all specific indirect effects, which in this case functioned as controls except in the case of market need assessments) was not significant, as the estimate of the total indirect effect was .0323, with a 95% confidence interval ranging from -.1204 to .1786. Given that zero is a value within the confidence interval, it cannot be claimed that the total indirect effect of language on the outcome variable differs from zero.

The one specific indirect effect related to language that was hypothesized in the model, namely investors' assessments of the market need being addressed by the new venture did not turn out to be significant. The results of the test showed a point

estimate of -.0263, with a 95% confidence interval ranging from -.1011 to .0071, so the claim that intense language has an indirect influence on the intuitive assessments of investors that goes through their assessments of the market need that the new venture is addressing with its products or services, is not supported by the data. Therefore, H_5, which predicted that investors' assessments of the perceived market need would positively mediate the relationship between intense language and the intuitive evaluations of investors, must be rejected.

Table 6: Bootstrapping test of indirect effects with Language as IV

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----------------------------------------------------------------
           BOOTSTRAP RESULTS FOR INDIRECT EFFECTS

Indirect Effects of IV on DV through Proposed Mediators
(ab paths)
              Data      Boot      Bias        SE
TOTAL        .0323     .0330     .0008     .0761
EmpIden      .0063     .0057    -.0007     .0253
Compet       .0421     .0427     .0006     .0523
Motivat      .0100     .0110     .0010     .0212
MktNeed     -.0263    -.0264    -.0002     .0263

Bias Corrected Confidence Intervals
             Lower     Upper
TOTAL       -.1204     .1786
EmpIden     -.0433     .0609
Compet      -.0552     .1568
Motivat     -.0212     .0662
MktNeed     -.1011     .0071

Level of Confidence for Confidence Intervals:
  95

Number of Bootstrap Resamples:
  5000
----------------------------------------------------------------
```

Story, as a control variable in this estimation (see Table 5), was shown to have no significant effect on investors' evaluations (β=-.0359, p=.738), which is consistent with the results of the previous analysis with story as independent variable, given that the partial effect of story as control variable in this estimation is analogous to the direct effect of story as independent variable in the previous analysis..

In summary, neither the storytelling nor the intense language treatments were shown to have a total effect on the outcome variable (i.e. investors' evaluations of the opportunity). Two of the intervening variables hypothesized to positively mediate the relationship between storytelling an investors' evaluations were shown to exercise this expected indirect influence, while a third was shown to exercise a negative indirect influence,. The intervening variable hypothesized to positively mediate the relationship between intense language and investors' evaluations was not shown to exercise an indirect influence on the outcome variable. Table 7 below depicts a summary of these findings and how they relate to the specific hypotheses in the proposed model. I will discuss these results and their implications in the next chapter.

Table 7: Summary of findings

	Variable	**Prediction**	**Findings**
H_1	Story	Positively influences evaluations	Not supported
H_2	Empathetic Identification	Positively mediates the relationship between story and evaluations	Supported
H_{3a}	Competence	Positively mediates the relationship between story and evaluations	Not supported (opposite effect)
H_{3b}	Motivation	Positively mediates the relationship between story and evaluations	Supported
H_4	Language	Positively influences evaluations	Not supported
H_5	Market Need	Positively mediates the relationship between language and evaluations	Not supported

Supplemental analyses

I conducted a series of supplementary analyses to address some additional empirical issues of interest that were either beyond the scope of testing the proposed model or that arose during the research process. Given the nature and the purpose of this research, which is focused on how specific forms of communication affect the evaluative judgments of early-stage investors, I wanted to explore the possibility, at least at a very general level, of whether the effects of narrative structure and language could interact in the formation of investors' evaluations. Although an interaction effect was not formally part of the hypothesized model, the idea resonates with the notion that a story may be enhanced, or even "embellished," by a specific kind of language to the point of having a greater effect. In other words, I wanted to consider the possibility that the effect of narrative structure on evaluative judgments could somehow be changed by the choice of language or, more unlikely, that narrative structure could change the effect of intense language in an audience of investors. Given the results of the multiple mediator model tests (see Tables 3 and 5), which showed no total effects of the independent variables on the outcome variable, the additional value of running a two-way analysis of variance (ANOVA) for a model with no main effects is quite limited. In any case, I did run the analysis for the sake of comprehensiveness, confirming not only that the main effects are not significant, but also that there are no interaction effects between story and language (see Table E-9 in Appendix E).

Collinearity, if anything, is more likely to attenuate the results of multiple mediation tests, so the risk that the researcher runs when the mediating variables are

correlated is that potentially significant indirect effects will not be picked up, rather than the other way around (Preacher & Hayes, 2008). That being said, having high levels of collinearity among the mediating variables can be undesirable when trying to draw inferences on specific mediators' unique abilities to mediate a given relationship, above and beyond the effects of any other mediators or covariates in the model. Given there are some relatively high bivariate correlations among the mediating variables in the model, I wanted to get a better understanding of the magnitude of a potential collinearity problem, so I regressed the mediating variables on the dependent variable, supplementing the analysis with collinearity diagnostic tools (see Table E-8 in Appendix E), in order to obtain at least a general overview of a potential problem. The value of the variance inflation factors (VIF) in the test ranged from 1.210 to 1.831, suggesting that the level of collinearity among the mediators is within an acceptable range in a general linear model, and thus that collinearity does not seem to constitute a problem. The highest VIF value corresponded to the variable Empathetic Identification (1.831), while the lowest VIF value corresponded to the Competence variable (1.210).

Related to the issue of correlations between the mediators and, more importantly, in order to gain a better understand of the patterns of interdependencies between the mediating variables in the model, I conduct a confirmatory factor analysis for the mediating variable scales that were related to storytelling as independent variable, i.e. to the mediators related to the person-specific assessments and reactions of investors, namely Empathetic Identification, Competence and Motivation (see

Table E-6 in Appendix E). In this analysis, I defined 3 factors a priori with the 10 items that constitute these 3 composite scales and conducted a principal component analysis with a Varimax rotation and Kaiser normalization. In addition, to check whether conducting a factor analysis for this data is appropriate, I examined the Kaiser-Meyer Olkin measure of sampling adequacy and conducted the Bartlett´s test of sphericity (see Table E-7 in Appendix E). The results of the Kaiser-Meyer Olkin test suggest that the data for these variables in the sample is factorable (KMO=.794), whereas the results of the Bartlett´s test of sphericity suggest that the variables are uncorrelated in the population (sig. = .000). In other words, these tests indicate that conducting a factor analysis is in this case appropriate.

I reiterate that the purpose of conducting a confirmatory factor analysis was to gain a better understanding of the interrelationships among the items constituting mediating variables, especially in the light of relatively high intercorrelations scores among some of the mediating variables, and not to determine the item-composition of the mediating variables, which was solely driven by theory. The factor analysis does not include items that are not related to person-specific assessments about, or personal reactions to, the entrepreneurial team, because they constitute a conceptually different category of assessments and reactions. In other words, items related to the market need variable, which reflect the degree to which investors understood and empathized with the situation of patients suffering cardiovascular crises in the current status quo of hypothermia technology, were not included in the analysis because respondents were

addressing a categorically different object of assessment (i.e. the patients rather than the entrepreneurs) and thus represent a different conceptual category.

Results of the factors analysis (see Table E-6 in Appendix E), show that all items across variables loaded as expected. That is to say, the three items constituting the competence variable loaded on to the same factor, and so did the three items constituting the motivation variable, as well as the four items constituting the empathetic identification variable (for convenience purposes, there is a key clarifying each item at the bottom of Table E-6). It is worthwhile to note that, while the loading on the competence and motivation factors are very clear and need no further comment, a couple of the items in the empathetic identification factor show somewhat weaker loadings. Items 3 and 4 of the empathetic identification scale show some level correlation with the competence factor and with the motivation factor respectively. That being said these items do load on to the empathetic identification factor, to which they show the highest level of correlation. In any case, these results of the factor analysis are interesting to better understand patterns in the data, especially when paired with the results of the reliability analyses. Although reliability statistics for each of these scales show that the composite measures are in every case internally consistent, it is also true that the empathetic identification scale shows the lowest (although still acceptable) level of reliability among these variables.

CHAPTER 6: DISCUSSION AND IMPLICATIONS

In this dissertation, I set out to examine whether and how entrepreneurial storytelling might affect the evaluations of early-stage investors regarding new venture opportunities. I have explained that early-stage investors conduct their initial evaluations in a rather intuitive manner, meaning that the formation of their initial impressions of a new venture opportunity is also influenced by affective and nonconscious elements. This is hardly surprising, given what we know about human judgment, decision making and appraisal processes, especially in contexts where there are high levels of uncertainty and ambiguity. Yet, it is striking how commonplace it is for both business angels and venture capitalists to invoke such subjective concepts as "gut feel" or "personal chemistry" as criteria for evaluating opportunities, in a context (private equity finance) in which decision makers are often expected to make dispassionate assessment based on available data and rational decision processes. Some, in fact (venture capitalists) have a fiduciary duty to do so. One of the main thrusts for this dissertation was thus to probe into the concept of investors' "gut feel" assessments'; their nature, their implications and, especially, how can they be influenced by entrepreneurs seeking funding.

I argued that entrepreneurial stories have the ability to convey more than mere factual information. They can, for example, also convey meaning, explain the intangible, make people participate in vicarious experiences and get people personally involved with the story characters. For these and other reasons, I theorized that

entrepreneurial storytelling can positively influence investors' intuitive evaluations about the attractiveness of a new venture opportunity. More specifically, I predicted that if a new venture opportunity is presented to early-stage investors in the form of a story (i.e. in a communication following the cannons of a narrative structure), investors are more likely to evaluate the opportunity more favorably than if the opportunity is presented in a non-narrative form, even if the substantive information about the opportunity remains unchanged. I hypothesized that the effect of storytelling on investors' evaluations must necessarily be indirect (a story *per se* has not effect if it is not processed by an audience) and that it should go through a series of cognitive and affective mental states that investors are likely to experience when exposed to the story. I developed a theoretical model in which several intervening variables, related to what investors think and feel when exposed to the opportunity, were hypothesized to meditate the relationship between the story and investors' evaluations. I predicted that a new venture opportunity presented in the form of a story would positively influence investors' level of empathetic identification with the entrepreneurial team, which in turn will positively influence their evaluation of the opportunity. I also predicted that a new venture opportunity presented in the form of a story would positively influence investors' assessments of both the entrepreneurial team's competence and motivation, which in turn would positively influence their evaluations of the opportunity. Finally, I argued that, beyond investors' person-specific reactions and assessments, their assessments of certain aspects of the market situation could also affect their overall intuitive evaluations. I explained that intense language, which is a

specific type of language high in emotionality and specificity, has the capability of making people pay more attention, generate affective responses, and generally make people understand and care more for a given situation being communicated (in this case the plight of the patients prior to the introduction of the new technology in the marketplace). Therefore, I theorized that the use of intense language when communicating a new venture opportunity would positively influence investors' intuitive evaluations about the attractiveness of the opportunity, even if the substantive information about the opportunity is kept constant. I also hypothesized that the effect of intense language on investors' evaluations must necessarily be indirect, and that it should go through a mental state that investors would experience when exposed to the story. Specifically, I predicted that a new venture opportunity communicated with intense language would positively influence investors' assessment of the existing market need for the products or services being introduced by the new venture, which in turn would positively influence investors' overall evaluation of the opportunity. Given that an overall assessment of the market need would be too abstract a measure for potential investors that might not be familiar with the market or with the specific technology, I used the more proximate concept of investors' understanding of the plight of the potential customers or users (in the case of my experiment, cardiovascular patients) as a proxy for gaging investors' understanding of the degree of "market pain" that the new venture is addressing with its products or services.

To test my hypotheses, I conducted a field experiment with 188 active business angel investors, in which they were presented with a short written description of a new

venture opportunity and were asked to make a series of assessments and evaluations about it. All angel investors were presented with the same opportunity, but the form in which the opportunity was communicated was manipulated at the narrative and language levels, and randomly assigned across investors. Contrary to my predictions, I did not find that choice of narrative structure or of type of language significantly changed the overall intuitive evaluations of investors. More specifically, I found that neither experimental treatment had a *total* effect on investors' evaluations (meaning that the independent variables had to aggregate effect on the outcome variable). However, that is not the same as saying that the experimental treatments had no effects. Some of the hypothesized indirect effects associated with the narrative structure treatment were found to be significant, albeit not always in the expected direction, which suggests that storytelling did affect investors' intuitive evaluations, but that the specific indirect effects that turned out to be significant competed with each other to the point of suppression.

The level of empathetic identification with the entrepreneurial team on the part of investors, as well as investors' assessments of the entrepreneurial team's level of motivation were found, as expected, to positively mediate the relationship between storytelling and investors' evaluations. Opposite to what was expected, however, investors' assessments of the entrepreneurial team's level of competence were shown to negatively mediate the relationship between storytelling and investors' evaluations, in effect cancelling out the effects of the other two person-specific mediators that exerted a positive influence on the outcome variable. Finally, I found no evidence

supporting the notion that investors' assessments of the market need being addressed by the new venture mediated the relationship between the use of intense language and investors' overall intuitive evaluations, although this finding needs to be qualified by the understanding that the way in which I tried to capture investors' assessments of market need probably reflects more what investors thought about and how they connected with the plight that current customers, or users , under current market conditions, i.e. prior to the introduction of the new products and services. This proxy assessment, although more specific and proximate than an overarching analysis of the market need, provides a type of information that is qualitatively different than a strict market assessment.

