Small Bus Econ (2015) 44:737–757
DOI 10.1007/s11187-014-9619-8

Entrepreneurs' negotiation behavior

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Accepted: 17 November 2014 / Published online: 5 December 2014

Abstract This study provides first empirical results on entrepreneurs' negotiation behavior. In a series of negotiation tasks, we compare persuasive behaviors and negotiation outcomes of entrepreneurs and non-entrepreneurs. Our results show that entrepreneurs make extensive use of emotions and arguments as means of persuasion. Due to their assertive behavior, they close fewer deals; however, when they close a deal, they make higher profits than non-entrepreneurs. These results demonstrate the relevance of studying entrepreneurs' interpersonal interactions as determinants of entrepreneurial success and highlight the role expressed emotions and arguments play in this context.

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Keywords Negotiation · Persuasion · Arguments · Emotions · Strategic uncertainty · Stakeholder interaction

JEL Classifications L26 · C70 · C93

1 Introduction

Negotiation is central to entrepreneurship. It is the process in which conflicting parties aim to reach an agreement (Bazerman and Neale 1994) and occurs whenever people cannot achieve their goals without the cooperation of others (Thompson et al. 2010). When founding, running and growing a venture, entrepreneurs constantly need to negotiate. They are obliged to settle agreements with various stakeholders to acquire human and financial resources. The way they interact and communicate determines their outcomes, making negotiation skills inevitable for entrepreneurial success. *How* entrepreneurs negotiate with their stakeholders is thus important for entrepreneurship education and theory.

So far, psychological and sociological approaches to entrepreneurship focus on either the individual or the team as the unit of analysis (Packalen 2007; Ruef 2003). Theories and empirical results on the interpersonal interactions between entrepreneurs and their numerous stakeholders—including research on entrepreneurs' negotiation behavior—are lacking (Sarasvathy and Venkataraman 2011). The only exception to

this is a study by Maxwell and Levesque (2011) who empirically investigate the impact of entrepreneurs' trust building behaviors in initial interactions with business angels. They show that entrepreneurs' trust building has a strong positive influence on the chances of receiving angel funding. Their results demonstrate the value of studying entrepreneurs' interpersonal interactions with stakeholders and suggest that this is fertile ground for further investigation.

In this paper, we investigate entrepreneurs' negotiation behavior by studying their use of persuasive techniques in a series of negotiation tasks and by testing whether entrepreneurs outperform non-entrepreneurs in negotiation situations that are shaped by features characteristic for the entrepreneurial context. To respond to the lack of theories on entrepreneurs' negotiation behavior, we approach these topics by building up on more general theories in both entrepreneurship and negotiation research. Our fundamental assumption is that in order to be successful, entrepreneurs' negotiation strategies have to be adapted to the entrepreneurial context which is shaped by uncertainty, asymmetric information and fast changes in the environment (Aldrich 1999). By studying how successful entrepreneurs negotiate, we aim to identify negotiation behaviors that are effective in this environmental context. Once successful negotiation behaviors are identified, they can be taught to people interested in pursuing an entrepreneurial activity. Such an approach follows the notion of *entrepreneurship as a method* where entrepreneurship is regarded as a set of skills to find, make and realize opportunities (Sarasvathy and Venkataraman 2011).

In this study, we focus on entrepreneurs' use of arguments and expressed emotions as means of persuasion in negotiations. Building up on previous theoretical and empirical research on negotiation, we test the hypotheses that entrepreneurs make extensive use of arguments and expressed emotions to handle the multifaceted problems and conflicts arising from negotiating under uncertainty and asymmetric information. Thereby, we also respond to Cardon et al.'s (2012) call for research exploring the role of emotional expressions in shaping entrepreneurs' interactions with others.

Combining methods from experimental economics and social psychology, we gathered rich data on the negotiation process and the behavior of the negotiating parties. Negotiations were conducted via an online platform where a chat tool enabled live communication. Depending on their performance, participants could earn up to 350 GBP (547 USD). We recorded outcomes, process data and analyzed all messages that were exchanged using content analyses techniques. This detailed analysis allowed us to test in how far behavioral differences mediate differences in negotiation outcomes between entrepreneurs and non-entrepreneurs.

Our study contributes to the entrepreneurship literature in three major ways. First, viewing at stakeholder interactions through the lens of entrepreneurs' negotiation behavior provides unique insights into their interpersonal interactions in situations of conflict and adds to process-oriented research in entrepreneurship. Second, demonstrating that arguments and expressed emotions play an important role in entrepreneurs' negotiations provides suitable starting points for theory development in this domain. We outline opportunities for future research in the discussion section. Third, the use of an innovative research method for studying interpersonal interactions in entrepreneurship provides useful tools for studying the influence of negotiation behaviors as determinants of entrepreneurial success.

In the next section, we briefly characterize the research gap this study addresses. In Sect. 3, we present our theoretical framework and hypotheses. Section 4 describes the methodology followed by the result in Sect. 5, We conclude with a discussion of the results and implications of this study.

2 Entrepreneurs' negotiation behavior: characterizing a research gap

2.1 Negotiation research

So far, negotiation research remains silent about entrepreneurs' behavior and venture creation in general. In fact, comprehensive reviews of the negotiation literature do not even include the words "entrepreneur" or "venture" (e.g., Bazerman et al. 2000; Thompson et al. 2010). The vast majority of negotiation research relies on student subjects. Only a small fraction of it studies professional experts such as sales people and corporate real estate negotiators (e.g., Neale and Northcraft 1986; Herbst et al. 2011). Although these groups outperform novices in

comparable tasks, their outcomes have been found to be influenced by framing and performance constraints, as are those of students (Neale and Northcraft 1986).[1] Whether their negotiation behavior is adapted to their specific professional context has not been studied. Other authors have investigated managers' bargaining strategies in specific cultural contexts, e.g., international business negotiations, or negotiations in Arabic countries (e.g., Harnett et al. 1973; Simintiras and Thomas 1998; Khakhar and Rammal 2013). By comparing strategies that are used in different cultural contexts, these studies aim to identify success factors for international and intercultural negotiations. Neither entrepreneurs as a group of expert negotiators nor negotiations in the entrepreneurial process have been studied so far.

2.2 Entrepreneurship research

Like negotiation research, entrepreneurship research has also widely neglected entrepreneurs' negotiation behavior or treated it like a black box, studying how input factors such as the market type or the entrepreneurs' experience impact on negotiation outcomes (e.g., Rea 1989; Zhang 2011). Other related research examines the influence of costly negotiation (Hellmann and Wasserman 2011) and perspective taking (Ramesh and Sarasvathy 2013—unpublished manuscript) on founder equity splitting. The actual *process* of negotiating and entrepreneurs' behavior in this process has not received much attention (Hellmann and Wasserman 2011; Sarasvathy and Venkataraman 2011).

Maxwell and Levesque's (2011) study on entrepreneurs' trust building behavior is a first important contribution to understanding entrepreneurs' interpersonal interactions with stakeholders. While their study focuses on initial interactions between entrepreneurs and business angels and does not consider negotiation processes, their results demonstrate the centrality of entrepreneurs' interpersonal behaviors for understanding why some entrepreneurs are successful (for instance in attracting funding) while others are not. Furthermore, their methodological approach shows how important the observation and coding of actual interactions of entrepreneurs is for gaining new insights into this topic.

3 Theory and hypotheses

The core assumption of the evolutionary approach to entrepreneurship is that, in order to be successful, entrepreneurs' strategies have to be fit to the environment they are used in (Aldrich 1999). Entrepreneurs' environment, that is the entrepreneurial context, is fundamentally shaped by uncertainty, information asymmetries, and the need to interact with numerous different stakeholders (Knight 1921; Kirzner 1973; Hayek 1945; Bird and Jelinek 1988). Entrepreneurs use information asymmetries, and act upon opportunities others might not recognize to bring together the necessary resources to create a new venture—thereby bearing substantial uncertainty. Evolutionary theory suggests that there are two major mechanisms that lead successful entrepreneurs to be fit to the requirements of this environmental context: selection and adaptation. On the one hand, people with specific characteristics or a specific skill set are more likely to self-select into and succeed in entrepreneurship (self-selection and selection). On the other hand, entrepreneurs learn successful strategies in their job (adaptation). Both mechanisms are assumed to induce differences between entrepreneurs and non-entrepreneurs in behavioral aspects vital for entrepreneurial success.

