

# Trust Between Entrepreneurs and Angel Investors: Exploring Positive and Negative Implications for Venture Performance Assessments

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*The study of trust-related outcomes has had a long tradition in the organizational literature. However, few have considered potential darker sides of trust or have explored its effects in the setting of entrepreneurial ventures. This study does so by examining how perceptions of entrepreneurs and angel investors concerning the degree of trust in their relationship impact the latter's assessments of venture performance. Hypotheses are tested using survey data from the lead entrepreneur and angel investor of 54 ventures. Results indicate that angel investors evaluate portfolio company performance more positively when they perceive high trust, whereas entrepreneurs' trust perceptions are negatively associated with angel investors' assessments of venture performance. Further, these effects are partially mediated by the quality of information exchanges between both parties. Together, these findings point to the benefits as well as threats that come with the presence of strong trust in entrepreneur–angel investor relationships.*

**Keywords:** *trust; angel financing; entrepreneurship; communication; venture performance assessments*

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1980

Among organizational scholars, a wide consensus exists concerning the benefits of trust for the functioning of individuals and teams in organizations (Burke, Sims, Lazzara, & Salas, 2007; Colquitt, Scott, & LePine, 2007; Dirks & Ferrin, 2001, 2002; Fulmer & Gelfand, 2012). While acknowledging the various attitudinal and behavioral benefits associated with trust, recent studies have started to explore how—especially in innovative and dynamic settings—relationships may be susceptible to darker sides of trust as well (Molina-Morales & Martinez-Fernandez, 2009; Thorgren & Wincent, 2011; Zahra, Yavuz, & Ucbasaran, 2006). The present study contributes to this stream of inquiry by examining how in entrepreneur–angel investor partnerships both parties’ perceptions of the degree of trust in their relationship (henceforth referred to as their intrateam trust perceptions) relate to the angel investor’s assessment of venture performance. By revealing both positive and negative implications of perceived intrateam trust, our study offers a more nuanced understanding of the role of trust in an entrepreneurial finance setting.

Examining perceptions of intrateam trust in the entrepreneur–angel investor setting is useful for two main reasons. First, one of our goals is to investigate the position that in parallel to engendering benefits such as improved communication among venture partners, increasing perceptions of intrateam trust may also have detrimental effects by locking decision makers into rigid behavioral patterns. These dysfunctional trust-related effects are expected to jeopardize firm performance most markedly in settings characterized by a continuous need for change and innovativeness, such as our entrepreneurial setting. Second, angel investors play an important role in providing seed and start-up capital for entrepreneurial ventures (Mason, 2006; Sohl, 2003) and, compared to other investors like venture capitalists, typically build closer partnerships with the entrepreneur in which trust likely plays a prominent role (De Clercq, Fried, Lehtonen, & Sapienza, 2006; Fairchild, 2011; Fiet, 1995). Taken together, we believe this warrants further investigation of possible functional and dysfunctional trust-related outcomes for entrepreneur–angel investor partnerships.

A unique aspect of our study is the analysis of both the entrepreneurs’ and the angel investors’ perceptions of intrateam trust that reflect their personal interpretations of the quality of their relationship. Prior research has typically examined trust from only one side of the relationship or has averaged members’ perceptions of trust within teams (Fulmer & Gelfand, 2012; Schoorman, Mayer, & Davis, 2007), assuming these partners’ trust perceptions to be largely symmetric and to have similar performance implications. Cognizant of recent developments in the trust literature (e.g., Brower, Lester, Korsgaard, & Dineen, 2009; De Jong & Dirks, 2012; Graebner, 2009) and of calls to explore trust-related differences between entrepreneurs and investors (De Clercq & Sapienza, 2006), our study deals with the lead entrepreneurs’ and angel investors’ individual perceptions of intrateam trust and tests their independent effects on angel investors’ venture performance assessments. Specifically, we propose that both partners’ intrateam trust perceptions will have a positive relationship with the angel investors’ evaluation of venture performance through increased communication quality between entrepreneurs and angel investors. Once we account for the positive effect of improved communication though, we expect a negative effect for entrepreneurs’ intrateam trust perceptions on angel investors’ venture performance assessments, whereas the link between the angels’ own intrateam trust perceptions and their performance assessment is expected to remain positive. As such, our study further highlights the value of considering individual perceptions of intrateam trust.

We contend this study makes several important contributions to the organizational literature on trust. First, previous work on trust can be said to suffer from an optimistic bias in that scholars have had a tendency to search for trust-related benefits while disregarding potential darker sides of trust (Dirks & Ferrin, 2001; Fulmer & Gelfand, 2012). Our study addresses this concern by clarifying how increasing perceptions of intrateam trust on the part of the entrepreneur may also, in parallel to improved communication, hold significant risks in the form of behavioral rigidities. Second, we take up the call for more contextualized models of trust. With most prior research on trust in organizations focused on supervisor–subordinate and coworker relationships in established companies (Colquitt et al., 2007; Dirks & Ferrin, 2002), we know relatively little about trust-related outcomes in entrepreneurial settings such as the entrepreneur–angel investor partnership where incentives, information asymmetries, risk, and dynamism are substantially different. Third, our study is one of few to explicitly recognize that trust perceptions in dyads or teams are not necessarily symmetric and, more importantly, extends thinking about how these parties' perceptions of intrateam trust may have dissimilar implications for performance assessments.

In addition, we make two valuable contributions to the entrepreneurship literature. First, a growing body of research has recognized that social aspects play a key role in the investment process of entrepreneurial ventures, this both in the pre-investment phase (e.g., Fairchild, 2011; Maxwell & Lévesque, in press; Shane & Cable, 2002) and post-investment phase (e.g., De Clercq & Sapienza, 2005; Sapienza & Korsgaard, 1996). Our study contributes to this research stream by clarifying how the social construct of intrateam trust perceptions impacts post-investment performance assessments by angel investors. These post-investment performance assessments by angel investors are central to a venture's continued success and survival because they likely determine whether the angel will continue to refinance or abandon the investment (De Clercq & Sapienza, 2006). Second, acknowledging that intrateam trust perceptions may have a variety of attitudinal and behavioral implications, we propose that improved communication between investors and entrepreneurs represents the main mechanism through which both angel investors' and entrepreneurs' intrateam trust perceptions affect the angels' assessments of venture performance. Thus, while using these trust perceptions as a proxy for various behavioral and attitudinal processes, we empirically verify communication quality's role as a central mediator, thereby providing further insight into the intervening paths that explain an investor's performance assessment.

The article proceeds as follows. First, we clarify the trust concept as used in this study and develop hypotheses that relate entrepreneurs' and angel investors' intrateam trust perceptions to angels' assessments of venture performance. Next, we describe the method used, followed by a presentation of the findings. We then conclude with a discussion of the implications of these findings and their consequences for future research.

## **Theory and Hypotheses**

### *Definition of Trust Concept*

Trust is generally defined as the willingness to accept vulnerability in a relationship based on positive expectations of the other party's intentions or behaviors (Fulmer & Gelfand,

2012; Rousseau, Sitkin, Burt, & Camerer, 1998; Schoorman et al., 2007). Drawing on this common conceptual core, scholars have identified different types of trust rooted in different bases on which to trust someone. A common distinction made in the academic literature is the one between cognitive and affective trust (Colquitt et al., 2007; Dirks & Ferrin, 2002). Cognitive trust is based on the trustor's information about and insights into the trustee's competence and moral character, with this cognitive understanding making the behavior of the trustee more predictable (Lewis & Weigert, 1985; Schoorman et al., 2007). Instead, affective trust denotes a close emotional bond between trustor and trustee where feelings of care, intimacy, and concern provide the basis for mutual positive expectations (Lewis & Weigert, 1985; McAllister, 1995). It is important to specify the type of trust we focus on in this study as these different trust types are associated with different theoretical processes and correlates (Dirks & Ferrin, 2002).

Trust in our study feeds into a cognitive, character-based approach of trust. Specifically, we examine trust that is based on an understanding of moral character, referring to characteristics such as fairness, integrity, consistency, promise fulfillment, and reliability. Corroborating its cognitive character, Colquitt and colleagues (2007: 911) state that "[i]ntegrity represents a very rational reason to trust someone, as a sense of fairness and moral character provides the kind of long-term predictability that can help individuals cope with uncertainty." Cognitive character-based trust is highly relevant in most professional relationships, including those between entrepreneurs and angel investors, where knowledge about the other party's reliability is deemed important and usually develops with ongoing exchanges (Harrison, Dibben, & Mason, 1997; Lewicki, Tomlinson, & Gillespie, 2006). While affective trust may also develop among angel investors and entrepreneurs due to personal bonding and empathy (Lewicki et al., 2006; Paul, Whittam, & Wyper, 2007), prior research on the post-investment relationship between angel investors and their entrepreneurs suggests that affect-based dynamics between these partners are less consequential for their considerations and decisions. For instance, affective conflicts between angels and entrepreneurs do not affect entrepreneurs' or angel investors' intentions to leave the venture; conflicts based on cognitive and more rational considerations, however, do (Collewaert, 2012).

