MOTIVATIONAL CUES AND ANGEL INVESTING: INTERACTIONS AMONG ENTHUSIASM, PREPAREDNESS, AND COMMITMENT*

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ABSTRACT

Angel investors often make investment decisions based on motivational cues communicated during pitches – including enthusiasm, preparedness, and commitment – to evaluate potentially important qualities of entrepreneurs. We tested the independent and interaction effects of these cues by having 72 angels complete 1,995 evaluations of 133 live pitches. We found a positive effect of preparedness on angel evaluations, an effect enhanced by one form of commitment. The relationship between enthusiasm and evaluations of funding potential varies depending on the type of commitment considered. Our findings suggest that enthusiasm, preparedness, and commitment should be treated as conceptually and empirically distinct.

Keywords: Entrepreneur, angel investors, funding, enthusiasm, preparedness, commitment, passion, emotion, motivation

Angel investment accounts for more than 70% of the capital provided to new entrepreneurial ventures (Morrissette, 2007), so its importance cannot be overstated (Fairchild, 2011). The challenge for entrepreneurs is in convincing angels to part with their own money to help the entrepreneur achieve his or her goals. Prior research has noted a number of criteria that are potentially important in securing angel investments (see Maxwell, Jeffrey, and Lévesque (2011) for a comprehensive analysis of objective market factors). These criteria include financial and other objective and verifiable factors (Mason & Stark, 2004), human capital factors of the entrepreneur or angels (Collewaert & Manigart, 2016; Haines, Madill, & Riding, 2003; Mason & Stark, 2004), relevant experience and ability of the management team and angels (Harrison, Mason, & Smith, 2015; Mason & Harrison, 1995; Mason & Rogers, 1997; Van Osnabrugge & Robinson, 2000), and subjective personality characteristics of the entrepreneur (Clark, 2008; Feeney, Haines, & Riding, 1999; Haines et al., 2003; Murnieks, Sudek, & Wiltbank, 2015). It is clear from the extensive literature stream on this subject that while objective factors matter to investors so do subjective factors (Maxwell & Lévesque, 2014). Further, the subjective factors often have to be assessed by investors during short periods of time, such as during the entrepreneur's pitch to a group of investors (Daly & Davy, 2016; Mason & Harrison, 1995; Maxwell et al., 2011).

One particular subjective factor, entrepreneurial passion, may play an important role in investor decision making, including that of angel investors (Carter & Van Auken, 2005; Mitteness, Sudek, & Cardon, 2012b). This is because passion indicates how willing the entrepreneur is to put in the time and effort necessary to make the company a success (Cardon, Wincent, Singh, & Drnovsek, 2009b; Vallerand et al., 2003), and entrepreneurs may be more persuasive and confident when they demonstrate high levels of positive emotion (Baron, 2008).

Consistent with its treatment in social psychology, Chen and colleagues (Chen, Yao, & Kotha, 2009) conceptualize passion as a motivational construct, encompassing affective, cognitive and behavioral components. We build on and clarify the theoretical arguments and empirical findings of Chen and colleagues (2009) that investors may consider the enthusiasm (affect), preparedness (cognition), and commitment (behavior) of entrepreneurs as part of their decision criteria. However, we depart from those authors and add to their work in important ways.

First, theoretically, Chen and colleagues argued that enthusiasm, preparedness, and commitment are all manifestations of passion. However, we argue, instead, that although enthusiasm may be clearly associated with passion (Cardon, 2008), preparedness and commitment are not manifestations of passion, but instead are independent constructs. We further suggest that enthusiasm, preparedness, and commitment all relate to an entrepreneur's motivation to engage in action and exert effort to ensure that his or her venture is successful. As such, angel investors may certainly consider preparedness and commitment, along with enthusiasm, in their investment decision-making process (Chen et al., 2009). However, the conceptual overlaps among being excited, enthusiastic, or emotional about one's venture; thinking through and carefully preparing for the venture cognitively; and demonstrating behavioral commitment to the venture through personal investment, for example, are not 100%. Instead, the constructs of enthusiasm, preparedness, and commitment are conceptually and empirically distinct and need to be considered as such in our theoretical and empirical work. Further, none of these constructs are synonymous with passion, which involves both positive intense feelings (similar to enthusiasm) and also identity-centrality (Cardon, Gregoire, Stevens, & Patel, 2013; Cardon, et al., 2009b), which cannot be easily assessed by observers (Cardon,

2008). Providing conceptual and empirical clarity among constructs is essential to advancing our knowledge of both entrepreneurial motivation and investor decision making.

Our second extension of prior research is our inclusion of commitment in our empirical model, which while part of Chen and colleague's theoretical model, was not part of their empirical analysis. There is widespread evidence that the extent to which an entrepreneur has "skin in the game" (i.e., personal money invested) is a critical decision factor for angel investors (Benjamin & Margulis, 2000; Sudek, 2006; Zott & Huy, 2007). This is the case because investments of personal time and money can lead to greater persistence (DeTienne, Shepherd, & De Castro, 2008) and psychological ownership in the venture (Pierce, Kostova, & Dirks, 2001). We extend the prior work on commitment of entrepreneurs by empirically examining how the efficient use of funds (McCarthy, Schoorman, & Cooper, 1993) and investment of both time and money (Benjamin & Margulis, 2000; Cassar & Friedman, 2009) impact the investment evaluation process.

Third, and perhaps most important, in our study we do not consider enthusiasm, preparedness, and commitment in isolation from one another but instead consider combinations of these motivational cues when evaluating the funding potential of the venture. More specifically, we examine how commitment may moderate the relationships among enthusiasm, preparedness, and investor decision making. This is essential to understanding investment decisions given that investors typically consider multiple criteria simultaneously when evaluating potential investments (e.g., Mason & Harrison, 2003).

This study makes four key advancements to our current understanding of the role of subjective factors specifically related to motivational cues in investment decisions of angel investors. First, as indicated, we extend prior research by examining the interactions among the

three constructs of enthusiasm, preparedness, and commitment on angel decision making. While prior research has looked at how enthusiasm and preparedness each independently influence investor interest (Chen et al., 2009), it has not yet considered the potential interactions between commitment and these other constructs, despite acknowledgement that angel investors use multiple decision criteria simultaneously in their decision-making process (Mason & Harrison, 2003; Mason & Stark, 2004; Maxwell et al., 2011). Entrepreneurship and psychology scholars have widely recognized that emotions and cognitions work together rather than independently (Cardon, Foo, Shepherd, & Wiklund, 2012; Mitchell et al., 2007; Mitchell, Randolph-Seng, & Mitchell, 2011). The extent to which emotions, cognitions, and behaviors interact to enhance or mitigate one another is in need of greater study (Cardon et al., 2012; Mitchell et al., 2007; Shepherd, 2015). We suggest that our research that examines such interactions in the investment context is important.

Second, we extend the work of Mitteness and colleagues (2012) who found that angels evaluate pitches as having greater investment potential when they perceive the entrepreneur to be passionate and enthusiastic. While their results are intriguing, angels may not fully understand their own decision criteria (Maxwell & Lévesque, 2014; Shepherd & Zacharakis, 2001; Zacharakis & Shepherd, 2001). Further, there may be demand artifacts or single-method bias to the observed relationship in the Mitteness and colleagues' study because angels rated both their interest in the venture and the passion of the entrepreneur simultaneously (as did the venture capitalists [VCs], bankers, and other financial people in Chen and colleagues' Study 2). Moreover, Mitteness and colleagues focused on angel investors' overall perceptions of passion and did not consider the specific things entrepreneurs do to signal their passion or other motivational cues that may be similarly important. In our study, we aim to establish the

importance of motivational cues related to enthusiasm, preparedness, and commitment based on a robust methodological approach that separates measurement of the independent and dependent variables.