In sum, despite the fact that there were no total or aggregate effects of storytelling on the outcome variable, the results of my specific indirect tests show that entrepreneurial storytelling did affect investors' intuitive evaluations, albeit in unexpected ways. Some of the significant effects were positive whereas others were negative, effectively cancelling each other out to produce a non-significant total effect of the independent variable on the outcome variable. The results of my tests also show that the choice of language did not have a total or an indirect effect on the outcome variable, but there is some evidence of the presence of a marginally negative effect that was not captured by any of the proposed mediators.

The analysis of the specific *a* and *b* paths, although not strictly necessary to test the hypotheses in the model, is quite telling of the patterns of relationships that were at play among the variables in the model. An examination of the relationships

represented by the *a* paths (i.e. the relationships between the independent variable and the mediators) not only provides an informative picture of the nature of these relationships, but it also provides an overview of the effectiveness of the experimental manipulations.

It is worthwhile to note that the different versions of the new venture opportunity for the most part had (except for a notable exception) the desired effects on the intervening variables, which suggests that the treatment manipulations of the opportunity description worked as expected – thus confirming what was first observed (and fine-tuned) in previous versions of the instrument piloted prior to implementation. Specifically, results of the analyses of the *a* paths show that communicating the opportunity in the form of a story led to a higher levels of empathetic identification with the entrepreneurial team on the part of investors. This finding, in addition to corroborating that the narrative manipulation was effective in creating the desired effects, supports one of the key arguments of the various theories of narrative involvement, which suggests that people are more likely to make cognitive and affective connections with the characters of a story than with characters featured in an expository text. The results also show that communicating the opportunity in the form of a story led to more favorable assessments of the entrepreneurial team's level of motivation, which also corroborates the effectiveness of the narrative manipulation. In addition, this finding also supports the theoretical argument suggesting that stories, by helping convey the meaning of the experiences of the characters in a story and by causing investors to attribute agency, intentionality,

responsibility or causality to the character's actions and to their vicissitudes, helped investors to make attributions about traits and dispositions of the entrepreneurial team.

The results, however, show that communicating the opportunity in a story form led to lower ratings of the entrepreneurial team's level of competence. In this case, thus, the narrative manipulation not only did not work, but had the exact opposite effect than the one that was anticipated. There are two categories of potential explanations that may account for this unexpected effect of the narrative manipulation on investors' assessments of the entrepreneurial team's competence. One category of explanations is based on alternative theoretical arguments about the effect that the narrative form might have had on investors' perceptions, while the other category of explanations is based on issues related to the execution of this particular experiment and, more specifically, to the design of this particular instrument. I discuss both categories of explanations below.

In terms of alternative explanations, there are several reasons that could explain why investors' assessments of the entrepreneurial team's level of competence were lower when exposed to an entrepreneurial story rather than to an expository text. Interestingly, these reasons could be related precisely to the power that stories seem to have had in increasing investors' level of personal connection with the entrepreneurial team and in increasing their assessments on the passion and the motivation experienced by the founders. The entrepreneurial story, with its power to convey meaning, its capability to aid investors in understanding what the team of founders is experiencing through the process of new venture creation, and its ability to help

investors make attributions of founders' intentions, motives or affective states (in sum, by doing what narratives are in the theory claimed to be able to do to a given audience), seems to have been very helpful in increasing the personal connection, both cognitive and affective, of investors with founders, and to have helped investors' understand the motives and passions driving the entrepreneurial team. Thus, when the opportunity was conveyed in a narrative form, investors were able to experience a higher level of empathetic identification with the entrepreneurial team, and to better grasp the entrepreneurial team's level of motivation, commitment and passion for pursuing the opportunity.

Ironically, these may have been the very same reasons why investors gaged the level of competence of the founding team to be lower when they were presented with the entrepreneurial story. One of the main tenets of early-stage venture capital investors, especially (but not only) professional venture capitalists, is that one should be wary of founders that are not interested in making money as their primary (some would say their sole) objective. The common wisdom among business angels, perhaps due to the natural isomorphic institutional forces at play in a given field of action (and in the particular field of private equity investing, professional venture capitalists have traditionally been referents) is also that one should stay away from "inventors," "technology enthusiasts," or "world savers," whose primary goal may be not to obtain a financial return for the venture, but rather, for instance, to introduce a new technology in the marketplace, to generate a breakthrough innovation, to bring to fruition some personal pet project, or to "save the world" from some particular

problem that might be very meaningful to them. A category of founders that one should be especially weary of are precisely those who have personal reasons to pursue a given opportunity, i.e. those who have personal reasons based on some aspect of their vital experience or their personal engagement in a given cause, rather than personal reasons that are more related to common financial motives. Investors tend to favor teams of founders who adopt a more "professional" approach to pursuing a given opportunity. While investors appreciate founders' passion and commitment for their new ventures (indeed these are some of their main espoused evaluation criteria), they also expect founders to adopt a financially instrumental approach to the pursuit of the business opportunity, understanding that the return of investment (ROI) is not only one of the main criteria for investors (the only criterion in case of professional venture capitalists) but that it should also be one of the main criteria for founders. Founders' misalignment with the supposedly shared understanding that the financial success of the venture should be their main focus is a common source of tension between founding teams and investors (and especially, but not exclusively, with professional venture capitalists). In fact, when investors have control of the board of directors and feel that the founding team is not instrumental enough in achieving their ROI objective, perhaps because the founders are focusing on other priorities, they do not hesitate in removing the founders from the new venture's management team and replacing them with people with more aligned objectives.

Therefore, it is possible that investors who thanks to the entrepreneurial story were able to develop a more personal understanding of the founders' thoughts,

feelings and intentions, which allowed them to create a more personal connection with the entrepreneurial team, were thus able to see “red flags” in terms of both the motives or the passion underlying the drive of the entrepreneurs in pursuing the opportunity. If one reflects about what the story of OxyCool actually conveys when presented in its narrative form, in terms of founders’ personal experiences, potential motives, as well as their drives and passions, particularly those of Dr. Fuller, who is the main founder as well as the narrative voice of the story, one could very well conclude that there is likely more at stake for Dr. Fuller than simply seizing on a lucrative business opportunity, or even more than satisfying his ego through the creation of a successful business. The story suggests that Dr. Fuller may have very personal reasons for wanting to pursue this opportunity, reasons that could potentially get in the way of him potentially making the “right” decisions in the future, making instead decisions that that might not be aligned with what a more “professionally” oriented entrepreneur (and especially investors) would be interested in doing.

The OxyCool story conveys the notion that Dr. Fuller has a personal interest in the phenomenon of hypothermia, particularly since he saw is nephew almost die when the little boy fell through the ice on Lake Bemidji in 1999. The story also conveys the notion that Dr. Fuller is genuinely concerned with the safety of his patients and motivated to reduce the amount of suffering that they experience. This impression could be inferred by the way Dr. Fuller conveys how he experiences the suffering of the patients in the story. In short, the narrative version of the OxyCool opportunity may include cognitive and affective cues that, while made investors empathetically

identify with the doctor and helped them understand his level of passion, these cues could have also raised some “red flags” in terms of Dr. Fuller’s appearing to be a man on a personal mission, rather than as “true” entrepreneur. His passion may not have been interpreted by investors as related to the process of creating a successful new venture or his motives may not have been attributed to him wanting to exploit a given available entrepreneurial opportunity. Instead, it is fully possible that investors may have interpreted that Dr. Fuller’s passion and motives, stem from fighting his own personal crusade on hypothermia, the one interest that he has had all his life, which is not something that investors would associate with the common characteristics of a “competent” entrepreneur.

In terms of experimental design reasons, one of the most plausible explanations of why investors reacted negatively, in terms of competence assessments, to the narrative versions of the opportunity description is that a *written* presentation of a new venture opportunity in the form of a story could have violated standard convention of how this type of documents look like and may thus have signaled to investors that the entrepreneurial team did not know how the process of communicating new venture opportunity in a professional manner. In that case, investors could have drawn negative inferences about overall competence of the entrepreneurial team based on this perceived lack of understanding of the process of communicating the opportunity. Investors are used to reviewing one or two-page executive summaries which are often, but not always, associated to their attending a brief presentation by the entrepreneur or the entrepreneurial team. These executive

summaries, as the name indicates, usually summarize the main points of the entrepreneur's pitch and provide a schematic overview of the opportunity (Mason & Harrison, 2003). Executive summaries tend to be highly standardized documents. There are, of course, many different versions of executive summary blueprints that are widely used,, but most of them follow similar patterns in terms of content and style. The structure of standard executive summaries is usually more similar to the baseline version of the opportunity description created for this experiment than to the versions with the narrative manipulations. Therefore, investors faced with such an "unusual" document (i.e. a narrative version of the opportunity description) could have concluded that the entrepreneurial team did not follow standard convention and thus inferred a lack of competence on the part of the entrepreneurial team (i.e. a kind of "halo" effect). This possibility is consistent with theoretical arguments based on the concept of legitimacy (or in this case lack thereof), in the sense that, by presenting a document that could be considered "unusual" by a given audience, the entrepreneurial team (it was written in first person, so authorship should be attributed to them, and more specifically to Dr. Fuller) may not have provided a document that could be considered proper and acceptable to potential investors, given their socially constructed system of norms, values, beliefs and definitions (Suchman, 1995). Perhaps it could have been different if the opportunity had been communicated in the form of an oral presentation, rather than in a written communication, as telling a story in an oral medium may not have violated the expectations of investors in the same way. In

any case, this (the effect of the medium in which the story is communicated) is an issue of potential interest for further research.

The results also show that communicating the opportunity with intense language led to marginally higher ratings in investors' assessments of the market need that was being addressed by the new venture, at least in the form of a proxy concept that rather gaged investors' empathetic understanding of the plight of the patients under current market conditions. Finding this marginal effect of the experimental manipulation moderately supports theoretical arguments suggesting that intense language can help people convey the nuances of a given situation and to influence an audience to pay more attention and to care for the situation being communicated, although this moderate effect turned out to have no impact on investors' overall evaluations of the opportunity.

In examining the effectiveness of the experimental manipulations by paying attention to the relationships inherent in the *a* paths of the model, it is also worthwhile to point out the effects that did *not* take place, and that were not expected to take place. For example, communicating the opportunity with intense language did not affect the intervening variables that were not conceptually associated with language effects (i.e. all the other mediators except market need assessments), which was the desired and expected effect of this particular manipulation. Therefore, it can be concluded that the lexical manipulation worked to a quite limited extent, not only because it only moderately influenced the intervening variable that was supposed to

influence, but because it did not affect the intervening variables that was not supposed to affect.

Similarly, the results of the *a* paths tests also show that communicating the opportunity in the form of a story did not lead to higher market need assessments on the part of investors, which was the expected and desired effect for this particular manipulation, given that narrative form was not hypothesized to influence this type of assessments. In that sense, the narrative manipulation worked in that it did not generate the unintended consequence of influencing market situation assessments, while influencing the desired person-specific assessments (with the very notable exception of investors' competence assessments).

Given the claims that I have hitherto made regarding the effectiveness of the experimental manipulations, based on testing the significance of the *a* paths in the model, it may be worthwhile, before further proceeding with the discussion, to briefly address the issue of conducting manipulation checks on message features from a theoretical standpoint. The reason for adding a brief discussion about manipulation checks here is that there is a common misunderstanding, especially among many researchers outside the field of communication, regarding the notion that when message variations are defined in terms of intrinsic message features, message manipulation checks are unnecessary (O'Keefe, 2003). Or, put differently, in a mediation model in which the effect of a message variation on a persuasive outcome is hypothesized to be mediated by a psychological state, assessing the occurrence of the expected psychological state constitutes the check of whether the manipulation of the

intrinsic message features had the desired effects, so there is no need for message manipulation check as such (O'Keefe, 2003). Similarly, it is bad practice to define message features in terms of their expected effects (which is one of the main problems that has plagued the literature on "vividness effects" throughout the years), because defining the feature of a message in terms of its expected effects (e.g. "vivid" or "fear appealing") makes it impossible to check whether the features of the message worked in creating the desired effect, only whether the desired effect took place or not. In short, manipulating a message in terms of its features (for example making it is long or short, making it contain a narrative structure or not, putting certain words or not, etc.), while at the same time claiming that these message features affect a given psychological state, which in turn is claimed to affect a distal persuasive outcome, does not necessitate a manipulation check of message features (the message is either long or short, it has a narrative structure or it does not, etc.). Instead, it necessitates an assessment of whether the manipulated message features had the intended effects on the meditating and outcome variables of interest, which are not manipulation checks as such, but that are the test of whether the intrinsic message features had the desired effects (O'Keefe, 2003).

In sum, and returning to the discussion of the *a* paths, results of testing the relationships inherent in the *a* paths suggest that the experiment's narrative and lexical manipulations, for the most part, seem to have worked and, with one notable exception, the manipulations seem to have worked as they were expected to work, given that they significantly affected two, and moderately affected one of the four

mediating variables in the manner that was predicted in the model. Investors' assessment of the entrepreneurial team's competence, alas, was that notable exception, as it went in the exact opposite direction than was predicted. This unintended effect of the narrative manipulation is very important for the overall outcome of this research project, as it led to significant consequences for the result of the experiment, as the negative influence of this intervening variable seems to have suppressed the positive effects of other intervening variables in the overall outcome.