Another intriguing issue concerns the difference between one's trust in another, one's sense of being trusted by the other, and one's perception of shared trust in a relationship. Most prior research has dealt with individuals' trust in another (Colquitt et al., 2007; Dirks & Ferrin, 2002), but trust scholars are increasingly recognizing the importance of developing a better understanding of other trust-related constructs (e.g., Deutsch Salamon & Robinson, 2008; Fulmer & Gelfand, 2012). Especially in exchange relationships characterized by mutual vulnerability such as entrepreneur–angel investor partnerships (Fairchild, 2011), perceptions of shared trust have meaning and may arise from the reciprocal interplay between one's sense of being trusted and one's own trust (Peterson & Behfar, 2003; Simons & Peterson, 2000). Accordingly, our study deals with the entrepreneurs' and angel investors' perceptions of shared trust, capturing their individual interpretations of the quality of their relationship. While prior research has typically aggregated such perceptions to the team level to measure intrateam or intragroup trust (e.g., Langfred, 2007; Simons & Peterson, 2000), we treat these individual perceptions separately to reflect the idea that interpretations of the degree of trust in a relationship are not necessarily equivalent in nature or outcomes. Taken

together with our cognitive character-based approach, we henceforth use the term *intrateam trust perceptions* to refer to the angel investors' and entrepreneurs' individual perceptions of shared trust grounded in moral character insights. This concept thus captures to what extent they expect just behavior from each other, count on each other's promise fulfillment, and the like (Peterson & Behfar, 2003). In what follows, we explain how the entrepreneurs' and angel investors' intrateam trust perceptions are both similar and different in terms of implications for the angels' venture performance assessments.<sup>1</sup>

### *Intrateam Trust Perceptions and Angel Investors' Performance Assessments*

Performance assessments take place in a social context, and research has demonstrated that social elements have a bearing on these assessments (Levy & Williams, 2004), including in investor–entrepreneur partnerships (De Clercq & Sapienza, 2006). Hence, examining angel investors' performance assessments from the perspective of entrepreneurs' and angel investors' intrateam trust perceptions is warranted. Assessments of performance represent a combination of, on the one hand, actual behaviors and performance and, on the other hand, a subjective cognitive evaluation process on the part of the evaluator (Feldman, 1981; Ferris, Munyon, Basik, & Buckley, 2008). Therefore, to guide our discussion of how entrepreneurs' and angel investors' intrateam trust perceptions (differentially) affect the latter's performance assessments, we will distinguish between the effects of these trust perceptions on (1) both parties' performance-relevant behaviors and (2) the subjective, cognitive evaluation process of the angel-evaluator.

*Intrateam trust perceptions and performance-relevant behaviors.* A first way intrateam trust perceptions may affect angels' venture performance assessments is by influencing performance-relevant behaviors. Under a cognitive character-based approach, the behavioral implications of trust refer first and foremost to engagement in activities that make individuals vulnerable to another party (Dirks & Ferrin, 2002; Mayer, Davis, & Schoorman, 1995). A key form of putting oneself in a vulnerable position, and of significant relevance to our setting, concerns open communications and free information sharing (Colquitt et al., 2007; Dirks & Ferrin, 2001). One of the main roles of angels in moving their portfolio ventures forward consists of offering expert advice and acting as a sounding board for the entrepreneur (Mason, 2006; Politis, 2008). Angel investors contribute their skills, knowledge, and expertise (based on their industry and/or entrepreneurial experience) and help their entrepreneurs in a wide range of matters such as devising a corporate strategy and providing advice on financial matters and marketing (Madill, Haines, & Riding, 2005; Mason & Harrison, 1996; Politis, 2008). Such advisory communications have been found to contribute significantly to the progress and performance of angel-backed ventures. For instance, angel involvement improves their portfolio companies' IPO firm performance (Bruton, Filatotchev, Chahine, & Wright, 2010), chances of attracting future venture capital financing (Madill et al., 2005), and their operations (e.g., employment, patents) and survival (Kerr, Lerner, & Schoar, in press). Entrepreneurs, for their part, are responsible for providing their angel investors with often sensitive information on company affairs, which

in turn enables these angels to adequately perform their advisory role (Madill et al., 2005; Paul et al., 2007). Overall, this leads one to conclude that a successful relationship between angel investors and entrepreneurs should be characterized by good communication between both partners. Drawing on trust and angel financing literature, we thus expect that intrateam trust perceptions of entrepreneurs and angel investors will enhance the quality of the firm-specific and advisory information exchanged between them, which in turn should have a positive impact on angels' performance assessments (De Clercq & Sapienza, 2006).

With regard to those performance-relevant behaviors that are susceptible to trust influences, we need to recognize that entrepreneurs do much more than just communicating; being the central decision makers, they are also responsible for the daily venture operations and for the development of strategic initiatives. Their decision making thus represents a second important behavioral role that can be shaped by their intrateam trust perceptions. Specifically, recent developments in the literature suggest that increasing intrateam trust perceptions on the part of entrepreneurs may potentially lower their quality of decision making by locking them into a pattern of expected behaviors (Thorgren & Wincent, 2011; Zahra et al., 2006), which is likely to negatively affect the performance of their ventures (see the following for more detail). Concerning performance-relevant behaviors, we thus argue that once we account for the quality of communications between investors and entrepreneurs, the effects of both partners' intrateam trust perceptions will diverge; entrepreneurs' and angels' intrateam trust perceptions can be expected to positively affect their informing and advisory communications, and as such the overall quality of communication behavior between them, but entrepreneurs' intrateam trust perceptions can also be expected to negatively affect their decision-making quality.

*Intrateam trust perceptions and subjective cognitive evaluation processes.* A second way intrateam trust perceptions may affect performance assessments concerns the subjective cognitive evaluation processes on the part of the evaluator, in our case the angel investor. After investment, angels periodically assess the financial and nonfinancial performance of their portfolio ventures to intervene if necessary (Fiet, 1995; Van Osnabrugge, 2000). This evaluation process consists of various cognitive elements, including attention to, interpretation of, and recollection of performance-relevant factors, which are susceptible to influences from the social context (Feldman, 1981; Ferris et al., 2008). Specifically, the way evaluators perceive and experience the social context in which they perform their evaluations shapes their disposition or attitude toward the evaluatee and, as a result, their cognitions of information on the latter's behavior and performance (Judge & Ferris, 1993; Levy & Williams, 2004). Consequently, in addition to the aforementioned behavioral influences, we must also consider how angel investors' intrateam trust perceptions may have an attitudinal influence on their assessments of venture performance. For angel investors, whose performance evaluations we focus on, increasing intrateam trust perceptions can be expected to have a supplemental positive influence as it engenders a more optimistic attitude toward the entrepreneur when engaging in the subjective evaluation process of seeking out, interpreting, and recalling performance-relevant factors (Dirks & Ferrin, 2001; Feldman, 1981; Simons & Peterson, 2000).<sup>2</sup>

*Total effects.* The trust literature has pointed to a variety of behavioral and attitudinal implications of this construct (Dirks & Ferrin, 2001, 2002; Fulmer & Gelfand, 2012). As the preceding paragraphs illustrate, the applicability of these trust-related behavioral and attitudinal processes for predicting angel investors' performance assessments differs between entrepreneurs and angels. Indeed, differences in the behavioral roles of entrepreneurs versus angel investors plus our interest in performance assessments as conducted by the angel call for a differential treatment of their respective intrateam trust perceptions. In the following sections, each of the aforementioned mechanisms will be explained in further detail, but at this point we proceed with formulating our total effect hypotheses.

For both the entrepreneurs' and angel investors' intrateam trust perceptions, we presume a positive impact on their communication behavior, which should positively affect the angels' performance assessments (De Clercq & Sapienza, 2006). Differences arise, however, when first considering that entrepreneurs' intrateam trust perceptions may also result in decision-making rigidity. While these opposing (i.e., positive through communication; negative through decision-making rigidities) influences of entrepreneurs' intrateam trust perceptions lead us to expect its impact on angels' performance assessments to be weaker than that of the angels' intrateam trust perceptions, we still expect its total effect to be positive. This is because the literature suggests that risk-taking behaviors, such as open communications, likely represent a more proximal behavioral expression of trust perceptions than rigidities in decision making and prior empirical research has consistently shown trust-related benefits to prevail across a variety of settings (e.g., Colquitt et al., 2007; Dirks & Ferrin, 2001; Fulmer & Gelfand, 2012). Another difference arises when considering that the angel investors' own intrateam trust perceptions are also expected to positively affect their attitude toward the entrepreneur during the subjective evaluation process. This discussion, therefore, leads to a first set of hypotheses on the total effects of intrateam trust perceptions on angel investors' assessments of venture performance:

*Hypothesis 1:* Entrepreneurs' intrateam trust perceptions will have a positive association with angel investors' assessments of venture performance.

