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Communication in the Gig Economy: Buying and Selling in Online Freelance Marketplaces

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Abstract

The proliferating gig economy relies on online freelance marketplaces, which support relatively anonymous interactions through text-based messages. Informational asymmetries thus arise that can lead to exchange uncertainties between buyers and freelancers. Conventional marketing thought recommends reducing such uncertainty. However, uncertainty reduction and uncertainty management theories indicate that buyers and freelancers might benefit more from balancing—rather than reducing—uncertainty, such as by strategically adhering to or deviating from common communication principles. With dyadic analyses of calls for bids and bids from a leading online freelance marketplace, this study reveals that buyers attract more bids from freelancers when they provide moderate degrees of task information and concreteness, avoid sharing personal information, and limit the affective intensity of their communication. Freelancers' bid success and price premiums increase when they mimic the degree of task information and affective intensity exhibited by buyers. However, mimicking a lack of personal information and concreteness reduces freelancers' success, so freelancers should always be more concrete and offer more personal information than buyers. These contingent perspectives offer insights into buyer–seller communication in two-sided online marketplaces. They clarify that despite, or sometimes due to, communication uncertainty, both sides can achieve success in the online gig economy.

Keywords

business-to-business exchange, gig economy, multisided platforms, online freelance marketplaces, text analysis, uncertainty management

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Online freelance marketplaces, such as Upwork, Fiverr, and PeoplePerHour, have prompted massive transformations in business-to-business (B2B) markets (Constantinides, Henfridsson, and Parker 2018; Zhou et al. 2021). In particular, they allow buyers to post gigs, or short-term service projects, which initiate reverse auctions whereby interested freelance workers submit bids to offer their services (Jap 2007). In these digital environments, buyers and freelancers often devote rather limited time and attention to detailed assessments and instead make choices on the basis of rational value expectations or prices (Ba and Pavlou 2002). In addition, online freelance marketplaces suffer from information asymmetries because they rely on text-based messages, which can create uncertainty and hinder the exchange (Hong, Wang, and Pavlou 2016; Srivastava and Chandra 2018). Imagine a buyer wants to hire a freelancer to optimize their pet website's search rankings, so they post a call for bids, requesting "someone for an SEO job." In response, Freelancer A might vaguely promise, "I have plenty of experience writing content that users find interesting to improve the quality and quantity of your traffic," whereas Freelancer B more concretely states, "I have four years of experience writing articles and blogs that engage users and are SEO-friendly. For example, I could

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focus on interest pieces like the everyday lives of pets." The communication of both the buyer and freelancer create different degrees of uncertainty, likely impacting who applies and who gets hired.

Uncertainty regarding communication can lead to various negative outcomes on both sides, including high rates (more than 50%) of service gigs that go unfulfilled (Horton 2019), diminished bid success, and less-than-optimal pricing for freelancers (Ba and Pavlou 2002). However, parties in B2B exchanges can also strategically leverage uncertainty in their communication to achieve more effective outcomes, such as when negotiators conceal information (Putman and Jones 1982) or when ambiguous contracts help reduce litigation concerns and increase cooperation (Zheng et al. 2020). Buyers and freelancers on online freelance marketplaces engage in a form of B2B exchange, so we propose that they similarly might balance their communication efforts by strategically reducing and increasing uncertainty to maximize their exchange success. In our previous example, by staying vague and without any specific direction from the buyer, Freelancer A might be trying to keep multiple options open and avoid over-promising outcomes.

In addition to fundamental questions regarding how to manage uncertainty in B2B exchanges (Lawrence et al. 2019; Palmatier, Dant, and Grewal 2007), we seek to address the role of communication in such exchanges (Berger et al. 2020; Rajdeep et al. 2015; see also Web Appendices A and B). We integrate uncertainty reduction theory (Berger and Calabrese 1975) and uncertainty management theory (Brashers 2001) to predict that, in online freelance marketplaces, various strategies for reducing and increasing the ability of message recipients to anticipate message senders' meaning and actions can benefit the exchange (Bradac 2001). Using Grice's (1975) communication principles, we argue that greater provision of task and personal information might reduce uncertainty in service exchanges (Ma and Dubé 2011) but could also lead to information overload or disagreements (Eisenberg and Witten 1987; Jones, Ravid, and Rafaeli 2004). Presenting information in a more concrete (cf. abstract) manner or with greater affective intensity also can reduce uncertainty (Grice 1975; Hamilton and Hunter 1998; Packard and Berger 2020). But again, too much concreteness or affective intensity might lead to restrictive communication that hinders exchanges (Eisenberg and Witten 1987; Hosman 2002).

