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THE IMPACT OF PERCEIVED ENTREPRENEURIAL PASSION ON ANGEL INVESTING

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ABSTRACT

In this paper we examine the relationship between the passion an entrepreneur displays, the passion angels perceive, and the impact on angels' interest and funding of ventures. Our qualitative study results indicate that angels do use displayed passion as a factor in their investment decisions and specifically focus on the enthusiasm, preparedness, and commitment entrepreneurs demonstrate. Results from our quantitative study suggest that the importance of different types of displayed passion varies depending on the stage of the funding process examined, and that all three types of displayed passion have a relationship with perceived passion and evaluations of funding potential, although the nature of these relationships is complex.

INTRODUCTION

Entrepreneurs need financial resources to grow their ventures, and often such resources come from outside investors, such as venture capitalists, angel investors, or friends and family. Entrepreneurs of fast growth firms who anticipate quick and aggressive growth often turn to angel investors for financing. Angels, who are often wealthy individuals with experience building a business, provide early stage financing for start-up ventures. Angel investors have provided seed capital for notable U.S. businesses such as Bell Telephone in 1874, Ford Motor Company in 1903, and Apple Computer in 1977 (e.g., Van Osnabrugge & Robinson, 2000). Although it is hard to estimate the exact size of angel investment due to its highly fragmented nature, in 2007 it is estimated that angels invested a total of \$26 billion in 57,120 entrepreneurs (e.g., Sohl, 2008.). Angels tend to invest in very early stages of the funding process, before new ventures typically can attract venture capital financing. Therefore, angel capital plays an important role in the entrepreneurial process.

Prior research suggests that angels use various criteria for determining whether or not to invest in a start-up, including enthusiasm of the entrepreneur, trustworthiness of the entrepreneur, exit route, revenue potential, domain expertise of the entrepreneur, growth potential of the market, and barriers for entry (eg. Van Osnabrugge, 1998, Sudek, 2006). One investment criteria receiving increasing attention is entrepreneurial passion. Chen, Yao, and Kotha (2009) argue that "passion is often critical to convince the targeted individuals to invest their money, time, and effort in the new venture." Passion may provide a strong indication of how committed the entrepreneur is to putting in the time and effort needed to make the company a success (c.f. Vallerand, et al., 2003). Passion may be associated with drive, tenacity, initiative, and willingness to work long hours (Bierly et al., 2000; Bird, 1989), and may help entrepreneurs find creative solutions to problems, persist despite obstacles, and experience a flow-like state of absorption (Cardon et al., 2009).

While scholars have recently focused on passion as experienced by entrepreneurs (e.g. Klauken, Paetzelt, & Shepherd, 2008; Cardon et al, 2009), others suggest that displayed passion is perhaps just as important (e.g. Cardon, 2008). This is because some people display emotions they

do not feel (e.g. Rafaeli & Sutton, 1987; Dasborough & Ashkanasy, 2002), and some are less expressive in displaying felt emotions (e.g., Kring, Smith, & Neale, 1994). We use the term “displayed passion” to refer to the emotion that is expressed or displayed by the entrepreneur. Entrepreneurs may be more persuasive when they demonstrate high levels of positive emotion (Baron, 2008), may appear more confident, and may receive more favorable decisions from investors (Chen, et al., 2009).

When entrepreneurs display passion, such as through providing animated venture pitches or presentations, potential investors make assessments concerning the level of perceived passion, or the amount of passion they perceive the entrepreneur to have. This is distinct from displayed passion, because the emotion an entrepreneur is trying to communicate through their display may not be perceived by the investor, or the investor may perceive that the displayed emotion is not genuine and thus will not perceive the entrepreneur to have passion. We use the term “perceived passion” to refer to the extent to which others perceive the entrepreneur to be passionate about their venture.

Scholars suggest that both angels and VCs rate perceived passion as an important investment criterion (e.g., MacMillan et al., 1987; Carter & Van Auken, 1992), however angels may view perceived passion as even more important than VCs (Carter & Van Auken, 1992; Sudek, 2006; Van Osnabrugge, 1998) due to their investments typically occurring at earlier stages of a company’s life. It may also be more relevant to angel investors because they base a lot of their investment decision on the entrepreneur themselves (Sudek, 2006), in addition to the business opportunity.

Very little is known about the extent to which either displayed and/or perceived passion plays a role in angel investment decisions. Thus, the focus of this study is on the relationship between an entrepreneur’s displayed passion, the angels’ perceived passion and how far the entrepreneur gets through the angel investment process. Angels have many decision points in considering investing in a business and firms fall out of the process due to unfavorable decisions at each step. For example, in our dataset, of the 1266 entrepreneurs who applied to the angel investor organization at the time of our study, 152 were invited to make presentations, and to date only 30 have been funded by angels in this group. While there may be several reasons why angels decide not to fund a venture or to move it to the next stage in the funding process, we focus on the extent to which displayed and perceived passion play a role in these decisions. Our specific research questions are; 1) Do angel investors consider the passion of the entrepreneur when making their funding decisions? If so, how do they conceive of passion? How do they evaluate it?; and 2) What impact does passion have on the actual investment? How far can passion take an entrepreneur towards acquiring the financial resources s/he wants from angels?