As our third contribution, we examine the relationships among enthusiasm, preparedness, and commitment cues during real-time evaluations of live investment deals, which is critical for developing a clear understanding of why investment decisions are actually made (Carpentier & Suret, 2015; Hall & Hofer, 1993; Harrison et al., 2015; Maxwell & Lévesque, 2014). As many scholars have noted, there are significant problems with relying on angel recollections of their prior decision process (Wiltbank, Read, Dew, & Sarasvathy, 2009), such that collected data may not reflect the actual decision process (Mason & Rogers, 1997; Mason & Stark, 2004; Maxwell & Lévesque, 2014). Therefore, the most appropriate way to study decision making, such as that of angel investors, is by using real-time methodologies (Carpentier & Suret, 2015; Hall & Hofer, 1993; Harrison et al., 2015; Mason & Harrison, 2003; Zacharakis & Meyer, 1998). We followed the procedure of Maxwell & Leveque (2014) by using observational interaction (Bakeman & Gottman, 1997), where we recorded, coded, and analyzed behaviors exhibited during actual angel-entrepreneur interactions. We used independent observers to extract our data of interest, which eliminated the possibility of self-report bias by angels (Petty & Gruber, 2011). In addition, our data go beyond that of Maxwell and colleagues (Maxwell et al., 2011; Maxwell & Lévesque, 2014) because our videos are not from tapings of a television show where "behaviors displayed . . . can be atypical of actual interactions" (Maxwell & Lévesque, 2014, p. 1076) but instead are of natural entrepreneur-angel investor interactions. In order to fully understand the behavior of angel (or other) investors, empirical studies should use live investment deals rather than hypothetical scenarios or business plan competitions (Kirsch, Goldfarb, & Gera, 2009). Chen and

colleagues note not using live deals as a limitation of their studies in which they used an experiment (study 1) and a business plan competition (study 2). Referring to these studies, they said that the "very specialized setting[s] for studying the passion construct" could limit their findings' generalizability (Chen et al., 2009, p. 211). Using live investment deals in our study helped reduce problems associated with artificial situations where only one or a few entrepreneurs can "win" or receive an investment (such as a business plan competition), as well as problems with small nonrandom samples (Kirsch et al., 2009). Analyzing live deals while the entrepreneur is making the pitch may also increase the ability of angels to provide more accurate assessments than if they made the assessments at a later time, after learning of the success or failure of the investment. (Mitteness, Baucus, & Sudek, 2012a).

Our fourth contribution is to the literature on entrepreneurial finance. The majority of research in this area focuses on the strength of the opportunity and the competence of the entrepreneur (Kaplan, Sensoy, & Strömberg, 2009; Macmillan, Siegel, & Narasimha, 1985), although there is a body of work on information asymmetries between investors and entrepreneurs (Gompers & Lerner, 1999), signals and decision cues used by entrepreneurs and potential investors to manage this asymmetry (Kirsch et al., 2009; Martens, Jennings, & Jennings, 2007; Metrick, 2007), and a venture's "readiness" to receive funding (Brush, Edelman, & Manolova, 2012). The extant research, however, focuses primarily on the form and content of the information conveyed to potential investors through things like business plans (Kirsch et al., 2009) or the timing and location of funding requests (Brush et al., 2012) and does not focus on the signals entrepreneurs use to demonstrate their motivation vis-a-vis their enthusiasm, preparedness, and personal commitment. To address this gap, we extend the contributions made by Mitteness and colleagues (2012) and Chen and colleagues (2009) by digging deeper into the

role of motivational cues in investment pitches. In particular, we examine the relationships among the three motivational cues that entrepreneurs may display during pitches and angel investors' interpretations of these cues in their evaluations of investment opportunities.

We proceed by examining angel investors and their decision-making process and then exploring the role the motivational cues of enthusiasm, preparedness, and commitment play in angels' decisions of investment potential. Our conceptual model is in Figure 1. We then present our empirical study and results, based on 1,995 evaluations of 72 angels across 133 pitches, followed by a discussion of the implications of our findings.

----- Insert Figure 1 about here -----

ANGEL DECISION MAKING

There is a wide body of extant research that examines a variety of factors that go into angel decision making. Excellent reviews of this research are provided by Maxwell, Jeffrey, and Leveque (2011), Harrison, Mason, and Smith (2015), and Carpentier and Suret (2015). For our purposes, it is important to note three primary aspects of our current knowledge concerning decision criteria that angel investors use.

First, although angels make their investment decisions in stages (Landström, 1998), the majority of extant research focuses on the initial selection or screening stage because that is where most deals are rejected (Carpentier & Suret, 2015; Maxwell et al., 2011). During this stage, angels typically are very time compressed (Mason & Rogers, 1997) and may devote as little as nine (Mason & Rogers, 1997) to 15 minutes (Mitteness, et al., 2012b) to making a decision concerning whether the entrepreneur and idea will progress to the next stage of the process (Mason & Harrison, 1995; Maxwell et al., 2011). Prior studies have demonstrated that angel investors specifically use shortcut decision heuristics (Harrison et al., 2015), where they

use a smaller number of criteria and seek a threshold level for those criteria in the screening stage of selection (Maxwell et al., 2011). In addition, angel decision making in the selection stage is likely not a result of any one behavior, but instead a combination of factors, including gut feelings about the individual and/or firm that represents a potential investment (Mason & Harrison, 2003; Mason & Stark, 2004; Maxwell et al., 2011).

Second, angel investors must make rapid decisions based on limited information (Ambady, Bernieri, & Richeson, 2000), and because of this, they use heuristics and instincts to guide their decision making rather than use purely objective information (Haines et al., 2003; Harrison et al., 2015; Maxwell et al., 2011). For example, angels make judgments concerning how trustworthy the entrepreneur is (Maxwell & Lévesque, 2014), the personality profile of the entrepreneur or entrepreneurial team (Murnieks et al., 2015), the investment readiness of the entrepreneur or technology (Douglas & Shepherd, 2002; Mason & Harrison, 2003), and how well aligned the entrepreneur's interests are with their own (Mason & Rogers, 1997). Because there is a lack of complete information and a limited time frame in which to make the initial decision of investor interest, angels look for certain signals or cues in the behaviors or words the entrepreneur uses to communicate the investment opportunity (Daly & Davy, 2016; Martens et al., 2007; Maxwell & Lévesque, 2014). This allows for the reduction of information asymmetry and uncertainty, which are two major obstacles to external investment (Shane, 2003).

Third, angel investors interpret multiple cues that entrepreneurs convey in deciding whether a venture has investment potential (Mason & Harrison, 1995). It is clear from prior research that entrepreneurs use a variety of behaviors to actively manage the impressions they give off in order to maximize their chances of receiving an angel investment (Mason & Harrison, 2003). Such impression management can include things such as presentation skills

(Baron & Markman, 2003; Mason & Harrison, 2003), presentation of self (Goffman, 1959), and a wide range of techniques designed to induce positive reactions in other people and establish personal legitimacy (Maxwell & Lévesque, 2014). Interestingly, the majority of research on impression management in screening decisions focuses on how entrepreneurs attempt to convey personal and organizational competence (Elsbach & Elofson, 2000; Kaplan et al., 2009; Macmillan et al., 1985) and investment readiness of themselves and their idea (Mason & Harrison, 2003). Essentially, entrepreneurial narratives or stories (Martens et al., 2007) tend to focus on signaling qualities of the entrepreneurs and of their firms. The quality signaling approach includes how signals of the firm's qualities such as top management team characteristics, endorsements, and prior track record of team members or the firm play a facilitative role in the firm acquiring external resources (Shane & Cable, 2002; Shane & Stuart, 2002).

There is limited research on what entrepreneurs may signal during their pitches beyond qualities of themselves or their ideas. As a rare exception, Maxwell and Levesque (2014) examined how angels interpret cues concerning an entrepreneur's trustworthiness to not only make their investment decisions but also to make decisions on how to structure their relationship and contract with the entrepreneur if they choose to invest. Interestingly, there is little research on how angels consider emotional and other cues that may signal the entrepreneur's motivation to succeed and persist through potential future obstacles. This is the case despite recognition that passion, for example, is an important aspect of entrepreneurship in that it may lead to entrepreneurs 1) spending more time working on their venture (Murnieks, Mosakowski, & Cardon, 2012), 2) persisting longer through obstacles (Cardon & Kirk, 2015), and 3) ultimately experiencing more firm growth (Drnovsek, Cardon, & Patel, in press) than they would if they did

not have passion. A commonality of the extant studies is their findings that passion is one potential signal of the motivation of the entrepreneur to work hard and succeed with his or her venture. Given our knowledge that language and communication play an important role in resource acquisition (Aldrich & Fiol, 2007; Martens et al., 2007) and the suggestion that motivation signaled through emotion and other cues may be important criteria for angel investors (Baron, 2008; Cardon, et al., 2009b), we focused on the signals entrepreneurs use to demonstrate their motivation to potential investors and, in particular, on how investors may interpret these signals or cues to assess the enthusiasm, preparedness, and commitment of the entrepreneur.