An examination of the relationships represented by the *b* paths (i.e. the relationships between the outcome variable and the mediators) provides an informative picture of the nature of these relationships, which also includes the explanation of why the negative effect of narrative structure on investors' competence assessments acted as a suppressor of the positive effects that storytelling otherwise had on the outcome variable through the other mediators. Precisely because investors' assessments about the competence of the entrepreneurial team had the expected positive effect on investors' overall intuitive evaluations, the negative effect of the narrative manipulation on this mediating variable turned out to have such important consequences for the overall outcome of the experiment.

In general, the results of testing the *b* paths in isolation showed support for the relationships that were hypothesized in the model, at least for the relationships associated with storytelling as the independent variable (as opposed to the mediator associated with language as independent variable) . As expected, the level of empathetic identification with the entrepreneurial team was shown to be positively

related to investors' overall intuitive evaluations, supporting theoretical arguments which suggest that investors' evaluations, perhaps because they include significant intuitive and/or unconscious components, are susceptible to be influenced by peripheral elements, or at least by reasons that are not directly related to the central substantive argument at hand. These findings are thus consistent with dual-process theories of persuasion such as the Elaboration Likelihood Model - ELM (Petty & Cacioppo, 1986), the Heuristic-Systematic Model – HSM (Chaiken, 1980; Eagly & Chaiken, 1993), or perhaps more appropriately in the context of narrative persuasion, with the Extended ELM model – E-ELM (Slater, 2002). This finding also supports arguments based on the theories of affect infusion, such as the Affect Infusion Model – AIM (Forgas, 1995; 2002), which suggests that affect facilitates the development of thoughts and beliefs in contexts of high ambiguity or complexity. Recall that theories of affect infusion build on the "affect-as-information" idea, which suggests that feelings can serve as affective feedback informing judgment and decision making (Clore, et al.,1994), but only depending on the situation at hand and on the information processing strategies at play (Forgas & Smith, 2003). The processing strategy in which affect infusion is likely to take place (i.e. the *substantive* processing strategy, which is adopted in complex, demanding, unusual and personally relevant evaluative judgments) seems thus to match the processing strategy adopted by most investors when evaluating new venture opportunities.

Also as expected, investors' assessments of the entrepreneurial team's level of competence were shown to be positively related to investors' overall intuitive

evaluations, which makes logical sense (investors should prefer a more competent team) and supports theoretical argument suggesting that investors' intuitive evaluations, in addition to affective and nonconscious elements, also include conscious and rational considerations. More importantly, this finding also supports the arguments, commonly found in extant literature on the decision criteria of business angels and venture capitalists, which suggest that considerations about the quality of the entrepreneurial team affect investors' investment decisions. This finding regarding the positive effect of competence assessments on the overall evaluations is, of course, what explains the suppressor effect that lower assessments of entrepreneurial team competence associated with the narrative versions have on the overall opportunity evaluation.

Also as expected, investors' assessments of the entrepreneurial team's level of motivation were shown to be positively related to investors' overall intuitive evaluations This finding provides further evidence to the notion, documented in in the literature (especially the literature on business angels' investment criteria), that investors do not assess a founding entrepreneurial team merely on the grounds of its task-related competence, but that there are many other qualities that they also consider; qualities such as traits and dispositions that can be more subjective and hard to assess than traditional measures of human capital, such as motivation, passion or work ethic (Feeney et al., 1999; Haines et al., 2003; Mason & Harrison, 1996). As in the case of competence assessments, this finding suggests that the "quality" of the people involved in a given new venture, broadly defined, it is an important factor in

how early-stage investors evaluate opportunities, which is a claim that has been hotly debated in the literature on investors' investment criteria.

Contrary to my prediction, however, investors' assessments of the market need being addressed by the new venture's products or services were not shown to be positively related to investors' overall intuitive evaluations, suggesting that, at least in this case, having a better sense and appreciation of the problem that the new venture was trying to solve, at least from the perspective of potential users, did not lead to more favorable overall evaluations of the opportunity. It could very well be that, in this particular case, investors did not see the severity of the market problem as a factor to consider in their evaluations because of particular characteristics of the market space in question (cardiovascular products), or that the problem was not considered to be severe enough to justify a higher rating of the business opportunity. Perhaps more likely is the possibility that the proxy measure used to capture the notion of market need perception, which I used to make the situation more concrete and proximate for potential investors, did not capture the nuances of the intended construct. What I likely captured under that label was the degree to which investors understood and empathized with the plight of the patients under current conditions, rather than the full scope of a market need assessment, or even the notion of the market "pain" concept as I had intended. Because of the design of this particular measure, it would not be very hard to argue that the instrument is thus more likely to capture the degree to which investors understand and empathize with the plight of the customer, or the end user (in

this case the patients), rather than their actual perceived market need as understood more broadly.

This is because understanding the magnitude of a given problem from the perspective of a potential customer is qualitatively different than gaging the overall market need for a given product or service, given that the former does not capture other significant aspects of the market situation that might be vital to make these kind of overarching assessments. For example, issues relating to the specific solution being proposed (i.e. the solution portion of the problem-solution dichotomy) should play a role in the formation of investors' market need assessments. In other words, it is fully possible to understand the shortcomings of the current offerings in the marketplace (and thus to express a high level of understanding and empathy for the plight of current users that must endure them), and yet still not be able to believe that there will be a market for a given proposed solution for a varied number of reasons, including that the proposed solution might not be the appropriate one under current conditions. In short, this particular measure may be capturing how investors feel about the patients' current situation (hence the effectiveness of the intense language manipulation), rather than their assessment of market need in terms of market potential. Whether that is the reason why this particular *b* path was not significant, is something that I cannot address with available data, and is perhaps a question to address with further research.

In sum, three out of the four hypothesized relationships between the intervening variables and the outcome variable (*b* paths) were supported by the data

and, in all cases, these relationships related to the mediators associated with storytelling. The one relationship that was not supported was shown to have an insignificant effect (rather than work in the opposite direction) and was associated with the choice of language. Overall, reviewing the test results for the singular relationships implied in the *a* and in the *b* paths, i.e. the specific relationships of the intervening variables with both their antecedents and their outcome, provides very valuable insights not only into the effects of the treatment manipulations, as I have argued above, but also into the specific relationships that govern the multiple mediator model proposed in this dissertation. In fact, formal tests of the significance of specific indirect effects (i.e. tests of the significance of the *ab* paths) confirmed the pattern of the relationships that could be inferred by merely examining the *a* and *b* paths in isolation. Bootstrapping tests to formally check for the significance of these specific indirect effects indeed confirmed the pattern of relationships that could be observed at a less integrated level.

Formal tests of the significance of specific indirect effects showed, as predicted, that investors' experienced level of empathetic identification with the entrepreneurial team mediated the relationship between storytelling and investors' intuitive evaluations. In other words, that communicating the new venture opportunity in the form of a story exerted a positive indirect effect on the evaluations of investors and that this indirect effect operated through their experienced level of empathetic identification. This finding is consistent with the observed relationships inherent in the *ab* path going through this particular intervening variable. Again, as seen above,

regression equations for both *a* and *b* paths indicated, without constituting a formal test of the specific indirect effect in question, that being exposed to a narrative version of the opportunity was associated with higher levels of empathetic identification, and that, in turn, higher levels of empathetic identification were associated with more favorable intuitive judgments. Similarly, formal hypotheses tests of the significance of specific indirect effects showed that investors' assessments of the entrepreneurial team's level of motivation positively mediated the relationship between storytelling and investors' intuitive evaluations. This finding is also consistent with the observed relationships inherent in the *ab* path going through this particular mediator. As seen above, regression equations for both *a* and *b* paths indicated that being exposed to the narrative versions of the opportunity was associated with higher ratings of the motivation of the entrepreneurial team on the part of investors and that, in turn, higher ratings of entrepreneurial team motivation were associated with more favorable intuitive judgments regarding the attractiveness of the opportunity.

Directly opposite of what was hypothesized in the model, however, investors' assessments of the entrepreneurial team's level of competence were found to negatively mediate the relationship between storytelling and investors' intuitive evaluations. This finding is consistent with the observed relationships inherent in the *ab* path going through this particular intervening variable. In this case, regression equations for *a* and for *b* showed that being exposed to a narrative version of the opportunity was associated with lower ratings of the entrepreneurial team's level of competence (suggesting that the manipulation was not only unsuccessful in the sense

that it did not achieve the desired effect, but that it had the exact opposite effect). In turn, higher ratings of the entrepreneurial team's competence were associated with more favorable intuitive judgments regarding the attractiveness of the opportunity. Therefore, the reason why this particular mediator had the opposite influence on the outcome variable than the one that was hypothesized can be found in the relationship represented by the *a* path. In other words, it is quite simply a matter of the manipulation not working in the expected way at influencing assessments of entrepreneurial team's competence, rather than competence assessments not having the expected influence on the overall evaluation of the opportunity. Above, in discussing the analysis of the specific individual *a* paths, I provided two categories of possible explanations as to why the manipulation had the opposite effect than expected on this particular mediator, one category of explanations related to alternative theoretical arguments and the other pointed to specific issues of the design of this particular instrument.

The balance of the empirical tests of the hypothesized model regarding the effect of storytelling on the intuitive evaluations of investors thus suggests that it can be characterized as an inconsistent mediation model, i.e. a model in which suppression effects seem to be at play (MacKinnon et al., 2000). In other words, the model that emerges from the data is one in which one or more of the intervening mechanisms operate in opposite directions, suppressing each other's effect on the outcome variable. More specifically, the test results show that the positive effects of storytelling on investors' evaluations operate through the mechanisms of investors' empathetic

identification with the entrepreneurial team and their assessment of the entrepreneurial team motivation, but that these effects are counteracted, i.e. suppressed, by the negative effects that operate through the mechanism of investors' assessment of the entrepreneurial team's level of competence.

I posit that these findings, despite the lack of evidence showing the existence of a total aggregate effect of the independent variable on the outcome variable, have some important implications. The first important implication is that the narrative manipulation did exert an indirect effect on the intuitive evaluations of investors, albeit in unexpected ways. This means that entrepreneurial storytelling has the capability of influencing investors' intuitive evaluations *at all*, which is something that is neither obvious nor has been empirically demonstrated before. The second implication is that entrepreneurial storytelling has the capability of *positively* influencing investors' intuitive evaluations, as reflected by the indirect effects that were shown to occur through the empathetic identification and the motivation mediators. The third implication is that entrepreneurial storytelling also has the capability of *negatively* influencing investors' intuitive evaluations, as reflected by the indirect effects that were shown to take place through the competence mediator.

Discerning whether the capability that stories have to offset their own opposite effects on investors' evaluative judgments is inevitable, or whether it would be possible to disentangle these two opposing forces, constitutes a challenge for future research in this area. It would be of great interest, to both researchers and practitioners, to be able to gain a better understanding of whether the positive effects of

entrepreneurial storytelling on investors' evaluations could be isolated from the negative ones. In other words, to better understand whether engaging in entrepreneurial storytelling must necessarily imply a tradeoff, in which the positive effects of telling a story on investors' evaluations must necessarily be offset by the negative ones, or whether that is not necessarily the case. More specifically, in terms of the concrete findings of this particular experiment, it would be of great interest to better understand if a storyteller could accrue the benefits that stem from generating empathetic identification and more positive dispositional assessments from an audience, while avoiding the disadvantages that stem from generating more negative assessments of competence. On the answer to this question should depend, to a large extent, the potential utility of entrepreneurial storytelling as an entrepreneurial resource acquisition strategy available to entrepreneurs.

The answer to this question will depend on what it is that actually that drives the relationship between narrative structure and investors' competence assessments. Earlier in this chapter, while discussing the examination of this particular *a* path in the model, I presented a series of alternative arguments that could potentially explain the nature of the relationship between storytelling and investors' competence assessments. Some of these arguments relate to theoretical reasons that point to potential mechanisms that could be at play in the negative relationship between storytelling and competence assessments. But I also opened the door to the idea that this negative relationship was observed in this experiment because of a particular issue that may have emerged from the specific design of the instrument. That is to say, I suggested

that presenting a story in the medium of a written document could have perhaps had violated investors' perceptions of legitimacy. Both sets of explanations are possible. In fact, interviews and informal conversations that were conducted *post hoc* with angel investors and other stakeholders corroborated the notion that either one of these alternatives constitutes a plausible explanation.

If the first set of explanations would turn out to be correct, and the negative relationship between storytelling and competence assessments would be a function of some underlying mechanisms inherent in the role of stories in shaping these assessments, then researches should explore the possibility of testing whether these effects could be isolated and neutralized, perhaps by tweaking the story form, i.e. finding a different kind of story, perhaps a story that strikes a better balance in activating the influence of the different types of potential mediators, so that an overall positive effect of storytelling on investors' assessments could still be generated.

If the second set of explanations turned out to be correct, and this negative relationship would be a function of some feature in the design of this experiment, then a similar experiment should be able to be replicated in a medium, or with a different instrument, that does not violate investors' expectations about what is the appropriate communication form in a given context. The challenge for both researchers and practitioners going forward (especially entrepreneurs seeking external resources) also in this case, should be to attempt replicate the positive effects of storytelling, i.e. increase investors' empathetic identification with the entrepreneurial team and improve their motivation assessments, without replicating the negative effects, i.e.