ANGEL INVESTING

Investors make their decisions to invest in startups based on the attributes of the entrepreneur, the management team, and the business opportunity. Previous research has looked at VC and the angel investment decisions (e.g., Tyebjee & Bruno, 1984; MacMillan, Siegel, & Subbanarasimha, 1985; MacMillan, Zemann, & Subbanarasimha, 1987; Carter and Van Auken, 1992; Van Osnabrugge, 1998; Haar, Starr, and Macmillan, 1988; Sudek, 2006). These studies show that entrepreneurial commitment, passion, trustworthiness, domain expertise, and track record are the most important entrepreneurial characteristics. In addition, these studies showed that revenue potential, market growth potential, barriers for entry, and exit potential are the most important criteria when evaluating characteristics of the opportunity.

The funding decision process used by VCs and angels typically consists of an initial screening of the opportunity, a screening presentation, due diligence, funding, and post investment involvement (e.g., Tyebjee & Bruno, 1984; Sudek, 2006). The initial screening phase typically filters out business opportunities that do not fit the VC or angel group. This may consist of a brief meeting with the entrepreneur, or this might be done via business plan or application review by the angel group. The screening phase consists of a presentation by the entrepreneur, followed by a question and answer period. This phase typically lasts between 30 and 45 minutes. If there is enough interest from the screening, the deal proceeds to due diligence. The due diligence phase consists of multiple meetings with entrepreneur and investors to review the business plan in detail. If it is determined the deal is still worthy of investing, a funding phase includes the final deal terms negotiation and actual investment. After the investment is made both VC and angels are involved with the company in the post investment phase.

Although entrepreneurs go through a similar funding decision process with both angels and VCs (Sudek, 2006), angels differ from VCs in several important areas. Angels tend to invest in very early stages of the funding process, before new ventures can attract venture capital financing (Freear & Wetzal, 1990). Angel investors typically include private individuals that invest their own money, whereas VCs invest funds raised from institutional investors (Van Osnabrugge, 2000). Angels perform less due diligence than VCs and invest more opportunistically, rely more on instincts, and do not calculate internal rates of return (IRR) (e.g., Timmons, 1990; Baty, 1991; Mason & Harrison, 1996; Van Osnabrugge & Robinson, 2000). Angels and VCs also differ in their entrepreneurial experience and expected involvement (e.g., Van Osnabrugge & Robinson, 2000). In general, Angel investors have more operating experience and are much more involved with the companies in which they invest than VCs. In addition, angels are more often involved in day-to-day operations (e.g., Benjamin & Margulis, 2000). Often, Angels will work part-time with periods of full-time commitment to help entrepreneurs through challenging issues (e.g., Van Osnabrugge & Robinson, 2000). For these reasons, the angel investment often becomes more personal for the investor, and is distinct from VC investment. Because of these differences we seek to understand how entrepreneurial passion may play a role in the funding decisions of angel investors, a question not yet addressed in the literature.

ENTREPRENEURIAL PASSION, DISPLAYED PASSION AND PERCEIVED PASSION

Entrepreneurial passion involves an “intense affective state that bears cognitive and behavioral manifestations of high personal value” (Chen, Yao, & Kotha, 2009: 199). It involves intense and positive feelings that entrepreneurs experience when they are engaged in key activities associated with roles (such as founder) that are critical to the self-identity of the entrepreneur (Cardon et al., 2009; Hoang & Gimeno, in press). The two key aspects of entrepreneurial passion seem to be that 1) it involves positive and intense feelings, and 2) the object of these feelings is profoundly personally meaningful to the entrepreneur. It can be difficult for outsiders to determine the personal meaning of activities or events to an entrepreneur, so the observable aspect of passion is the intensity of the positive feelings that an entrepreneur displays.

While entrepreneurs can certainly display authentic emotions to others such as employees (e.g. Cardon, 2008) or potential investors (Chen, et al., 2009), scholars determined long ago that individuals can use emotional labor to display emotions they do not feel or hide emotions they do feel in order to secure more positive outcomes for themselves (Rafaeli and Sutton, 1987) or their organizations (Dashborough and Ashkanasy, 2002). The entire field of emotional intelligence is based on the idea that individuals can control their own emotions, pick up on the emotions of others, and deliberately try to influence the emotions of other people (Cross and Travaglione,

2003). Thus it is critical for us to differentiate between the passion or more general positive affect experienced by entrepreneurs that other scholars have looked at (Cardon et al., 2009; Baum, Locke, and Smith, 2001; Baron, 2008), the passion entrepreneurs choose to display, and passion as perceived by others such as angel investors.

The passion an entrepreneur displays is important because it can lead investors to be more confident in the entrepreneur, particularly when the product or environment is ambiguous and uncertain (Zacharakis & Shepherd, 2001). High levels of displayed positive affect can help entrepreneurs expand their social networks and be more persuasive, which combined can increase their social and financial capital (Baron, 2008). Displayed passion can also lead to emotional contagion, where others cannot help but get caught up in the excitement the entrepreneur displays (Cardon, 2008). This would lead to a suggestion that displayed passion, especially enthusiasm which is most readily associated with the theoretical definition of passion as an affect, will lead to greater investment by angels. More formally,

H1: Greater enthusiasm (displayed affective passion) will be associated with greater evaluations of funding potential.

In addition, different aspects of how an entrepreneur displays passion might be important, including affective, cognitive, and behavioral aspects. Chen, Yao, and Kotha (2009) define passion as an intense affective state that is accompanied by cognitive and behavioral manifestations of high personal value. They talk about affective passion, which when displayed is akin to enthusiasm, and suggest that the affective experience of passion tends to be accompanied by cognitive arousal (I can't stop thinking about my business) and behaviors to act on that passion (Chen et al., 2009). In particular they argue that in addition to enthusiasm, investors will pay attention to the cognitive preparedness of an entrepreneur that is likely associated with passion. We agree that investors may well consider how prepared an entrepreneur is for a presentation and assess how much thinking they have done about their business; their preparedness. In fact, Chen, Yao, and Kotha (2009) found that for student business plan presentations, business plan judges (i.e. bankers, VCs, and individuals from financial companies) paid more attention to preparedness than to the displayed enthusiasm of student presenters. The content of the business plan itself was more important than the manner in which the pitch was delivered. Consistent with their findings and the theoretical arguments above, we propose that,

H2: Greater preparedness (displayed cognitive passion) will be associated with greater evaluations of funding potential.