We build up on this theoretical framework and argue that entrepreneurs' negotiation behavior is one of these vital aspects. Being able to persuade stakeholders to invest into their idea and to buy from them is the sine qua non for starting a business. Capitalizing on entrepreneurial opportunities requires accessing human and financial resources from various stakeholders who need to be won for the venture: the list reaches from investors, partners and employees to suppliers, retailers and customers. Convincing these parties to give resources to a *new* rather than an established venture is particularly challenging because new venture creation is fundamentally shaped by uncertainty and information asymmetries. This regularly causes problems with moral hazard and diverging judgments about the potential value of the venture or

[1] The authors explain this performance gap with experts' greater process expertise and suggest that experts might *not* be immune to framing effects and cognitive biases. Their results do not allow for any conclusions on whether experts might be less susceptible to cognitive biases in their own domain where they are confronted with constraints specific to their profession (Neale and Northcraft 1986, p. 316).

its products and puts heavy duty on entrepreneurs to persuade their stakeholders. Furthermore, unlike business negotiations in large, established companies where negotiations are regularly delegated to lawyers or professional sales people, entrepreneurs typically negotiate their deals themselves and risk their own money.

3.1 Performance under uncertainty and asymmetric information

Uncertainty impacts on negotiation processes and outcomes through its influence on social cognition and perception. It makes negotiators susceptible to a variety of cues that shape their thoughts and behavior, such as emotions or the power relationship between the conflicting parties (Neale and Fragale 2006). The social cognition approach discerns that different negotiators may exhibit different behaviors when faced with the same situation because they perceive the situation differently (Fiske and Taylor 1991). Assuming that entrepreneurs' perception of uncertain situations differs from that of non-entrepreneurs (Simon et al. 2000), their strategies to deal with incomplete information might also differ. Differences in cognitive fit might also underlie entrepreneurs' supposed advantages in exploiting asymmetric information through appropriate strategies (Kirzner 1973). Empirical evidence supports such a relationship showing, for instance, that entrepreneurs categorize business situations more positively and see more opportunities where others only see risky ventures with little potential (Palich and Bagby 1995). Assuming that entrepreneurs' negotiation strategies are adapted to exploiting uncertainty and asymmetric information, we hypothesize that entrepreneurs outperform non-entrepreneurs in negotiations involving incomplete, asymmetric information.

H1 Entrepreneurs outperform non-entrepreneurs in negotiations with incomplete, asymmetric information.

3.2 Performance across changing negotiation situations

As the central figure in their organization, entrepreneurs have to negotiate with numerous stakeholders. Thereby, the role in which they interact with others necessarily varies. Be it negotiating with employees about their employment contracts, forming strategic alliances or bargaining over the price at which they sell their product to a customer, entrepreneurs constantly need to switch perspectives and adjust to different opponents and negotiation situations. Often they need to adapt to a new negotiation context very quickly. An entrepreneur's typical work day might easily involve negotiating with an employee about a pay raise, settling the conditions for a new sales channel, re-negotiating input prices with an existing supplier and bartering over the price at which to sell their service to a potential customer. Dealing with constantly changing negotiation situations requires adaptability. Indeed, Baron and Markman (2003) find that adaptability is positively related to entrepreneurs' profits. Based on the assumption of strategic fitness (Aldrich 1999), we hypothesize that entrepreneurs who frequently need to switch perspectives and to adapt to a new negotiation context outperform non-entrepreneurs across changing negotiation situations.

H2 Entrepreneurs outperform non-entrepreneurs across changing negotiation scenarios.

3.3 Entrepreneurs' negotiation behaviors: persuasion techniques

When negotiating, people engage in a dialog to resolve a conflict. Their interaction during negotiation engenders changes in their goals and the way they perceive the issue. The aim is to produce an agreement or compromise. Typically, negotiators make offers and counteroffers, and try to convince the other party of making concessions until an agreement is reached or until the parties realize that they cannot reach an agreement.

Negotiation behavior refers to the way negotiators act in this process—involving persuasion techniques and their general strategies in the negotiation process. We assume that entrepreneurs' negotiation behaviors differ from those of non-entrepreneurs because the former are adapted to be successful under uncertain, asymmetric information and changing negotiation contexts. Persuasion is the ability to influence others to change their view or behavior and reach personal goals. It is a key competence in the negotiation process. Entrepreneurs need to be particularly skilled in persuading others when important information is not available or risky. The survival of their ventures

depends on their skill to persuade stakeholders, often already at stages of the entrepreneurial process where the future value of the product or service provided is still an unknown. Thus, persuasion techniques are of particular importance for entrepreneurs. Persuasion techniques can appeal either to reason or to emotion.

3.3.1 Arguments

Using arguments as a means of persuasion appeals to reason. The persuader aims to convince the persuadee to shift his or her position by logical argument, empirical evidence or rhetoric. Persuasive arguments substantiate the position of a negotiator and can help to significantly strengthen that person's bargaining power.

Arguments generally have a positive impact on negotiators' outcomes. Negotiators with strong arguments defend their position and are better equipped to fight others' attempts at persuasion. Presenting such arguments can help negotiators limit their own concessions and to claim higher profits.

At the same time, arguments can also have a negative effect on profits (Maaravi et al. 2011). This can occur, for instance, when arguments accompany a first offer because people tend to use the first offer in a negotiation as an anchor, i.e., a salient standard of comparison to which they adjust their claims (Benton et al. 1972; Chertkoff and Conley 1967; Liebert et al. 1968). Maaravi et al. (2011) propose that when negotiators hear arguments for why the anchor is correct, they may think of counter-arguments and diverge from the anchor more extensively than they would do otherwise.

Under uncertainty and asymmetric information, providing "good reasons" for the opponent to make a concession can help reduce the perceived risk that is involved in the transaction. Persuasive arguments can assure stakeholders and build up confidence. For example, entrepreneurs who provide reasons for a salary plan might be able to reduce the employees' perceived risk and enhance trust in the actual reliability of salary payments. Similarly, providing reasons for the pricing of a new product can help to increase perceived adequacy of its price in customers.

Given that entrepreneurs constantly negotiate on the basis of uncertain and asymmetric information, we expect them to make pronounced use of arguments and reasoning. Based on these assumptions, we hypothesize that entrepreneurs use arguments more extensively than non-entrepreneurs do to persuade their opponent and to convince them to make concessions.

H3 In negotiations, entrepreneurs use arguments more extensively than non-entrepreneurs do.

3.3.2 Expressing emotions

Another way of "getting to yes" is appealing to the opponents' emotions.[2] The affect infusion model assumes affect influence cognitive and judgmental processes (Forgas 1995). Positive and negative affects are thus assumed to have important consequences for negotiator strategies and outcomes (Lanzetta 1989). Indeed, researchers find evidence that a positive mood increases negotiation performance and decreases evasive and equivocal communication (Forgas 1998; Forgas and Cromer 2004). Strong emotions might also lead negotiators to act impulsively and to make mistakes (Li and Roloff 2006).

An important interaction between the influence of power and affect also exists: positive and negative affects of high-power negotiators are more influential than those of low-power negotiators (Anderson and Thompson 2004). This might be related to the impact of expressing emotions. Negotiators' expressed emotions influence their opponent and can be used strategically to persuade conflicting parties to make concessions (Li and Roloff 2006). The persuader might strategically express emotions such as aggression, happiness or sadness, to provoke emotional reactions in the persuadee and to pressure him or her to make a concession (Li and Roloff 2006). Anger expressions, for instance, have been shown to produce concessions from negotiators presumably because the angry negotiator signals "toughness" (Sinaceur and Tiedens 2006).

Under uncertainty, people are particularly responsive to emotional cues and cues of power relations that shape their thoughts and behavior (Neale and Fragale 2006). For example, in situations where the relative bargaining power of negotiators is unclear, entrepreneurs who signal "toughness" through aggressive behavior might produce the impression that their

[2] Following Cardon et al. (2012), we use the terms "emotion" and "affect" interchangeably and as a broad label for subjective feelings (Barsade 2002) of pleasure or displeasure (Barrett et al. 2007).

relative bargaining power is higher than that of their opponent. This in turn might help them to claim higher profits. Moreover, positive emotions can be expressed to reduce perceived uncertainty in a negotiation. For instance, entrepreneurs might express positive emotions to evoke trust and sympathy in their opponents and help them settle difficult agreements. On the basis of these assumptions and previous research, we hypothesize that entrepreneurs express emotions more frequently in negotiations than do non-entrepreneurs.