MOTIVATIONAL CUES: ENTHUSIASM, PREPAREDNESS, AND COMMITMENT

Given that enthusiasm, preparedness, and commitment are very different constructs, we consider each separately before exploring their potential interactions. This approach is especially important given the known inability to truly separate affect from cognition (Lazarus, 1981, 1982, 1991).

Enthusiasm

One of the most observable characteristics of entrepreneurs that is often associated with their motivation is their enthusiasm, or the observable conveyance of very positive emotions for their venture, product or service (Chen et al., 2009). While some scholars have included enthusiasm as a proxy for passion (Chen et al., 2009), we note that it can be difficult for outsiders to determine the personal meaning (or identity centrality) of activities or events to an entrepreneur (Cardon, 2008), which is an essential dimension of experienced passion (Cardon et al., 2013; Cardon, Wincent, et al., 2009). Therefore, we focused on what entrepreneurs may communicate in order to signal not only their passion but also other motivational cues to potential investors.

The most dominant affective signal of motivation is enthusiasm, which is meant to convey the underlying emotion the entrepreneur feels for his or her venture. Communicated emotion is important in an entrepreneurial context (Baron, 2008; Cardon, 2008) 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). Displaying enthusiasm can be critical to convincing potential investors to invest not only money but also time and effort in the new venture (Chen et al., 2009). Such cues may provide a strong indication of how motivated the entrepreneur is to put in the time and effort needed to make the venture a success (Murnieks et al., 2012; Vallerand et al., 2003) or how motivated he or she will be to persist when faced with obstacles (Cardon & Kirk, 2015).

Emotions that are experienced very profoundly are more likely to be displayed (Cardon, 2008; Gross, 1998) and are also more likely to be contagious (Hatfield, Cacioppo, & Rapson, 1994) to other individuals such as employees (Breugst, Domurath, Patzelt, & Klaukien, 2012; Cardon, 2008) or investors (Baron, 2008). Baron (2008) argues that entrepreneurs who display a high degree of positive emotion about their ventures are more likely to be successful in obtaining essential financial and human resources from others than those who do not. This may be due not only to emotional contagion processes but also to the fact that individuals who display positive affect project expertise, which gives others more confidence in the message that person is trying to communicate (Rucker & Petty, 2006). Emotional messages make people respond more and are more persuasive than non-emotional messages (Rucker & Petty, 2006). Also, positive emotional display has been positively associated with enthusiasm, which is closely related to persuasiveness (Baron, 2008; Terry & Hogg, 2000).

Entrepreneurs may display a high degree of positive emotion in their presentations to

potential investors, such as when they use animated facial expressions and rich body language (Chen et al., 2009). Due to angels likely having greater confidence in messages entrepreneurs communicate when they display enthusiasm, as well as other factors argued above, we anticipated that displayed enthusiasm would increase the likelihood of a favorable evaluation for funding a startup venture. The relationship between enthusiasm perceived by investors and investor interest has been supported empirically by Mitteness and colleagues (Mitteness, et al., 2012b) who found that although variations exist across angels, in general, angel perceptions of greater enthusiasm on the part of entrepreneurs significantly and positively impact angel investor evaluations of the deal. Therefore, we propose:

> *Hypothesis 1: Greater enthusiasm will be associated with higher evaluations of funding potential.*

Preparedness

In addition to enthusiasm, investors often pay attention to the *preparedness* of an entrepreneur (Chen et al., 2009). Chen and colleagues define preparedness as the extent to which the entrepreneur has thought about and thought through specific aspects of his or her business. Some entrepreneurs cannot stop thinking about their business and therefore spend a lot of time planning things out, anticipating problems, and otherwise getting and being more prepared to run their venture (Chen et al., 2009). Entrepreneurs develop meaningful mental models and plans for their firm and then communicate that to other individuals (Hill & Levenhagen, 1995). Entrepreneurs express their preparedness by creating a thoughtful, focused presentation and by writing business plans or application materials that are rich in imagery (Chen et al., 2009), and they may signal their preparedness by giving in-depth presentations that reflect deep knowledge of their marketplace and thinking about their business.

Research on storytelling (e.g., Martens et al., 2007) and persuasion (e.g., Rucker & Petty,

2006) argues that individuals are able to shape and mold the messages they convey to others in order to give a certain impression or to convince others to behave in certain ways, such as investing in their firms (Martens et al., 2007). Entrepreneurs include information in their pitches that they believe will convey important signals to investors concerning the validity and legitimacy of their ventures (Kirsch et al., 2009). Such information may be viewed as ceremonial or just for show, or alternatively may be viewed as communicating important content, which may be a better predictor of investor interest if the information communicated is believed to be valid (Kirsch et al., 2009). Potential investors may, therefore, consider not only the enthusiasm that entrepreneurs display but also their preparedness, a cue they may perceive as more authentic and informative than enthusiasm. We agree with Chen and colleagues (2009) that investors may consider how well prepared entrepreneurs are to run their business based on how much thinking they have done about their business. In fact, Chen and colleagues (2009) found that when observing student business plan presentations, business plan judges (i.e., bankers, VCs, and individuals from financial companies) paid more attention to preparedness than to the enthusiasm of student presenters.

When entrepreneurs signal their preparedness[1], they may increase their prospects for obtaining funding because the entrepreneurs appear to have put a lot of thought into the business opportunity and their communication is memorable. They may also be able to deliver the information that potential investors are looking for (Kirsch et al., 2009), such as whether the entrepreneur is truly ready for investment (Brush et al., 2012). Entrepreneurs who have put a lot of thought into their venture and the relevant business environment are able to deliver a coherent,

[1] We acknowledge that entrepreneurs may be prepared in that they have thought a lot about their ventures, but may not be able to communicate that effectively in their presentations. As such, our focus is on angel evaluations of the entrepreneur's preparedness, as expressed in their pitch. We thank an anonymous reviewer for this clarification.

well thought-out, and detailed story about that venture and its future. Swap and colleagues (Swap, Leonard, Shields, & Abrams, 2001, p. 103) note that because stories are "more vivid, engaging, entertaining, and easily related to personal experience than rules or directives … they would be more memorable, be given more weight, and be more likely to guide behavior." In addition, the more vivid and imaginable the entrepreneur's story or message about the venture, the more likely it is to be judged as true (Swap et al., 2001). Further, Martens and colleagues (2007, p. 1110) note that, "packaging information about a firm's existing resource endowments into an appealing format…should make it easier for potential resource providers to evaluate the likelihood that the entrepreneurs will be able to realize the profit potential of their proposed initiatives" in large part due to reducing information asymmetry and uncertainty. They argue that the venture story the entrepreneur tells makes their thought processes explicit and helps observers to evaluate their plans more critically based on how the mental model of the entrepreneur is depicted in terms of causes and effects and how the mental model aligns with that of the observer. Based on the above, we conclude that entrepreneurs who have given a lot of thought to their venture and the issues it may face and who have developed plans to address them may appear more competent and well prepared than entrepreneurs who have not. Therefore, well-prepared entrepreneurs are more likely to be recipients of angel investments than entrepreneurs who are less prepared. Thus,

> *Hypothesis 2: Greater preparedness will be associated with higher evaluations of funding potential.*

Commitment

Another important signal of motivation is commitment, which is the extent of determination an individual has to attain a goal (Hollenbeck & Klein, 1987; Locke & Latham, 1990). In entrepreneurship, commitment has been defined as going all-in (Chen et al., 2009) and

being determined (Cassar & Friedman, 2009) when trying to succeed with the venture. As discussed by Chen and colleagues (2009), entrepreneurs vary in their level of commitment to their ventures. Such behavioral commitment may be associated with the amount of passion an entrepreneur experiences because individuals tend to focus their time and efforts on activities that they find deeply meaningful and important (Cardon, et al., 2009b; Vallerand et al., 2003). However, entrepreneurs may also be committed to their ventures if they are not particularly passionate about the firm or the product/service it provides. Entrepreneurs who are motivated to see their firms succeed can signal this motivation through behavioral commitment, rather than (or in addition to) their affective enthusiasm or cognitive preparedness. Entrepreneurs who want to signal commitment to investors might do so through things such as personal investments of time and money and efficient use of funds towards launching the venture and making it a success (Benjamin & Margulis, 2000; Cassar & Friedman, 2009; McCarthy et al., 1993). Entrepreneurs indicate their commitment to a new venture by showing what they have accomplished and what they are willing to give up in order to make the new venture a success (Zacharakis & Shepherd, 2001).