decreasing their competence assessments. Again, it is very possible that the instrument used for this experiment was flawed in that it lacked credibility among investors. In retrospect, some of the early feedback from actual investors from their pilot version of the instrument, as well as some interviews and conversations that I conducted after the experiment took place, suggests that this might have been the case. It is well known that it is very difficult to replicate realistic life situations under experimental conditions.

The key implication of either possibility is, nevertheless, that with a different iteration of the same instrument, or with a different instrument, the results of this experiment could have been different and would not have suffered from the negative effect of investor's competence assessments on the overall outcome. In sum, if it is possible to get rid of the negative effects of communicating a new venture opportunity in the form of a story while keeping the positive effects, then entrepreneurial storytelling might still be a viable tool to sway investors' evaluations in the desired direction.

The balance of the empirical tests regarding the indirect effects model with intense language as independent variable is a different story. In this case, neither total nor indirect effects were found in the analysis, suggesting that the choice of language had very little effect on anything at all, although some marginal direct effect of a negative nature were found in the analysis. In any case, the indirect effect model based on intense language, which has a single hypothesized mediator, was conceptualized as a complementary tool to the storytelling model from its inception, i.e. it was intended

to throw some additional light into the question of whether the form in which an opportunity is being communicated could be capable of changing investors' assessments.

In any case, formal tests of the significance of this specific indirect effect, contrary to what was predicted, showed that investors' assessments of the market need being addressed by the new venture did not mediate the relationship between the choice of intense language in the communication of the opportunity and investors' intuitive evaluations This finding is consistent with the observed relationships inherent in the *ab* path going through this particular intervening variable. Again, as seen above, regression equations for both *a* and *b* paths indicated, without constituting a formal test of the specific indirect effect in question, that being exposed to an intense language version of the opportunity was only moderately associated with higher ratings of market need on the part of investors (suggesting that the language manipulation had some moderate level of success). However, higher market need assessments were not shown to be associated with more favorable intuitive judgments about the overall quality of the opportunity, suggesting that the reason for this lack of results in terms of specific indirect effects probably lies in the relationship captured by the *b* path.

It is not clear why higher assessments of the market need being addressed by the new venture's products and services did not lead to more favorable overall assessments of the opportunity. Above, I offered several potential explanations for this observed result, including that the proxy measure that I used to capture investors'

perceptions of the severity of the market need being addressed by the new venture was in fact capturing something else, namely how well they understood and empathized the plight of current user/customers, namely patients. Still, it is also not clear why having a better sense and appreciation of the problem that the new venture is addressing, what is commonly known and referred to as the level of "market pain," did not lead to more favorable overall evaluations of the opportunity, even when expressed in terms of empathy and understanding for the plight of the patients. Further research would be needed to address this question, but one can speculate that the degree to which investors understood and empathized with the plight of the patients under current conditions did not represent the full scope of a market need assessment, or even the notion of the "market pain" concept. This could be because understanding the magnitude of a given problem from the perspective of a potential customer does not necessarily imply that the solution proposed by the new venture is the one that is appropriate for a given market at a particular moment in time.

In sum, the results of the field experiment conducted with the sample of early-stage investors in this dissertation suggest that entrepreneurial storytelling indirectly influences investors' intuitive evaluations in several ways, but that these influences can counterbalance each other, yielding no observable change in the outcome variable. The results also show that that embellishing the communication of an entrepreneurial opportunity with intense language does not influence investors' evaluations, indirectly or otherwise.

Therefore, the findings of this study validate several of the main ideas underling most theories of narrative persuasion, which posit that stories have the capability to persuade, and thus to influence the formation of evaluative judgments, through the mechanism of creating a connection of the audience with the characters in a story, a connection that can be both cognitive and affective in nature (Green & Brock, 2000). In that sense, the results of this experiment should not surprise communication researchers, although they provide some additional empirical evidence in the context of entrepreneurship.

However, there are several surprising, or counterintuitive implications that one could draw from the results of this experiment, not only for entrepreneurship scholars and management researchers more generally, but also for communication researchers interested in the persuasive effect of entrepreneurial stories. First, entrepreneurship researchers, and researchers in the field of venture capital in particular, should note that investors' evaluative judgments in regards to a given new venture opportunity *can* be influenced by something so subjective and "soft" as the level of investors' empathetic identification with the entrepreneurial team. After reading this dissertation, and the arguments that I have exposed in it, it may not seem a very counterintuitive implication of this research. Yet, although the notion that investors' evaluative judgments may include a substantial intuitive component appears in the literature, it is not immediately obvious the extent to which affective or nonconscious inputs may play a role in the formation of investors' assessments. And there is certainly not much in terms of existing direct evidence for the existence of this type of effects. Put simply,

it is one thing to assume that there is some “gut feel” component in investors’ assessments, but it is quite another to actually see some evidence for it, and more interestingly, to actually see that the potential sources of the formation of these “gut feels” might include such “non-rational” drivers.

Second, and this might be counterintuitive to both entrepreneurship as well as communication researchers, it is possible that the suppression effects leading to the non-significant results of the experiment in terms of an aggregate effect of entrepreneurial storytelling on investors’ assessments, are a consequence of two opposite forces that might be fueled by the same mechanisms. In other words, it is possible that the mechanisms that make possible for storytelling to have a positive influence on investors’ empathetic identification with the entrepreneurial team are the same mechanisms that make it possible for storytelling to have a negative effect on investors’ competence assessments. As I mentioned above, it is ironic to consider that the capability of the entrepreneurial story of increasing investors’ level of personal connection with the entrepreneurial team may have been what is also responsible for investors’ lower assessments of the entrepreneurial team’s level of competence. Recall that the OxyCool story may have had the expected effect of helping investors make a personal connection with Dr. Fuller, by helping them understand his experiences, his motives, by helping them make attributions about his intentions, reasons and affective states, and even by helping investors emotionally connect with Dr. Fuller as a character. However, it is precisely these effects that may have raised “red flags” in terms of Dr. Fuller’s competence as entrepreneur, because they may have been in

conflict with commonly understood and shared notions of what constitutes a competent entrepreneur. As I also discussed above, one of the main challenges for future research in this area would be to discern whether the seemingly opposite effects of these same mechanisms are inevitable, or whether they could be addressed by experimenting with different types of entrepreneurial stories.

Contributions

In this dissertation, I capitalized on a research opportunity brought about by integrating insights from the literature on business angels and venture capitalists' decision making, and the literature on entrepreneurial resource acquisition. I make a number of contributions to both these literature streams, as well as to the entrepreneurship and management literatures more generally.

I contribute to the literature on entrepreneurial resource acquisition, and more specifically to the literature that examines potential strategies available to entrepreneurs in influencing the resource acquisition process by articulating and testing a model by which entrepreneurial storytelling might influence investors' evaluative judgments about new venture opportunities, and ultimately their investment decisions. In so doing, I also contribute directly to the emerging literature on entrepreneurial storytelling in a number of ways. To this particular literature, I make at least two distinct theoretical contributions. First, by providing a conceptual definition of what constitutes an "entrepreneurial story," which is a concept that has hitherto been rather inconsistently defined and operationalized in the literature and which, I

argue, has posed some problems in interpreting extant findings. Second, by articulating a conceptual model that attempts to explain the specific mechanisms by which entrepreneurial stories might influence investors' assessments, and thus providing a more fine-grained theoretical explanation of how stories may influence the perceptions of investors regarding the attractiveness of investment opportunities, which is something that ultimately affects the resource acquisition process. I also make an empirical contribution to the entrepreneurial storytelling literature, by testing the model on a sample of real-life investors, and thus providing empirical evidence of the effect of stories to an area that only has, to my knowledge, very few empirical studies to date (Martens et al., 2007; O'Connor, 2004). Furthermore, this is the first study that examines empirically how investors actually react to entrepreneurial stories, rather than inferring their reactions from investment outcomes. Also, to my knowledge, this is the first experiment that has been conducted specifically on the effects of entrepreneurial storytelling. Random assignment of the different versions of the new venture opportunity description provides internal validity to the causal relationships observed in the empirical model and thus provides a completely new kind of empirical evidence in this area of study.

I also contribute to the literature on informal venture capital (business angels) and to the venture capital literature more broadly in a number of ways. I specifically contribute to the literature on investors' pre-investment decision processes and investment evaluation criteria. First, by theoretically offering a more specific conceptualization of what constitutes the concept of an investor's "gut feel" and what

are the implications of this concept for the investment decision process. Investor intuitions are a recurring topic in the literature on early-stage investors' evaluation criteria, but there is surprisingly very little research on the topic. Second, I empirically contribute to the investment decision process literature in a number of ways. By testing a model in which the dependent variable is the "gut feel" evaluations of investors, I provide empirical evidence that speaks to the processes by which early-stage investors are said to form their initial evaluative judgments, and to what are the constitutive elements of this formation process. Therefore, I also contribute to the raging debate in this literature about the relative importance of the founding team as investment evaluation criterion, by providing further evidence that the quality of the founding entrepreneurial team matters in the formation of investors' evaluative judgments in regards to a potential opportunity, and that the quality of the entrepreneurial team is not only assessed in terms of objectively observed competencies, but also by a number of more subjective personal traits and dispositions.

Finally, I would like to point out the size and the scale of the experiment that the execution of this research project involved. Although experiments on the decision processes of early-stage investors have been conducted before, at least in the area of formal venture capital research (not in the area of business angels), this is to my knowledge the largest experiment conducted to date on a sample of early-stage investors (n=188). To my knowledge, this is also the largest empirical study of any kind conducted on any particular sample of business angels, with the exception of a

few studies conducted at the general population level, such as those based on Global Entrepreneurship Monitor (GEM) data, or those conducted in Sweden by Avdeitchikova and colleagues (2008).

I also contribute to the entrepreneurship and management literatures more broadly in a number of ways. First, I contribute to the general debate in entrepreneurship literature about the nature of entrepreneurial opportunities, and more specifically on the debate of whether opportunities exist out there in the world and are just waiting to be discovered, or whether it is the actions of enterprising individuals that create opportunities, or whether it is a combination of the two views (Zahra, 2007; Alvarez & Barney, 2007). Storytelling differs from more general impression management behavior in that it emphasizes the construction of a new possible reality, rather than the reconstruction or repositioning of an existing reality in response to strategic opportunities (Lounsbury & Glynn, 2001). This is an important distinction because, as entrepreneurs convey their visions of a potential future reality they, in effect, help shape its contours. Stories are capable of revealing a set of potential configurations of the future, a possible world as envisioned by the entrepreneur, and a road map for enacting a reality that does not yet exist. Changing the story implies changing the future envisioned reality, and thus changing the opportunity itself. For this reason, this study provides some insights into the potential role of storytelling in helping shape the construction of opportunities in the minds of both entrepreneurs and investors.

This study also contributes to the management and organizational literature on resource mobilization more generally. The findings of this study are consistent with contemporary resource mobilization theories that are based on a logic of embeddedness that suggests that the transfer of resources from one party to another in a mutual process of value creation is based on the parties degree of mutual dependency, rather than on power asymmetries (Gulati & Sytch, 2007). Recent research in this area of study suggests that two of the most important mechanisms that underlie the concept of social embeddedness between two parties engaged in a process of mutual value creation are precisely those of empathy and identification (Gulati & Sytch, 2007). To the extent that storytelling contributes to developing empathetic identification and a sense of personal connection between two exchange parties, it will increase the level of social embeddedness between these parties. Storytelling could thus be conceptualized as one of the potential mechanisms that underlie the resource mobilization process as seen from a theoretical perspective based on interdependence.

Implications for practice

In this dissertation, I implicitly adopted the perspective of two key stakeholders in the entrepreneurial resource acquisition process to develop a model of how entrepreneurial stories may affect investors' evaluations. On the one hand, I adopted the perspective of a new venture faced with the difficult task obtaining external resources to pursue its activities, as well as the perspective of an early-stage investor evaluating investment opportunities in an environment of extreme uncertainty

and lack of information. This is because, in addition to making a contribution to the academic literature, my goal from an engaged scholarship perspective was also to contribute by trying to help gaining a better understand of an actual problem that is experienced by, and grounded in the reality of, one or more specific stakeholders (Van de Ven, 2007).

The findings of this study should have some implications for each of the aforementioned groups of stakeholders that I had in mind when I set out to research this topic. From the perspective of a new venture engaged in the process of raising capital, the implication of this study is that entrepreneurial storytelling *can* have an effect on some of the assessments that investors make in regards to the attractiveness of a new venture opportunity. Communicating an opportunity in the form of a story could increase potential investors' level of empathetic identification with the members of the founding team, as well as their assessments of the entrepreneurial team's level of motivation. In turn, these two outcomes should be associated with higher overall evaluations of a given investment opportunity on the part of investors. These insights should be of some interest for entrepreneurs seeking to get funding for their ventures, especially those seeking funding from angel investors.