H4 In negotiations, entrepreneurs express emotions more frequently than non-entrepreneurs do.

3.4 Entrepreneurs' negotiation behaviors: strategic uncertainty taking

When negotiators aim to maximize their profits in a distributive negotiation, they will ask for the highest share of the profit that they think their opponent will agree to give up. In this situation, negotiators experience what is called "strategic uncertainty"; that is uncertainty that stems from the interaction with another decision maker. In our example, negotiators experience strategic uncertainty stemming from their ignorance about the lowest profit share their counterpart will accept. The higher the profit share a negotiator claims for herself/himself, the higher the likelihood of making a large profit, but also the higher the likelihood of failing to reach an agreement and making zero profit.

Recent experimental results show that in comparison with non-entrepreneurs, entrepreneurs are more willing to accept strategic uncertainty in a competitive task (Holm et al. 2013). This suggests that they might also cope with more strategic uncertainty in negotiations. Doing so might help entrepreneurs to get "top deals"—only if a negotiator is willing to risk an impasse might he/she be able to claim high profit shares in a distributive negotiation.

Whereas individual attitudes toward strategic uncertainty cannot easily be measured due to the interdependence of decisions and the influence of potentially flawed beliefs about their counterparts' behavior, people's minimum asking level can be viewed as a proxy for their attitude toward strategic uncertainty (Rubinstein 1982; Osborne and Rubinstein 1994). On the basis of Holm et al.'s (2013) results, we hypothesize that entrepreneurs reject higher profit shares than do non-entrepreneurs.

H5a Entrepreneurs reject higher profit shares than non-entrepreneurs do.

Another proxy for strategic uncertainty taking in negotiations is the variance of profits. Negotiators who aim to hit a "top deal" will have to accept that their high claims might be rejected and that their assertive behavior will potentially lead to an impasse where no agreement can be reached. In this case, entrepreneurs forgo the chance of making any profit. However, if their high claims and assertive behavior succeed, they are likely to make a top deal. Hence, when negotiators follow a "tough guy" strategy, their profits will show a higher variance than those of negotiators who follow a fifty–fifty approach where negotiators aim at splitting the pie equally. On the basis of these assumptions, we hypothesize that entrepreneurs reject higher profit shares than do non-entrepreneurs and that their profits exhibit a greater variance than those of non-entrepreneurs.

H5b Entrepreneurs' profits exhibit a greater variance than those of non-entrepreneurs.

4 Methods

4.1 Recruitment

We investigated the behavior of small and medium-sized business entrepreneurs, who founded, own and manage their companies. We believe this group is most suitable for studying entrepreneurs' negotiation behavior because small and medium-sized business owners are frequently leading negotiations at all levels of their business themselves. Owners of larger businesses, by contrast, often employ specialized experts, e.g., lawyers or sales managers, to execute negotiations on their behalf, and intrapreneurs do not put their own money at risk and might not be involved in negotiations at all. As a comparison group, we chose employees without entrepreneurial experience from a wide range of industries that match the entrepreneurs sample closely with respect to demographic factors and educational background.

Because data on effect sizes for the differences between entrepreneurs' and non-entrepreneurs' negotiation behavior from previous studies are not available and behavioral differences between entrepreneurs and different group of non-entrepreneurs have been

shown to exhibit medium to large effects (e.g., Busenitz and Barney 1997), we assumed a medium effect size to determine a sufficient sample size. Power analysis for a Wilcoxon rank sum test was conducted in G*Power using an alpha of .05, a power of .80 as recommended by Cohen (1988), a medium effect size ($dz = .5$) and one tail (Faul et al. 2009). Based on these assumptions, the desired sample size is 106.

Entrepreneurs were recruited via the entrepreneurship center of a UK university, which has access to a large, countrywide data base of business contacts. From this database, we identified entrepreneurs who started and owned small and medium-sized businesses, had been running their business for at least one year at the time of the study and had 5 or more employees. From the complete list of entrepreneurs meeting these criteria, we randomly selected 60 to be invited to our experiment. Thirty-four of them registered for the study, which equals a response rate of 56.7 %. The non-entrepreneurs were recruited via the experimental participant database of the university. This database contains a high percentage of nonstudent subjects from a wide range of backgrounds. First, we compiled list of all employed people without entrepreneurial experience in the database. After identifying those on the list who had no or very little experience with experiments, we randomly selected 100 participants to be invited to our study. Ninety-four of them registered, which equals a response rate of 94 %. The difference in response rates between the two groups is most likely to be explained by entrepreneurs' severe time restrictions and the circumstance that the non-entrepreneurs in the experimental database had already agreed to be invited to participate in research at some point, whereas the invitation came unexpectedly for the entrepreneurs.

4.2 Experimental design and procedure

The study was conducted using an interactive online platform. Participants were randomly assigned a time slot at which they were asked to sign in on the platform. Although online studies can have some drawbacks, such as drop-outs, this procedure had the advantage that intensely time-restricted entrepreneurs could participate from their work or home computer, which significantly enlarged our recruitment outreach.

To ensure that the negotiation tasks included the essential characteristics of entrepreneurs' negotiations while allowing non-entrepreneurs to easily relate to them, we based the scenarios on the most generic negotiation situation entrepreneurs encounter in their everyday business: buying and selling.

The study was conducted in six sessions with 16–34 participants each. After being given instructions, participants were randomly matched in pairs to negotiate the price at which a good would be exchanged between them. One party acted as a buyer, and the other party as a seller. Monetary incentives were real. Participants knew that they had a fair chance to actually receive the profit for which they were negotiating: After the study was completed, two participants would be randomly selected to receive their profit from one of the scenarios as a real payment via check. This amount could be up to 350 GBP (547 USD) depending on the negotiation outcome of the respective participant and depending on the scenario that was randomly selected for the payment. We preferred this way of incentivizing the negotiations to paying out a small amount of money to each participant because a high amount gives more room for meaningful alternating offers and because entrepreneurs might not take a negotiation about a small sum seriously or might even feel shoddy about doing so (Sandri et al. 2010).[3] Negotiations took place in a chat room via instant messaging (see Appendix 1 for a screenshot). That way, participants could communicate with each other while preserving their anonymity. None of the participants had information about the age, gender or profession of their counterpart. To make negotiations as realistic as possible and to analyze behavioral differences, we allowed for any kind of comments, order of offers, counteroffers and rejections. This enabled us to gather rich behavioral data on entrepreneurs' negotiation strategies and outcomes.

To test entrepreneurs' performance across changing negotiation situations, we confronted participants with three different negotiation scenarios that varied in the roles assigned to the participants—buyers became sellers and sellers became buyers—and in the structure of information provided. Participants were randomly

[3] Since we did not provide information on the total number of participants, beliefs about the chances of being chosen for the payment might have differed. The negotiation task would still be incentive compatible in this case, but the perceived strength of the incentive could have differed.

re-matched with a new anonymous counterpart for each scenario.

Entrepreneurs' performance under incomplete and asymmetric information was tested in the first two scenarios: In scenario 1, buyer and seller had private information about their own evaluation of the good under negotiation. The seller only knew the distribution of the buyers' possible reservation prices, whereas the buyer only knew the distribution of the sellers' possible production cost. In scenario 2, participants knew their own and their opponent's reservation price for the good, but both could sell or buy the good elsewhere at a price known solely to them. Their opponent knew only the distribution of possible outside option prices. In scenario 3, participants had complete information about their own and their opponent's reservation price and no outside option existed.

For each scenario, participants had 15 min to settle on a price. Once agreeing on a price, they could confirm and make it a binding agreement. If no agreement was reached within 15 min, negotiators lost out on the chance of making a profit from the exchange. The time remaining was displayed on the screen, and participants were made aware of the consequences of not closing a deal in time.

4.2.1 Control variables

After having completed the negotiation tasks, participants were asked to indicate their age, gender and professional and educational background, and to fill in a personality inventory.