We apply this theoretical reasoning to exchanges in online freelance marketplaces, in which buyers post calls for bids to attract as many freelancers as possible to apply (Horton 2019). These buyers face a trade-off between reducing uncertainty for freelancers (e.g., providing more information, using less ambiguity) and still efficiently granting them sufficient interpretative freedom. Theorists concur that principles for using relevant information or less ambiguity often get deliberately flouted in conversation, such as when an individual is attempting to save face (Goffman 2008) or please a counterpart (Khosarvizadeh and Sadehvandi 2011). If different communication strategies might entice more freelancers to bid, buyers could establish optimal designs for calls for bids.

In response to those calls for bids, freelancers write and submit their bids. In doing so, these freelancers also must manage uncertainty. Thus, they might benefit from matching or mimicking the communication approach adopted by the prospective buyer that issued the call (Verbeke, Dietz, and Verwaal 2011). Communicative mimicry can evoke similarity perceptions, which tend to increase receivers' sense of rapport and reduce their uncertainty (Soliz and Giles 2014). Research on adaptive selling recommends matching the buyer's communication (e.g., McFarland, Challagalla, and Shervani 2006; Singh, Marinova, and Singh 2020). However, in some situations, deviations also may be beneficial (Afifi and Burgoon 2000), so we consider a more nuanced distinction related to the level at which the similarity occurs. Furthermore, if freelancers compete on price, they may become enmeshed in a self-defeating value trap (Hong, Wang, and Pavlou 2016; Sridhar and Mittal 2020) in which they win more bids but earn less revenue. Strategically mimicking or deviating from a buyer's communication might provide a viable means to winning more gigs without being trapped. We accordingly suggest how freelancers should calibrate their bid formulations to improve their bid success and achieve a price premium.

Using a unique, large-scale data set of calls for bids and bids, obtained from a leading online freelance marketplace, along with a series of multilevel models that account for endogeneity, we establish three main contributions. First, we determine the effects of buyers' strategic communications in two-sided online marketplaces (Berger et al. 2020). Rather than uncritically recommending that communication should always be informative and unambiguous, we specify the diminishing, even adverse consequences that can result if buyers relay too much task or personal information in a very concrete, intense manner. Second, in an extension of research into adaptive selling (McFarland, Challagalla, and Shervani 2006; Verbeke, Dietz, and Verwaal 2011), we reveal how freelancers' dyadic communicative mimicry affects bid success. Mimicry effects are contingent on the communicative aspect and the buyer's relative uses of each aspect. As we show, mimicking buyers in terms of the provision of task information and use of affective intensity increases bid success. In contrast, we find that freelancers should always offer more personal information and be more concrete in their bid formulations than buyers' calls for bids. Third, we offer insights into how freelancers can avoid predatory pricing (Constantinides, Henfridsson, and Parker 2018) and escape a value trap (Sridhar and Mittal 2020). By strategically managing uncertainty according to the information communicated, and by managing the manner in which they do so, freelancers can earn price premiums.

Online Freelance Marketplace Exchanges

Online freelance marketplaces that feature reverse auctions rely on a three-stage process (Hong, Wang, and Pavlou 2016; Jap 2007). First, in seeking a suitable freelancer, a buyer describes a gig or short-term service project in a call for bids. Second, multiple freelancers apply by formulating

and submitting bids that describe themselves, the service offering, and the price requested. Third, the buyer compares the bids and selects a freelancer to complete the project. The outcome of each stage defines exchange success. That is, buyers' success results from a large pool of viable freelance offers. A higher number of bids increases the chances of finding a suitable freelancer for the gig (Horton 2017, 2019). Freelancers' success depends on whether their bids are chosen, preferably at a price premium (Constantinides, Henfridsson, and Parker 2018; Hong and Pavlou 2017). In this context, a price premium is the monetary amount in excess of the buyer's original payment offer (i.e., expected price; Grewal, Monroe, and Krishnan 1998; Singh and Sirdeshmukh 2000). Buyers might pay a premium beyond their original payment offer for various reasons, including their willingness or "need to compensate the seller for reducing transaction risks" (Ba and Pavlou 2002, p. 248). In competitive online marketplaces, freelancers also might encounter value traps in which they wind up selling more of their services at a lower price (Ba and Pavlou 2002; Sridhar and Mittal 2020). In this sense, freelancers' success depends on winning the bid but also earning price premiums (or avoiding discounts). Unlike traditional B2B exchanges, buyers' and freelancers' success hinges on textual communication (Constantinides, Henfridsson, and Parker 2018; Horton 2019). Comparing theories on uncertainty and the role of communication in producing or reducing it, we delineate how both buyers and freelancers may best strike a balance between providing more information and reducing ambiguity versus preserving some uncertainty and maintaining interpretative flexibility.