Investors pay great attention to committed entrepreneurs, looking for things such as whether or not the entrepreneur has invested his or her own money in the venture and whether the entrepreneur still maintains another job while working for the firm seeking an investment (Benjamin & Margulis, 2000). Personal investment of time and money signals that an entrepreneur's goals are more aligned with those of capital providers (Forbes, Korsgaard, & Sapienza, 2010). In addition to investing significant amounts of time and money into a new venture, entrepreneurs can signal goal alignment by using resources efficiently. Prior research has found that using resources efficiently indicates commitment to angel investors (Cardon,

Sudek, & Mitteness, 2009a).

From an investment of funds perspective, when entrepreneurs have invested their own money, capital providers feel that the entrepreneurs have "skin in the game," which signals that they are committed to a successful outcome (Eddleston, Ladge, Mitteness, & Blachandra, in press; Prasad, Bruton, & Vozikis, 2000; Sudek, 2006). When entrepreneurs make real sacrifices in terms of personal investment or delayed wages, potential investors are impressed and more convinced than they otherwise would be of the sincerity and commitment of the entrepreneurs to the venture and its success. Such "symbols of commitment reassure resource providers that the entrepreneurs are able to endure adversity and not 'jump ship' and abandon their projects when faced with difficulties" (Zott & Huy, 2007, p. 89).

Entrepreneurs can also signal their commitment to the venture through the investment of time devoted to the new venture. Longer time spent on a venture can lead to greater feelings of emotional attachment (Cardon, Zietsma, Saparito, Matherne, & Davis, 2005), a greater degree of psychological ownership (Pierce et al., 2001), and a greater sense of self-esteem and identity based on the venture (Shepherd, 2003). Signals conveying commitment in the form of the time invested may be especially important to investors since this may well be a good predictor of the extent to which an entrepreneur will demonstrate tenacity and the willingness to work long hours on behalf of his or her venture in the future. Personal investment of time, money and energy has been found to impact the decision to persist with a venture (DeTienne et al., 2008). Through the devotion of time, entrepreneurs communicate their determination to make their business succeed (Cassar & Friedman, 2009; Wilson, Carter, Tagg, Shaw, & Lam, 2007).

Lastly, commitment can also be displayed by entrepreneurs through their efficient use of resources (Cardon, et al., 2009a). Although entrepreneurs want their new ventures to be

successful, they vary in terms of their devotion to the venture, with the less devoted possibly making opportunistic use of their resources (Amit, Glosten, & Muller, 1990; Shepherd & Zacharakis, 2001). For example, entrepreneurs may use funds to conduct activities that differ from those originally planned (Cable & Shane, 1997). Mason and Harrison (2003) found that angels assign a higher level of risk to their relationships with entrepreneurs that they think would spend the investment funds differently than they would (Van Osnabrugge & Robinson, 2000). To mitigate concerns about the potential misuse of funds, entrepreneurs can build trust with equity providers by showing behavioral consistency (Maxwell & Lévesque, 2014; Shepherd & Zacharakis, 2001). We suggest that entrepreneurs who have used capital efficiently in the past will be trusted more by potential investors than those who have not because their past efficient use of resources signals their commitment to the venture. By investing significant amounts of time and money and also using resources efficiently, entrepreneurs signal alignment of incentives and goals, leading capital providers to perceive them as individuals motivated to make decisions that minimize the risk associated with the investment (Goranova, Alessandri, Brandes, & Dharwadkar, 2007). Such symbolic emphasis on personal commitment of entrepreneurs may convince angels or other outside financiers to invest in the firm (Zott & Huy, 2007). Thus,

> *Hypothesis 3: Greater commitment of an entrepreneur will be associated with higher evaluations of funding potential, with commitment indicated by a) the entrepreneur having invested a larger amount of his or her own funds in the venture, b) the entrepreneur having spent a long time pursuing the venture, or c) the entrepreneur having used his or her funds efficiently.*

Cue Combinations

In an exploratory study asking angels about the importance of passion when evaluating a company for investment, Cardon and colleagues (2009a) found that angels used language consistent with the three constructs described above—enthusiasm, preparedness, and

commitment. Yet they also indicated that passion for a particular business may be a bad thing when it overrides and clouds the judgment of the entrepreneur, a finding also found by Ho and Pollack (2014) concerning obsessive passion. Similarly, the extent of commitment to the firm that the entrepreneur signals may be particularly important for angel investors who are concerned that obvious displays of enthusiasm by entrepreneurs are inauthentic and created through emotional labor just to acquire needed resources. While entrepreneurs may certainly display authentic emotions to others such as employees (Breugst et al., 2012; Cardon, 2008) or potential investors (Chen et al., 2009; Martens et al., 2007), scholars determined long ago that individuals sometimes use emotional labor to display emotions they do not feel or to hide emotions they do feel in order to secure more positive outcomes for themselves (Hochschild, 1983; Rafaeli & Sutton, 1987) or their organizations (Dasborough & Ashkanasy, 2002). Because signals rooted in behavior are more credible than verbal promises (Busenitz, Fiet, & Moesel, 2005), potential investors are more likely to believe in the authenticity of an enthusiastic display when it is accompanied by indicators of commitment than when it is not. This suggests that commitment may enhance the influence of enthusiasm on investor interest. Therefore, we propose that there is a positive moderating influence of commitment on the relationship between enthusiasm and investor interest.

> *Hypothesis 4: The relationship between enthusiasm and evaluations of funding potential will be stronger when commitment is high, as indicated by a) the entrepreneur having invested a larger amount of his or her own funds in the venture, b) the entrepreneur having spent a long time pursuing the venture, or c) the entrepreneur having used his or her funds efficiently.*

Commitment may also enhance the relationship between preparedness and evaluations of funding potential. Entrepreneurs who have thought a lot about their venture but who have not invested their own resources may be perceived as thinkers rather than doers, and angels may

question the ability of such entrepreneurs to follow through on their ideas. Paralysis by analysis reduces individuals' ability to take advantage of emerging opportunities (Zajac & Bazerman, 1991). Angel investors may be particularly inclined to invest in entrepreneurs and their firms if the entrepreneurs demonstrate both that they have thought in depth about their venture and are therefore prepared AND if they demonstrate that they are committed to making their new ventures a success by investing a significant amount of time and money while using existing resources efficiently. Prior research has found that individuals who have devoted more time and money working toward a goal are more likely to persist in pursuing that goal (Benjamin & Margulis, 2000; Zott & Huy, 2007), even when that pursuit is difficult (DeTienne et al., 2008) than those who have devoted less time and money to a goal. We suggest that angels prefer to invest in entrepreneurs who not only have "skin in the game" in terms of the investment of time and money but also have their "head in the game" by efficiently using existing resources while displaying preparedness. Hence, we propose that:

> *Hypothesis 5: The relationship between preparedness and evaluations of investor funding potential will be stronger when commitment is high, as indicated by a) the entrepreneur having invested a larger amount of his or her own funds in the venture, b) the entrepreneur having spent a long time pursuing the venture, or c) the entrepreneur having used his or her funds efficiently.*

METHODOLOGY

Research Setting

We tested our hypotheses concerning the relationships among the three motivational cues described above and angel evaluations of funding potential in the angel investment group context. Angel investment groups represent voluntary organizations of individuals looking to invest their personal funds and expertise in new ventures (Van Osnabrugge & Robinson, 2000). While these groups usually screen entrepreneurs as a group, typically each angel decides

independently of the others whether or not to invest in the venture. This context involves high stakes and uncertainty because the angels invest in the very early stage of a new venture's existence and angel groups often require each angel to make a minimum investment of $25,000 (Sudek, 2006). Our sample includes entrepreneurs who submitted applications for funding and made screening presentations to one of the largest angel investment groups in the United States, Tech Coast Angels, between March 2007 and April 2009. Tech Coast Angels has nearly 300 angels across five chapters in California. Entrepreneurs typically make presentations to 10–20 angel investors at a time. Of the 160 entrepreneurs who presented as part of this study, eight declined being videotaped, and 18 were not recorded due to technical problems (N=134, 83.8% of the sampling frame).