The influence of personality has been shown to be a poor predictor of negotiation behavior and outcomes; despite ample research efforts, results remain contradictory and inconclusive (Lewicki et al. 1994; Thompson 1990). Negotiation researchers have thus tended, over time, to put less emphasize on the influence of personality. Nonetheless, we feel that a robustness test controlling for the effect of personality is informative, given that entrepreneurs have been shown to differ from non-entrepreneurs in terms of a number of characteristics (e.g., Rauch and Frese 2007; Zhao and Seibert 2006). We measured those traits that have been most widely studied and discussed to have an influence on negotiations: extraversion, agreeableness, conscientiousness, neuroticism and openness (the "Big Five", Costa and McCrae 1992). Additionally, we measured participants' internal locus of control (Rotter 1966) as a frequently cited trait that has been shown to be related to entrepreneurial success and that could potentially affect entrepreneurs' success in negotiations (Rauch and Frese 2007).[4] The Big Five were measured on 5-point scales in accordance with John et al. (1991): extraversion (8 items), agreeableness (9 items), conscientiousness (9 items), neuroticism (8 items) and openness (10 items). Locus of control was measured on a 6-item 5-point scale using a short version of the original Rotter scale (1966). All of these scales were adequately reliable (extraversion Cronbach's $\alpha = .87$; agreeableness Cronbach's $\alpha = .73$; conscientiousness Cronbach's $\alpha = .86$; neuroticism Cronbach's $\alpha = .82$; openness Cronbach's $\alpha = .70$; locus of control Cronbach's $\alpha = .76$).

4.2.2 Independence of observations

Observations of participants who negotiate with each other are dependent. For example, whenever a seller is able to claim a profit share of 60 %, the buyer will automatically receive the remaining 40 %. Including both parties in the analyses would lead to overestimating effects. The assumption of independence therefore requires considering each negotiation only once. For this reason, entrepreneurs and non-entrepreneurs were matched with non-entrepreneur opponents and the opponents' observations were excluded from the analysis. We included all entrepreneurs and those non-entrepreneurs who faced the same situation with respect to their own and their opponent's reservation price and the role they were assigned in the respective scenario.[5] Appendix 2 contains the instructions.

[4] Further narrow traits that would be interesting to control for in future research include self-efficacy, stress tolerance and proactivity. Due to time restrictions, we did not include items to measure these traits in the present study.

[5] We first identified which role participants were assigned to and the values of their own and opponents' reservation prices participants were assigned to in each scenario. For each entrepreneur with a specific parameter constellation, we randomly selected one non-entrepreneur who was confronted with the same parameters in this round.

4.3 Coding

To test whether entrepreneurs made extensive use of arguments and expressed emotions, all messages exchanged in the negotiation process were coded using content analysis techniques. To test hypothesis 3, we coded when a participant used an argument as "1" and "0" otherwise. To allow for a more in-depth analysis, we also coded as separate, binary categories whether the argument was supporting the participant's own offer (*A_pro*) or whether the argument was used to reject the offer of their opponent (*A_con*). Correspondingly, to test hypotheses 4, we coded when an emotion was expressed as "1" and "0" otherwise and as separate, binary categories whether the emotion that was expressed was positive (*E_pos*) or negative (*E_neg*). An overview of the coding categories and examples for the coding are listed in Table 3 in the Appendix 1.

The coding was conducted separately by an external and an internal coder without knowledge of the group affiliation or other individual information. After a first assessment of the negotiation protocols, coding categories were discussed and agreed upon. As part of the external coder's training, we coded three of the protocols together. Then, we coded three further protocols separately and compared and discussed the results before individually continuing with the coding. When coding was completed, the results were compared: We obtained an agreement 92 % for the four main categories *arguments*, *emotions*, *obtaining an offer* and *rejecting an offer*. The inter-rater reliability was good to very good (Cohen's Kappa = .89). For the coding of negative and positive expressed emotions, the agreement rate was 63 %, and the inter-rater reliability was fair to good (Cohen's Kappa = .53). For the coding of pro- and contra-arguments, the agreement was 83 % and the inter-rater reliability was fair to good (Cohen's Kappa = .66). We discussed the remaining cases of deviation and agreed on the categories. Together, 37.5 h of chat conversation was coded.

5 Results

5.1 Sample

A total of 128 participants registered for the study (34 entrepreneurs and 94 non-entrepreneurs). Two of the 34 entrepreneurs and 10 of the 94 non-entrepreneurs dropped out early and did not complete all tasks. This equals a dropout rate of 10.6 %, which can be considered low, particularly, when taking into account the length of the study of about 1 h. We excluded the observations of these participants from further analyses, assuming that they had been interrupted or had not taken their participation seriously enough. To avoid effects of dropouts on their opponents, we also excluded the observations of the 16 participants who could not complete all parts of the study because their opponent had dropped out. Our analyses are based on 87 observations of 29 entrepreneurs who completed all parts and 87 observations of those 30 non-entrepreneurs who completed all parts of the study and faced the same bargaining setup as the entrepreneurs: i.e., the same reservation price, opponent's reservation price and role in the respective scenario. In total, we included 176 negotiations. As explained in above, we considered one party of each negotiation only as outcomes are perfectly interdependent. Characteristics of the opponent entered the analyses via controlling for the opponents' reservation price.

5.1.1 Entrepreneurs

The entrepreneurs were aged 27–59 years (Mean: 36.7, Median: 36.0). Twenty-one of the entrepreneurs were male, six were female, and two did not indicate their sex. Eighteen of them had one or more co-founders when starting their company and 23 of them stated that their company had been growing over the last 12 months. The industries they were active in ranged from financial services, consulting, education, technology and online media, energy, retailing and marketing, health care, beauty and fashion, and others. Thirteen of them had had experience with a previous venture. For the other 16, their current venture was their first experience as an entrepreneur. Twenty had 1–4 years of experience, four had 4–8 years, three had more than 8 years, and two did not indicate their years of experience. The number of employees their companies employed ranged from 5 to 220, with a mean of 19.9 employees and a median of five employees, indicating a higher percentage of small business owners than medium-sized business owners. Ten of the entrepreneurs had been trained in negotiation in either a specific course or another formal training program.

5.1.2 Non-entrepreneurs

The non-entrepreneurs were aged 18–64 (mean 30.0, median 28.0) years. Five of them did not indicate their age. Twelve of them were male, 13 were female, and five did not indicate their sex. The industries they were employed in varied from academia, administration, accounting and financial services, health care, IT and engineering, journalism, and others; five did not indicate their industry. Only one of them indicated having been trained in negotiation.

5.2 General results

In 140 out of 174 negotiations, a deal was closed and the product was sold for the agreed price. This equals an agreement rate of 81 %. In scenario 1, where private information about reservation prices was given, the agreement rate was 75.9 %. In scenario 2, where private information about outside options was given, it was 74.1 %, and in scenario 3, with complete information, 91.4 % of the participants reached an agreement.

Overall, entrepreneurs closed significantly fewer deals than non-entrepreneurs: They reached an agreement in 63 out of 87 negotiations, whereas the non-entrepreneurs did so in 77 out of 87 negotiations (Pearson $\chi^2 = 7.17$, $p = .007$). The difference in agreement rates was most pronounced in scenario 1.

Agreement rates influenced the profits that were generated. Only when a deal was closed could participants make a profit from the negotiation. In scenario 2, participants had outside options to sell or buy the product to or from a third party; however, executing the outside option would generate a lower profit than could be reached by a negotiated agreement.

Overall, mean profits were 97.55 GBP. Mean profits increased from 70.86 GBP in scenario 1 to 108.95 GBP in scenario 2 and 112.85 GBP in scenario 3. Entrepreneurs made slightly lower mean profits than non-entrepreneurs in scenario 1, and slightly higher mean profits in scenario 2 and 3. None of these differences was statistically significant.

When examining profits from closed deals, however, we find that entrepreneurs made significantly higher profits: Their mean profit from closed deals was 126.68 GBP. Non-entrepreneurs made on average 107.70 GBP when they closed a deal. This difference is statistically significant (Wilcoxon rank sum test: $z = -2.136$, $p = .033$). Table 4 in Appendix 1 gives an overview of participants' profit rates by scenario, group and in total.

5.3 Hypotheses testing

5.3.1 Performance under uncertain and asymmetric information

To test whether entrepreneurs outperformed non-entrepreneurs under uncertain, asymmetric information, we compared the profits of the two groups in scenario 1 and scenario 2. In scenario 1, private information was supplied about reservation prices. In scenario 2, private information was supplied about outside options. Our results do not show significant profit differences between entrepreneurs and non-entrepreneurs in either of these scenarios (scenario 1: $z = 1.766$, $p = .077$; scenario 2: $z = -0.673$, $p = .501$). In scenario 1, entrepreneurs' profits were slightly lower than those of non-entrepreneurs, but slightly higher in scenario 2. Hypothesis 1 that entrepreneurs outperform non-entrepreneurs in negotiations involving uncertain and asymmetric information is hence not supported by our data.