Investors may also consider how committed an entrepreneur is to the business in terms of their behaviors. The entrepreneur's commitment and determination are critical when looking for successful entrepreneurs (e.g., Timmons & Spinelli 2004). As Benjamin and Margulis (2000: 95) articulated, investors pay great attention to passionately committed entrepreneurs. For example, whether or not the entrepreneur has committed their own money to the venture may be important, as well as whether the entrepreneur still maintains another job or only works for the company seeking investment. These behavioral manifestations may be associated with the amount of passion an entrepreneur experiences, and therefore are a part of the passion they may display to others. From an investment perspective, when an entrepreneur has invested their own money angels feel they have "skin in the game." This signals to the angels that they are more committed to a successful outcome. Sudek (2006) reported that in a qualitative study of angel investors discussed an entrepreneur who appeared passionate and committed based on investing his own money, one who showed high energy and enthusiasm that impressed the angels. In addition, the

passionate entrepreneur had made reasonable money in past careers and had put up most of his money, including mortgaging his house, to start the company. The passion and perceived commitment of this entrepreneur garnered excitement from the investors.

H3: Greater commitment (displayed behavioral passion) will be associated with greater evaluations of funding potential.

However, if the passion displayed is perceived by angels as momentary or not genuine, it will likely not have a major impact on angel investing. Angel investors typically screen many companies and have developed a sense of when the presenter is genuinely passionate about their product or company and when not. Similarly, Elsbach and Kramer (2003) found that when unknown screenwriters pitched ideas for shows to studio producers, the producers categorized the presenters based on their level of passion in order to assess their creative potential, including the ability to adapt and innovate, versus presenters that had an interesting story but lacked this creative potential. This categorization determined whether or not the script would be successful at that studio. We believe angel investors have a similar skill at reading between the lines to determine their own assessment of the perceived passion of the entrepreneur. They may also rely more on their assessment of the sincerity of the entrepreneur's displayed passion (Chen, Yao, and Kotha, 2009; Ferris, Treadway, Perrewe, Brouer, Douglas, & Lux, 2007) in making their funding decisions.

In addition, temporary emotions, such as those elicited through contagion processes, tend to diminish once the stimuli (such as the immediate presence of the passionate entrepreneur) is removed (Bechara, Dimasio, and Dimasio, 2003). This leads us to believe that some aspects of displayed passion, such as preparedness and commitment, may be more important than displayed enthusiasm at later stages of the funding process. Overall, we suggest that while all three aspects of displayed passion will influence the extent of progress an entrepreneur makes in the funding process, a key mediating variable may be the level of perceived passion on the part of the angel investor.

H4: The relationship between a) enthusiasm, b) preparedness, and c) commitment and greater evaluations of funding potential will be mediated by the level of passion perceived by angel investors.

METHODS

To test our hypotheses we conducted two studies, one qualitative and one quantitative. In the first we qualitatively assessed our first research question, how angel investors think about passion and whether they think it is relevant to the investment decision. In the second study we examined our second research question, the impact of the perceived passion of entrepreneurs on the funding process, and tested our hypotheses using a sample of 60 entrepreneurs and 53 angels.

Study 1

In study 1, data were gathered from multiple US angel investment groups to determine what angel investors think about perceived entrepreneurial passion. These groups sometimes invest as a group, but typically each angel decides whether or not to independently invest. In the fall of 2008, angels were asked to take an online survey that included measures of 1) the extent to which they include perceived passion as a criterion when they make investment decisions; 2) why

passion is or isn't important when evaluating an entrepreneur; 3) how they define perceived passion; and 4) the specific behaviors or attitudes they look for in entrepreneurs seeking funding.

This qualitative study was necessary to validate and modify the scale that has been used in prior research to assess perceived passion (Chen et al., 2009), for several reasons. First, the prior scale was developed to assess passion in student presentations, which might be quite different than presentations given by practicing entrepreneurs. Second, the prior scale was used by judges (i.e. bankers, VCs, and individuals from financial companies) to assess student presentations, and research has shown that angel investing is quite different than VC investing (e.g., Van Osnabrugge & Robinson, 2000), and may also differ from typical loan decisions from banks. For example, because angels do not have to answer to other partners in a firm they may have less rigorous and objective evaluations of ventures (e.g., Van Osnabrugge & Robinson, 2000), and are thus perhaps more easily persuaded by a passionate entrepreneur. Finally, the scale developed by Chen and colleagues has only been used in one prior study, and therefore validation of the scale in other contexts is important.

Study 1 results. 1,336 angels were asked to participate in this study, and 150 angels completed the survey, yielding a response rate of 11%. The average rating of how important passion is to their investment decisions was 4.53 on a 5 point scale. Definitions of passion included comments such as "passion is the emotional attachment to the business that carries you through the hard times. It is often the intense, driving feeling or conviction that this can work, will work, and must work."

In response to the question of why passion is important, angels responded with comments such as "it reflects the entrepreneur's level of commitment to and energy for the endeavor being considered." "Without passion it won't last long." "Without passion, the normal speed bumps can be terminal." "Passion keeps people going in the face of obstacles and early failures." "It contributes to momentum and has an infectious quality that brings in talent and money."