Data Collection

We collected data from two different sources. First, angel investors completed a survey in which they assessed the strength of each opportunity, the competence of the entrepreneurs, and the funding potential at the time the entrepreneurs made their screening presentations. Second, we measured motivational cues based on verbal and non-verbal communication from entrepreneurs videotaped during their screening presentations. 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 evaluated the entrepreneur in the video using the measures for enthusiasm and preparedness developed by Chen and colleagues (2009) and our measure of commitment (explained below).

Coding of videos occurred in three separate steps. In the first step, a panel of 10–17 angel investors and five researchers coded either the live or the videotaped presentations of five entrepreneurs. We measured all items, except for the two objective measures of commitment, on

5-point Likert-type scales. The number of angels that coded each screening varied based on how many attended the presentations each day. There was a .699 correlation between the angels' ratings (as a group) at the live screenings and the researchers' ratings (as a group) of the videotaped screenings of the same presentations. We used a correlation instead of inter-rater reliability so that we could compare the overall consistency between the angels' responses (up to 17 of them for each presentation) and the researchers' responses (five of them). An intra-class correlation coefficient (ICC) is not appropriate because it would report consistency across all coders regardless of whether they are angel investors or researchers. The .699 correlation gave us reasonable confidence that the researchers' coding was consistent with the angels' coding of the same presentations and items. Therefore, we moved forward with our analysis.

In the second step, the five researchers coded five additional videotaped presentations. The overall inter-rater reliability for the 10 presentations involving five researcher coders was an ICC of .896. This gave us confidence that the coding that the five researchers did was consistent within the group of researchers and that we could proceed to the third step. In the third step, three of the five original researcher coders assessed the remaining 124 videos. The inter-rater reliability for these 124 videos was an ICC of .906. We removed one company from further analyses because it exhibited unique characteristics preventing the coders from reaching agreement.

The resulting sample included 133 video-taped entrepreneurs presenting to the angel investor group. As recommended by other scholars, and in order to increase the accuracy of the results, we separated the evaluations of motivational cues observed during investment screenings from evaluations of funding potential (Maxwell & Lévesque, 2014). This approach of having the videos coded by independent researchers is consistent with research by Maxwell and colleagues

(Maxwell et al., 2011; Maxwell & Lévesque, 2014), who used Dragon Den video footage. As Maxwell and colleagues explained (2011), using observational interaction where independent observers record, code, and analyze behaviors during actual angel-entrepreneur interactions allows the observers to extract certain data and removes the likelihood of self-report bias by angels, who may not be aware of their own decision-making process (Petty & Gruber, 2011).

Measures

Enthusiasm and Preparedness. We used Chen and colleagues' (2009) measures of enthusiasm and preparedness. The items measuring *enthusiasm* included whether the entrepreneur had energetic body movements, rich body language, and animated facial expressions. Items for *preparedness* included whether the presentation content had substance, was thoughtful and in-depth, and was coherent and logical. These measures achieved acceptable reliabilities for enthusiasm (alpha = .82) and preparedness (alpha = .74).

Commitment. Chen and colleagues (2009) dropped commitment from their analysis and there is little guidance provided in the literature to indicate how to measure cues that signal commitment. However, Cardon, Sudek, and Mitteness (2009a) conducted an exploratory study with angels across the United States regarding what specific behaviors angels look for when considering motivational aspects of entrepreneurs they are evaluating. The specific measure they used was "the presenter appears to use money efficiently," which was derived from comments from angels regarding how they evaluate displays of commitment by entrepreneurs. These comments included statements about displays of commitment that focused on sacrifices of the entrepreneur on behalf of the business, such as "willing to subjugate personal needs for the needs of the success of the company," and "unflappable belief in their idea and commitment to the success of the company." Therefore, when coding *commitment*, our coders were instructed to

look for indications that the entrepreneur used money efficiently (i.e., whether the entrepreneur gave a reason for not spending money on something or whether the entrepreneur put the business' needs in front of his or her own with regard to resource usage) as well as comments made by angels during the Q&A noting that the entrepreneurs used money efficiently, such as "I like that he didn't waste money on XYZ." We measured this item using researcher ratings of the videos, coded using a 5-point Likert-type scale. We also collected two objective measures that angels indicated as reflecting *commitment*. Similar to Eddleston and colleagues' (in press) measures of commitment signals, we measured the amount of personal investment of money the entrepreneur had made in the venture, but we measured the amount invested to date, whereas they measured the amount invested in the first year. Instead of measuring personal investment of time as hours devoted to the business in a typical workweek, as Eddleston and colleagues had done, we measured it as the number of years the entrepreneur had been pursuing the business.

Evaluation of funding potential and control variables. We used the same dependent variable as Mitteness and colleagues (2012b) and had angels evaluate the funding potential of a new venture at the screening stage of the angel investment process. After entrepreneurs completed their presentation and Q&A session, angels indicated to what extent they felt the venture should go to the next step in the funding process, due diligence, using a 5-point agree – disagree Likert-type scale.

Angels also rated the control variables, including the perceived strength of the opportunity and entrepreneur's competency. We calculated perceived strength of the opportunity and entrepreneur competency by averaging the responses of angels attending the screening to create company level variables. Angels used a 5-point agree-disagree scale to rate the strength of the opportunity. We altered the opportunity strength measure that Mitteness and colleagues

(2012b) used by taking out two items that could be attributed to the entrepreneur and his or her preparedness (development risk is low and there are reasonable barriers to entry). This allowed us to focus on the four items that are specifically indicative of the opportunity itself. These four items are "the business model is strong," "the company's revenue potential is large," "the company has a reasonable exit plan," and "the market has large growth potential." We measured entrepreneur competency using responses to three items, including "the domain expertise of the presenter is strong," "the presenter has a proven track record," and "the management team appears strong." We eliminated items that Mitteness and colleagues (2012b) used to measure the overall strength of an entrepreneur that are not related to competency (honesty and trustworthiness).

Analysis and Results

Table 1 provides means, standard deviations, and correlations for all study variables. Fairly low correlations among the independent variables indicate that multicollinearity was not an issue. This supports our theoretical stance that enthusiasm, preparedness, and commitment are independent constructs, rather than being part of the construct of passion or displayed passion. We applied a multilevel (i.e., mixed-model) approach to examine the relationships between the three types of motivational cues and evaluations of funding potential. This approach accounts for the nested nature of the data. At each screening multiple angels were present and evaluating each company, and each angel was evaluating multiple companies**.** Our data include 1966 decisions at level 1, 72 angels at level 2, and 133 companies at level 3. We estimated the unconditional model (with no predictors involved) and found significant level 2 and level 3 variances, which confirmed that the multilevel approach was the correct data analysis technique to use (see Table 2). We grand-mean-centered all of the predictor variables and used −2 log

likelihood (−2LL) to assess model fit. The smaller the −2LL value, the better the model fit (Tabachnick & Fidell, 2006). To assess the significance of the change in −2LL from one model to the next, we performed a series of chi-square tests with the degrees of freedom equal to the difference in the number of parameters for the pair of nested models (Bryk & Raudenbush, 1992). Table 2 shows the results of those tests. We note that although the addition of the interaction terms decreases the model fit, the additional information provided in the full model concerning how various indicators of commitment interact with enthusiasm and preparedness warrants its consideration.

We entered control variables into the model first, followed by the independent variables, and then the two-way interaction terms to create a full model (Cohen & Cohen, 1983). We plotted the significant interactions to explore further their exact nature. Following the procedure suggested by Cohen and Cohen (1983), we set values of the different types of cues at 1 standard deviation above and below the mean to determine the range of values for the dependent variable.

----- Insert Tables 1 and 2 about here -----

Consistent with previous research showing that investment criterion related to the opportunity and the entrepreneur impact evaluations of funding potential (Macmillan et al., 1985; Mitteness, et al., 2012a; Van Osnabrugge, 1998), the control variable model in Table 2 shows that perceived strength of opportunity and entrepreneur competency were significant ($b = .74$ and $b = .31$, $p < .001$ respectively). Hypothesis 1 states that enthusiasm will have a positive impact on evaluations of funding potential. However, results presented in the predictor model of Table 2 do not support this hypothesis ($b = -.07$, $p > .05$). We find support for hypothesis 2, which predicts a positive relationship between preparedness and evaluations of funding potential ($b = .22$, $p < .01$). Hypothesis 3, which predicts a positive relationship between commitment and

evaluations of funding potential, was not supported for any of the three measures of commitment, including years pursuing (b= -.01, p > .05) and uses money efficiently (b= .17, p > .05). The surprise finding that investing personal money was negatively related to evaluations of funding potential (b= -.0002, p < .05) was the first indication of the complexity commitment has on evaluations of funding potential, which we examine in depth next.