5.3.2 Performance across changing negotiation scenarios

To test entrepreneurs' ability to adapt to changing negotiation scenarios and roles, we compared entrepreneurs' and non-entrepreneurs' outcomes across all three scenarios. Average accumulated profits were 293.86 GBP (SE: 16.67 GBP). This includes all negotiations—whether a deal was closed or not. With 302.10 GBP (SE: 25.84 GBP), entrepreneurs' average accumulated profits were higher than those of non-entrepreneurs' with 285.62 GBP (SE: 21.20 GBP); however, this difference was not statistically significant (Wilcoxon rank sum test: $z = -.323$, $p = .747$). Notably, when considering profits from closed deals alone, we find that entrepreneurs made significantly higher accumulated profits (Wilcoxon rank sum test: $z = -2.047$, $p = .041$). Their average accumulated profits from closed deals were 360.05 GBP (SE: 22.11 GBP). Non-entrepreneurs average accumulated profits in this case were only 298.36 GBP (SE: 21.17 GBP). Figure 1 below illustrates these results.

5.3.3 Arguments

Results show that entrepreneurs argued much more frequently than non-entrepreneurs: For every argument non-entrepreneurs made, entrepreneurs made on average 1.7 arguments. This difference is statistically significant (Wilcoxon rank sum test: $z = -3.912$, $p < .001$). Since this difference could be simply caused by entrepreneurs being more active in negotiation, we also tested for differences in the ratio of arguments to total number of messages sent by the participant. Results show that the difference in arguments per messages is even slightly more pronounced. Roughly, every 4th message (28.4 % of the messages) sent by an entrepreneur contained an argument, while only every 7th message (15.2 % of the messages) sent by a non-entrepreneur did so. For every argument per message non-entrepreneurs made, entrepreneurs made on average 1.9 arguments per message. This difference is statistically significant (Wilcoxon rank sum test: $z = -4.789$, $p < .001$) providing strong support for hypothesis 3.

Furthermore, we find that entrepreneurs used significantly more arguments to support their own offer than non-entrepreneurs did: For every pro-argument non-entrepreneurs made, entrepreneurs made on average 1.7 pro-arguments (Wilcoxon rank sum test: $z = -2.181$, $p = .029$). Entrepreneurs also used significantly more con-arguments: For every con-argument non-entrepreneurs made, entrepreneurs made on average 1.8 con-arguments (Wilcoxon rank sum test: $z = -3.664$, $p < .001$).

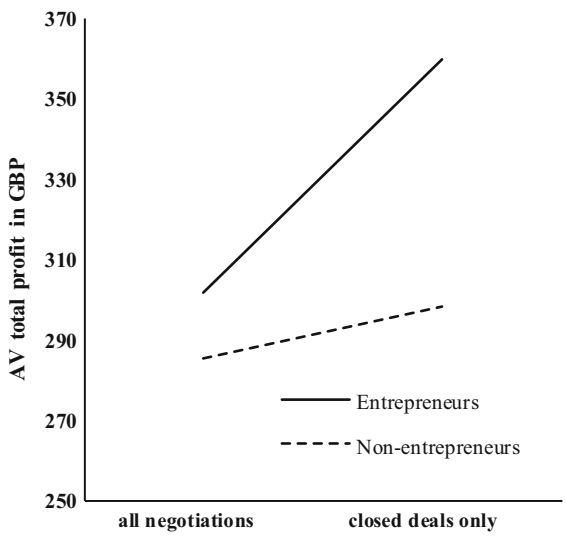


Fig. 1 AV total profits in GBP

In scenario 1, most of the sellers' arguments dealt with covering costs of production, whereas buyers argued about the value the product would have for them. In scenario 2, where outside options existed, arguments focused on the participants' best alternative to negotiated agreement (BATNAs), whereas in scenario 3, where complete information was available, arguments dealt primarily with fairness considerations. Thereby, slightly fewer entrepreneurs used fairness arguments than non-entrepreneurs; however, this difference was not statistically significant (Pearson $\chi^2 = 1.947$, $p = .163$).

5.3.4 Expressing emotions

Our data also support our hypothesis that entrepreneurs use expressed emotions more extensively than non-entrepreneurs do. Entrepreneurs expressed emotions 1.4 times as often than non-entrepreneurs. This difference is statistically significant (Wilcoxon rank sum test: $z = -2.590$, $p = .005$). Again, we tested whether this difference is robust when considering the ratio of expressed emotions to the total number of messages sent by the respective participant and find that the effect remains almost unchanged. Entrepreneurs' expressed emotions per message 1.3 times as frequent as non-entrepreneurs (Wilcoxon rank sum test: $z = -3.331$, $p < .001$). In roughly every 2nd message (48.3 % of the messages) sent by an entrepreneur, emotions were expressed while this was the case in every 3rd message (37.2 % of the messages) sent by a non-entrepreneur.

Furthermore, we find that this difference stems from entrepreneurs expressing negative emotions significantly more often than non-entrepreneurs (Wilcoxon rank sum test: $z = -5.435$, $p < .001$). For every negative emotion expressed by a non-entrepreneur, entrepreneurs expressed on average 1.8 negative emotions. No difference was found in the expression of positive emotions.

Among the most frequently expressed positive emotions were liking, "having a good mood", fun, amusement and content. Among the most frequently expressed negative emotions were dislike, anger, fear and feeling offended.

5.3.5 Strategic uncertainty taking

Testing differences in participants' willingness to accept strategic uncertainty, we compared the highest profit share rejected (hypothesis 5a) and the variation of profit shares participants were able to claim (hypothesis 5b). On average, entrepreneurs rejected offers equal to or below 49.1 % (SE: 2.6 %), while non-entrepreneurs rejected offers equal or below 46.3 % (SE: 2.3 %). This difference is not statistically significant (Wilcoxon rank sum test: $z = -.810$, $p = .418$). Hence, hypothesis 5a is not supported by our data.

While hypothesis 5a was not supported by our data, we found significant differences in the distribution of profit shares claimed by entrepreneurs and non-entrepreneurs. We can reject the null hypothesis that they were drawn from the same distribution (two-sample Kolmogorov–Smirnov test for equality of distribution functions $p = .548$). The variance in profit shares claimed by entrepreneurs is significantly higher, supporting hypothesis 5b.

5.4 Robustness tests

To test the robustness of our main results, we estimated random-effects linear models controlling for personality, age, gender, education and negotiation training.[6] Furthermore, we included controls for the participants' own private value and their opponents' private value to control for the negotiation scenario they were faced with.

The regression results are reported in Table 1; they show that the pronounced use of arguments and expressed emotions by entrepreneurs are robust when controlling for personality, age, gender, education and negotiation training. The result that entrepreneurs gain higher profits when they close a deal is only marginally significant when controlling for these individual differences. The limited statistical significance of this robustness test might be due to the large number of controls in a comparably small sample. The result that entrepreneurs closed fewer deals than non-entrepreneurs did is robust when controlling for personality, age, gender, education and negotiation training (Table 6 in the Appendix 1).

5.5 Mediation analysis

The above analyses have shown that entrepreneurs closed fewer deals than non-entrepreneurs and that they made higher profits when they did close a deal. Given entrepreneurs' pronounced use of arguments and expressed emotions as means of persuasion, the question arises to which extent these behaviors are responsible for the observed negotiation outcomes.

In order to answer this question, we tested whether the effect of being an entrepreneur on the likelihood of closing a deal was mediated by the extent to which arguments and emotions were used. To test these relationships, we used a macro developed by Preacher and Hayes (2008)[7] that allows for the analyses of multiple mediators and dichotomous outcomes, and relies on bootstrapping to test the indirect effects of entrepreneurship on reaching agreement through the use of arguments and emotions. This procedure does not rely on the assumption of normality for the indirect effects and can be used for rather small sample sizes (Preacher and Hayes 2008).