On the other hand, another implication is that telling a story may lead to potential investors developing a less favorable view of the entrepreneurial team's level of competence, which poses a challenge for investors intending to engage in storytelling when communicating with investors (at least in a written medium). Thus, the challenge and the opportunity for entrepreneurs seeking external resources, is to

find ways to capitalize on the potential advantages of entrepreneurial storytelling while trying to avoid its potential pitfalls. Further research is needed to gain a better understanding of whether there are some fundamental conceptual reasons underlying the negative effect of stories on competence, and whether there is something that can be done at the story design level to avoid this problem. To the extent that the driving force for the negative influence of storytelling on competence assessments is grounded, instead, on the use of the written medium because it might represent a violation of established norms of practice, entrepreneurs should then try to avoid this particular medium to convey their stories, in order to minimize the risk of appearing less competent and professional in the eyes of investors. This may necessitate finding the appropriate channels and mediums in which a communication in the form of a story would be acceptable. These may include oral presentations, informal conversations, or other versions of written materials that do not invoke the mental category of an executive summary, or a similar standardized investment description document, in the minds of potential investors.

From the perspective of business angel investors engaged in the process of evaluating new venture opportunities, the findings of this study provide further evidence to the notion that early stage investors' evaluative processes are influenced by factors that are subjective, not necessarily obvious, and that can be considered not to be directly related to their standard espoused evaluation criteria. This finding should perhaps be no news to business angel investors, given that they often invoke "gut feels" and "personal chemistry" as part of their investment decision process (although

investors do have a tendency to brush aside the intuitive component of their decision making process and tend to post-hoc rationalize their investment decision outcomes). The insight that the decision processes of business angels include an intuitive component does not represent a problem, or an advantage, to early stage investors (although it would be certainly advantageous for them to be aware of it). Discerning whether the intuitive or the rational component of investor' decisions (assuming they could be disentangled) lead to better outcomes is beyond the scope of this research. Again the useful insight here is to be aware of how humans form evaluative judgments, especially under conditions of high uncertainty.

A more interesting implication of this study for angel investors might be what it reveals about some of the specific elements that may be driving the formation of these "gut feels." Investors might be surprised to learn that their "gut feel" evaluations can be influenced by factors that they would not immediately identify as potential candidates to do so. For example, the experience of empathetic identification relates closely to the notion of "personal chemistry," so it might not be so surprising, at an intuitive level, to make the connection between these two concepts and recognize that one's intuitive evaluation can be influenced by the level of personal connection with th object of evaluation . The same is the case of investors' assessments of personal qualities, traits or dispositions of the entrepreneur, such as their level of passion or motivation.. In other words, that the mediating variables proposed in the model presented in this dissertation that include a certain level subjetivity would influence investors' "gut feel" assessments is probably understandable to most investors, and

probably even desirable. What is probably not so obvious to business angel investors is that a simple manipulation in the communication form in which a new venture opportunity is presented can influence these "personal chemistry" related assessments and, even less obviously, even influence supposedly more objective assessments such as the team's level of competence. Investors should be aware that small changes in the way an opportunity is being communicated to them can lead to changes in some of their initial assessments and reactions, which can influence their "gut feel" evaluations. Given the results of the influence of stories on their competence assessments, investors should particularly consider the potential "halo" effect that even minor violations in formal practice and procedures might have on their competence assessments. Consciously trying to counteract cognitive biases, such as the "halo" effect, stereotyping or drawing inferences on irrelevant cues, among many others, is not an easy task, but formal decision process aids do exist. Given that is widely documented in the literature that early-stage investors' evaluations and investment decisions are far from optimal, there are several calls from researchers recommending ways of reducing investors' susceptibility to cognitive biases, for example with the use of formal decision aids (Zacharakis & Meyer, 2000; Shepherd & Zacharakis, 2002). Beyond what the literature has to say on this topic, I do not add to the suggestion that investors should use these decision aids, I simply suggest that, to improve best practices in regards to their evaluative processes, investors should be aware and pay more attention to how their intuitive evaluations are formed.

Limitations and opportunities for future research

This research suffers from a number of limitations. First, although convenience sampling is essentially unavoidable in the context of empirical research on business angels and venture capitalists, it raises the issue of sample representativeness. This study is no exception in that regard. I tried to attenuate the risk of obtaining a biased sample by sampling from several different angel groups distributed across different geographic areas in the US, which should have accounted for some individual variability in these self-selecting groups (Avdeitchikova et al., 2008), given that different angel groups and networks have different member profiles and attract different types of people.

Second, for all the advantages of an experimental design in determining cause-effect relationships, experiments provide a controlled decision environment that may differ in many respects from a naturally occurring opportunity evaluation context, so it is reasonable to conclude that this probably affects the external validity of the research, particularly in such complex decision environments in which business angels and venture capitalists operate (Petty & Gruber, 2009). A particular manifestation of this problem may have occurred with the opportunity description versions that used the narrative manipulation, which may have had created a problem that could have conditioned the overall outcome of the experiment (see the discussion above in this chapter about the instrument design as a potential reason for investor competence assessments). To the extent that the narrative version of the opportunity description did not match expectations of what such document should look like and was regarded

as an unrealistic medium for conveying the opportunity by investors, then the external validity of the results may be limited. Further research should try to address this issue by creating instruments that capture the narrative structure of a communication making sure that it does not violate any key expectations of participants. In summary, external validity issues, like in any experiment, are probably what constitutes one of the greatest limitations of this study and should be taken into consideration when interpreting the results. On the other hand, because of the experimental design and its corresponding random assignment of the treatments, the internal validity of the findings, that is to say, the findings related to how investors reacted to the different versions of the opportunity, should be very high and thus provide relevant information about the effects of the manipulation on the mediating variables. In other words, the internal validity of the findings regarding how investors reacted to the different versions of the opportunity (regardless of whether these were realistic or not from an external generalizability point of view), provides valid information of how investors may react to entrepreneurial stories.

This dissertation points to a number of potential avenues for future research. One set of opportunities relates to the medium in which the entrepreneurial story is conveyed. For example, does it make any difference if the entrepreneurial story is presented in written form in a document or in the context of a live or taped presentation? Another set of opportunities arises when one considers the effects of particular types of stories. This dissertation was simply concerned with examining whether and how *any* kind of entrepreneurial stories would influence investors'

evaluations (one has to start somewhere). Future research could examine different types of narrative structure, i.e. different kinds of story forms, and which is more conducive to affect investors' evaluations in certain specific ways. Perhaps the negative effects of storytelling on investors' competence assessments observed in this study could be counteracted by a different type of story, a type of story that could generate the benefits observed in the story used for this experiment but not its disadvantages. Yet another avenue for future research would be to examine the effect of storytelling on other types of investors, such as venture capitalists, who have a slightly different set of goals and motivations for investing (allegedly only one, actually). Furthermore, research could be conducted on the effect of storytelling on a broader range of resource mobilization contexts at the firm, industry and societal level, including those of established firms, industry groups, or social movements.

Conclusion

This research examined whether and how entrepreneurial storytelling could influence investors' evaluations of new venture opportunities by articulating and empirically testing a theoretical model that specified the mechanisms by which this influence could be exerted. The model was tested with an experiment involving 188 active business angel investors. Results from the experiment suggest that storytelling exerts a number of specific indirect effects on investors' evaluations, but that these effects operate in opposite directions, effectively cancelling each other out, so that the final outcome of the manipulation on investors' evaluative judgments is unobservable.

The findings of the experiment thus suggest that entrepreneurial storytelling does affect investors' evaluative judgment, but in an inconsistent manner, which implies that entrepreneurs seeking to influence investors' evaluations by communicating their opportunities in the form of a story will have to find ways of capitalizing on the positive effects that storytelling seems to provide, while avoiding some of its pitfalls. The balance of this research shows that entrepreneurial stories *can* influence the evaluative judgments of early-stage investors, and opens the door for further research on the role of communication strategies in the entrepreneurial resource acquisition process.

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APPENDICES

Appendix A: Participation request letters

(Paper and email versions)

Dear angel investor,

I am working with a doctoral student, Jaume Villanueva, from the University of Minnesota, who is focusing his dissertation on the angel investing decision process. This project is the critical piece in completing his PhD, and he needs your help. This research project is being conducted in conjunction with the Tech Coast Angels (TCA) and other prominent angel groups such as your own. This study focuses on how angel investors initially evaluate potential opportunities. Understanding how this process works, especially when available information is limited and uncertainty is very high, is important to improve best practices in angel investing. It has been demonstrated that initial judgments affect subsequent assessments and decisions, even after more information becomes available over time.

We ask you to read the following brief overview of an opportunity and then to answer a *brief* questionnaire. This should take about 15 minutes. Please take into consideration the assumptions that we provide in the introductory section. We apologize for the apparent repetitiveness of some questions, but it is necessary for data validity.

The questionnaire does not seek any sensitive data of any kind and all your responses will be kept strictly confidential. Only the summary results of this study will be published. At the completion of the project, we will share with you a copy of the final report in which we will summarize our findings. If you wish, you may also receive information about how your responses compare to others'.

Please understand that your participation is totally voluntary; the decision of whether or not to participate will in no way affect your relationship with TCA or your own group. If you do participate, you are free to withdraw at any time and to refuse to answer any question for any reason. We foresee no risks to this study. We expect this study to benefit entrepreneurs and Angel investors.

Thank you very much in advance for considering participating in this project.

Sincerely,

Richard Sudek, PhD
Chairman Elect
Tech Coast Angels

ABOUT YOU

1. Please enter your name: _____

2. Please enter your Angel Group name: _____

3. Please enter your email address: _____

4. What is your current age? _____

5. What is your gender? ☐ Female ☐ Male

6. What is the highest level of education you have completed?

☐ Grade School ☐ High School ☐ Bachelors ☐ Masters ☐ PhD

Email version

Dear Ms./Mr. X

I am working with a doctoral student, Jaume Villanueva, from the University of Minnesota, who is focusing his dissertation on the angel investing decision process. This project is the critical piece in completing his PhD, and he needs your help. This research project is being conducted in conjunction with the Tech Coast Angels (TCA) and other prominent angel groups such as your own. This study focuses on how angel investors *initially* evaluate potential opportunities. Understanding how this process works, especially when available information is limited and uncertainty is very high, is important to improve best practices in angel investing. It has been demonstrated that initial judgments affect subsequent assessments and decisions, even after more information becomes available over time.

We ask you to read the following brief overview of an opportunity and then to answer a *brief* questionnaire. This should take about 15 minutes. Please take into consideration the assumptions that we provide in the introductory section. We apologize for the apparent repetitiveness of some questions, but it is necessary for data validity.

The questionnaire does not seek any sensitive data of any kind and all your responses will be kept strictly confidential. Only the summary results of this study will be published. At the completion of the project, we will share with you a copy of the final report in which we will summarize our findings. If you wish, you may also receive information about how your responses compare to others'.

Please understand that your participation is totally voluntary; the decision of whether or not to participate will in no way affect your relationship with TCA or your own group. If you do participate, you are free to withdraw at any time and to refuse to answer any question for any reason. We foresee no risks to this study. We expect this study to benefit entrepreneurs and Angel investors.

Thank you very much in advance for considering participating in this project.

To participate and complete the survey, please click on the following link [URL link].

Sincerely,
Richard Sudek, PhD
Chairman Elect
Tech Coast Angels

Appendix B: Introductory text – Background and assumptions

BACKGROUND AND ASSUMPTIONS

Dr. Rob Fuller has recently filed a provisional patent on a novel method for inducing hypothermia in humans. He is one of the three founders of OxyCool, a new venture created to develop and commercialize this technology. Please read this brief opportunity overview and provide some feedback in the accompanying questionnaire.

Important: When you do this exercise keep in mind that it is not possible to make a fully informed assessment, as the information is necessarily incomplete. We are mainly interested in your initial "gut" reaction to the opportunity. We hope that you feel comfortable doing this exercise in the informal spirit that it has been created. Please take into consideration that there are no right or wrong answers and that we are not asking you to commit to any decisions.

In order to facilitate your assessment, while keeping the opportunity overview brief, we ask you to make the following assumptions about this opportunity:

1. The opportunity has been referred to you by a reliable angel investor that you trust and with whom you have co-invested with in the past.
2. You (or your group) are open to investing in the medical device industry.
3. This company is seeking first-round funding. No other investors (angels or VCs) have so far been involved.
4. The company is seeking funding for an amount in the range of deals that you have participated in; it presently appears that little additional funding will be needed in the future.
5. The company's valuation is in the range of what can be expected for a company in this industry and stage of development.
6. Technical experts agree that FDA approval should not be an issue for this product.

Appendix C: Baseline scenario

Appendix C-1: Baseline scenario text

Hypothermia, the reduction of body temperature, can protect vital organs from cell death and is widely used in open-heart surgery. Studies show that the use of hypothermia during open-heart surgery can reduce death rates by 25% and tissue damage by 78%. However, current methods of inducing hypothermia are complicated, inconvenient, invasive and slow. They include (1) submerging patients in cold water, which can sometimes produce significant adverse physiological reactions, (2) filling patients' lungs with cold fluids while they are being sedated in order to allow them to continue breathing, (3) administering cold fluids intravenously, or (4) placing cooling devices in areas around the heart with the help of catheters.

OxyCool has a proprietary technology that induces controlled hypothermia in a simpler, more convenient and less invasive way than other methods. Patients simply breathe a patented mixture of cold gases that turn their respiratory system into a natural, effective and reliable cooling instrument. Experiments show that it cools twice as fast as other existing technologies. This is particularly important to heart failure victims because the amount of tissue damage varies directly with the time that elapses before treatment. Faster treatment means an increase in heart surgery success and a decrease in patients' exposure to physiological and psychological discomfort. OxyCool is simple and portable. It allows medics to treat patients before reaching a medical facility.