Hypotheses 4 and 5 argue that commitment moderates the relationship between both enthusiasm and preparedness with evaluations of funding potential. Four of the six interaction terms were significant, although not all in the direction predicted. Surprisingly, entrepreneurs with high enthusiasm received lower evaluations of funding potential when they displayed commitment by investing their personal money (H4a) and personal time (H4b) in the venture (b = -.0004, p < .01 and b = -.11, p < .05 respectively). Entrepreneurs who invest a lot of personal money (Figure 2a) and spend a lot of years working on their venture (Figure 2b) receive lower evaluations of funding potential when they also display high enthusiasm. We followed procedures for testing simple slopes in multilevel models (Bauer & Curran, 2005; Preacher, Curran, & Bauer, 2006) in order to interpret these findings. The results indicate that the slopes do not differ from zero. Thus, H4a and H4b were not supported.

----- Insert Figure 2 about here -----

Another result that highlights the complexity of the impact commitment has on evaluations of funding potential was found in the significant interaction between enthusiasm and the commitment measure of using money efficiently (b = .52, p < .05). We hypothesized in H4c that the positive relationship between enthusiasm and evaluations of funding potential would be stronger when commitment was high, as indicated by entrepreneurs using their own money efficiently. Figure 2c shows that using money efficiently makes the negative main effect

between enthusiasm and evaluations of funding positive, although not significant. When we conducted a simple slopes test we found that the negative relationship between enthusiasm and evaluations of funding potential is stronger when commitment (uses money efficiently) is low (y=-.32, s.e.=.1535, t=-2.087, p= .0394) than when commitment is high (y=.1327, s.e.=.1573, t=.8434, p= .401). This suggests that although using money efficiently makes the significant negative effect of enthusiasm on evaluations of funding potential positive (although not significant), it does not make the hypothesized (but not supported) positive effect stronger, thus H4c is not supported. This indicates that although Angels appear to be especially critical of enthusiastic entrepreneurs who do not use money efficiently, by using money efficiently, an entrepreneur can offset the negative aspects of being enthusiastic such that the effect is no longer significantly negative. Finally, as illustrated in Figure 2d, we find support for H5a. Entrepreneurs who signal preparedness have higher evaluations of funding potential when they also invest their personal money into the venture ($b = .0009$, $p < .05$). Hypotheses 5b and 5c are not supported since these interactions are not significant.

DISCUSSION AND IMPLICATIONS

The fundamental question driving this study was whether or not, and to what extent, angel investors consider the different types of motivational signals that an entrepreneur may communicate— by being enthusiastic about, prepared for, and committed to his or her venture or business idea—when making evaluations of funding potential. While prior studies have explored the relative impact of enthusiasm and preparedness (Chen et al., 2009) and the importance of an overall perception concerning how passionate the entrepreneur is (Mitteness, et al., 2012b), our approach offers a number of contributions beyond this work. First, we not only examine enthusiasm and preparedness but also incorporate commitment and allow for interactions among

these different cues (Maxwell et al., 2011). Second, our methodological approach separates assessments of the signals entrepreneurs send and the evaluations of funding potential and involves actual investment pitches and angel decisions, both of which are critical to accurate research results (Hall & Hofer, 1993; Maxwell & Lévesque, 2014). As Maxwell & Levesque (2014, p. 1075) argue, "Analyzing short, but dynamic examples of entrepreneurial behaviors can explain how experienced investors (or other potential stakeholders) make rapid judgments about whether to enter a business relationship."

Prior research on entrepreneurial pitches involving angel investors has taught us a lot, but focuses primarily on the form and content of the information conveyed to potential investors through things like business plans (Kirsch et al., 2009) or the timing and location of funding requests (Brush et al., 2012) and does not focus on the emotional and personal communication between entrepreneurs and potential investors. Our study addresses this gap by building on the contributions of Mitteness and colleagues (2012b) and Chen and colleagues (2009) and by digging deeper into the role of emotions and motivational cues communicated in this context and, in particular, how these cues alone, and in combination, influence investor decision making. These extensions have resulted in a more fine-grained understanding of how different types of cues an entrepreneur uses might influence angel investor evaluations of investment potential.

Our main effect results are consistent with the findings of Chen and colleagues (2009) that enthusiasm does not have a significant main effect on VC and banker evaluations in a business plan competition but preparedness does. However, our results also suggest an important boundary condition to these previous findings concerning preparedness. In our study, the extent to which preparedness matters to angel investors varies depending on commitment, specifically the extent to which entrepreneurs invested their own money in the venture. When entrepreneurs

have invested a lot of personal money in their ventures there is a positive relationship between preparedness and angel evaluations of funding potential. However, when entrepreneurs have invested a low amount of personal funds in their ventures the relationship between preparedness and angel evaluations is flat. Practically speaking, angel investors appear to prefer entrepreneurs who have thought a lot about their ventures *and* who have also demonstrated commitment to the success of their ventures through investment of their own funds.

Our results also support the view of Mitteness and colleagues (2012) that enthusiasm can be important to angel investors, but in our case that importance depends upon the way in which entrepreneurs demonstrate commitment (i.e., they invested their own money, spent a lot of time pursuing their venture, or used money efficiently). More specifically, contrary to our expectations, the relationship between enthusiasm and evaluations of funding potential was strongly negative when entrepreneurs had invested a lot of their personal money, spent a lot of time pursuing their venture, and did not use money efficiently. Interestingly, the relationship between enthusiasm and angel evaluations was positive (although not statistically significant from zero) when entrepreneurs had invested little of their own money or time in the venture prior to the pitch, rather than remaining significantly negative as it was as a main effect. These findings suggest that while prior work has studied the direct impact of commitment on funding potential, examination of the interaction between commitment and other motivational cues may provide a novel perspective, as may examining different indicators of commitment. Prior studies (Sudek, 2006) suggest that entrepreneurs who are more committed to their organizations, as demonstrated by their having more "skin in the game" will be perceived more favorably than other entrepreneurs because they will be seen as motivated to work hard to ensure a positive return on their personal investment. In contrast, literature on escalation of commitment (Staw,

1981) suggests that greater levels of commitment are not necessarily a good sign. Instead, high levels of commitment may signal that an entrepreneur may have escalation of commitment issues, where the entrepreneur continues to allocate funds to a losing venture even when provided with negative feedback (McCarthy et al., 1993). In these circumstances, angel investors may look to an entrepreneur's enthusiasm to determine why the entrepreneur has not moved the venture further along given that the entrepreneur has invested considerable amounts of time and/or personal funds. While we are speculating here about what drove our findings, it is clear from our results that instead of commitment cues having a direct impact on angels' funding decisions as is suggested in prior research outlined above, the impact of commitment may be more complex. Our results indicate that angels may perceive high levels of enthusiasm combined with commitment cues to be inauthentic (see areas for future research below).

Taken together, these results highlight the importance of the context in which we study the role motivational cues play in entrepreneurial investments. Our data, which we collected exclusively from live angel investors considering the investment of their own money, suggest that the specific type of cues matter in this context. Our results indicated distinct relationships between the different motivational cues we examined—enthusiasm, preparedness, and commitment—and angel investor evaluations of funding potential and also indicated distinct relationships for the specific operationalization of commitment. These results support the idea that we must be clearer in our research with conceptual definitions and empirical examinations.