Figure 2 shows the results for the direct effects of entrepreneurship on the extent to which arguments and expressed emotions were used in negotiations. Consistent with hypotheses 3 and 4, being an entrepreneur has a highly significant positive relationship with arguments ($b = .13$, $p < .001$) and emotions ($b = .11$, $p < .001$). We tested the significance of the indirect effects with a bias-corrected bootstrapping procedure with 5,000 bootstrap samples (Preacher and Hayes 2008). Table 2 displays the indirect effects, their standard errors and the 95 % bias-corrected CIs. First, the indirect effect of entrepreneurship for closing a deal via arguments was negative and significant (indirect effect $= -.8515$, 95 % CI -1.619 to $-.2894$), whereas the indirect effect via emotions was positive and not statistically significant (indirect

[6] Before running the regressions, we tested for differences in personality between the two groups. In line with previous research, we found that entrepreneurs have a more internal locus of control. We also found significant differences in neuroticism and openness (see Table 5 in the Appendix 1 for a summary of these results).

[7] The macro "INDIRECT" by Preacher and Hayes (2008) has been improved since the 2008 paper was published. In particular, the latest version allows estimating models with a dichotomous outcome variable as given in our analysis (Hayes 2013).

Table 1 Robustness tests: linear regressions with random effects for individuals

Models	1. Arguments/messages		2. Emotions/messages		3. Profit from closed deals	
	b	SE	*b*	SE	*b*	SE
Entrepreneur	.10**	(.05)	.10*	(.05)	19.49*	(11.65)
Private value	−.02	(.02)	−.03	(.02)	32.35***	(6.47)
Private value opponent	.03	(.02)	.01	(.02)	4.26	(6.21)
Gender	.05	(.04)	.00	(.05)	−25.61**	(11.05)
Age	.00	(.00)	.00	(.00)	−.53	(.58)
Bachelor	−.06	(.06)	−.04	(.07)	12.70	(15.67)
MBA, Master	.04	(.04)	.04	(.05)	−7.00	(11.30)
PhD	.00	(.00)	.03	(.10)	4.28	(22.40)
Training	.08	(.05)	.13**	(.06)	−15.78	(12.91)
Extraversion	.00	(.00)	.00	(.00)	−.17	(.83)
Agreeableness	.01	(.00)	.00	(.00)	−2.04*	(1.04)
Conscientiousness	.00	(.00)	.00	(.00)	−.81	(1.00)
Neuroticism	.01**	(.00)	.02***	(.01)	−2.95***	(1.12)
Openness	.00	(.00)	.00	(.01)	1.30	(1.18)
Locus of control	−.01	(.01)	.00	(.01)	−.57	(2.71)
Constant	−.19	(.32)	−019	(.38)	267.99	(82.89)
Observations	142		142		116	
Number of subjects	52		52		52	
R^2	.30		.31		.36	
sigma_u	.07		.09		13.68	
sigma_e	.15		.16		38.89	
rho	.21		.24		.11	

Linear regression with GLS random effects for individuals; SE in brackets

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

effect = .0027 95 % CI −.3717 to .3936). The proportion of the total effect mediated was 64.7 %, and the ratio of indirect to direct effect was 1.871.

Closing a deal was the prerequisite for making any profit from the negotiated outcome, and the effect of entrepreneurship on closing a deal was negatively mediated through the use of arguments. However, arguments did not have a significant effect on profits from closed deals. Thus, whereas arguments had a significant and large impact on whether or not entrepreneurs made a deal, the use of arguments does not explain why entrepreneur's profits from closed deals were higher than those of the non-entrepreneurs.

Further regression analyses show that expressing positive emotions has a large positive effect on profits from closed deals; however, this effect does not reach statistical significance ($b = 43.25$, SE = 27.63, $p = .118$, 95 % CI −10.90 to 97.40). Negative emotions had a small negative coefficient, but also this effect was statistically insignificant ($b = -3.29$, SE = 36.96, $p = .929$, 95 % CI −75.72 to 69.13).

6 Discussion and conclusion

Current psychological and sociological approaches to entrepreneurship focus on either the individual or the team as the unit of analysis, neglecting a central dimension of entrepreneurial activity: entrepreneurs' interpersonal interactions with their various stakeholders. Investigating interactions during entrepreneurs' negotiations is at the very heart of this research topic. The dearth of studies investigating the processes through which contracts between different stakeholders are structured and closed has already been criticized by Sarasvathy and Venkataraman (2011). They call for "making the inter-subjective a key factor of analysis" in entrepreneurship research. At the same time, Cardon et al.'s (2012) call for studying the role of

Fig. 2 Conceptual model

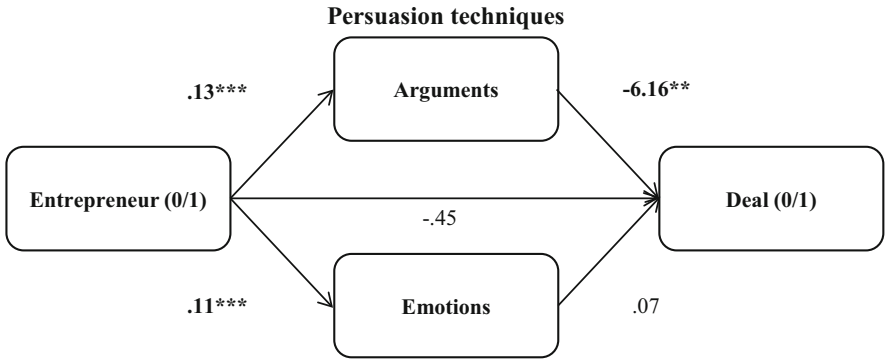


Table 2 Bootstrap-indirect effects

	Bootstrap-indirect effect	SE	Lower limit 95 % CI	Upper limit 95 % CI
Total indirect	−.8488	.2968	−1.527	−.3467
Indirect via arguments	−.8515	.3376	−1.619	−.2894
Indirect via emotions	.0027	.1882	−.3717	.3936

emotional expressions in shaping entrepreneurs' interactions with others. In this paper, we respond to both of these calls and contribute to behavioral, process-oriented approaches to entrepreneurship by investigating entrepreneurs' interactions and persuasive behaviors in negotiations, making the inter-subjective the key focus of our analysis.

Our results show that entrepreneurs negotiated higher profits when they closed a deal, but that they also closed significantly fewer deals. Confirming our hypotheses, entrepreneurs made extensive use of arguments and expressed emotions during negotiations, demonstrating increased assertiveness and involvement. A mediation analysis reveals that the extensive use of arguments accounts for 64 % of the negative effect of being an entrepreneur on closing a deal. Interestingly, however, arguments did not have a significant effect on profits from closed deals. Furthermore, the expression of emotions did neither mediate the likelihood of closing a deal nor did it affect profits from negotiated agreements.

First of all, these results reveal significant differences in entrepreneurs' negotiation behavior and in their outcomes when compared to non-entrepreneurs. Understanding these differences better will help identify strategies and behaviors that are effective when structuring and closing contracts with stakeholders. This study represents a first step on this way by showing that entrepreneurs' extensive use of arguments has a negative influence on their likelihood of closing a deal.

Second, do our results indicate that entrepreneurs' negotiate too hard? Our results suggest that entrepreneurs indeed negotiated "harder" than non-entrepreneurs did, being more assertive and resistant to closing deals at mediocre prices. Entrepreneurs tended to agree to a deal only when it was particularly profitable for them. This result corresponds with findings on entrepreneurs' above-average perseverance (Gimeno et al. 1997; Lowe and Ziedonis 2006; Markman et al. 2005). Arguments are not only a means to persuade others but also work as a fence against being persuaded by others. The extensive use of contra-arguments we find in entrepreneurs might thus reflect one of the strategies that make entrepreneurs more persistent in following their goal.

A pronounced assertiveness can also result from entrepreneurs' extensive experience of negotiating on both sides of the table—now acting as a seller, then as a buyer. Epley et al. (2006) find that perspective taking can lead to an increase in "taking," e.g., in demanding high shares of the profit. They describe how this "dark side of perspective taking" can lead to increases in impasses and overall inferior negotiation outcomes. In their study, considering the opponent's perspective activated egoistic theories of their likely behavior, which led people to counter by behaving more egoistically themselves.

Entrepreneurs' extensive use of arguments led to a greater profit variance: More often than non-

entrepreneurs, they left the bargaining table with nothing, but they also left with a very high profit share more often. This suggests that entrepreneurs' general strategy to achieve profits in negotiations differs from that of non-entrepreneurs.