Conceptual Background

Uncertainty reduction theory (Berger and Calabrese 1975) and uncertainty management theory (Brashers 2001) draw on a central tenet of information theory (Shannon and Weaver 1949) —namely, that communication, information, and uncertainty are inextricably linked. Thus, uncertainty is inherent to any interaction. Goffman (1959) suggests uncertainty depends on the ability to draw inferences from provided information content and the manner in which it is provided. Whereas uncertainty reduction theory predicts how communication can reduce uncertainty, uncertainty management theory examines how people cope with uncertainty, which may include efforts to increase uncertainty to attain beneficial outcomes (Bradac 2001). Our conceptual development relies on these fundamental principles.

Communication Principles in Online Freelance Marketplaces

In online freelance marketplaces, buyers and freelancers depend on one another; all else being equal, they want their mutual exchange to succeed. In such interactions, Grice (1975) suggests that four generalized cooperative communication principles (or maxims) apply. Three principles refer to what should be said: the quantity of information ("give as much information as is required and no more than is required"), its quality ("do not say what is false or that for which you lack adequate evidence"), and its relevance. The fourth principle, manner (be clear and avoid ambiguity), pertains to "how what is said is to be said" (Grice 1975, p. 46). In our study context, neither a buyer nor a freelancer can know upfront whether the other party might be lying, so truthfulness would have to be assumed prior to the exchange. We also highlight that information does not have to be "correct" to influence uncertainty perceptions (Brashers 2001). Therefore, among the four maxims, we focus on the quantity of relevant information that buyers and freelancers offer and the manner in which they present it.

Uncertainty Implications of Communication Principles

Communication outcomes are fundamentally uncertain (Berger and Calabrese 1975). When people vary their use of communication principles (Grice 1975), they create conversational implications such that message recipients must infer what speakers are trying to imply with their wording. Accordingly, the (un)certainty that buyers and freelancers encounter while making inferences should depend on the degree to which calls for bids and bids provide relevant information in an unambiguous manner, though the meaning of relevant information varies by context. In line with prior research (e.g., Berger et al. 2020), we define this degree as the proportion of specific lexical terms used relative to the total number of words in a message.

More information reduces uncertainty (Berger and Calabrese 1975) and increases receivers' perceptions of the information's value (Weiss, Lurie, and MacInnis 2008). In service exchanges, the parties seek information about the task and the person who will complete it (Ma and Dubé 2011). A greater degree of task information should reduce uncertainty about functional service aspects (Ma and Dubé 2011). By self-disclosing greater degrees of personal information, a sender also provides a receiver with more information about the self (Derlega, Harris, and Chaikin 1973). In line with the quantity principle (Grice 1975), sparse provision of relevant task and personal information would make it difficult for the receiver to anticipate outcomes or distinguish among options, thus creating uncertainty (Engelhardt, Bailey, and Ferreira 2006).

Regarding the principle of manner (Grice 1975), greater degrees of concreteness and affective intensity should reduce ambiguity and enhance clarity. Concrete terms describe something in a perceptible, precise, specific, or clear manner (Brysbaert, Warriner, and Kuperman 2014; Larrimore et al. 2011; Packard and Berger 2020). A greater degree of concreteness reduces ambiguity because it makes it easier for receivers to perceive or recognize what the message sender is implying (Brysbaert, Warriner, and Kuperman 2014; Hamilton and Hunter 1998; Packard and Berger 2020). Affective intensity reflects the proportion of affective terms included in a message. More affective terms as a proportion of the total word count produce a greater degree of affective intensity, which increases receivers' ability to make evaluative judgments (Hamilton and

Hunter 1998; Hosman 2002).[1] We provide examples of these principles in Table 1.

Reducing and Maintaining Uncertainty in Communication Exchanges

Cross-disciplinary research provides ample evidence that conversational partners generally prefer to reduce uncertainty (Berger 2011). In B2B relationships, reducing uncertainty increases exchange effectiveness (Heide and Weiss 1995; Lawrence et al. 2019; Palmatier, Dant, and Grewal 2007). In Web Appendix A, we offer an overview of some key empirical marketing studies on B2B communication aspects. Specifically in online freelance marketplaces, which are relatively anonymous, the required coordination and dependence between rational buyers and freelancers may increase their need for information and clarity (Constantinides, Henfridsson, and Parker 2018; Hong, Wang, and Pavlou 2016). Thus, for example, reputation cues commonly appear in online freelance marketplaces as a way to reduce uncertainty and facilitate exchanges (Hong, Wang, and Pavlou 2016). More broadly, reducing uncertainty by adhering to Grice's (1975) principles in dyadic buyer–freelancer communications may boost exchange success.