*Hypothesis 2:* Angel investors' intrateam trust perceptions will have a positive association with their assessments of venture performance.

### *The Mediating Role of Communication Quality*

While several studies on trust have referred to the aforementioned behavioral and attitudinal processes in explaining performance outcomes, few have explicitly explored its mediating mechanisms (Dirks, 2006). One important mechanism through which we expect entrepreneurs' and angels' intrateam trust perceptions to impact angels' venture performance assessments is improved information sharing, which we hereafter refer to as communication quality. Indeed, as proposed by De Clercq and Sapienza in a study on venture capitalists, trusting bonds between entrepreneurs and investors will "increase performance *primarily* through the enhancement of fruitful communications between the parties" (2006: 331, emphasis added). Specifically, our reasons to focus on the mediating role of communication quality are twofold.



First, as outlined previously, it is the only mediating mechanism that applies to both the entrepreneurs' and the angel investors' intrateam trust perceptions, thereby likely representing a key intervening mechanism in relation to the angel investors' performance assessment. Second, prior literature suggests that the other aforementioned explanatory mechanisms will likely play a less central role in clarifying the link between intrateam trust perceptions and performance assessments. In particular, reflecting the conceptual core of the trust construct (Mayer et al., 1995; Rousseau et al., 1998), engagement in behaviors that put them in a vulnerable position such as communicating openly and freely is expected to represent the closest behavioral manifestation of entrepreneurs' intrateam trust perceptions, with rigidities in decision making likely being more distal (Colquitt et al., 2007; Fulmer & Gelfand, 2012). As for angel investors' intrateam trust perceptions, we follow De Clercq and Sapienza (2006) in their conjecture for venture capitalists that it would be unlikely that subjective attitudinal processes will play as big a role in predicting investors' performance assessments compared to a more objective behavioral trust manifestation such as information sharing. In support of this view, prior research has revealed that in making performance-related decisions, such as whether or not to abandon the investment, angel investors are mainly influenced by objective facts such as whether or not they have the same goals as their entrepreneurs rather than by more subjective interpersonal aspects (Collewaert, 2012).

Taking a closer look into the role of the quality of communications between these parties is important as it determines angel investors' understanding of the venture's operations and their ability to add value with well-targeted advice and critical feedback. Indeed, as entrepreneurial ventures often lack a well-developed internal skills base, angel investors can add significant value by presenting their expert advice and challenging ideas (De Clercq et al., 2006; Mason, 2006; Politis, 2008). To effectively perform this advisory role, angel investors depend on the entrepreneur for inside information on the venture's operations and challenges, and entrepreneurs will be more forthcoming in sharing this firm-specific information when they perceive their relationship with the angel investor to be a trusting one. Strong intrateam trust perceptions create an atmosphere in which entrepreneurs feel comfortable disclosing firm-specific information and admitting problems as they expect the angel to use that information for cooperative purposes only (Carmeli, Tishler, & Edmondson, 2011; Dirks & Ferrin, 2002; Zheng, 2012). In contrast, when entrepreneurs' perceptions of intrateam trust are low, they may be unwilling to disclose sensitive data on firm operations and stall, hide, or misrepresent information due to interpersonal tensions and fears of misuse or disciplinary action by the angel (De Jong & Elfring, 2010; Simons & Peterson, 2000). Likewise, the angel investors' intrateam trust perceptions can be expected to affect their motivation to exchange information with the entrepreneur in the form of advice and feedback. When their intrateam trust perceptions are strong, angels feel more comfortable expressing their views and expend greater effort in performing their advisory tasks as they expect the entrepreneur to put the offered advice into cooperative rather than self-serving uses (De Jong & Elfring, 2010; Zheng, 2012). Moreover, lower interpersonal tensions and the reduced need for defensive suspicion-based controls associated with higher intrateam trust perceptions (Colquitt et al., 2007; Langfred, 2007; Peterson & Behfar, 2003) should free up time and other resources that can be invested in value-adding communications (De Clercq & Sapienza, 2006). Complementing the aforementioned communication advantages, which are largely grounded in one's trust in



the other, a recent study by Deutsch Salamon and Robinson (2008) shows that feeling trusted also leads to more cooperative behavior in that individuals are more inclined to act responsibly toward others. In the setting of angel investor–entrepreneur partnerships, the latter could be argued to encompass providing timely and accurate information. This hence suggests that the combination of these parties’ trust and sense of being trusted, as reflected in their intrateam trust perceptions, should advance their communications.

In summary, we posit that entrepreneurs’ intrateam trust perceptions affect their willingness to communicate firm-specific information to angel investors, whereas angels’ intrateam trust perceptions increase their offering of advisory information to entrepreneurs. Together this should result in higher quality communications between angels and entrepreneurs, which in turn, due to its value-adding nature, can be expected to lead to more positive performance assessments by angel investors (De Clercq & Sapienza, 2006). Hence:

*Hypothesis 3a:* Entrepreneurs’ intrateam trust perceptions will have a positive association with the quality of communication between entrepreneurs and angel investors.

*Hypothesis 3b:* Communication quality mediates the relationship between the entrepreneurs’ intrateam trust perceptions and the angel investors’ assessments of venture performance.

*Hypothesis 4a:* Angel investors’ intrateam trust perceptions will have a positive association with the quality of communication between entrepreneurs and angel investors.

*Hypothesis 4b:* Communication quality mediates the relationship between the angel investors’ intrateam trust perceptions and their assessments of venture performance.

### *Intrateam Trust Perceptions and Angel Investors’ Performance Assessments After Accounting for Communication Quality*

The dominant view in the extant trust literature suggests that stronger intrateam trust perceptions should lead to more effective exchange relationships (Colquitt et al., 2007; Deutsch Salamon & Robinson, 2008; Fulmer & Gelfand, 2012). However, some scholars have warned for possible darker sides of trust next to these clear and undisputed benefits (e.g., McEvily, Perrone, & Zaheer, 2003), and recent studies have started to pay more systematic attention to these potential dysfunctional trust outcomes (e.g., Gargiulo & Ertug, 2006; Thorgren & Wincent, 2011; Zahra et al., 2006). Our review of this sparse and largely conceptual literature points to two different lines of thought; whereas some have argued for an inverted U-shaped relationship between trust and performance outcomes, others have argued for negative effects of trust developing in parallel to the traditional positive ones.

The main argument of those adopting a curvilinear view is that very high levels of trust are usually unwise with such “blind trust” opening the door for abusive behaviors (e.g., Gargiulo & Ertug, 2006; Wicks, Berman, & Jones, 1999). This danger of blind trust likely mainly applies to affective forms of trust where emotions may engender unconditional trust exceeding the trustee’s actual trustworthiness (Gomez-Mejia, Nunez-Nickel, & Gutierrez, 2001; Lewis & Weigert, 1985). However, under the cognitive character-based trust approach we adopt, the threat of blind or unconditional trust is less of a concern because underlying our focal intrateam trust perceptions, even in case they are very high, is information about trustworthiness and cognitive insights into each other’s character (Colquitt et al., 2007;

Schoorman et al., 2007). Hence, the danger of high intrateam trust perceptions being unwise and exceeding one another's trustworthiness is significantly reduced as these perceptions are based on knowledge rather than emotions (Lewis & Weigert, 1985). In contrast to this curvilinear view, the second view pertains more to our cognitive character-based approach of trust and suggests that rigidities already develop when trust perceptions are low and accumulate in parallel to their positive effects (e.g., Thorgren & Wincent, 2011). While dysfunctional in most settings, such trust-related rigidities represent a particularly important threat in entrepreneurial settings such as ours, characterized by dynamism and a continued need for creative change (Thorgren & Wincent, 2011). Therefore, based on this notion of trust-related rigidities, we will propose that once communication quality is accounted for, the remaining direct effect of entrepreneurs' intrateam trust perceptions on the angels' performance assessments will be negative. Yet, for the angel investors themselves, we expect the direct effect to remain positive. We explain both effects in detail in the following.