However, other angels were more skeptical of using passion as an investment criterion, making comments such as the following: "No amount of passion can make a pig fly." "Passion is important, but more of a necessary than sufficient condition for considering an investment." "Numbers speak for themselves and the idea should make sense on its own. No one person can sell an idea just with passion." "Too much passion is dangerous because it equates to tunnel vision." "Passion is just one part of the equation: skill, knowledge, intelligence, eloquence, etc." also matter. "it is just one element of the recipe. For example, it would never be more important to me than intelligence but intelligence is insufficient without passion."

In order to develop a new scale for measuring displayed passion, three independent coders analyzed two questions the angels responded to: What specific behavior or attitudes would represent an entrepreneur with a high (low) level of passion? The responses fell into three categories, which were consistent with the affective, cognitive, and behavioral passion distinction made by Chen and colleagues (2009). However, the specific items contained in each category differed from those presented previously. Displayed affective passion included factors related to how much enthusiasm and excitement the entrepreneur displayed in their presentation to the angels. Specific items identified included "tone of voice," "eye contact and intensity of verbalization", energetic and enthusiastic presentation of business/ideas," "high energy and a positive attitude." Displayed cognitive passion reflected preparedness, or the extent to which the entrepreneur appeared knowledgeable and focused mentally on their venture. Specific comments made by the angels included the following: "deep and thorough knowledge of his business

model,” “to display extensive knowledge of the key issues.” “knowing their field, product and/or idea cold, and “has thought about objections and has clearly defined answers.”

Displayed behavioral passion items reflected the amount of personal commitment the entrepreneur has demonstrated to their business including how much personal financial investment they have made. Sample comments from the angels include “committing significant time and resources to the project,” “willing to put his own money at risk,” “commitment of time, career, and money,” and “personal sacrifice, commitment to the business, long hours (years in some cases) developing the company business.” Based on angel responses to these open-ended questions we created three scales for use in Study 2: displayed affective passion (enthusiasm), displayed cognitive passion (preparedness), and displayed behavioral passion (commitment). Specific items for each scale are indicated in Figure 1.

Study 2

In study 2, we used the displayed passion scale developed in study 1, and examined the relationship between displayed passion, angel assessments of perceived passion and how far the entrepreneur got in the funding process.

We used 60 videotaped screening presentations entrepreneurs made to one of the largest US angel investment groups, the Teach Coast Angels group. As of February 2009, this group had made investments in over 150 companies totaling over \$99 million (TCA, 2009). TCA has approximately 300 angels across five chapters in California. Angel participants in this study were part of the Orange County chapter of TCA. In the normal TCA funding process, entrepreneurs fill out an online application and are then pre-screened by 3-5 angels. If the angels determine the entrepreneur should go further, they give a full screening presentation. These presentations are typically made to 10-20 angels.

Videos were collected at screenings made to the Orange County chapter of TCA between July 2006 and March of 2009. In each video, the presenting entrepreneur made a 15 minute presentation following by 15 minutes of Q&A. The full 30 minutes were coded for this study. Each coder responded to the video in terms of scales described below to assess the displayed passion (enthusiasm, preparedness, and commitment) of the presenter. Coding of videos was completed in two separate steps. In the first step, five researchers coded 10 presentations. The overall inter-rater reliability for the 10 presentations was .896. This gave us confidence that the coding was consistent and that we could proceed to step two, where the remaining 50 videos were assessed by three of the five original coders. The inter-rater reliability for these 50 videos was .872. One company was dropped from the analysis due to the determination it was an outlier due to a negative Cronbach’s alpha among coders.. The resulting sample included 59 video—taped entrepreneurs.

Measures of displayed passion. The displayed passion scale developed in study 1 contains three types of displayed passion – displayed enthusiasm (affective passion), displayed preparedness (cognitive passion), displayed commitment (behavioral passion). Reliability for two of the three displayed passion scales were high. The Cronbach’s alpha of .937 for displayed enthusiasm and .844 for displayed preparedness are comparable to Chen, et al. (2009) alphas for similar scales of .94 and .90, respectively. In addition, we measured displayed commitment but only achieved a Cronbach’s alpha of .444 for this three item measure. The correlations among the three scales were low (ranging from -.033 to .366), indicating that while they are correlated, they are not redundant scales.

Measures of perceived passion. When each screening presentation was initially made, angel investors assessed the overall passion and enthusiasm demonstrated by the entrepreneur at the time of their presentation. The passion item was “CEO is very passionate about the company” and the enthusiasm item was “CEO is very enthusiastic.” This measure of perceived passion was done at the screening stage of the angel funding decision process.

Measure of evaluation of funding potential. Angels evaluate the funding potential of a new venture at various stages of the funding decision process, creating multiple points where an entrepreneur can fail to proceed to the next stage of the funding decision process. Two dependent variables were utilized in this study, interest at the screening stage and investment at the funding stage. Interest represents the evaluation angels make at the end of the screening stage: whether the angel expresses interest in the new venture as an investment which we coded as 1 = interest and 0 = no interest. The second dependent variable, measured at the funding stage, indicates whether the angel invested in the new venture. A dichotomous variable was created with 1 indicating an angel invested in a new venture and 0 indicating no investment.

Control variables include the strength of the opportunity and the amount of funding sought. Strength of the opportunity was determined by averaging the responses of angels attending the focal screening. Angels used a 5 point agree-disagree scale to rate the strength of the opportunity using six items, such as “the business model is strong”, “the market has a large growth potential”, etc. The dollar amount of funding sought was standardized to make it more comparable to the other variables.