Why would entrepreneurs possibly follow such a strategy? Does this strategy simply reflect their preference for strategic uncertainty? Recent results of Holm et al. (2013) show that entrepreneurs are more willing than non-entrepreneurs to accept strategic uncertainty in a competitive situation. Our result is also in line with the idea that entrepreneurs' have a pronounced willingness to accept uncertain payoffs (Knight 1921; Kihlstrom and Laffont 1979). We suggest there might be a plausible alternative explanation: Assuming that entrepreneurs used the strategies they employ in their "natural environment," their behavior might reflect a strategy that is adapted to the entrepreneurial context outside our negotiation scenarios. Previous research in behavioral economics shows that professionals regularly use strategies that they use in their job rather that reacting to incentive structures provided by economic experiments (e.g., Dejong et al. 1988). In their profession, entrepreneurs often negotiate in the face of limited resources. There, unlike in our negotiation scenarios, they can only fulfill a limited number of contracts. These contracts in turn need to be as profitable as possible to secure venture survival. A strategy that ensured closing only the most profitable deals would prove successful in such an environment. The pronounced willingness to accept profit variability in our negotiation scenario could thus also reflect a strategy that is well adapted to entrepreneurs' professional environment.

Third, we show that entrepreneurs express emotions extensively—roughly every 2nd comment they made included an emotional expression. They also express emotions much more frequently in negotiations than non-entrepreneurs do. Whereas this shows that emotions clearly play an important role in entrepreneurs' interactions during negotiations, analyses show that the use of emotions did not mediate the likelihood of closing a deal nor had an effect on profits.

The observed difference in expressing emotions stems from entrepreneurs expressing more negative emotions than non-entrepreneurs. There are two possible explanations for this difference: On the one hand, entrepreneurs might use expressed negative emotions strategically to put pressure on their opponent to make a concession. In the presence of uncertainty, entrepreneurs might have learned to use negative emotions to signal that they possess relatively more bargaining power. Such strategic use of emotions has already been documented in previous research on negotiation (Li and Roloff 2006). For instance, appealing to feelings of blame and concern in microloan investment processes has been shown to lead to more rapid funding (Allison et al. 2013). On the other hand, entrepreneurs' pronounced expression of negative emotions could also indicate a lower ability to control their emotions. Our results raise the questions if and to which extent entrepreneurs use emotions *intentionally* and *strategically* to influence stakeholders in different steps of the entrepreneurial process. Our results suggest that this is a fruitful avenue for future research that is able to significantly contribute to the growing literature emphasizing the importance of emotions in the entrepreneurial process (Cardon et al. 2012; Brundin et al. 2008).

6.1 Limitations

Our results are based on a small sample of observations, which might have limited the statistical significance of some of our results. Furthermore, participants interacted via a chat device, which limited their means of expression as compared with face-to-face interaction. Although this procedure ensured participants' anonymity and allowed us to control for potential effects that are not in the focus of this study, i.e., potential differences in reactions toward a male or female/younger or older opponents, face-to-face negotiations would be an interesting subject to study. Given the lively negotiations we observed and the degree to which participants appeared to be involved, we believe that our results provide a good first impression of entrepreneurs' negotiation behavior.

6.2 Future research

There are rich opportunities for future research on entrepreneurs' negotiation behavior. We see three major dimensions along which future research could be organized: First, there are many interesting and important questions to answer concerning the *negotiation behaviors* of entrepreneurs: for instance, to which extent do they use emotions intentionally and strategically to influence stakeholders in different

steps of the entrepreneurial process? The range of behavioral facets that can be used in negotiations is wide and reaches from displaying passion and excitement to playing offended or keeping silence. Including body language and facial expressions in the analyses deems to be very worthwhile in this context. Second, future research might investigate entrepreneurs' interpersonal interactions with *different groups of stakeholders*, like partners, employees, other entrepreneurs, strategic allies, customers, suppliers and different groups of investors. Such research could contribute to answer the questions whether entrepreneurs negotiate differently with different groups of stakeholders and if so why. Third, the *structure of the conflict* is an important dimension to consider. We studied entrepreneurs' behavior in distributive negotiations. Future research should also examine entrepreneurs' negotiation behavior in other setups where long-term relationships and repeated interaction play a major role. Particularly, integrative negotiations are highly relevant in the entrepreneurial process. Based on the evolutionary approach to entrepreneurship, we expect entrepreneurs to be particularly good at seeing opportunities for "making the pie larger" and finding integrative solutions.

We hope that the results of this study inspire further research on entrepreneurs' negotiation behavior and its role as a determinant of entrepreneurial success.

Acknowledgments We appreciate helpful comments and suggestions from Anna Abratis, Katrin Burmeister-Lamp, Philipp Koellinger, Christine Lauritzen, Maria Minniti, Mirjam van Praag, Christian D. Schade, Joeri Sol, Noam Wassermann and the participants at the ERIM research seminar at Erasmus University, the ACE research seminar in Amsterdam, the Humboldt Research Seminar on Entrepreneurship and Innovation Management and the Oxford Summer Residence Week for Entrepreneurship Scholars. We also wish to thank Joern Block and two anonymous reviewers for their feedback and suggestions on an earlier version of the paper.

Appendix 1

See Tables 3, 4, 5, 6.

Table 3 Coding categories and examples

Category	Comment	Coding
Argument	"It is a high value product"	$A = 1\ A\_pro = 1$
	"Better to have something than nothing"	$A = 1\ A\_pro = 1$
	"I need to make money on it and the production is expensive"	$A = 1\ A\_pro = 1$
	"The quality is worth it"	$A = 1\ A\_pro = 1$
	"Come on, we both get equal profit of £125 that is very fair"	$A = 1\ A\_pro = 1$
	"Your profit margin is large even if it is costing you £125"	$A = 1\ A\_pro = 1$
	"That is impossible, it won't pay my cost"	$A = 1\ A\_con = 1$
	"The value is less than half of that"	$A = 1\ A\_con = 1$
	"No too much for me, I am a reseller of these items and I have to make a decent margin for it to be worthwhile"	$A = 1\ A\_con = 1$
	"…Remember, I can buy this elsewhere for 125"	$A = 1\ A\_con = 1$
	"We both know that I can buy it from someone else for far less"	$A = 1\ A\_con = 1$
	"Sorry, but that leaves me next to nothing and I have got a business to run"	$A = 1\ A\_con = 1$
Emotion	"It's fantastic doing business with you. You rock man!"	$E = 1\ E\_pos = 1$
	"haha ☺ you're really a great guy"	$E = 1\ E\_pos = 1$
	"I very much like your style, you seem like an honest guy ☺"	$E = 1\ E\_pos = 1$
	"I am feeling good"	$E = 1\ E\_pos = 1$
	"I would be pleased to see you happy with the price"	$E = 1\ E\_pos = 1$
	"Lol ☺ Seriously, it has a sticker price of 200 ☺?"	$E = 1\ E\_pos = 1$
	"Clock is ticking ☺ I'm afraid we won't get a deal here"	$E = 1\ E\_neg = 1$
	":(Now I am disappointed"	$E = 1\ E\_neg = 1$
	"Ouch, that hurts"	$E = 1\ E\_neg = 1$
	"Stop wasting my time…"	$E = 1\ E\_neg = 1$
	"When I said get real I meant it!"	$E = 1\ E\_neg = 1$
	"Stop it now!"	$E = 1\ E\_neg = 1$

Table 3 continued

Category	Comment	Coding
Obtaining an offer	"…How much do you want for this then?"	O = 1
	"What would be a good starting point for you?"	O = 1
	"How much are you looking to sell for?"	O = 1
	"what is the best price you offer for the product?"	O = 1
	"so how much would you be willing to sell me this product for?"	O = 1
	"so how much is the product?"	O = 1
	"Ok, what were you looking to pay?"	O = 1
	"Where would you like to start the pricing?"	O = 1
	"Come on, make me a better offer"	O = 1
	"How much would you sell it for?"	O = 1
	"How much are you willing to come down?"	O = 1
	"What is your asking price?"	O = 1
Rejecting an offer	"No, your offer is far too high!"	R = 1
	"can't do that price"	R = 1
	"Unfortunately not, that price is well below my valuation"	R = 1
	"Won't buy at that price dear"	R = 1
	"Sorry, too much"	R = 1
	"No thanks that's too high"	R = 1
	"No that is not possible, but thank you anyway"	R = 1
	"Not good enough"	R = 1
	"unfortunately that is way too high"	R = 1
	"Not that low, thanks"	R = 1
	"Ok, I won't buy it than"	R = 1
	"Not this price not from you"	R = 1