Passion has been found to be an important aspects of entrepreneurship (Cardon & Kirk, 2015; Gielnik, Spitzmuller, Schmitt, Klemann, & Frese, 2015), but clearly not everything we study that involves the level of engagement a person has with a firm should be labeled as passion. Preparedness involves developing a meaningful mental model for the firm and carefully

thinking through the strategy, goals, target markets, and operational plans for the venture, among other things. All of that can be done, and done well, by someone who is not particularly passionate. Similarly, it is straightforward that someone can invest time and money in ventures in which they are not emotionally involved, which suggests that passion and commitment are also independent constructs. Our data showed that the correlations among enthusiasm, preparedness, and commitment ranged from -.02 to .33, indicating that, although there is some covariation, there is also evidence of independence between them. Thus the relationships between experienced passion, enthusiasm, preparedness, and commitment are open to conceptual and empirical examination, including potential reverse causality (Gielnik et al., 2015) but should not be subsumed under the broad term of "passion." We believe our results provide a better understanding of the distinctions among the different ways entrepreneurs can communicate their enthusiasm, preparedness, and commitment to their ventures through their verbal and nonverbal behaviors and their responses to questions from potential investors. Further, our study addresses several methodological limitations of prior research on angel decision making, such as relying on data collected after decisions have already been made and relying on recall of prior decisions (Maxwell & Lévesque, 2014; Wiltbank et al., 2009). These methods are problematic because investors are often unaware of their own decision criteria (Zacharakis & Meyer, 1998) and may be subject to recall bias. Our study avoids those problems.

Our study fits into the broad body of research on angel investor funding (Brush et al., 2012) and VC capital investment decision making (Kirsch et al., 2009). There are many instances of information uncertainty and asymmetry between entrepreneurs and potential investors (Gompers & Lerner, 1999). Prior studies have addressed the decision making process in such contexts, including the criteria potential investors use to evaluate the deal (Macmillan et

al., 1985), key signals and decision cues investors use (Kirsch et al., 2009; Metrick, 2007), a venture's "readiness" to receive funding (Brush et al., 2012), and when during the investment evaluation process investors focus more on the strength of the opportunity than the strength of the entrepreneur (Kaplan et al., 2009; Mitteness, et al., 2012). We add to this research by extending and, perhaps more important, clarifying prior studies on the potential roles that entrepreneurial passion (Cardon, et al., 2009b; Mitteness et al., 2009) and the related constructs of enthusiasm, preparedness, and commitment (Chen et al., 2009) have over and above that of the particular opportunity and individual entrepreneur involved.

Areas for Future Research

Our somewhat surprising lack of results concerning the direct effects of enthusiasm and negative interactive effects of enthusiasm and two of our commitment measures need further research. They may be due to angel investors believing the entrepreneur is putting on an act and not displaying authentic emotions during their pitch presentations. Individuals sometimes display emotions they do not feel in order to secure more positive outcomes for themselves (Rafaeli & Sutton, 1987) or their organizations (Dasborough & Ashkanasy, 2002). Yet Ashkanasy (2003, p. 42, emphasis added) argues that "people are able to recognize physiological, or *felt* emotion, as distinct from consciously controlled *displayed* emotion." Even untrained observers, such as friends, colleagues, and customers seem to be capable of detecting attempted manipulation (Ashkanasy, 2003). Popular culture has perhaps led to somewhat inappropriate learning from TV shows such as Dragon's Den and Shark Tank, or to over-coaching on the pitch to emphasize enthusiasm[2]. Angels may be wary of being influenced in this manner and, therefore, suspicious of some aspects of entrepreneurial displays of emotion, especially enthusiasm, which involves

[2] We appreciate this insight from an anonymous reviewer.

public presentation skills that can be learned. Research on emotions suggests that there is a problem with emotions that are perceived as insincere because they lead to cynicism on the part of the observers (Ashkanasy, 2003). We suggest that this may be the case with the population of angel investors and VCs who screen a large number of investment pitches on a regular basis (Metrick, 2007; Shane, 2009).

Martens and colleagues (2007) suggested that there is a need for research to look further into inauthenticity of entrepreneurs, especially in terms of the nature, prevalence, and effects of such inauthenticity. They specifically questioned whether investors who do not completely believe the stories of entrepreneurs would continue to commit investment funds. We believe this is a great question, but one we cannot yet answer. We have no way of knowing whether the motivational cues displayed by the entrepreneurs in this study were indeed authentic or insincere. Future research should integrate existing scales to measure passion in general (Vallerand et al., 2003) or entrepreneurial passion, more specifically, as experienced by the entrepreneur (Cardon et al., 2013). This would broaden and deepen our understanding of the nuanced relationships between passion that is felt, emotion that is signaled in the form of enthusiasm, other motivational signals such as preparedness and commitment, how motivated and passionate angel investors perceive the entrepreneurs to be, and how these factors influence angel funding decisions.

We note that our focus was on the live screening of entrepreneurs, which is typically the second step in the overall angel investor screening process (Carpentier & Suret, 2015; Hall & Hofer, 1993; Mason & Harrison, 2003; Maxwell & Lévesque, 2014). Prior to reaching the live screening stage, entrepreneurs submit written materials to angel investment groups for evaluation. These materials may signal varying levels of enthusiasm, preparedness, and

commitment. Future research could utilize content analysis or other means to evaluate the emotional and other content of such materials (See e.g., Martens et al., 2007) to determine the extent to which entrepreneurs signal their enthusiasm, preparedness, and commitment in written materials and the extent to which such signals are recognized and utilized by angels during the initial screening.

Limitations

Several limitations of this study need to be noted. First, our measure of commitment was based on one subjective and two objective items. The subjective measure was derived from qualitative work (Mitteness, et al., 2012) with angels, asking them what behaviors signal commitment to them on the part of entrepreneurs. Based on this prior research, we believe the subjective measure, as well as the objective measures of the amount of personal funding the entrepreneur has invested (Prasad et al., 2000) and the years they have spent pursuing the business, are highly relevant. However, other cues that signal commitment may also be relevant to angel investors, such as the opportunity cost involved in starting the venture, regardless of any personal financial investment the entrepreneur may have made. Other objective and survey items should be considered in future research as well, especially in light of the distinct relationships the three operationalizations of commitment had on angel investor evaluations in our study.

Second, our dependent variable reflects investors' interest in moving the venture to the due diligence stage and not necessarily to actual investment. The investor interest variable is important because it is collected for all firms that advance to the screening stage (our sampling frame), while actual investment involves a much smaller number of firms that advance past screening to the due diligence stage of the process (Brush et al., 2012). It may be of interest to examine whether the different types of motivational cues have different effects on angel investor

interest than on actual angel investment. That said, while it is true that the study reflects investors' interest in moving the venture to due diligence and not necessarily to actual investment, in the context of entrepreneurial investing (whether of angel, VC, or bank funds), there are very few deals that ever make it past the screening stage into the due diligence stage Therefore, the potential impact of research that is focused on this critical aspect of the entrepreneurial finance process should not be downplayed (Hall & Hofer, 1993; Mason & Harrison, 2003; Maxwell & Lévesque, 2014). Our study does not examine how enthusiasm, preparedness, or commitment might influence potential investors at different stages of the process, such as when their written material are evaluated (Hall & Hofer, 1993; Martens et al., 2007) or during due diligence. However, despite this limitation, we believe our findings apply to a variety of contexts in which there are multiple stages of screening including a live pitch component.

Third, our results may lack generalizability because we examined the impact of motivational cues on angels that are part of an angel group. Although such angels make independent decisions concerning which firms to invest in and are not likely to engage in "herding behavior" where they are influenced by the decisions of other angels (Maxwell et al., 2011), it is possible that angels investing alone may have somewhat different decision criteria than those investing in groups (Banerjee, 1992; Scharfstein & Stein, 1990). Recent research suggests that the angel market is becoming quite heterogeneous, with key differences between independent angels and those operating as part of angel investment groups (Carpentier & Suret, 2015). Because of this, future research should examine the decision criteria of solo investors as well as those conducting screenings as part of an angel group, as well as the heterogeneity among angel groups. Other types of investors or stakeholders could also be considered, such as

VCs or employees. Potential stakeholders may differ in the degree to which they perceive motivational cues or as to which specific cues they attend to, which could ultimately influence their decision to become involved with the startup venture. Potential stakeholders that future research should examine include not only other equity investors such as VCs but also potential new venture team members, board members, customers, employees, and suppliers (Breugst et al., 2012).