Study 2 results. Table 1 provides means, standard deviations and correlations for variables used in the study. Fairly low correlations among the independent variables indicate multicollinearity is not an issue. In addition, our diagnostic tests indicate that the data do not violate assumptions of linearity, normality, homoskedasticity, and independence. We tested our hypotheses using hierarchical regression analyses to regress each of the dependent variables on blocks of predictor variables. Table 2 provides the logistic regression results for both dependent variables. Models 1-3 provide the results predicting interest in funding the new venture at the screening stage and models 4-6 show results for investment in the new venture at the funding stage. We controlled for strength of opportunity which was significant in all models and amount of funding sought which was not significant in any of the models (Table 2, models 1 and 4).

Hypothesis 1 argues that displayed enthusiasm will be positively associated with progress through the funding process. We did not find support for this hypothesis at either the screening stage or the funding stage (Table 2, models 2 and 5). The results indicate that displayed enthusiasm may be negatively related to interest at the screening stage but not related to whether angels invest at the funding stage ($b = -.294, p < .05$; $b = -.597, p > .05$, respectively).

Hypothesis 2 proposes that displayed preparedness will be positively associated with progress through the funding process. Support for this hypothesis was found at the funding stage but not at the screening stage ($b = .316, p > .05$; $b = 9.986, p < .05$, respectively).

Results regarding hypothesis 3 are similar to the results regarding hypothesis 1. We did not find support for the positive association of displayed commitment with either interest at the screening stage or investment at the funding stage (Table 2, models 2 and 5). The results indicate that displayed commitment may be negatively related to interest at the screening stage and not related to investment at the funding stage ($b = -.392, p < .01$; $b = 3.152, p > .05$, respectively).

Hypothesis 4 suggests that perceived passion mediates the relationships between displayed passion (enthusiasm, preparedness, and commitment) and funding progress. Baron and Kenny (1986) provide a framework using regression to test for mediation. Variable M is considered a mediator if the following criteria are met: 1) X significantly predicts Y, 2) X significantly predicts M, and 3) M significantly predicts Y when controlling for X (Baron & Kenny, 1986; Preacher & Hayes, 2004). Following this framework, perceived passion does not appear to mediate the relationships between types of displayed passion and progress in the funding process due to one or more of these three criteria not being met (Tables 2, models 3 and 6; Table 3, model 2). However, researchers argue the importance of directly testing the significance of indirect effects to overcome the shortcomings inherent in the Baron and Kenny method (i.e. Holmbeck, 2002; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Preacher & Hayes, 2004).

Evidence of mediation exists if the indirect effect of X on Y when M is present differs from the direct effect of X on Y (Preacher & Hayes, 2004). Statistically testing if these two effects differ is more robust than conducting a series of regression analyses (MacKinnon et al., 2002; Preacher & Hayes, 2004). The Sobel test provides a more direct test of an indirect effect but assumes normal distribution of errors (Preacher & Hayes, 2004). A more conservative approach is not to assume normal distributions and use a bootstrap test (Lockwood & MacKinnon, 1998). Preacher and Hayes (2004) provide the framework and necessary SPSS syntax to test for significance with the Sobel test and a bootstrapping test.

Table 4 shows the results of the Preacher and Hayes (2004) Sobel and bootstrap test using the unstandardized path coefficients. The Sobel test and the bootstrap indicate perceived passion has a mediating effect on the relationships between the three types of displayed passion and interest at the screening stage but not investment at the funding stage. Perceived passion appears to mediate the relationship between displayed enthusiasm and interest as determined by the Sobel test ($z = 4.73, p < .01$), as well as the bootstrap test which indicates the indirect effect is different from zero with 99% confidence. In other words, although displayed enthusiasm by itself does not lead to or prevent angel interest at the screening stage ($b = -.121, p > .05$), there is a part of displayed enthusiasm that is positively related to perceived passion ($b = .264, p < .01$) and is positively related to interest at the screening stage ($b = .735, p < .01$). The part that is not related to perceived passion is in fact negatively related to interest at the screening stage ($b = -.320, p < .01$).

With regards to displayed preparedness, the results indicate that displayed preparedness does have an indirect effect on interest, with the effect occurring through perceived passion. Although, the positive relationship between displayed preparedness and interest is not statistically significant ($b = .284, p > .05$), the relationship is smaller after controlling for perceived passion ($b = .083, p > .05$). The bootstrap output shows that the indirect effect is different from zero with 99% confidence and the Sobel test also indicates a statistically significant indirect effect exists ($z = 3.26, p < .01$).

Finally, the mediating effect of perceived passion on the relationship between displayed commitment and interest at the screening stage is similar to when examining displayed enthusiasm with the exception of a statistically significant negative relationship between displayed commitment and angel interest at the screening stage ($b = -.363, p < .01$). However, there is a part of displayed commitment that is positively related to perceived passion ($b = .156, p < .01$) and is positively related to interest at the screening stage ($b = .728, p < .01$). The part that is not related to perceived passion is negatively related to interest at the screening stage ($b = -.496, p < .01$).

Therefore, we find support for hypothesis 4 when examining interest at the screening stage but not investment at the funding stage.

DISCUSSION AND IMPLICATIONS

Theoretical developments have argued that passion is a critical component of entrepreneurship. This paper adds to the literature by providing an empirical assessment of the extent to which these theoretical arguments hold true for angel investment decisions. This should help both angels and entrepreneurs seeking their funding to better understand the dynamics of these investment decisions. It also is one of the first empirical studies of the role of passion in entrepreneurship, and the first to examine the impact of displayed passion on angel investor decision-making.