The potential market for this product is very large. In the US alone, there are 1.5 million heart failures every year. Because proper treatment often cannot be administered on time, half of all heart failures are fatal and a third of non-fatal incidents result in permanent damage. Eventually, controlled hypothermia with OxyCool will include the prevention of cerebral palsy, spinal cord preservation and aortic surgery. Venture capitalists have already validated the controlled hypothermia market, investing over $150 million in the last few years in several ventures, including Inner Cool, Radiant Medical, and Alsius. The founders' goal is to eventually sell the company to a large player in the medical device industry such as Medtronic. In 2009 Medtronic acquired CoreValve for $1 billion and Ventor Technologies for $325 million, two startups that have also developed state-of-the-art technologies in the cardiovascular market.

OxyCool's management team is comprised of its three co-founders: Dr. Fuller, an accomplished surgeon at the Cardiovascular Center at the University of Minnesota, is the inventor and is in charge of all technological and scientific aspects of the business; David Franiscone, a successful entrepreneur with significant experience in the medical device industry, is in charge of day-to-day operations; Mary Jeter, the past business development director of Bristol-Myers Squibb's cardiovascular division for 18 years, has strong industry relationships and is the acting CEO of the company. The team has been working on this project together for over two years and is fully committed to succeed.

Appendix C-2: Information and rationale underlying baseline scenario

The arguments were organized around a problem-solution sequence, followed by evidence of market potential, value creation potential and entrepreneurial team competence. This is the key information provided for each category of arguments, and its underlying logic.

Problem

- Hypothermia, or the reduction of body temperature, can protect vital organs from cell death and it is therefore widely used today in all forms of open-heart surgery. Studies show that the use of hypothermia during open-heart surgery can reduce death rates by 25% and tissue damage by 78%
- However, current methods of inducing hypothermia are too slow, complicated, inconvenient, unreliable and invasive. They include:
    - Submerging patients in cold water
    - Filling their lungs with cold fluids
    - Administering intravenous cold fluids
    - Inserting cooling devices with catheters

[Unsolved problem presents opportunity, magnitude of problem and inadequacy of solutions suggests extent of market need – i.e. "market pain"]

Solution

- OxyCool has a patent-pending technology that induces controlled hypothermia in a faster, simpler, more convenient, more reliable and less invasive way than existing technologies
    - Patients simply breathe a mixture of cold gases and mist that lowers their body temperature
    - With this technology, the patient's respiratory system is used as a natural cooling device
    - This technology allows patients to be treated faster: Speed is particularly important because the amount of tissue damage varies directly with the time that elapses before treatment is effective
    - This technology allows patients to be treated outside medical facilities: The simplicity of the product makes it very portable

[Novel solution offers advantages that existing products do not offer, addresses market pain, faster, portable, more reliable, less invasive]

Market potential

- The potential market for this product is very large
    - In the US alone, there are 1.5 million heart attacks every year. Because proper treatment often cannot be administered on time, half of all heart attacks are fatal and a third result in permanent damage to the patient
    - Future therapeutic uses of controlled hypothermia with the OxyCool system will include the prevention of cerebral palsy, spinal cord preservation, aortic surgery and head injury treatments

[Market is very large – provide evidence, new applications of the technology are going to make the potential market even larger]

Value creation potential

- The venture capital industry already recognizes the value of the controlled hypothermia market. Many well-known venture capital investors have invested over $150 million in the last few years in several potential competitors, including Inner Cool, Radiant Medical, Alsius and Critical Care Research
- The company believes that it will achieve high margins thanks to its superior and proprietary technology and that it will reach a substantial volume of sales in this large market
- The founders' goal is to eventually sell the company to a large player in the medical device industry, such as Medtronic or Boston Scientific. Medtronic, for instance, has during this past year (2009) acquired CoreValve (for $1 billion) and Ventor Technologies (for $325 million), two startups that have also developed state-of-the-art technologies in the cardiovascular market

[High margins and proprietary technology to defend those margins suggest profitability, founders will to sell the company means cashing out, evidence supporting potential for value creation from investors investing in similar companies and by acquisition activity]

Management team

- OxyCool's management team is comprised of its three co-founders
    - Dr. Fuller
        - An accomplished surgeon at the Cardiovascular Center at the University of Minnesota Medical Center
        - the brain behind the development of this novel technology
        - is in charge of all technological and scientific aspects of the business
    - David Franiscone
        - A successful entrepreneur with significant experience in the medical device industry (he has founded two other medical technology companies)
        - has extensive startup experience and understands what it takes to make a new venture successful
        - is in charge of OxyCool's day-to-day operations
    - Larry Jeter
        - The former business development director of Bristol-Myers Squibb's cardiovascular division, which he left after 18 years of service to join OxyCool
        - strong industry relationships through the years
        - is the acting CEO of the company
- The founding management team is fully committed to make this new venture a success and to improve the lives of millions of patients around the world

[Entrepreneurial team has competence and experience in relevant areas: technical, entrepreneurial, managerial, and business development as well as contacts in the industry and good reputation – can be trusted, entrepreneurial team is motivated and committed to succeed]

Appendix D: Narrative & Lexical Manipulations

Appendix D-1: Narrative version text

Hi. I'm Robert Fuller and I am 52-year old cardiologist. Many years ago, when I was a young resident at the University of Minnesota, someone discovered that hypothermia, the reduction of body temperature, can protect vital organs from cell death and is widely used in open-heart surgery. I am still astounded by studies showing that the use of hypothermia during open-heart surgery can reduce death rates by 25% and tissue damage by 78%. Although I became an early adopter of controlled hypothermia because of its effectiveness, I am very dissatisfied with current methods of inducing hypothermia are complicated, inconvenient, invasive and slow. They include submerging patients in cold water, which can sometimes produce significant adverse physiological reactions, filling patients' lungs with cold fluids while they are being sedated in order to allow them to continue breathing, administering cold fluids intravenously, or placing cooling devices in areas around the heart with the help of catheters.

My personal interest in the phenomenon of hypothermia started in 1999, when I went up north on an ice-fishing trip with my family and saw my nephew Jacob fall through the ice on Lake Bemidji. Although he remained submerged under water for a long period of time before my cousins managed to pull him out, he came out perfectly unharmed. How could that be? What mechanisms were at play in this remarkable outcome? Upon returning to the hospital, I set out to understand the phenomenon and my research eventually yielded OxyCool's proprietary technology: It induces controlled hypothermia in a simpler, more convenient and less invasive way than other methods. Patients simply breathe a patented mixture of cold gases that turn their respiratory system into a natural, effective and reliable cooling instrument. My experiments show that it cools twice as fast as other existing technologies. This is particularly important to heart failure victims because the amount of tissue damage varies directly with the time that elapses before treatment. Faster treatment means an increase in heart surgery success and a decrease in patients' exposure to physiological and psychological discomfort. OxyCool is simple and portable. It allows medics to treat patients before reaching a medical facility.

The idea of turning these discoveries into a company started when I first came into contact with Ms. Jeter, our CEO, when she was still the business development director of Bristol-Myers Squibb's cardiovascular division. When I first told her about the technology, she immediately realized its potential as a business opportunity and encouraged me to pursue patent protection. We saw early on that the potential market for this product is very large. In the US alone, there are 1.5 million heart failures every year. Because proper treatment often cannot be administered on time, half of all heart failures are fatal and a third of non-fatal incidents result in permanent damage. Eventually, controlled hypothermia with OxyCool will include the prevention of cerebral palsy, spinal cord preservation and aortic surgery. Venture capitalists have already validated the controlled hypothermia market, investing over $150 million in the last few years in several ventures, including Inner Cool, Radiant Medical, and Alsius. Our goal is to eventually sell the company to a large player in the medical device industry such as Medtronic. In 2009 Medtronic acquired CoreValve for $1 billion and Ventor

Technologies for $325 million, two startups that have also developed state-of-the-art technologies in the cardiovascular market.

Our management team is comprised of its three co-founders: Me, the inventor and a surgeon at the Cardiovascular Center at the University of Minnesota. I am in charge of all technological and scientific aspects of the business; David Franiscone, a successful entrepreneur with significant experience in the medical device industry, is in charge of day-to-day operations. Finally, my old friend, Mary Jeter, who left Bristol-Myers Squibb after 18 years of service to join OxyCool and who has strong industry relationships, is the acting CEO of the company. The three of us have been working on this project together for over two years and we are fully committed to succeed.

Appendix D-2: Narrative manipulation rationale and execution

Story must contain the following elements (see Chapter 3):

- Sequence of events that unfold over time
- Focal actor/s: Primarily Dr. Fuller, other actors are also involved in some events
- Narrative voice: 1st person - Dr. Fuller
- Plot (see below)

Basic plot

1. Dr. Fuller is a young resident in Minnesota when people start using hypothermia, but he does not like current methods of inducing it (initial problematic state)
2. Dr. Fuller experiences the incident with his nephew and gets really curious about how hypothermia works and how it can be induced more easily than with existing methods. He gets the motivation to come up with a better solution. He resolves the problem from a technical perspective.
3. Jeter realizes that there is a big market for this technology and eventually leaves Bristol-Myers Squibb to convince Dr. Fuller and a third partner to start a company to bring this technology to market. This event makes the creation of the new venture a reality and it gives the possibility of the new product to reach the market.
4. The creation of the new venture leads to the resolution of the problem…or almost. This where investors come in, to (profitably) help it make it a reality.

This plot, though simple, describes how the vicissitudes of the focal actor led to his motivation to solve the problem (attribution of cause-effect relationship), which led to the focal actor working hard and finally solving the problem (attribution of agency, intentionality, responsibility).

OPPORTUNITY DESCRIPTION: **NARRATIVE** (maroon/**bold**) + Neutral language

Below is a depiction of how the narrative elements were introduced in the new venture opportunity description. The narrative elements that were introduced are highlighted in bold with the color maroon, to make them distinctive. Note that the language style remains unchanged in this version. The non-highlighted portions of the description correspond to parts of the text that transfer information in the same way than in the baseline version.

Opportunity description by Larry Jeter (narrative voice)

1. Introducing focal actor and initial state (dissatisfaction – problem)

My name is David Fuller and I am 52-year old cardiologist. A long time ago, when I was a young resident at the University of Minnesota, it was discovered that hypothermia, the reduction of body temperature, can protect vital organs from cell death. Today, it is widely

used in all forms of open-heart surgery**. I am astounded by** studies showing that the use of hypothermia during open-heart surgery can reduce death rates by 25% and tissue damage by 78%.

I became an early adopter of controlled hypothermia because of its effectiveness, but I am very dissatisfied with current methods of inducing hypothermia **because they** are too complicated, inconvenient, invasive and slow. They include submerging patients in cold water, which can sometimes produce significant adverse physiological reactions filing the patient's lungs with cold fluids while they are being sedated in order to allow them to continue breathing, administering cold fluids intravenously, or inserting cooling devices in areas around the heart with the help of catheters.

2. Vicissitudes experienced by focal actor results in technical solution to problem

My personal interest in the phenomenon of hypothermia started 1999, when I went up north on an ice-fishing trip with my family and saw my nephew Jacob fall through the ice on Lake Bemidji. Although he remained submerged under water for a very long period of time before my cousins eventually managed to pull him out, he came out perfectly unharmed. How could that be? What mechanisms were at play in this remarkable physiological process? Upon my return to work at the hospital, I set out to understand this phenomenon and my research eventually yielded OxyCool's proprietary technology, which induces controlled hypothermia in a simpler, more convenient and less invasive way than other methods. Patients simply breathe a patented mixture of cold gases that turn their respiratory system into a natural, effective and reliable cooling instrument. More importantly, **my** experiments show that it does so twice as fast as any other existing technology. This is particularly important to heart failure victims because the amount of tissue damage varies directly with the time that elapses before treatment is. Faster treatment means an increase in the success rate of heart surgeries and that the amount of time that patients are exposed to severe physiological and psychological discomfort will be significantly reduced. In addition, because OxyCool is simple and easily portable it allows first responders to treat patients before they reach a medical facility.

3. Focal actor meets another character that helps reach resolution

The idea of turning these discoveries into a company started when first came into contact with Mr. Jeter, our CEO, when he was still the business development director of Bristol-Myers Squibb's cardiovascular division. When I first told him about the technology, he immediately realized of its potential as a business opportunity and encouraged me to pursue patent protection. We saw early on that the potential market for this product is very large. In the US alone, there are 1.5 million heart failures every year. Because proper treatment often cannot be administered on time, half of all heart failures are fatal and a third of non-fatal incidents result in permanent damage. Eventually, controlled hypothermia with

OxyCool will include the prevention of cerebral palsy, spinal cord preservation and aortic surgery.

4. Resolution – final (latest) state

The venture capital industry has already validated the value of the controlled hypothermia market. Many well-known venture capital investors have invested over $150 million in the last few years in several potential competitors, including Inner Cool, Radiant Medical, Alsius and Critical Care Research. **Our** goal is to eventually sell the company to a large player in the medical device industry, such as Medtronic or Boston Scientific. Medtronic, for instance, has during this past year (2009) acquired CoreValve (for $1 billion) and Ventor Technologies (for $325 million), two startups that have also developed state-of-the-art technologies in the cardiovascular market.