Based on an impressive body of prior research (e.g., Colquitt et al., 2007; Dirks & Ferrin, 2001), we have argued that as entrepreneurs' intrateam trust perceptions increase, they will be more inclined to openly share sensitive information with the angel investor, which in turn should positively affect angels' performance assessments. While this engagement in behaviors that make them vulnerable to the angel likely represents trust's most proximal behavioral expression (Langfred, 2007; Mayer et al., 1995), increasing intrateam trust perceptions may also have a parallel dysfunctional effect by locking entrepreneurs into a pattern of expected behaviors (Thorgren & Wincent, 2011; Zahra et al., 2006). To further clarify these rigidities in the entrepreneurs' decision making, the trust literature can be complemented with insights from the impression management literature. Given that a trusting relationship offers entrepreneurs more favorable prospects of continued investor support, they have an incentive to actively "manage" the degree of trust in their relationship with the angel so as to optimize their welfare and the prospects of their venture (Maxwell & Lévesque, *in press*). With regard to impression management, scholars have pointed to the importance of defensive techniques aimed at protecting what are perceived to be favorable social impressions and conditions (Arndt & Bigelow, 2000; Yuan & Woodman, 2010). Specifically, with increasing intrateam trust perceptions, entrepreneurs will have greater incentive to protect what they consider to be a trusting bond and thus to avoid putting the established trust at risk (Thorgren & Wincent, 2011; Yuan & Woodman, 2010). A key defensive technique entrepreneurs can use to maintain what they perceive to be a trusting relationship concerns the predictability and consistency of their behavior, with this "knowing what to expect" underlying the trustor's willingness to be vulnerable (Butler, 1991; Whitener, Brodt, Korsgaard, & Werner, 1998). Hence, increasing intrateam trust perceptions may encourage entrepreneurs to stick to accepted patterns of behavior and make them less willing to adopt rock-the-boat, deviating actions that may potentially lead the angel investor to question the set of principles guiding their behavior (Mayer et al., 1995; Yuan & Woodman, 2010; Zahra et al., 2006). This echoes the arguments of Tsai, Chi, Grandey, and Fung (2012) who indicate that members experiencing high intrateam trust tend to focus on maintaining group norms and traditions and avoid challenging the status quo in order not to jeopardize the established trust. Ultimately, these trust-based rigidities in decision making should negatively affect venture performance assessments as it is precisely the entrepreneurs' readiness and eagerness to continuously experiment and engage in innovative, deviating actions that allow

for the survival and growth of entrepreneurial ventures (Baker & Nelson, 2005; Baum & Bird, 2010).

In relation to the two intermingled components of intrateam trust perceptions (i.e., one's trust and sense of being trusted), we would expect the entrepreneurs' sense of being trusted to be the main driver of these rigidities. This is because individuals who feel trusted "recognize that the trust invested in them *binds their behavior* . . . in a manner that does not violate the expectations of the trusting party" (Deutsch Salamon & Robinson, 2008: 595, emphasis added). While this process may be beneficial in some respects, it may at times also hinder entrepreneurs in their behaviors and decision making. To summarize, whereas prior literature indicates that open information sharing likely represents the main (positive) mechanism linking entrepreneurs' intrateam trust perceptions to angels' performance assessments, trust-related rigidities may be developing simultaneously in the entrepreneurs' decision making. For this reason, we propose that once we account for the mediating role of communication quality, increasing intrateam trust perceptions of entrepreneurs will negatively affect the angels' performance assessments by locking entrepreneurs into a rigid pattern of behaviors with fewer of the decisions and actions this dynamic innovation-driven setting requires. Therefore:

*Hypothesis 5:* Once we account for the mediating role of communication quality, entrepreneurs' intrateam trust perceptions will have a negative association with angel investors' assessments of venture performance.

With regard to the link between angels' own intrateam trust perceptions and their assessments of venture performance, high-quality value-adding communications represents only one of the mechanisms positively influencing performance assessments alongside a more positive attitude toward the entrepreneur (Dirks & Ferrin, 2001, 2002). Indeed, in addition to performance-relevant behaviors, the subjective cognitive evaluation process on the part of the evaluating angel investor represents a second component of their performance assessments (De Clercq & Sapienza, 2006; Ferris et al., 2008; Levy & Williams, 2004). In the uncertain and often ambiguous entrepreneurial setting, angel investors need to perform several cognitive evaluation tasks, such as attention to, interpretation of, and recollection of performance-relevant factors, which are susceptible to attitudinal influences (Feldman, 1981; Ferris et al., 2008). Given that angels' intrateam trust perceptions capture to what extent they view the entrepreneur as having high moral standards and the sincere intent of behaving in a cooperative manner (Mayer et al., 1995), these perceptions likely shape their attitude in the evaluation process.

Specifically, research has shown that when evaluators expect positive behaviors, as they do with trusted individuals, they tend to notice and recall such positive behaviors more than they do unexpected negative behaviors (Feldman, 1981; Judge & Ferris, 1993). In other words, evaluators generally seek to confirm their expectations and impressions when attending to and recollecting information. Moreover, intrateam trust perceptions offer the angel a positive perspective from which to interpret the entrepreneur's often ambiguous decisions and actions (Dirks & Ferrin, 2001; Peterson & Behfar, 2003; Simons & Peterson, 2000), thereby further boosting up their performance assessments. In the words of Dirks and Ferrin (2001: 459), the

same actions and results will thus be “interpreted and reacted to differently, depending upon the level of trust one has in the other party.” Besides these positive attitudinal implications of the angels’ trust in the entrepreneur, their own sense of being trusted may further enhance their attitude during evaluations as it likely leads to greater satisfaction and a more positive mood (Deutsch Salamon & Robinson, 2008; Kickul, Gundry, & Posig, 2005). The described attitudinal processes may, for instance, make angel investors with high intrateam trust perceptions more inclined to attribute setbacks to external contingencies rather than to the actual functioning of the entrepreneur and his venture, thereby leading to a lowering of their performance aspirations and standards instead of their actual performance assessments (Patzelt & Shepherd, 2008; Sundaramurthy & Lewis, 2003). Due to this attitudinal element in the angel investors’ evaluation process, we propose that even after accounting for communication quality, the effect of angels’ intrateam trust perceptions on their performance assessments will remain positive. Hence:

*Hypothesis 6:* Once we account for the mediating role of communication quality, angel investors’ intrateam trust perceptions will have a positive association with their assessments of venture performance.

## Method

### *Sample and Data Collection*

The data reported in this study are part of a larger study on angel investor–entrepreneur relationship dynamics. Data were gathered in two locations, Continental Europe (Belgium) and the United States (California). For the Belgian sample, 20 different data sources were used, including a random directory of start-ups, deal lists of angel networks, GEM data, directories of high-technology companies, media articles, incubators, and snowballing. In this manner, a list of 305 Belgian potential angel-backed companies was constructed. These companies were contacted by telephone during the summer of 2007 to identify whether they fulfilled the conditions of the research. These conditions were (1) at least one angel investor was a member of the board of directors or actively involved in strategic decision making in their portfolio company and (2) the company received angel financing between January 2003 and August 2006. The latter condition was imposed to avoid recall and survival bias. This resulted in 64 (potentially) eligible companies. For the Californian sample, a list of 1,265 Californian potential angel-backed companies was put together based on data sources such as Zephyr, VentureXpert, Growthink, and the members’ or participants’ lists from the Angel Capital Association, C21 BioVentures, and the California Clean Tech Open competition. Having asked them through e-mail whether they fulfilled the research conditions, this resulted in 588 (potentially) eligible companies. This includes companies that we were not able to contact and hence whose angel-backed nature could not be verified.

When parties agreed to participate, questionnaires were e-mailed either directly to the concerned individuals or, in some cases, through the CEO when the angel investor preferred to remain anonymous. This method of distributing surveys is consistent with previous research (e.g., Simons, Pelled, & Smith, 1999; Srivastava, Bartol, & Locke, 2006). A final

sample was obtained of 28 Belgian and 26 Californian ventures, or 54 cases in total from which responses were used from both the lead investor and entrepreneur.

Differences in Belgian and Californian response rates could be due to differences in data sources used in that sources used for the Californian sample are more likely to include larger and older angel-backed companies who may not have fulfilled the research conditions (e.g., given that Californian angel networks are older than their Belgian counterparts, deal lists are more likely to include deals outside of the targeted time frame for this study). Regardless, we believe that combining the two subsamples into one is warranted for the following reasons. First, research on angel investors has revealed a remarkable consistency across countries in terms of the typical demographic angel profile; angel investors tend to be middle-aged men (45 to 65 years old) who are well educated and have entrepreneurial experience (Mason, 2006). In the Belgian and Californian subsamples, the average angel investor is male (no females vs. one, respectively), middle-aged (48 vs. 55 years old), well educated (university degree in both subsamples), and with entrepreneurial experience (11 years of entrepreneurial experience in both subsamples and four companies founded vs. two, respectively). Of these characteristics, only the difference in age was statistically significant ( $p < .01$ ). While this may influence the angel's performance assessments, the latter is not significantly different between the two subsamples (average score of three in both). In line with previous research, this supports the contention that angel investors in the Belgian and Californian subsamples are similar in terms of their demographic profiles.