Research implications and areas for future research

As expected, displayed enthusiasm (affective passion) and displayed commitment (behavioral passion) appear to lead to more perceived passion, as assessed by angel investors. However, these two types of displayed passion were not expected to be negatively associated with interest at the screening stage or investment at the funding stage. It appears that the relationship between displayed passion and evaluations of funding potential angels make at both the screening and investment stage of the funding process may be more complex than originally thought. Both displayed enthusiasm and displayed commitment have aspects that lead to increased perceptions of passion and also interest at the screening stage, but also have aspects that lead to decreased interest at the screening stage. One possible explanation for these results could be related to literature regarding individuals displaying emotions they do not feel in order to secure more positive outcomes for themselves (Rafaeli and Sutton, 1987) or their organizations (Dashborough and Ashkanasy, 2002). Angels may be weary of being influenced in this manner and therefore are suspicious of some aspects of displayed passion. Future research can conduct a more fine-grained examination of exactly what aspects of displayed enthusiasm and commitment are positively associated with interest at the screening stage of the funding process, and which aspects have a negative impact on interest.

The fact that perceived passion only had a mediating effect when predicting interest at the screening stage of the funding process and not at the investment stage of the funding process suggests that displayed enthusiasm (affective passion) and displayed commitment (behavioral passion) will only get you only so far in the funding process. A strong opportunity appears to be always important (as indicated in its statistical significance in all models), whereas the type of displayed passion that matters changes as an entrepreneur progresses through the funding process. This could be a result of temporary emotions elicited through the contagion process diminishing over time (Bechara, et al., 2003). In the weeks or months between the presentation and the investment decision, the passion the entrepreneur was able to convey to the angel, as well as the angels recollection of displayed passion likely diminishes. However, displayed preparedness (cognitive passion) does not seem to diminish over time. Although not directly related to either perceived passion or interest at the screening stage, displayed preparedness is positively associated with investment at the funding stage. Displayed preparedness may have a more lasting impact than the other two types of displayed passion. This result is consistent with the findings of Chen Yao, and Kotha (2009) who found that in evaluations of business plan presentations raters also focused more on preparedness than on affective passion of the presenters. However, while those authors propose three aspects of passion (affective, cognitive – preparedness, and behavioral – commitment), they tested only the first two of these aspects, while we tested all three.

While we focused on the mediating effect of perceived passion on the relationship between displayed passion and important outcomes, there is a need for future research to continue to explore how experienced passion differs from displayed passion and perceived passion in the entrepreneurship context. Our somewhat surprising results concerning enthusiasm and commitment may be due to angels sensing the entrepreneur is putting on an act and not displaying authentic emotions. Therefore we need to use recently developed measures of the extent to which entrepreneur really feel or experience passion (Cardon, 2008), as well as what this passion is focused on (Cardon et al, 2009) in order to truly understand the nuanced relationships between passion that is felt, displayed, and perceived, and how these factors influence angel funding decisions. It may also be relevant to look at other characteristics of the entrepreneur (i.e. personality, social skills, etc.) that might impact the level of displayed passion and perceived passion. The amount of passion perceived by others likely is impacted by characteristics of the entrepreneurs displaying such passion, as well as their skills such as social perception skills. We hope that this study encourages future research to explore these types of relationships.

Limitations

There are several limitations of this study that need to be noted. First, our measure of displayed commitment (behavioral passion) had a low Cronbach's alpha. We had only a three item measure that reflected different possible manifestations of behavioral passion, and future research is needed to examine what additional or alternative items could be used.

Second, since most new ventures at the screening stage of the funding process do not ultimately receive funding, the number of cases at the funding stage was substantially smaller than at the screening stage. 59 new ventures were screened by between 7 and 21 angels for a total of 860 observations. Of the 59 new ventures in the sample that reached the screening stage, 9 received funding, resulting in 109 observations involving both displayed passion data and data regarding whether the angel invested. Most angels choose not to invest most of the time. This results in a fairly low number of cases involving angels' evaluations of the investment criteria who subsequently invested in the new venture. Only ten of the 109 observations involve angels who ultimately invested. This small sample size may explain the lack of support for some of the hypotheses at the investment stage of the funding process.

Practical implications

The results suggest that entrepreneurs seeking funding from angel investors need to have a good business idea and need to be able to display to potential investors that they are prepared, meaning they have thought through the big picture and impact of their product or service and are able to convey confidence and answer questions competently. In addition, their ability to convey authentic enthusiasm and commitment to angels appears to be important in terms of increasing angels' initial interest in the venture. However, the relationships among the three aspects of displayed passion, angels' perceptions of perceived passion, and actual funding appear complex and warrant further practical and academic study.