Our management team is comprised of the three co-founders: **Me, the inventor and** a surgeon at the Cardiovascular Center at the University of Minnesota Medical Center. **I am** in charge of all technological and scientific aspects of the business. Mr. David Franiscone, who is a successful entrepreneur with significant experience in the medical device industry, is in charge of OxyCool's day-to-day operations. **Finally, my old friend** Mr. Larry Jeter, **who left Bristol-Myers Squibb after 18 years of service to join OxyCool** and who has strong industry relationships, is the acting CEO of the company. **The three of us** have been working on this project for over two years and **we are** fully committed to succeed.

Appendix D-3: Baseline version with intense language text

Hypothermia, the reduction of body temperature, can protect vital organs from cell death and is widely used in open-heart surgery. Studies show that the use of hypothermia during open-heart surgery can reduce death rates by 25% and tissue damage by 78%. However, current methods of inducing hypothermia are complicated, inconvenient, invasive and slow. They include (1) submerging patients in ice water, which can sometimes produce significant convulsions and seizures, (2) filling patients' lungs with cold fluids while they are given anti-gagging medication in order to prevent them from choking to death, (3) injecting cold fluids directly into their veins, or (4) placing cooling devices in arteries and tissues around the heart by inserting catheters.

OxyCool has a proprietary technology that induces controlled hypothermia in a simpler, more convenient and less invasive way than other methods. Patients simply breathe a patented mixture of cold gases that turn their respiratory system into a natural, effective and reliable cooling instrument. Experiments show that it cools twice as fast as other existing technologies. This is particularly important to heart attack victims because the amount of tissue damage varies directly with the time that elapses before treatment. Faster treatment means that many more patients' lives will be saved in the operating room table and that the amount of time that people suffer from suffocation, nausea, vomiting, palpitations, panic and anxiety is significantly reduced. OxyCool is simple and portable. It allows medics to bring relief to patients before reaching a medical facility.

The potential market for this product is very large. In the US alone, there are 1.5 million heart attacks every year. Because proper treatment often cannot be administered on time, half of all heart attacks result in violent death and a third of survivors are maimed for life after sustaining irreversible injuries. Eventually, controlled hypothermia with OxyCool will include the prevention of cerebral palsy, spinal cord preservation and aortic surgery. Venture capitalists have already validated the controlled hypothermia market, investing over $150 million in the last few years in several ventures, including Inner Cool, Radiant Medical, and Alsius. The founders' goal is to eventually sell the company to a large player in the medical device industry such as Medtronic. In 2009 Medtronic acquired CoreValve for $1 billion and Ventor Technologies for $325 million, two startups that have also developed state-of-the-art technologies in the cardiovascular market.

OxyCool's management team is comprised of its three co-founders: Dr. Fuller, an accomplished surgeon at the Cardiovascular Center at the University of Minnesota, is the inventor and is in charge of all technological and scientific aspects of the business; David Franiscone, a successful entrepreneur with significant experience in the medical device industry, is in charge of day-to-day operations; Mary Jeter, the past business development director of Bristol-Myers Squibb's cardiovascular division for 18 years, has strong industry relationships and is the acting CEO of the company. The team has been working on this

project together for over two years and is fully committed to help saving the lives of millions of patients around the world.

Appendix D-4: Intense language manipulation rationale and execution

OPPORTUNITY DESCRIPTION: Baseline scenario NEUTRAL LANGUAGE (blue/*italic*) vs. baseline scenario INTENSE LANGUAGE (green/**bold**)

Section 1: Explanation of hypothermia and its uses – No changes

Hypothermia, the reduction of body temperature, can protect vital organs from cell death and is today widely used in all forms of open-heart surgery. Published studies show that the use of hypothermia during open-heart surgery can reduce death rates by 25% and tissue damage by 78%.

Section 2: Explanation of problems with existing technologies – *PROBLEM* vs. **PAIN**

However, current methods of inducing hypothermia are too complicated, inconvenient, invasive and slow. They include (1) submerging patients in [*cold*] [**ice**]water, which can sometimes produce significant [*adverse physiological reactions*] [**convulsions and seizures**], (2) filing the patient's lungs with cold fluids while they are [*being sedated*] [**given anti-gagging medication**] in order to [*allow them to continue breathing*] [**prevent them from choking to death**], (3)[*administering cold fluids intravenously*] [**injecting cold fluids directly into their veins**], or (4) inserting cooling devices in [*areas*] [**arteries and tissues**] around the heart [*with the help of*][**by inserting**] catheters.

Section 3: Explanation of solution, advantages of OxyCool – *SOLUTION* vs. **RELIEF**

OxyCool has a proprietary technology that induces controlled hypothermia in a simpler, more convenient and less invasive way than other methods. Patients simply breathe a patented mixture of cold gases that turn their respiratory system into a natural, effective and reliable cooling instrument. More importantly, experiments show that it does so twice as fast as any other existing technology. This is particularly important to heart [*failure*] [**attack**] victims because the amount of tissue damage varies directly with the time that elapses before treatment. Faster treatment means [*an increase in the success rate of heart surgeries*][**that many more patients lives will be saved in the operating room table]** and that the amount of time that patients [*are exposed to*] [**suffer from**] [*severe physiological and psychological discomfort*] [**suffocation, nausea, vomiting, palpitations, panic and anxiety**] will be significantly reduced. In addition, because OxyCool is simple and easily portable it allows first responders to [*treat*] [**bring mental and physical relief to**] patients before they reach a medical facility.

Section 4: Explanation of magnitude of market need –*PROBLEM* vs. **PAIN**

The potential market for this product is very large. In the US alone, there are 1.5 million heart [*failures*] [**attacks**] every year. Because proper treatment often cannot be administered on time, half of all heart [*failures are fatal*] [**attacks result in violent death**] and a third [*of non-fatal incidents result in permanent damage*] [**of survivors are maimed for life after sustaining irreversible injuries**]. Eventually, controlled hypothermia with OxyCool will include the prevention of cerebral palsy, spinal cord preservation and aortic surgery.

Section 5: Explanation of potential financial returns – no changes

The venture capital industry has already validated the value of the controlled hypothermia market. Many well-known venture capital investors have invested over $150 million in the last few years in several potential competitors, including Inner Cool, Radiant Medical, Alsius and Critical Care Research. The founders' goal is to eventually sell the company to a large player in the medical device industry, such as Medtronic or Boston Scientific. Medtronic, for instance, has during this past year (2009) acquired CoreValve (for $1 billion) and Ventor Technologies (for $325 million), two startups that have also developed state-of-the-art technologies in the cardiovascular market

Section 6: Explanation of entrepreneurial team – no changes except for outcome (solution)

OxyCool's management team is comprised of its three co-founders: Dr. Fuller, who is an accomplished surgeon at the Cardiovascular Center at the University of Minnesota Medical Center, is the inventor of this ground breaking innovation and is in charge of all technological and scientific aspects of the business. Mr. David Franiscone, who is a successful entrepreneur with significant experience in the medical device industry, is in charge of OxyCool's day-to-day operations. Mr. Larry Jeter, who was the business development director of Bristol-Myers Squibb's cardiovascular division for 18 years, has strong industry relationships and is the acting CEO of the company. The team has been working on this project together for over two years and is fully committed to [*succeed*][**help saving the lives of millions of patients around the world**].

MANIPULATION RATIONALE: Underlying rationale for each specific change

In regards to the problem (pain)

- [*cold*] [**ice**] – more graphic
- [*adverse physiological reactions*] [**convulsions and seizures**] – not only less abstract and more graphic, but also more emotionally-laden
- [*being sedated*] [**given anti-gagging medication**] – gagging invokes negative affect as well as a very specific experience

- [*allow them to continue breathing*] [**prevent them from choking to death**] - choking to death is more graphic than not being able to breath, it invokes concrete imagery of someone choking, and it is more likely to elicit negative emotion
- [*administering cold fluids intravenously*] [**injecting cold fluids directly into their veins**] – injected and veins are less abstract words than administering and intravenously, also more likely to elicit negative emotions and more likely to invoke imagery
- [*areas*] [**arteries and tissues**] – Arteries and tissues are words that invoke flesh and specific human physiology, more concrete and image provoking than areas.
- [*with the help of*][**by inserting**] – more graphic and concrete

In regards to the solution

- Heart [*failure*] [**attack**] – more graphic and emotionally-laden
- [*an increase in the success rate of heart surgeries*][**that many more patients lives will be saved in the operating room table**] - saving lives is more concrete that increasing the success rate of surgeries. The actual operating room invokes the image of the patient during surgery
- [*are exposed to*] [**suffer from**] – suffering is more emotionally-laden
- [*severe physiological and psychological discomfort*] [**suffocation, nausea, vomiting, palpitations, panic and anxiety**] – less abstract, more graphic and emotionally-laden
- [*treat*] [**bring mental and physical relief to**] – relief is more emotionally-laden

In regards to market size (size of pain)

- Heart [*failures*] [**attacks**] – more graphic and emotionally-laden
- [*failures are fatal*] [**attacks result in violent death**] – violent death is emotionally-laden
- [*of non-fatal incidents result in permanent damage*] [**of survivors are maimed for life after sustaining irreversible injuries**] – maimed for life after sustaining irreversible injuries is language that is more emotionally-laden than permanent damage to the patient

In regards to outcome (solution)

- [*succeed*][**help saving the lives of millions of patients around the world**] – saving lives more emotionally-laden

AppendixD-5: Narrative version with intense language text

Hi. I'm Robert Fuller and I am 52-year old cardiologist. Many years ago, when I was a young resident at the University of Minnesota, someone discovered that hypothermia, the reduction of body temperature, can protect vital organs from cell death and is widely used in open-heart surgery. I am still astounded by studies showing that the use of hypothermia during open-heart surgery can reduce death rates by 25% and tissue damage by 78%. Although I became an early adopter of controlled hypothermia because of its effectiveness, I am very dissatisfied with current methods of inducing hypothermia are complicated, inconvenient, invasive and slow. They include submerging patients in ice water, which can sometimes produce significant convulsions and seizures, filling patients' lungs with cold fluids while they are given anti-gagging medication in order to prevent them from choking to death, injecting cold fluids directly into their veins, or placing cooling devices in arteries and tissues around the heart by inserting catheters.

My personal interest in the phenomenon of hypothermia started in 1999, when I went up north on an ice-fishing trip with my family and saw my nephew Jacob fall through the ice on Lake Bemidji. Although he remained submerged under water for a long period of time before my cousins managed to pull him out, he came out perfectly unharmed. How could that be? What mechanisms were at play in this remarkable outcome? Upon returning to the hospital, I set out to understand the phenomenon and my research eventually yielded OxyCool's proprietary technology: It induces controlled hypothermia in a simpler, more convenient and less invasive way than other methods. Patients simply breathe a patented mixture of cold gases that turn their respiratory system into a natural, effective and reliable cooling instrument. My experiments show that it cools twice as fast as other existing technologies. This is particularly important to heart attack victims because the amount of tissue damage varies directly with the time that elapses before treatment. Faster treatment means that many more patients' lives will be saved in the operating room table and that the amount of time that people suffer from suffocation, nausea, vomiting, palpitations, panic and anxiety is significantly reduced. OxyCool is simple and portable. It allows medics to bring relief to patients before reaching a medical facility.

The idea of turning these discoveries into a company started when I first came into contact with Ms. Jeter, our CEO, when she was still the business development director of Bristol-Myers Squibb's cardiovascular division. When I first told her about the technology, she immediately realized its potential as a business opportunity and encouraged me to pursue patent protection. We saw early on that the potential market for this product is very large. In the US alone, there are 1.5 million heart attacks every year. Because proper treatment often cannot be administered on time, half of all heart attacks result in violent death and a third of survivors are maimed for life after sustaining irreversible injuries. Eventually, controlled hypothermia with OxyCool will include the prevention of cerebral palsy, spinal cord preservation and aortic surgery. Venture capitalists have already validated the controlled

hypothermia market, investing over $150 million in the last few years in several ventures, including Inner Cool, Radiant Medical, and Alsius. Our goal is to eventually sell the company to a large player in the medical device industry such as Medtronic. In 2009 Medtronic acquired CoreValve for $1 billion and Ventor Technologies for $325 million, two startups that have also developed state-of-the-art technologies in the cardiovascular market.

Our management team is comprised of its three co-founders: Me, the inventor and a surgeon at the Cardiovascular Center at the University of Minnesota. I am in charge of all technological and scientific aspects of the business; David Franiscone, a successful entrepreneur with significant experience in the medical device industry, is in charge of day-to-day operations. Finally, my old friend, MaryJeter, who left Bristol-Myers Squibb after 18 years of service to join OxyCool and who has strong industry relationships, is the acting CEO of the company. The three of us have been working on this project together for over two years and we are fully committed to help saving the lives of millions of patients around the world.