Table 4 Overview mean profits in GBP

	Scenario 1	Scenario 2	Scenario 3	Total
Entrepreneurs	58.62 (12.33)	112.97 (10.81)	116.55 (10.59)	96.05 (7.04)
Entrepreneurs closed deals	100.00 (13.96)	138.14 (10.19)	135.20 (6.83)	126.68 (6.02)
Non-entrepreneurs	83.10 (9.68)	104.93 (10.08)	109.14 (9.68)	99.06 (5.73)
Non-entrepreneurs closed deals	89.26 (9.34)	123.55 (10.05)	113.04 (9.18)	107.70 (5.65)
Total	70.86 (7.93)	108.95 (7.35)	112.85 (7.13)	97.55 (4.53)
Total closed deals	93.41 (7.81)	130.67 (7.16)	123.49 (5.97)	116.24 (4.19)

Table 5 Personality scores by group

	Entrepreneurs	Non-entrepreneurs	*p* value
Locus of control	16.63 (SD 1.94)	15.10 (SD 2.98)	<.001
Extraversion	29.81 (SD 5.50)	28.08 (SD 7.57)	>.05
Agreeableness	34.67 (SD 5.08)	34.66 (SD 5.44)	>.05
Conscientiousness	35.78 (SD 6.28)	35.16 (SD 6.83)	>.05
Neuroticism	17.59 (SD 4.82)	20.18 (SD 6.11)	(1-p) < .01
Openness	40.70 (SD 4.10)	37.34 (SD 4.14)	<.0001

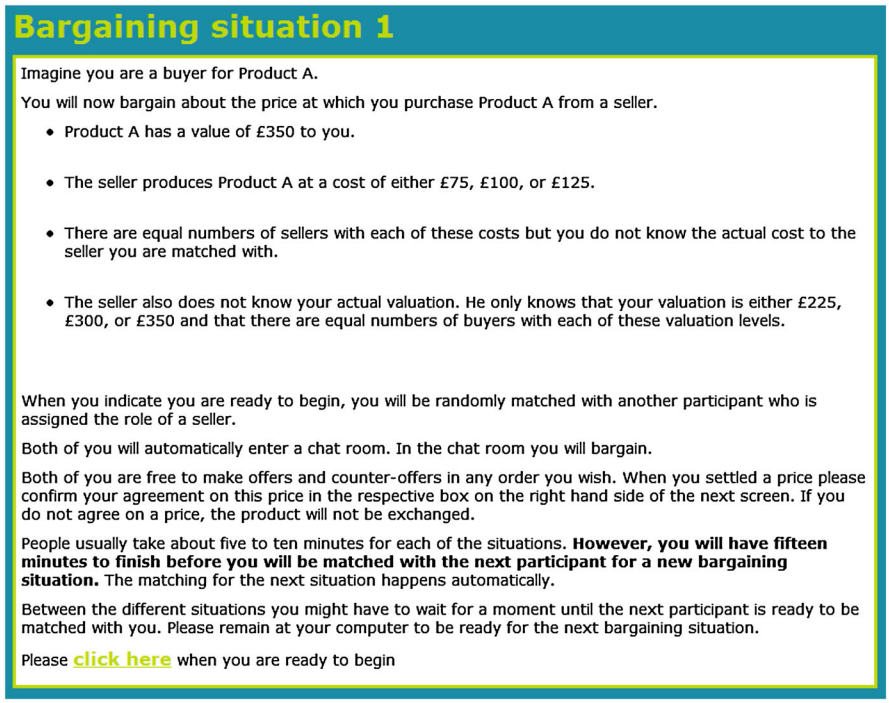
Table 6 Robustness test: logistic regression with random effects for individuals

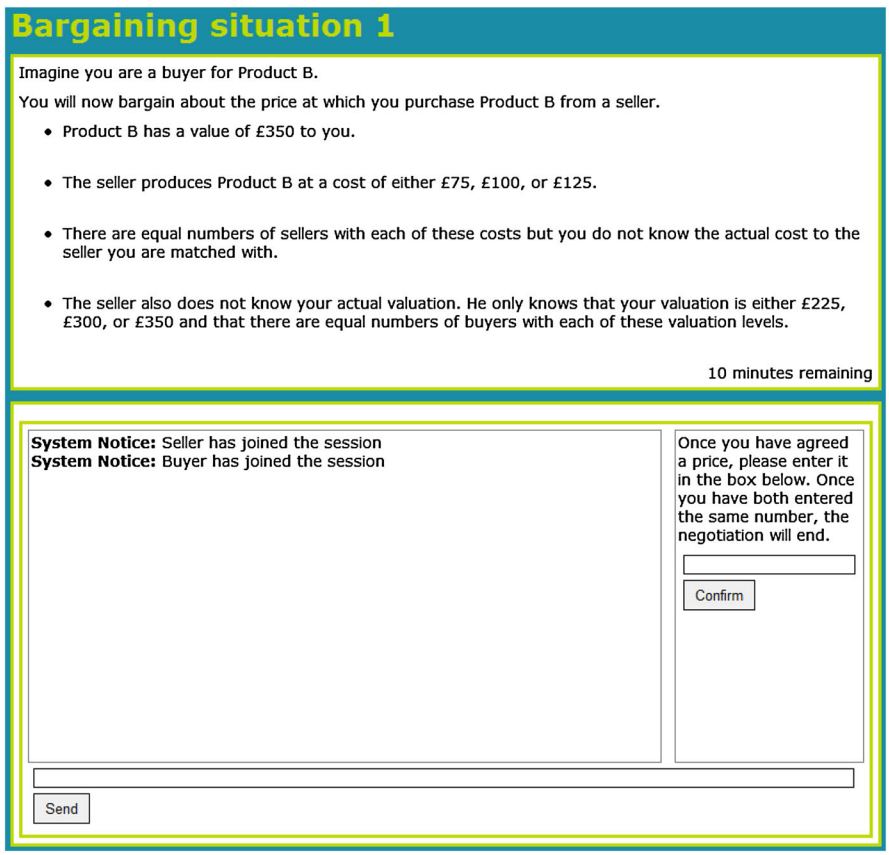
DEAL (0/1)	Odds ratio
Entrepreneur	.26**
Private value	2.78***
Private value opponent	.89
Extraversion	.95
Agreeableness	1.02
Conscientiousness	1.09*
Neuroticism	1.04
Openness	1.05
Locus of control	.76*
Gender	2.78
Age	.89
Constant	1.02
Log likelihood	−58.15
LR χ^2	22.27
Pseudo R^2	.161

$N = 143$, dependent variable: deal = 0/1

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

Appendix 2: Instructions


Bargaining situation 1
Imagine you are a buyer for Product A.
You will now bargain about the price at which you purchase Product A from a seller.
• Product A has a value of £350 to you.
• The seller produces Product A at a cost of either £75, £100, or £125.
• There are equal numbers of sellers with each of these costs but you do not know the actual cost to the seller you are matched with.
• The seller also does not know your actual valuation. He only knows that your valuation is either £225, £300, or £350 and that there are equal numbers of buyers with each of these valuation levels.
When you indicate you are ready to begin, you will be randomly matched with another participant who is assigned the role of a seller.
Both of you will automatically enter a chat room. In the chat room you will bargain.
Both of you are free to make offers and counter-offers in any order you wish. When you settled a price please confirm your agreement on this price in the respective box on the right hand side of the next screen. If you do not agree on a price, the product will not be exchanged.
People usually take about five to ten minutes for each of the situations. However, you will have fifteen minutes to finish before you will be matched with the next participant for a new bargaining situation. The matching for the next situation happens automatically.
Between the different situations you might have to wait for a moment until the next participant is ready to be matched with you. Please remain at your computer to be ready for the next bargaining situation.
Please click here when you are ready to begin


Bargaining situation 1
Imagine you are a buyer for Product B.
You will now bargain about the price at which you purchase Product B from a seller.
• Product B has a value of £350 to you.
• The seller produces Product B at a cost of either £75, £100, or £125.
• There are equal numbers of sellers with each of these costs but you do not know the actual cost to the seller you are matched with.
• The seller also does not know your actual valuation. He only knows that your valuation is either £225, £300, or £350 and that there are equal numbers of buyers with each of these valuation levels.
10 minutes remaining
System Notice: Seller has joined the session
System Notice: Buyer has joined the session
Once you have agreed a price, please enter it in the box below. Once you have both entered the same number, the negotiation will end.
Confirm
Send

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