Second, and most directly related to the topic at hand, some recent studies have shown that institutional differences in terms of investor protection may affect the use and effectiveness of angel investor governance mechanisms (e.g., Bruton et al., 2010; Chahine, Filatotchev, & Wright, 2007). These studies mainly build on the notion that there may be differences across countries in terms of angel investors' involvement. Whereas some differences between Belgium and the United States with regard to level of investor protection exist (e.g., World Bank Investor Protection Index: score Belgium = 7, score United States = 8.3; World Bank, 2011), differences in terms of angel involvement in our sample should be limited given the research criteria that demanded angel investors to be actively involved either way. This is further corroborated by the nonsignificance of the difference in communication frequency between angel investors and entrepreneurs (as reported by both parties, average score in Belgium = 25, average score in California = 24). Additionally, angel investors were asked to indicate the roles they fulfill in their portfolio companies, which could be providing advice, business and market intelligence, hands-on assistance, networking, or coaching. Again, no significant differences were uncovered; in both subsamples angel investors spend most of their time on providing advice (41% vs. 37%) and coaching (21% vs. 23%). A final indication that their approach to their relationship with entrepreneurs is similar in both subsamples is reflected by the lack of significance regarding differences in aspired times to exit: In line with previous angel research, in both subsamples angel investors want to exit between 5 to 7 years after investment. Taken together, this evidence suggests that angel investors in the Californian and Belgian subsamples do not differ substantially in terms of demographic profile and approach to their post-investment relationship with the entrepreneur. Therefore, we believe that combining these two subsamples into a larger one is warranted.

## Variables

*Dependent variable.* The angel investor's assessment of venture performance was evaluated by using the multi-criterion measure based on Sapienza and Gupta (1994). First, angel investors were asked to indicate the importance of six financial (e.g., "market share," "gross margin") and five nonfinancial (e.g., "new product development") subdimensions of overall performance by allocating 200 points (100 across financial subdimensions, 100 across nonfinancial ones). Second, they were asked how satisfied they were with the current performance of the venture on each of these 11 criteria on a scale from 1 (*not at all satisfied*) to 5 (*extremely satisfied*). For each criterion, a weighted score was calculated based on their importance and satisfaction. These weighted scores were then summed across all financial and nonfinancial criteria, respectively, and divided by 100. Investors were also asked how much emphasis should be given to financial and nonfinancial goals (percentage). Using the percentages as weights, the two previous sums were then added together resulting in a weighted-average, multi-criterion performance measure (range 1-5).<sup>3</sup> The mean value was 3.16 ( $SD = 0.88$ ).

As such, this measure takes into account two aspects that are crucial to creating a valid performance measure for angel-backed companies. First, it acknowledges the existence of heterogeneity in the angel investor population (Mason, 2006) in that angel investors may substantially differ in terms of their individual preferences or goal priorities. Assume we have a company that excels only in new product development. If one were to ask two angel investors, a former engineer and a former financial manager, to assess this particular venture in terms of new product development, both may in fact give it a high score while this may not necessarily convey how they subjectively think of that particular venture. If the ex-financial manager prefers companies that perform well in terms of cash flow, he may in fact not think too highly of this particular portfolio company even though objectively it does indeed perform well on the criterion assessed. For our purposes, it is important that the performance measure reflects investors' subjective performance assessment and thus their own individual preferences as that will determine whether or not they decide to continue the investment. Second, not all companies are created equal; whereas for biotech companies performance in terms of new product development is crucial, this is much less so for communication services companies. The same may hold for younger versus older companies. Our measure allows investors to make this distinction by giving them the opportunity to assign different weights to different subdimensions. As such, we believe this measure is well suited to our research purposes in addition to being valid.

*Independent variables.* Intrateam trust perceptions were measured using four items based on the scale of Simons and Peterson (2000), which is in line with our cognitive character-based approach of trust (Colquitt et al., 2007; Dirks & Ferrin, 2002). Both entrepreneurs and angel investors were asked, for instance, to what extent they had counted on each other to fully live up to their word and had been certain they could trust each other on a scale from 1 (*never*) to 9 (*always*). The mean value for the entrepreneurs' perceived intrateam trust was 7.54 ( $SD = 1.65$ ) and 7.96 ( $SD = 1.03$ ) for the angel investors' perceived intrateam trust. Both Cronbach's alpha values indicated good reliability (0.94 and 0.77, respectively). As



opposed to most previous studies on intrateam trust, the entrepreneurs' and investors' intrateam trust perceptions are not aggregated to the team level because that would preclude the possibility of examining whether both partners' perceptions have dissimilar performance implications.

*Mediator.* Communication quality was measured using a scale from Mohr and Spekman (1994). Based on the semantic differential technique, entrepreneurs and angel investors were asked to rate the extent to which information exchanged between them was, among others, timely/untimely, accurate/inaccurate, and complete/incomplete. Items were averaged into an individual score of communication quality. In contrast to the individual trust scores (for which we were interested in subjective perceptions and expected dissimilar performance implications), investors' and entrepreneurs' perceptions of their communication quality were aggregated to the team level. This choice is motivated by the fact that the aggregated measure should reflect a more objective estimate of the actual communication conduct as portrayed by the investor and entrepreneur, reducing the impact of individual perceptions (Simons & Peterson, 2000: 105). Indeed, in our theoretical modeling we distinguished between objective behavioral inputs of performance evaluations and the evaluator's subjective cognitive evaluation process, where communication was argued to represent such a central behavioral input. Further, aggregating entrepreneurs' and angel investors' perceptions of communication quality helps in mitigating common method bias concerns.

To check whether this aggregation was appropriate and meaningful, the intraclass correlation coefficients (ICC[1] and ICC[2]) and within-group agreement index were calculated (James, Demaree, & Wolf, 1984; Klein & Kozlowski, 2000). We used James et al.'s (1984)  $R_{wg(j)}$  index as an estimate of interrater agreement because multiple items were used to measure communication quality. The median (mean)  $R_{wg(j)}$  was 0.94 (0.88), thereby exceeding the threshold level of 0.7. In addition, the ICC(1) was statistically significant (0.33;  $p < .01$ ) and ICC(2) was 0.50. While the results for  $R_{wg(j)}$  and ICC(1) are in keeping with past research involving aggregation, the ICC(2) value is on the low side. As noted by, among others, Bliese (1998) and Klein and Kozlowski (2000), ICC(2) is a function of the ICC(1) value and group size. As the present study relies on two informants, the small group size of two may result in a slightly less reliable mean (i.e., lower ICC[2] value). However, it should be noted that this lower reliability will likely make it more difficult to detect relationships based on average communication quality scores and thus make it more rather than less difficult to find support for our hypotheses (Bliese, 1998). In light of all the evidence and motivation described, we continued to create an aggregate measure of communication quality and proceeded with the analyses based on the aggregate score. The aggregated score was calculated by taking the average of the entrepreneur's and angel investor's communication quality scores. The resulting Cronbach's alpha was excellent (0.92).

*Control variables.* Controls were added for investment stage, industry, and country. Information on stage was gathered during the initial contact (i.e., through telephone or e-mail), while industry information was gathered through the entrepreneur's survey. Because performance assessments may vary depending on the stage of financing (De Clercq & Sapienza, 2006), a dummy variable was included taking the value of one for early stage

angel investments and zero otherwise. Consistent with previous research on angel investments (Mason, 2006), the vast majority (72%) of the investments in our sample were early stage. Industries may also vary in terms of average performance. Two industry dummy variables were added as controls; one dummy variable was added for software (50% of the sample) and one for high-tech manufacturing (17%), which together represented the two most common industries in our sample. Finally, while descriptive statistics indicate few relevant differences between the two country subsamples, we included a dummy variable for the country of data collection (1 = Belgium, 0 = United States) to control for any unobserved differences between the two that may affect the intrateam trust perceptions–performance relationship.<sup>4</sup>

### *Examination of Potential Biases*

*Nonresponse bias.* To test for possible nonresponse bias, respondents and nonrespondents were compared in terms of company age in 2007, age at time of investment, and industry distribution based on *t* tests for the age variables and chi-square tests for the industry distribution. These tests yielded no significant differences between the two groups of Belgian respondents and nonrespondents at the  $p < .05$  level. The Californian respondents and nonrespondents did not significantly differ in terms of company age at time of investment and industry distribution at the  $p < .05$  level, but the ventures of nonrespondents were older at the time of the research project ( $p < .01$ ). The latter is not surprising because this research was targeted toward younger angel investments. Given that angel investors tend to invest in the earlier stages of development (Mason, 2006), older, more mature companies would probably not have fulfilled the second condition of this study and were therefore more likely to not respond to the survey request (note that 547 of the 562 nonrespondents could not be contacted). Finally, we separated early and late respondents in both samples into two groups and performed *t* tests on the responses of each group. These tests indicated that there were no substantial differences (at  $p < .05$ ) between early and late respondents regarding the primary variables of interest. Taken together, this indicates that nonresponse bias should be limited.