Appendix D-6: Master document

NON-NARRATIVE VERSIONS (*NEUTRAL* & **INTENSE LANGUAGE**)

Hypothermia, the reduction of body temperature, can protect vital organs from cell death and is widely used in open-heart surgery. Studies show that the use of hypothermia during open-heart surgery can reduce death rates by 25% and tissue damage by 78%. However, current methods of inducing hypothermia are complicated, inconvenient, invasive and slow. They include (1) submerging patients in *cold* **ice** water, which can sometimes produce significant *adverse physiological reactions* **convulsions and seizures**, (2) filling patients' lungs with cold fluids while they are *being sedated* **given anti-gagging medication** in order to *allow them to continue breathing* **prevent them from choking to death**, (3) *administering cold fluids intravenously* **injecting cold fluids directly into their veins**, or (4) placing cooling devices in areas arteries and tissues around the heart with the help **by inserting** of catheters.

OxyCool has a proprietary technology that induces controlled hypothermia in a simpler, more convenient and less invasive way than other methods. Patients simply breathe a patented mixture of cold gases that turn their respiratory system into a natural, effective and reliable cooling instrument. Experiments show that it cools twice as fast as other existing technologies. This is particularly important to heart failure **attack** victims because the amount of tissue damage varies directly with the time that elapses before treatment. Faster treatment *means an increase in heart surgery success* **that many more patients' lives will be saved in the operating room table** and *a decrease in patients' exposure to physiological and psychological discomfort* **that the amount of time that people suffer from suffocation, nausea, vomiting, palpitations, panic and anxiety is significantly reduced**. OxyCool is simple and portable. It allows medics to *treat* **bring relief to** patients before reaching a medical facility.

The potential market for this product is very large. In the US alone, there are 1.5 million heart *failures* **attacks** every year. Because proper treatment often cannot be administered on time, half of all heart *failures are fatal* **attacks result in violent death** and a third *of non-fatal incidents result in permanent damage* **of survivors are maimed for life after sustaining irreversible injuries**. Eventually, controlled hypothermia with OxyCool will include the prevention of cerebral palsy, spinal cord preservation and aortic surgery. Venture capitalists have already validated the controlled hypothermia market, investing over $150 million in the last few years in several ventures, including Inner Cool, Radiant Medical, and Alsius. The founders' goal is to eventually sell the company to a large player in the medical device industry such as Medtronic. In 2009 Medtronic acquired CoreValve for $1 billion and Ventor Technologies for $325 million, two startups that have also developed state-of-the-art technologies in the cardiovascular market.

OxyCool's management team is comprised of its three co-founders: Dr. Fuller, an accomplished surgeon at the Cardiovascular Center at the University of Minnesota, is the inventor and is in charge of all technological and scientific aspects of the business; David Franiscone, a successful entrepreneur with significant experience in the medical device industry, is in charge of day-to-day operations; Mary Jeter, the past business development director of Bristol-Myers Squibb's cardiovascular division for 18 years, has strong industry relationships and is the acting CEO of the company. The team has been working on this project together for over two years and is fully committed to *succeed* **help saving the lives of millions of patients around the world**.

NARRATIVE VERSIONS (*NEUTRAL* & **INTENSE LANGUAGE**)

Hi. I'm Robert Fuller and I am 52-year old cardiologist. Many years ago, when I was a young resident at the University of Minnesota, someone discovered that hypothermia, the reduction of body temperature, can protect vital organs from cell death and is widely used in open-heart surgery. **I am still astounded by** studies show**ing** that the use of hypothermia during open-heart surgery can reduce death rates by 25% and tissue damage by 78%. **Although I became an early adopter of controlled hypothermia because of its effectiveness, I am very dissatisfied with** current methods of inducing hypothermia are complicated, inconvenient, invasive and slow. They include submerging patients in *cold* **ice** water, which can sometimes produce significant *adverse physiological reactions* **convulsions and seizures**, filling patients' lungs with cold fluids while they are being sedated **given anti-gagging medication** in order to *allow them to continue breathing* **prevent them from choking to death**, administering cold fluids intravenously **injecting cold fluids directly into their veins**, or placing cooling devices in areas **arteries and tissues** around the heart *with the help* **by inserting** *of* catheters.

My personal interest in the phenomenon of hypothermia started in 1999, when I went up north on an ice-fishing trip with my family and saw my nephew Jacob fall through the ice on Lake Bemidji. Although he remained submerged under water for a long period of time before my cousins managed to pull him out, he came out perfectly unharmed. How could that be? What mechanisms were at play in this remarkable outcome? Upon returning to the hospital, I set out to understand the phenomenon and my research eventually yielded OxyCool's proprietary technology: It induces controlled hypothermia in a simpler, more convenient and less invasive way than other methods. Patients simply breathe a patented mixture of cold gases that turn their respiratory system into a natural, effective and reliable cooling instrument. My experiments show that it cools twice as fast as other existing technologies. This is particularly important to heart *failure* **attack** victims because the amount of tissue damage varies directly with the time that elapses before treatment. Faster treatment means *an increase in heart surgery success* **that many more patients' lives will be saved in the operating room table** and *a decrease in patients' exposure to physiological and psychological discomfort* **that the amount of time that people suffer from suffocation, nausea, vomiting, palpitations, panic and anxiety is significantly reduced**. OxyCool is

simple and portable. It allows medics to *treat* **bring relief to** patients before reaching a medical facility.

The idea of turning these discoveries into a company started when I first came into contact with Ms. Jeter, our CEO, when she was still the business development director of Bristol-Myers Squibb's cardiovascular division. When I first told her about the technology, she immediately realized its potential as a business opportunity and encouraged me to pursue patent protection. We saw early on that the potential market for this product is very large. In the US alone, there are 1.5 million heart *failures* **attacks** every year. Because proper treatment often cannot be administered on time, half of all heart *failures are fatal* **attacks result in violent death** and a third *of non-fatal incidents result in permanent damage* **of survivors are maimed for life after sustaining irreversible injuries**. Eventually, controlled hypothermia with OxyCool will include the prevention of cerebral palsy, spinal cord preservation and aortic surgery. Venture capitalists have already validated the controlled hypothermia market, investing over $150 million in the last few years in several ventures, including Inner Cool, Radiant Medical, and Alsius. **Our** goal is to eventually sell the company to a large player in the medical device industry such as Medtronic. In 2009 Medtronic acquired CoreValve for $1 billion and Ventor Technologies for $325 million, two startups that have also developed state-of-the-art technologies in the cardiovascular market.

Our management team is comprised of its three co-founders: **Me**, the inventor and a surgeon at the Cardiovascular Center at the University of Minnesota. **I am** in charge of all technological and scientific aspects of the business; David Franiscone, a successful entrepreneur with significant experience in the medical device industry, is in charge of day-to-day operations. **Finally, my old friend**, Mary Jeter, **who left Bristol-Myers Squibb after 18 years of service to join OxyCool** and who has strong industry relationships, is the acting CEO of the company. The **three of us have** been working on this project together for over two years and **we are** fully committed to *succeed* **help saving the lives of millions of patients around the world**.

Appendix E: Additional Tables

Table E-1: Intuitive Evaluation scale reliability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha on Standardized Items	N of Items
.898	.900	4

Inter-Item Correlation Matrix

	Item 1	Item 2	Item 3	Item 4
Item 1	1.000	.771	.605	.656
Item 2	.771	1.000	.672	.746
Item 3	.605	.672	1.000	.708
Item 4	.656	.746	.708	1.000

Case Processing Summary

		N	%
Cases	Valid	186	98.9
	Excluded[a]	2	1.1
	Total	188	100.0

a. Listwise deletion based on all variables in the procedure.

<u>Items key</u>

Item 1: “Overall, this seems to be a good investment opportunity”

Item 2: “Overall, I have a good impression of this new venture”

Item 3: “I feel that this opportunity could become a good business”

Item 4: “I have a positive gut feeling about this opportunity”

Table E-2: Empathetic Identification scale reliability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha on Standardized Items	N of Items
.698	.695	4

Inter-Item Correlation Matrix

	Item 1	Item 2	Item 3	Item 4
Item 1	1.000	.533	.349	.409
Item 2	.533	1.000	.323	.312
Item 3	.349	.323	1.000	.254
Item 4	.409	.312	.254	1.000

Case Processing Summary

		N	%
Cases	Valid	185	98.4
	Excluded[a]	3	1.6
	Total	188	100.0

a. Listwise deletion based on all variables in the procedure.

Items key

Item 1: “I feel affinity with this group of entrepreneurs”

Item 2: “I am like this group of entrepreneurs in some ways”

Item 3: “I appreciate what the entrepreneurs are trying to accomplish”

Item 4: “I understand how the founding team feels about its endeavors”

Table E-3: Competence scale reliability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha on Standardized Items	N of Items
.775	.777	3

Inter-Item Correlation Matrix

	Item 1	Item 2	Item 3
Item 1	1.000	.451	.601
Item 2	.451	1.000	.561
Item 3	.601	.561	1.000

Case Processing Summary

		N	%
Cases	Valid	183	97.3
	Excluded[a]	5	2.7
	Total	188	100.0

a. Listwise deletion based on all variables in the procedure.

<u>Items key</u>

Item 1: “The entrepreneurial team seems competent”

Item 2: “The entrepreneurial team has a proven track record”

Item 3: “The entrepreneurial team has the necessary expertise”

Table E-4: Motivation scale reliability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha on Standardized Items	N of Items
.785	.790	3

Inter-Item Correlation Matrix

	Item 1	Item 2	Item 3
Item 1	1.000	.608	.437
Item 2	.608	1.000	.623
Item 3	.437	.623	1.000

Case Processing Summary

		N	%
Cases	Valid	183	97.3
	Excluded[a]	5	2.7
	Total	188	100.0

a. Listwise deletion based on all variables in the procedure.

<u>Items key</u>

Item 1: “The entrepreneurial team seems motivated to succeed”

Item 2: “The entrepreneurial team is committed to the new venture”

Item 3: “The entrepreneur seems passionate about the business”

Table E-5: Market Need scale reliability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha on Standardized Items	N of Items
.676	.675	3

Inter-Item Correlation Matrix

	Item 1	Item 2	Item 3
Item 1	1.000	.515	.337
Item 2	.515	1.000	.377
Item 3	.337	.377	1.000

Case Processing Summary

		N	%
Cases	Valid	187	99.5
	Excluded[a]	1	.5
	Total	188	100.0

a. Listwise deletion based on all variables in the procedure.

Items key

Item 1: “I understand how patients must feel about current treatments”

Item 2: “I can see the problem from the perspective of the patient”

Item 3: “Current treatments put patients through a terrible ordeal”

Table E-6: Factor Analysis

Rotated Component Matrix[a]

	Component		
	1	2	3
EmpIden item 1	.151	.115	.802
EmpIden item 2	.030	.197	.770
EmpIden item 3	.146	.331	.493
EmpIden item 4	.478	-.054	.596
Motivat item 1	.788	.173	-.024
Motivat item 2	.853	.197	.186
Motivat item 3	.761	.009	.315
Compet item 1	.328	.817	-.040
Compet item 2	-.047	.765	.302
Compet item 3	.103	.821	.196

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 6 iterations

<u>Items key</u>

EmpIden item 1: “I feel affinity with this group of entrepreneurs”

EmpIden item 2: “I am like this group of entrepreneurs in some ways”

EmpIden item 3: “I appreciate what the entrepreneurs are trying to accomplish”

EmpIden item 4: “I understand how the founding team feels about its endeavors”

Motivat item 1: “The entrepreneurial team seems motivated to succeed”

Motivat item 2: “The entrepreneurial team is committed to the new venture”

Motivat item 3: “The entrepreneur seems passionate about the business”

Compet item 1: “The entrepreneurial team seems competent”

Compet item 2: “The entrepreneurial team has a proven track record”

Compet item 3: “The entrepreneurial team has the necessary expertise”

Table E-7: Kaiser-Meyer-Olkin and Bartlett´s tests

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.794
Bartlett's Test of Sphericity	Approx. Chi-Square	578.849
	df	45
	Sig.	.000

Table E-8: Collinearity diagnostics of mediating variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.745	.351		2.122	.035		
	EmpIden	.303	.113	.218	2.666	.008	.546	1.831
	Competence	.466	.068	.454	6.824	.000	.826	1.210
	Motivation	.187	.084	.153	2.214	.028	.768	1.302
	MktNeed	-.150	.079	-.138	-1.902	.059	.697	1.435

a. Dependent Variable: Intuitive Evaluation

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	EmpIden	Competence	Motivation	MktN
1	1	4.915	1.000	.00	.00	.00	.00	.00
	2	.035	11.816	.00	.01	.60	.00	.34
	3	.025	14.130	.06	.00	.34	.41	.29
	4	.014	19.023	.94	.05	.01	.36	.02
	5	.011	21.008	.00	.94	.05	.23	.35

a. Dependent Variable: Intuitive Evaluation

Table E-9: Two-way analysis of variance

Tests of Between-Subjects Effects

Dependent Variable: evaluation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2.070[a]	3	.690	1.138	.335
Intercept	2335.094	1	2335.094	3851.919	.000
Story	.212	1	.212	.350	.555
Language	1.117	1	1.117	1.842	.176
Story * Language	.738	1	.738	1.217	.271
Error	110.331	182	.606		
Total	2452.563	186			
Corrected Total	112.401	185			

a. R Squared = .018 (Adjusted R Squared = .002)

Between-Subjects Factors

		N
Story	.00	93
	1.00	93
Language	.00	89
	1.00	97