Practical Implications and Conclusion

Not surprisingly, our results confirm that entrepreneurs seeking funding from angel investors need to have a strong opportunity and be perceived as competent. More important, beyond these factors, entrepreneurs appear to be able to increase their chances of receiving funding if they are able to signal 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 answer questions with confidence and without appearing defensive. More generally, our results suggest that being more aware of how angel investors react to different types of motivational cues and what it may mean for potential success of a new venture may help entrepreneurs to fine-tune their pitches to potential investors. As Mason and Harrison (2003) have noted, understanding how investment decisions are made at each stage in the process may help to improve the efficiencies of the process and increase the chances of a successful investment. Being aware of the different cues entrepreneurs can use to signal their motivations, how they are communicating those cues, and how the cues are received may lead to greater fundraising success for entrepreneurs. We caution, though, that we are just beginning to understand the relationships among these constructs and we encourage further practical and academic studies, as well as greater definition precision and conceptual clarity, in such work.

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Table 1
Descriptive Statistics and Correlations

	Mean	s.d.	n	1	2	3	4	5	6	7	8
1. Eval of Funding Potential	3.04	1.26	1966	1.00							
2. Strength of Opportunity	3.34	.72	1966	.56**	1.00						
3. Entrepreneur Competency	3.72	.78	1966	.42**	.46**	1.00					
4. Enthusiasm	3.05	.59	1966	.01	.03	.00	1.00				
5. Preparedness	3.57	.39	1966	.15**	.12**	.15**	.33**	1.00			
6. Personal Investment	287.09	522.05	1966	-.08**	-.01	.02	.10**	.12**	1.00		
7. Years Pursuing	2.41	1.64	1966	-.03	-.02	-.03	.08**	-.02	.13**	1.00	
8. Uses Money Efficiently	3.65	.44	1966	.15**	.12**	.13**	.11**	.27**	.09**	.15**	1.00

* p < .05
** p < .01

Table 2
MLM Results

	Unconditional Model	Control Variable Model	Predictor Model	Full Model	
Fixed Effects Parameter					
Intercept	3.075***	3.0411***	3.0487***	3.0331***	
Perceived Opportunity Strength		.7366***	.7333***	.7320***	
Perceived Entrepreneur Competency		.3054***	.3018***	.3037***	
Enthusiasm			-.0692	-.0938	H1
Preparedness			.2152**	.3436**	H2
Commitment					
Personal Money			-.0002*	-.0002	H3
Years Pursuing			-.0060	.0085	H3
Uses Money Efficiently			.1650	.1271	H3
Enthusiasm * Preparedness				-.1143	
Enthusiasm * Personal Money				-.0004**	H4a
Enthusiasm * Years Pursuing				-.1056*	H4b
Enthusiasm * Uses Money Efficiently				.5143*	H4c
Preparedness * Personal Money				.0009*	H5a
Preparedness * Years Pursuing				-.0612	H5b
Preparedness * Uses Money Efficiently				.1436	H5c
Covariance Parameter					
Company	.443***	.193***	.179***	.158***	
Angel	.139***	.128***	.129***	.129***	
Residual Variance	.953***	.710***	.710***	.710***	
Model Information Criteria					
-2 Log Likelihood (-2LL)	5845.392	5266.271	5244.251	5266.351	
Change in -2LL	5845.392***	579.121***	22.020**	-22.100**	
Akaike's Information Criterion (AIC)	5851.392	5232.271	5250.251	5272.351	
Schwarz's Bayesian Criterion (BIC)	5868.141	5249.017	5266.990	5289.079	

1966 decisions at level 1; 72 angels at level 2; 133 companies at level 3;
*p < .05
**p < .01
***p < .001

Figure 1
Theoretical Model of Motivational Cues' Effects on Evaluations of Funding Potential

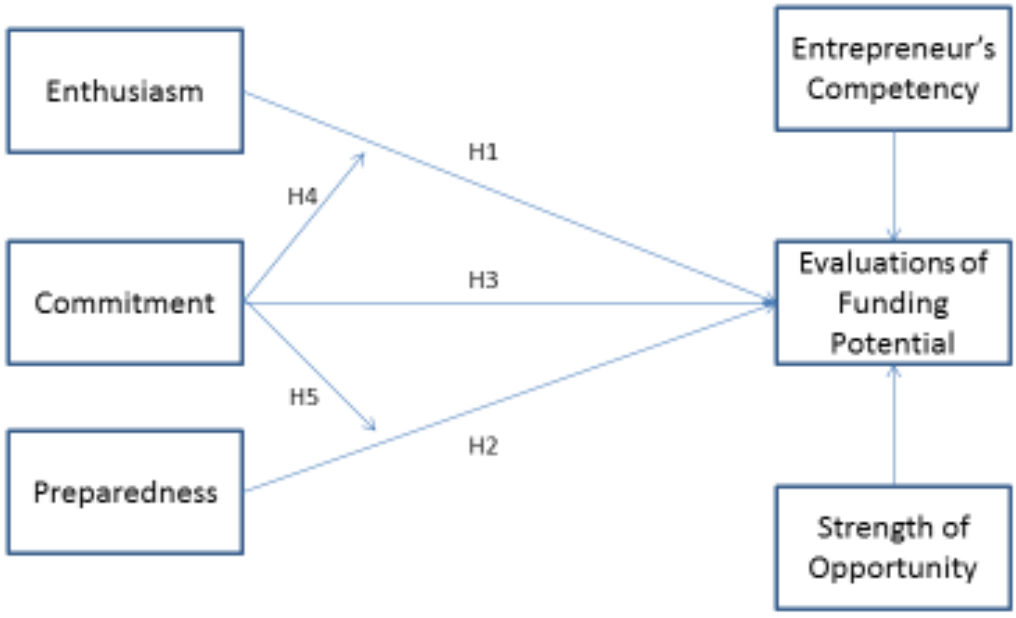
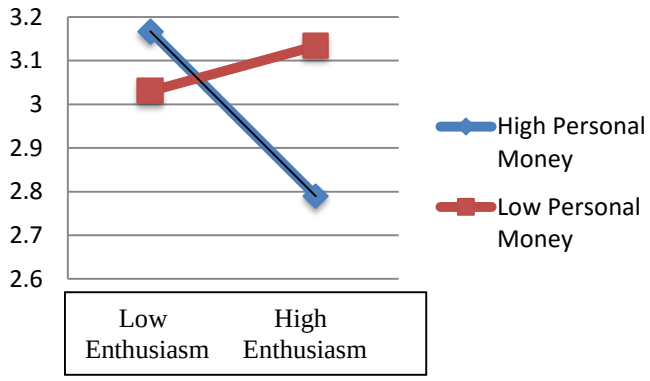


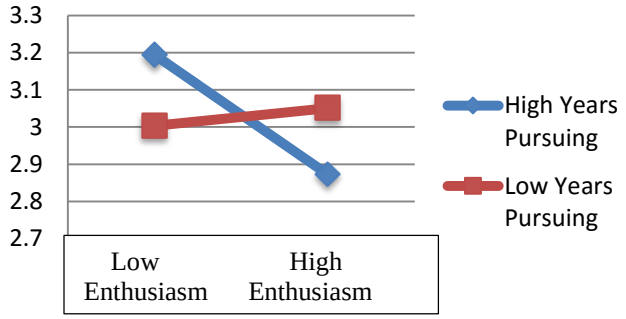
Figure 2

Interaction Plots for Moderating Effects of Commitment on Evaluations of Funding Potential

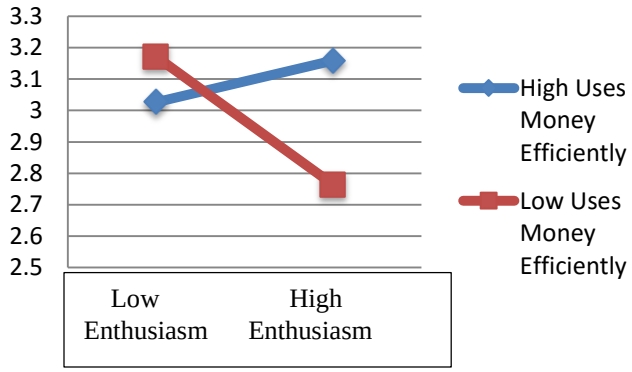
a. The moderating effect of Personal Money Invested (Commitment) and Enthusiasm (H4a)



b. The moderating effect of uses Years Pursuing (Commitment) and Enthusiasm (H4b)



c. The moderating effect of Uses Money Efficiently (Commitment) and Enthusiasm (H4c)



d. The moderating effect of Personal Money Invested (Commitment) and Preparedness (H5a)