*Common method bias.* Podsakoff, Mackenzie, Lee, and Podsakoff (2003) noted that using self-reports may introduce common method bias that threatens the validity of the research findings. We therefore implemented several procedures to minimize method variance. First, data were collected from multiple sources. Only one hypothesized relationship, namely, between the angel investor's intrateam trust perception and his assessment of venture performance, is assessed by a single party. Second, several precautions were taken in designing the questionnaire, including reverse scoring of items, use of variation in wording of items, use of different scaling anchors for the key variables, and guaranteeing absolute anonymity to respondents (Lindell & Whitney, 2001; Podsakoff et al., 2003). Further, all variables were measured using scales that had been previously validated and shown to have good psychometric properties (see aforementioned).

In addition to the design of this study, we performed a confirmatory factor analysis (CFA) to test whether a single factor could account for all the variance in our data (Podsakoff et al., 2003). If common method bias is a significant problem, a single factor model should fit the

data as well as a more complex model. The CFA was based on the individual respondents' ratings ( $N = 108$ ) of the trust and communication quality items (nine in total). The items for the angels' performance assessment were not included in this analysis given that this represents a formative latent construct rather than a reflective one, for which such techniques are less appropriate (MacKenzie, Podsakoff, & Jarvis, 2005; Petter, Straub, & Rai, 2007). Results indicate that the two-factor model had a significantly better fit than the one-factor model (one-factor model: Comparative Fit Index [CFI] = 0.66, Tucker-Lewis Index [TLI] = 0.54, standardized root mean square residual [SRMR] = 0.16, root mean square error of approximation [RMSEA] = 0.31 compared to the two-factor model: CFI = 0.94, TLI = 0.91, SRMR = 0.05, RMSEA = 0.14). The improved fit of the two-factor model was significant as indicated by the chi-square difference of 220.53 ( $p < .001$ ). While these results do not eliminate the threat of common method bias, they do provide evidence that interitem correlations are not solely driven by common method bias. Finally, we also followed a testing procedure suggested by Lindell and Whitney (2001) that aims at partialling out common method effects. As a marker measure, we used communication frequency between the investor and entrepreneur, as it had the smallest positive correlation (.17, not significant) with the angels' performance assessments (Lindell & Whitney, 2001) and a rather weak theoretical link to this assessment for which communication quality matters more than its frequency. The resulting correlations between the intrateam trust perceptions, communication quality, and performance perceptions (the latter only for the investor) controlling for common method variance did not change in terms of significance, thereby indicating that our results should not be significantly distorted by common method bias.<sup>5</sup>

*Reverse causality.* To rule out potential endogeneity issues, we follow previous literature (e.g., Argyres, Bercovitz, & Mayer, 2007; Walter, Kellermanns, & Lechner, 2012) and use instrumental variables for both the angel investor's and entrepreneur's intrateam trust perceptions. Specifically, we use STATA 10.1 to specify a two-stage least squares (2SLS) regression model based on which endogeneity can be examined through the Durbin-Wu-Hausman test. We use the difference in years of management experience and industry experience between the angel investor and entrepreneur as instruments for the angel investor's intrateam trust perception and the difference in years of general management and R&D working experience between both parties as instruments for the entrepreneur's intrateam trust perception. Regarding the relationship between intrateam trust perceptions and the angel's performance assessment,  $F$  and chi-square tests confirmed that the independent variables in question are exogenous (for investor trust perceptions:  $F = 1.801$ ,  $p = .19$ ;  $\chi^2 = 2.001$ ,  $p = .16$ ; for entrepreneur trust perceptions:  $F = 1.224$ ,  $p = .27$ ;  $\chi^2 = 1.373$ ,  $p = .24$ ).<sup>6</sup> As such, their ordinary least squares (OLS) estimates are unbiased and can be reported in the article.

### *Hypotheses Testing*

We employ hierarchical OLS regression analyses to test the hypothesized relationships. In model 1 we regress the dependent variable on the control variables (model 1), followed by

**Table 1**  
**Means, Standard Deviations, and Correlations for Study Variables<sup>a</sup>**

Variables	Mean	SD	1	2	3	4	5	6	7
1. Early stage investment	0.72	0.45	—						
2. High-tech manufacturing industry	0.17	0.38	.28*	—					
3. ICT industry	0.50	0.50	-.12	-.45**	—				
4. Country <sup>b</sup>	0.52	0.50	-.35**	-.27	.07	—			
5. Angel investor's perceived intrateam trust	7.96	1.03	.07	-.26	.09	-.16	<b>.64</b>		
6. Entrepreneur's perceived intrateam trust	7.54	1.65	-.08	-.02	.01	-.28*	.06	<b>.85</b>	
7. Communication quality	4.17	0.64	-.08	-.12	.12	-.18	.36**	.37**	<b>.80</b>
8. Angel investor's venture performance assessment	3.16	0.88	.09	.08	-.21	.03	.31*	-.27*	.32*

<sup>a</sup>Correlations are based on a sample size of 54. Correlations based on variables 1 through 4 should be interpreted with care given that they are dummy variables; values on the diagonal (in bold) represent average variances extracted. ICT = .

<sup>b</sup>Country: 1 = Belgium, 0 = United States.

\* $p < .05$ .

\*\* $p < .01$ .

adding in the independent variables (model 2) and the mediator (model 3). In models 4 and 5, we regress the mediator on the control and independent variables. In testing our mediation hypotheses we follow the recommendation by Preacher and Hayes (2004, 2008) and use formal significance tests of the indirect effect (see also MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). One way to accomplish this would be through a Sobel test (Sobel, 1982), but this test relies on the assumption that the indirect effect is normally distributed. This assumption has been challenged in the statistical literature; not only is the sampling distribution of such a product term rarely normal, it is also often not symmetrical, especially so in small samples (MacKinnon et al., 2002; Preacher & Hayes, 2004; Shrout & Bolger, 2002). To address these problems, Preacher and Hayes (2004) have developed an alternative test involving bootstrapping. This is a nonparametric approach for assigning measures of accuracy to statistical estimates and it produces a mediation test that is not based on large-sample theory (Preacher & Hayes, 2004). Bootstrapping is accomplished by taking a large number of samples (in our study, 5,000) with replacement from the data to create a distribution from which the standard errors used in the calculation of the  $p$  values and confidence intervals for the indirect effect are derived. As such, it is generally recommended for testing indirect effects (Preacher & Hayes, 2004; Shrout & Bolger, 2002). Specifically, we used the INDIRECT syntax developed by Preacher and Hayes (2008) as it allows for testing simple mediation using bootstrapping while simultaneously controlling for covariates.

## Results

### *Descriptive Statistics*

Table 1 provides an overview of the means, standard deviations, average variance extracted (AVE), and correlations between all variables included in the hypothesized models. The square root of the AVE of each latent construct is significantly higher than the correlation

of that particular construct with the other constructs in the model, thereby supporting discriminant validity. Further, while we find a statistically significant and positive correlation between angel performance assessments and the angel investor's perceived intrateam trust, the correlation between these performance assessments and the entrepreneurs' perceived intrateam trust is negative and significant. Further noteworthy is that the correlation between both parties' intrateam trust perceptions is trivial. Communication quality is significantly and positively correlated with the angel investor's performance assessments and with both intrateam trust perceptions. Variance inflation factors corroborate the limited threat of multicollinearity; maximum (mean) values vary between 1.38 and 1.54 (1.25 and 1.34).

### *Hypotheses Testing*

The results of the regression analyses are reported in Table 2. According to Hypotheses 1 and 2, the entrepreneur's perceived intrateam trust (Hypothesis 1) and the angel investor's perceived intrateam trust (Hypothesis 2) were expected to have a positive effect on the angel's performance assessments above and beyond the impact of the control variables. Adding the trust predictors made a significant contribution to the control model, namely, model 1 ( $\Delta R^2 = .19, p < .01$ ). While model 2 reveals a positive and statistically significant effect for the angel investor's perceived intrateam trust ( $p < .01$ ), the effect for the entrepreneur's perceived intrateam trust—albeit significant ( $p < .01$ )—is negative. This thus provides support for Hypothesis 2, but not for Hypothesis 1.

Having established that there is a relationship to be mediated, we can then proceed to the next step of testing whether the predictor variables, namely, the entrepreneur's and angel investor's intrateam trust perceptions, are related to the mediator, namely, communication quality. The last column in Table 2 (model 5) shows that both trust perceptions were predictive of communication quality ( $p < .05$ ). Given the positive sign on both coefficients, this provides support for both Hypotheses 3a and 4a.