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REFERENCES

- Baron, R. A. (2008). The role of affect in the entrepreneurial process. *Academy of Management Review*, 33(2), 328-340.
- Baron, R.M, Kenny, D.A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology* 51(6), 1173-1182.
- Baty, G.B. (1991). *Entrepreneurship for the 1990s*. Englewood Cliffs, NJ: Prentice Hall.
- Baum, J. R., Locke, E. A., & Smith, K. G. (2001). A multidimensional model of venture growth. *Academy of Management Journal*, 44(2): 292-303.
- Bechara, A., Dimasio, H., & Dimasio, A.R. (2003). Emotion, decision making and the orbitofrontal cortex. *Cerebral Cortex*, 10: 295-307.
- Benjamin, G.A. & Margulis, J. (2000). *Angel Financing: How to Find and Invest in Private Equity*. New York: John Wiley & Sons.
- Bierly, P. E., Kessler, E. H., & Christensen, E. W. (2000). Organizational learning, knowledge, and wisdom. *Journal of Organizational Change Management*, 13(6): 595-618.
- Bird, B. J. (1989). *Entrepreneurial Behavior*. Glenview, IL: Scott Foresman and Co.
- Cardon, M.S. (2008). Is passion contagious? The transference of entrepreneurial emotion to employees, *Human Resource Management Review*, 18 (2): 77-86.
- Cardon, M. S., Wincent, J., Singh, J., & Drnovsek, M. (2009). The nature and experience of entrepreneurial passion, *Academy of Management Review*, 34(3).
- Carter, R.B. & Van Auken, H.E. (1992). Effect of professional background on venture capital proposal evaluation. *Journal of Small Business Strategy*, 3(1), 45-55.
- Chen, X., Yao, X., & Kotha, S.B. (2009). Passion and preparedness in entrepreneurs' business plan presentations: A persuasion analysis of venture capitalists' funding decisions, *Academy of Management Journal*, 52(1).
- Cross, B. & Travaglione, A. (2003). The untold story: Is the entrepreneur of the 21st century defined by emotional intelligence? *The International Journal of Organizational Analysis*, 11(3): 221-228.
- Dasborough, M.T., & Ashkanasy, N.M. (2002). Emotion and attribution of intentionality in leader-member relationships. *Leadership Quarterly*, 13(5): 615.
- Elsbach, K.D., & Kramer, R.M. (2003). Assessing creativity in Hollywood pitch meetings: Evidence for a dual-process model of creativity judgments. *Academy of Management Journal*, 46(3): 283.
- Ferris, G.R., Treadway, D.C. Perrewe, P.L., Brouer, R.L., Douglas, & Lux. (2007). Political skill in organizations. *Journal of Management*, 33(3): 290.
- Freear, J., & Wetzal, W.E. (1990). Who bankrolls high-tech entrepreneurs? *Journal of Business Venturing*. 5:77-89.
- Harr, N.E., Starr, J., & MacMillan, I.C. (1988). Informal risk capital investors: investment patterns on the east coast of the U.S.A. *Journal of Business Venturing*, 3, 11-29.
- Hoang, H. & Gimeno, J. (in press). Becoming a founder: How founder role identity affects entrepreneurial transitions and persistence in founding. *Journal of Business Venturing*.
- Holmbeck, G.N. (2002). Post-hoc Probing of Significant Moderational and Meditational Effects in Studies of Pediatric Populations. *Journal of Pediatric Psychology* 27, 87-96.
- Kring, A.M., Smith, D.A., & Neale, H.M. (1994). Individual differences in dispositional expressiveness: Development and validation of the emotional expressivity scale. *Journal of Personality and Social Psychology*, 66(5): 934.

- Lockwood, C.M., & MacKinnon, D.P. (1998). *Bootstrapping the Standard Error of the Mediated Effect*. Proceedings of the 23rd annual meeting of SAS Users Group International (pp. 997-1002). Cary, NC: SAS Institute.
- MacKinnon, D.P., Lockwood, C.M., Hoffman, J.M., West, S.G., & Sheets, V. (2002). A Comparison of Methods to Test Mediation and other Intervening Variable Effects. *Psychological Methods* 7, 83-104.
- MacMillan, I.C., Siegel, R., & SubbaNarashimha, P.N. (1985). Criteria used by venture capitalists to evaluate new venture proposals. *Journal of Business Venturing*, 1, 119-128.
- MacMillan, I.C., Zemann, L., & SubbaNarashimha, P.N. (1987). Criteria distinguishing successful from unsuccessful ventures in the venture screening process. *Journal of Business Venturing*, 2, 123-137.
- Mason, C.M. & Harrison, R.T. (1996). Why 'business angels' say no: a case study of opportunities rejected by an informal investor syndicate. *International Small Business Journal*, 14(2), 35-51.
- Preacher, K.J., Hayes, A.F. (2004). SPSS and SAS Procedures for Estimating Indirect Effects in Simple Mediation Models. *Behavior Research Methods, Instruments, & Computers* 36(4), 717-731.
- Rafeli, A., & Sutton, R. I. (1987). Expression of emotion as part of the work role. *Academy of Management Review*, 12, 23-37.
- Sohl, J. (2008). The Angel Investor Market in 2007, Center for Venture Research, University of New Hampshire, May 2008.
- Sudek, Richard (2006). Angel Investment Criteria. *Journal of Small Business Strategy*, 17(2).
- Tech Coast Angels. (2009). Information retrieved on April 8, 2009 from www.techcoastangels.com.
- Timmons, J.A. (1990). *Planning and Financing the New Venture*. Acton, MA: Brick House Publishing Co.
- Timmons, J.A. & Spinelli, S. (2004). *New Venture Creation: Entrepreneurship for the 21st Century*. New York, NY: McGraw-Hill/Irwin.
- Tyebjee, T. & Bruno, A. (1984). A model of venture capitalist investment activity. *Management Science*, 30(9), 1051-1066.
- Vallerand, R. J., Mageau, G. A., Ratelle, C., Leonard, M., Blanchard, C., Koestner, R., & Gagne, M. (2003). Les Passions de l' Ame: On obsessive and harmonious passion. *Journal of Personality and Social Psychology*, 85(4): 756-767.
- Van Osnabrugge, M. (1998). Do serial and non-serial investors behave differently? An empirical and theoretical analysis. *Entrepreneurship Theory and Practice*, 22(4): 23-43.
- Van Osnabrugge, M. & Robinson, R. J. (2000). *Angel investing: matching start-up funds with start-up companies: the guide for entrepreneurs, individual investors, and venture capitalist*. San Francisco: Jossey-Bass.
- Zacharakis, A.L., & Shepherd, D. (2001). The nature of information and overconfidence on venture capitalist's decision making. *Journal of Business Venturing*, 16(4): 311.