Model 3 reveals that adding communication quality provides a statistically significant improvement over and above model 2 ( $\Delta R^2 = .141, p < .01$ ). Controlling for the predictors, communication quality has a positive and statistically significant effect ( $p < .001$ ) on the angel investor's performance assessment. Furthermore, the bootstrap analyses reveal, with 95% confidence, that the indirect effect of the entrepreneur's intrateam trust perception on angel performance assessment through communication quality was significant, with a point estimate of .075 and a 95% bias-corrected and accelerated bootstrap confidence interval of .008 to .195. These results support both Hypotheses 3b and 5 in that communication quality acts as a (partial) mediator of the relationship between the entrepreneur's perceived intrateam trust and the angel investor's performance assessment (Hypothesis 3b) and in that after controlling for communication quality's positive mediating effect, the entrepreneur's perceived intrateam trust still has a negative remaining or direct effect (Hypothesis 5). This pattern of results would suggest communication quality acting as an inconsistent mediator (also referred to as suppression); the direct and indirect effects are opposite in sign, and communication quality increases the predictive validity of the entrepreneur's perceived intrateam trust (MacKinnon, Krull, & Lockwood, 2000). The term *inconsistent mediation*

**Table 2**  
**Hierarchical Multiple Regression Analyses Involving Entrepreneur's and**  
**Angel Investor's Intrateam Trust Perceptions and Angel Investor's Venture**  
**Performance Assessment<sup>a</sup>**

	Angel Investor's Venture Performance Assessment			Communication Quality	
	1	2	3	4	5
Control variables					
Early stage investment	.197 (.268)	.030 (.247)	.112 (.227)	-.179 (.204)	-.134 (.190)
High-tech manufacturing industry	-.061 (.424)	.221 (.372)	.197 (.328)	-.206 (.265)	.038 (.301)
ICT industry	-.377 (.264)	-.359 (.231)	-.423 (.224)	.080 (.202)	.106 (.175)
Country	.134 (.266)	.111 (.263)	.163 (.238)	-.327 (.184)	-.086 (.192)
Independent variables					
Angel investor's perceived intrateam trust		.328** (.113)	.201* (.098)		.208* (.095)
Entrepreneur's perceived intrateam trust		-.144** (.053)	-.219*** (.044)		.123* (.060)
Mediating variable					
Communication quality			.608*** (.129)		
<i>F</i> value	0.64	4.70***	14.66***	1.02	2.95*
<i>R</i> <sup>2</sup>	.055	.247	.388	.078	.266
$\Delta R^2$		.192**	.141**		.188**

<sup>a</sup>Reported regression coefficients are unstandardized with robust standard errors reported in parentheses. These results are based on ordinary least squares regression models ( $N = 54$ ). All tests are two-tailed. ICT = .

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

mainly serves to emphasize the untypical pattern of mediation as a typical mediation model would lead one to expect a relationship between the entrepreneur's intrateam trust perception and the angel's performance assessment that would diminish in magnitude as well as one for which the direct and mediated relationships have the same sign. However, when direct and indirect effects are opposite in sign—as is the case here—the relationship between the dependent and independent variable may actually increase rather than diminish when controlling for the mediator (MacKinnon et al., 2000).

With regard to the angel investor's perceived intrateam trust, the bootstrap analyses reveal, with 95% confidence, that the indirect effect of the angel investor's intrateam trust perception on his performance assessment through communication quality was significant, with a point estimate of .127 and a 95% bias-corrected and accelerated bootstrap confidence interval of .015 to .274. Thus, communication quality (partially) mediates the association between the angel investor's perceived intrateam trust and performance assessments, thereby providing support to Hypothesis 4b. As the remaining effect of the angel investor's perceived intrateam trust is positive, we also find support for Hypothesis 6.



### *Additional Analysis*

Whereas in this study we follow scholars who argue for positive and negative trust-related effects occurring in parallel, others have argued that the effect of trust is contingent upon its level (e.g., Gargiulo & Ertug, 2006). To test for this alternative view implying an inverted U-shaped relationship, we reran hypothesized models including quadratic effects for both the investor's and entrepreneur's intrateam trust perceptions. Neither were, however, statistically significant in any of the models nor did they improve model fit. Hence, our evidence does not support a curvilinear relationship between intrateam trust perceptions and performance assessments. However, we must note that intrateam trust perceptions in our sample were very high, which may have obscured curvilinear relationships.

## **Discussion and Conclusions**

### *Main Findings and Academic Contributions*

The empirical findings of this study offer interesting insights into the role of trust in the entrepreneur–angel investor relationship. Results support the idea that intrateam trust perceptions enhance the quality of communications between entrepreneurs and angel investors, which in turn leads to improved venture performance as evaluated by the angel. Our findings also corroborate the view that the remaining effect on angels' performance assessment after controlling for communication quality is positive for the angels' own intrateam trust perceptions and negative for the entrepreneurs' intrateam trust perceptions. However, contrary to our expectations, we find that the negative effect of the entrepreneurs' intrateam trust perceptions actually outweighs its positive influence via communication quality. This suggests that having the perception of being in a strong trusting relationship may lead to an emphasis on maintaining trust and lock decision makers into a pattern of expected behaviors, which—at least in dynamic and innovation-driven settings—appears to dominate more traditional trust-based communication advantages.

Our work contributes to the organizational literature on trust as well as the entrepreneurship literature in several ways. To begin with, this study offers the first empirical demonstration of dysfunctional trust-related effects occurring in parallel to, and even dominating, functional effects. Whereas prior organizational trust research mainly highlighted its benefits (Dirks & Ferrin, 2001), scholars have recently started to explore how trust-based rigidities may develop and potentially harm firm performance, especially so in entrepreneurial settings characterized by a continuous need for innovativeness and change (Thorgren & Wincent, 2011; Zahra et al., 2006). Our study's findings reveal that in entrepreneur–angel investor partnerships, the entrepreneurs' intrateam trust perceptions may indeed negatively impact angel investors' assessment of venture performance, and this in spite of significant trust-based communication advantages. While we can only speculate at this point in time, a possible reason for the (unexpected) dominant negative effect of entrepreneurs' intrateam trust perceptions may be the high levels of intrateam trust perceptions reported in this study. While we argued that negative effects already develop at low levels of entrepreneurs' intrateam trust perceptions, the strength

of these effects may differ depending on the level of perceived intrateam trust under consideration. In other words, it may be that at lower levels of perceived intrateam trust its positive effect through improved communication still dominates its negative effect through more rigid decision making. More research is however needed to confirm this conjecture. Regardless, our finding has important implications for research in that it reveals the need for greater awareness of, and further inquiry into, the risks involved in developing and, perhaps even more so, in maintaining strong trusting bonds among exchange partners. Our results thus point to some of the limits of trust as an organizing principle and encourage future research to adopt a more nuanced view of trust and its related constructs, acknowledging that serious dysfunctional effects may occur in parallel to traditional benefits.

A second contribution is the inclusion of both the entrepreneurs' and the angel investors' intrateam trust perceptions and our modeling of divergent outcome implications. In most prior research, trust perceptions have been measured from only one side of dyadic relationships or have been averaged across team members (Dirks & Ferrin, 2001; Fulmer & Gelfand, 2012; Schoorman et al., 2007), based on the implicit assumption that these trust perceptions are symmetric and their effects largely equivalent. Our results demonstrate a trivial correlation between entrepreneurs' and angels' intrateam trust perceptions and, more importantly, significant differences in their outcomes. This article outlined key similarities and differences in the theoretical mechanisms linking angels' own intrateam trust perceptions versus entrepreneurs' intrateam trust perceptions, respectively, on the one hand and assessments of venture performance by angels on the other. We explained how both intrateam trust perceptions may enhance angels' performance assessments via improved communications. Yet our study also clarified why the remaining effects after accounting for communication quality are likely different for the angels' intrateam trust perceptions (more positive attitude toward the entrepreneur) and those of the entrepreneurs (rigidities in decision making). Overall, our research highlights the value of considering trust perceptions of both parties in a relationship and advances thinking about possible divergent implications of these trust perceptions.

Our study also contributes to the entrepreneurship literature dealing with the role of social elements during the investment process of entrepreneurial ventures (e.g., De Clercq & Sapienza, 2005, 2006; Maxwell & Lévesque, in press; Shane & Cable, 2002). How investors evaluate post-investment performance of their portfolio companies influences their willingness to reinvest (De Clercq & Sapienza, 2006), which is central to these ventures' continued success and survival. In comparison to the more widely researched venture capitalists, angel investors typically build stronger relational partnerships with the entrepreneur (De Clercq et al., 2006; Fairchild, 2011), making a study on trust-related effects on performance assessments particularly relevant for this setting. By providing evidence of the angels' and entrepreneurs' perceived intrateam trust positively and negatively, respectively, affecting angels' performance assessments, our study further clarifies the important role the social context plays in how these investors evaluate their portfolio ventures.

### *Limitations, Suggestions for Future Research, and Practical Implications*

This study is not without its limitations, which provide opportunities for future research. First, the performance measure used was self-reported by the angel investor and may hence

be critiqued for not being a good or relevant performance measure. However, as was argued by De Clercq and Sapienza (2006), examining perceived rather than actual portfolio company performance provides a unique insight into how investors evaluate their portfolio companies and what factors impact this evaluation process. Further, more “objective” performance measures, such as sales and profit, do not necessarily provide a more reliable view of the venture’s performance given the high proportion of early stage companies in our sample. As such, we believe that our use of the angel investor’s perceived performance as a relevant outcome is warranted. One may further critique our measure for being a composite performance measure and hence for not providing a more detailed insight into its different components. Post hoc analyses would suggest that the hypothesized relationships may indeed differ for, for instance, financial versus nonfinancial performance. While valuable and worthy of future research, further exploring these differences was beyond the scope of our article.