Figure 1: Displayed Passion Scales Based on Qualitative Responses

Enthusiasm (displayed affective passion)

- The CEO/presenter moved around a lot
- The presenter showed animated facial expressions
- The presenter talked with varied tone and pitch*
- The presenter had energetic body movements*
- The presenter had rich body language*
- The presenter used a lot of gestures*
- The presenter's face lit up when he/she talked*

Preparedness (displayed cognitive passion)

- The presenter appeared focused and not distracted
- The presenter explained big picture - did not get lost in too many details
- The presenter was able to explain the impact of the product/service
- The presenter appeared curious and interested in solving problems
- The presenter was able to defend viewpoint while still appearing open
- The presentation was thoughtful and in-depth*
- The presentation content had substance*
- The presentation was coherent and logical*
- The presenter articulated the relationship between his/her business plan and the broader context*
- The presenter cited facts to support his/her arguments*

Commitment (displayed behavioral passion)

- The presenter appears willing to do whatever it takes
- The presenter has developed strong social networks based on the quality of management team and advisors
- The presenter stated he/she uses the product/service

*item is also in the Chen, Yao, and Kotha (2009) measure.

Table 1: Descriptive Statistics and Correlations

| | Mean | s.d. | n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------------------|-------|------|-----|--------|---------|--------|--------|-------|--------|--------|-------|
| 1. Invested | .090 | .290 | 109 | 1.000 | | | | | | | |
| 2. Interest | .410 | .493 | 846 | .261** | 1.000 | | | | | | |
| 3. Perceived Passion | 4.076 | .829 | 860 | .179 | .242** | 1.000 | | | | | |
| 4. Strength of Opportunity | 3.212 | .643 | 860 | .313** | .329** | .414** | 1.000 | | | | |
| 5. Funds Sought (std) | .000 | 1.00 | 833 | .170 | .037 | .019 | .170** | 1.000 | | | |
| 6. Displayed Enthusiasm | 3.210 | .649 | 860 | -.063 | -.039 | .206** | .002 | -.005 | 1.000 | | |
| 7. Displayed Preparedness | 3.760 | .302 | 860 | .283** | .042 | .126** | .094** | -.009 | .366** | 1.000 | |
| 8. Displayed Commitment | 2.896 | .606 | 860 | -.026 | -.105** | .097** | -.060 | -.046 | -.033 | .099** | 1.000 |

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

Table 2: Results of Logistic Regression Analysis

| | Screening Stage: Interest | | | Funding Stage: Invested | | |
|-------------------------|---------------------------|-----------|-----------|-------------------------|----------|----------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Control Variables: | | | | | | |
| Strength of Opportunity | 1.247** | 1.240** | .981** | 2.114** | 2.189** | 1.757* |
| Funds Sought | -.041 | -.049 | -.033 | .860 | 1.536 | 1.667 |
| Independent Variables: | | | | | | |
| Displayed Enthusiasm | | -.294* | -.457** | | -.597 | -.628 |
| Displayed Preparedness | | .316 | .319 | | 9.986* | 10.479* |
| Displayed Commitment | | -.392** | -.494** | | 3.152 | 3.348 |
| Mediator Variable: | | | | | | |
| Perceived Passion | | | .574** | | | .681 |
| Chi-Square | 99.417** | 113.459** | 137.744** | 13.931** | 24.301** | 25.136** |
| Change Chi-Square | 99.417** | 14.042** | 24.285** | 13.931** | 10.369* | .835 |
| Pseudo R-square | | | | | | |
| Cox & Snell | .114 | .129 | .155 | .120 | .200 | .206 |
| Nagelkerke | .154 | .174 | .208 | .262 | .436 | .449 |

*P < .05; **P < .01

Table 3: Results of Multiple Regression Analysis for Perceived Passion

| | 1 | 2 |
|-------------------------|--------|--------|
| Control Variables: | | |
| Strength of Opportunity | .546** | .554** |
| Funds Sought | -.044 | -.039 |
| Independent Variables: | | |
| Displayed Enthusiasm | | .269** |
| Displayed Preparedness | | -.012 |
| Displayed Commitment | | .175** |
| R-squared | .174** | .232** |
| Adjusted R-squared | .172 | .228 |
| Change R-squared | .174** | .058** |

Standardized regression coefficients are displayed in the table.

*P < .05; ** P < .01

Table 4: Mediation Results

| | Displayed Enthusiasm | Displayed Preparedness | Displayed Commitment |
|--------------|----------------------|------------------------|----------------------|
| DV: Interest | | | |
| b (YX) | -.121 | .284 | -.363** |
| b (MX) | .264** | .343** | .156** |
| b (YM.X) | .735** | .669** | .728** |
| b (YX.M) | -.320** | .083 | -.496** |
| Sobel Test | .194** | .229** | .114** |
| Bootstrap | .194** | .229** | .114** |
| DV: Invested | | | |
| b (YX) | -.362 | 7.051* | -.190 |
| b (MX) | .245* | -.224 | -.238 |
| b (YM.X) | 1.183 | 1.352* | 1.079 |
| b (YX.M) | -.5608 | .067** | -.045 |
| Sobel Test | .290 | -.302 | -.257 |
| Bootstrap | .290 | -.302 | -.257 |

*P < .05; ** P < .01