Second, one may also criticize the small sample size. Entrepreneurial finance research has generally adopted an exclusive investor or entrepreneur perspective, something that has also been mentioned as a limitation of the respective studies (Lockett, Ucbasaran, & Butler, 2006). Retrieving data from both sides is a difficult task to achieve, with either investor or entrepreneur often refusing to ask their partner to participate in the research (see e.g., Higashide & Birley, 2002). In our setting, this task was even more complex to achieve given the sensitive nature of the topic under examination. Thus, while our sample size of 54 may seem small compared to those used in non-survey-based entrepreneurial finance studies (e.g., Bruton et al., 2010) or in studies based on only one key respondent (e.g., De Clercq & Sapienza, 2006; Freear, Sohl, & Wetzell, 2002), it compares well to those few studies that rely on matched pairs (e.g., Mason & Harrison, 1996; Sapienza & Gupta, 1994). Additionally, samples of this magnitude are not exceptional in studies on sensitive team dynamics such as trust (see e.g., Mach, Dolan, & Tzafrir, 2010; Peterson & Behfar, 2003). However, a potential concern exists that a lack of power somehow compromised our findings. Additional analyses indicate that the statistical power achieved at each step in our models (i.e., adding the perceived intrateam trust variables or communication quality) varied between .88 and .90 (Borenstein, Rothstein, & Cohen, 2011), indicating adequate power (Cohen, Cohen, West, & Aiken, 2009). Nonetheless, we invite future research based on larger sample sizes to corroborate our findings.

In addition to addressing the aforementioned limitations, many challenges remain for future research. First, in this study we adopted a cognitive character-based approach of trust, with most of our arguments grounded in this cognitive perspective. Scholars are encouraged to examine the role of other forms of trust, such as affective trust, in the entrepreneur–angel relationship and to further clarify the processes by which these operate. Second, future research needs to examine how the observed detrimental effects of entrepreneurs’ intrateam trust perceptions can be mitigated while maintaining its parallel positive effects on communication quality. Scholars may, for instance, explore to what extent the presence of task conflicts between angels and entrepreneurs, or the use of dialectical techniques, moderates the relationship between entrepreneurs’ intrateam trust perceptions and performance outcomes. Third, this study examined intrateam trust perceptions, which essentially represent a combination of one’s trust and sense of being trusted, and did not allow for disentangling these components. While the relationship between feeling trusted and trust is often assumed to be reciprocal (e.g., Simons & Peterson, 2000), and this construct of intrateam trust perceptions offers

valuable insight into the effects of how partners experience the quality of their interpersonal relationship, more work is needed to clarify the actual interplay between one's trust and sense of being trusted and also to test whether these two components possibly have divergent outcome implications. Fourth, while we measured intrateam trust perceptions at one point in time, a longitudinal approach would provide valuable insight into how trust-related effects may change over time and how asymmetries in intrateam trust perceptions evolve. Finally, it would be interesting to explore if and how the empirical results of this study could be transferred to team processes and relationships in other settings such as, for instance, the entrepreneur–venture capitalist dyad or interorganizational innovation partnerships.

Despite its limitations, this article has several practical implications. First, it is important that both entrepreneurs and investors become aware of the potential dangers associated with higher entrepreneurs' perceptions of investor–entrepreneur trust; despite the fact that this may cause entrepreneurs to feel more incentivized to share sensitive information with their investors, they need to realize that it may also cause entrepreneurs to tread too cautiously in dealing with their angel investor. So, while building a trusting investor–entrepreneur relationship is crucial in the pre-investment stages to ensure funding (e.g., Harrison et al., 1997; Maxwell & Lévesque, in press), post-investment entrepreneurs perceiving their partnership with their angels as a highly trusting one should be careful in not trying to conserve what they consider to be a high-trusting relationship at all cost, for instance by avoiding experimentation. Similarly, angel investors should pay close attention to signals of such behavior. Building in mechanisms early on to avoid such entrepreneurial behavior may be valuable. One such mechanism may be to ask angel investors to explicitly take on the role of resident devil's advocate; by agreeing upfront that it is the investor's job to probe the entrepreneur when strategic choices and decisions need to be taken, they may be able to create an environment where debate is welcomed. Not only will such an environment avoid entrepreneurs feeling intimidated by the investors' probing (Collewaert, 2012), it may also stimulate more divergent and creative thinking on the entrepreneurs' part, thereby reducing the likelihood of entrepreneurs getting stuck in rigid decision-making patterns.

Second, entrepreneurs and investors may learn more about the crucial role of communication. While exchanging timely and complete information and advice is often seen as a nuisance—generally more so to entrepreneurs than investors—our study indicates clear advantages of doing so with regard to investors more positively assessing the portfolio venture's performance. Hence, putting in the time and effort to craft a communication process that provides timely, accurate, adequate, complete, and credible information to both entrepreneurs and investors is worthwhile, especially so for entrepreneurs given the importance of angels' performance assessments for their willingness to reinvest in their portfolio companies. Taken together, this study provides important insights for both angel investors and entrepreneurs as to how to deal with each other once the investment has been made.

### *Concluding Note*

Trust between entrepreneurs and their investors has often been suggested to be key to their cooperation and the success of their partnership. The present study offers a more nuanced view by pointing to both functional and dysfunctional outcomes of these parties' intrateam trust

perceptions. Specifically, our results suggest that angel investors' intrateam trust perceptions positively affect their venture performance assessments, while entrepreneurs' intrateam trust perceptions negatively affect angels' assessments of venture performance. This study thus suggests that a trusting bond may have both bright and dark sides in an entrepreneurial finance setting and underlines the value of modeling and measuring trust perceptions individually. We hope this article encourages further study on trust-related functions and dysfunctions, particularly in entrepreneurial and other dynamic settings.

## Notes

1. As indicated, our conceptualization of intrateam trust perceptions incorporates the two intermingled elements of trust and feeling trusted. Apart some exceptions (e.g., Deutsch Salamon & Robinson, 2008), the extant trust literature deals almost exclusively with the outcomes of trust (rather than outcomes of feeling trusted) and well-established insights from this trust literature figure prominently in our explanations of the effects of intrateam trust perceptions. However, we already note here that in our theoretical argumentation for possible negative outcomes of entrepreneurs' intrateam trust perceptions, the sense of being trusted or feeling trusted component would appear more influential; it is over here that we will complement the extant trust literature with insights from the impression management literature. Yet, as our interest is in understanding the outcomes of the intrateam trust perceptions construct, and we only measure this construct, our hypotheses will not distinguish between the components of trust and feeling trusted.

2. As suggested by an anonymous referee, attitudinal aspects of entrepreneurs' intrateam trust perceptions also have a potential impact on angels' performance assessments via the observable behavioral manifestations of these attitudes. Indeed, it is worthy of note here that trust is essentially an attitudinal variable (Dirks & Ferrin, 2002) and that the entrepreneurs' intra-individual attitudinal processes thus also play a role. Yet, given that it will ultimately be the observable performance-relevant behaviors of entrepreneurs that affect angels' performance assessments, we focus on these for reasons of parsimony.

3. There is one difference between the measure we use compared to the one reported in Sapienza and Gupta (1994). In the latter, angel investors were also asked to explicitly rate their satisfaction with the overall performance of the venture on a scale from 1 (*not at all*) to 5 (*extremely*). We were able to gather this information in the U.S. sample only. As an additional check, we constructed an additional performance measure identical to the one used in Sapienza and Gupta by averaging the overall performance item with our venture performance score. The resulting correlation coefficient with the latter is .97 ( $p < .001$ ), indicating that our measure of perceived venture performance highly resembles the one used in Sapienza and Gupta.

4. We also reran all analyses including interaction effects for all hypothesized variables with the country dummy; none of these interaction effects were significant and results remained robust.

5. Additionally, potential negative affectivity bias was accounted for by rerunning the hypothesized models while controlling for negative affect; results remain qualitatively the same. However, this additional check was based on Belgian data only because the scale for negative affect was only included in the questionnaire sent to the Belgian companies due to space restrictions in the U.S. questionnaire.

6. We thank an anonymous referee for this suggestion. The difference variables refer to absolute values. As an additional check, we ran similar analyses for the relationship between both intrateam trust perceptions and communication quality. We also ran an analysis where we additionally instrumented communication quality by the directional difference in years of R&D working experience. For both analyses, results from the Durbin-Wu-Hausman test indicated that the instrumented variables (i.e., intrateam trust perceptions and communication quality) are exogenous.

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