However, people experience uncertainty differently and do not always prefer to reduce it (Bradac 2001). Instead, according to uncertainty management theory (Brasher 2001), strategic communication choices that might not minimize uncertainty, and even cultivate it, can be effective and lead to better outcomes for consumers (Humphreys, Isaac, and Wang 2020), organizations (Eisenberg and Witten 1987; Homburg, Klarmann, and Staritz 2012), and interorganizational governance (Zheng et al. 2020). For example, Humphreys et al. (2020) find that a lack of concreteness aids consumers' initial online searches because such vague queries return a greater variety of search results. In collective bargaining settings, seasoned negotiators use concealment and ambiguity to enhance the likelihood of agreement (Putnam and Jones 1982). In B2B exchanges, parties can use less information and more ambiguity strategically to accomplish specific goals (Bayer, Tuli, and Skiera 2017; Zheng et al. 2020). Even if such efforts are not universally favored, uncertainty-cultivating communication provides benefits by allowing different receivers to perceive multiple different meanings simultaneously (Eisenberg and Witten 1987). Moreover, communication theorists concur that people sometimes deliberately flout or violate Grice's (1975) conversation principles, such as when they intentionally maintain uncertainty to save face (Goffman 2008) or please a counterpart (Khosarvizadeh and Sadehvandi 2011). Subverting the principles is not necessarily less cooperative, and furthermore, the purpose of communication is not always to be as informative and clear as possible. Arguably, cooperative principles encourage reasonable adherence, not compulsion. Thus, strategically allowing recipients to develop a broader range of possible interpretations by maintaining some level of uncertainty might facilitate buyer–freelancer exchanges.

Research Propositions

Managing Freelancers' Uncertainty in Calls for Bids

Freelancers choose whether to offer their services in response to a buyer's call for bids. The number of freelancers who choose to do so is consequential for the buyer, as more bids implies a greater likelihood of finding a suitable service provider (Horton 2019). Managing freelancers' uncertainty through relevant information provision and the manner of communication in the calls for bids should influence freelancers' decisions to apply.

Relevant information. In calls for bids, buyers can vary the degree of task and personal information included in the description of the gig. If freelancers evaluate this information favorably, they develop more positive dispositions and are more likely to apply (Singh, Marinova, and Singh 2020). As prior research establishes, more information enhances communication outcomes in business settings by reducing uncertainty. For example, studying web forums, Weiss, Lurie, and MacInnis (2008) indicate that the breadth of information provided by a sender affects receivers' objective judgments of the value of that information. Larrimore et al. (2011) find that greater degrees of monetary information increase peer-to-peer lending, and Joshi (2009) shows that more task information increases the time and commitment sellers allocate to a buyer. Greater degrees of personal information also reduce uncertainty, increase trust (Ma et al. 2017), and enhance performance on crowdsourcing platforms (Pollock, Luttgens, and Pillar 2019). Such self-disclosure can strengthen ongoing buyer–seller relations as well (Crosby, Evans, and Cowles 1990). In contrast, a greater proportion of nonrelevant information (i.e., a lesser degree of relevant information) increases uncertainty (Brashers 2001). Because greater degrees of task and personal information in calls for bids help reduce freelancers' uncertainty, freelancers who believe they qualify for the gig should be more willing to submit bids.

However, excessive relevant information may be ineffective, even if it reduces freelancers' uncertainty. That is, if buyers provide excessive details about the task, the gig may appear too restrictive or prescriptive (Eisenberg and Witten 1987), which might not appeal to freelancers. For example, leaving detailed information out of contracts (Ghosh and John 2005) or negotiations (Putman and Jones 1982) represents a tactic for improving exchange performance. In a downsizing context, a greater degree of information provision can increase uncertainty and negative reactions (Homburg, Klarmann, and Staritz 2012). For freelancers, excessive information can feel overwhelming and can limit their motivation,

[1] Task and personal information, concreteness, and affective intensity do not comprise an exhaustive list of all the lexical elements that might define relevant information content and manners of communication. Various extensions are thus available for further research. However, we note the primacy of these elements in previous research and therefore prioritize them for this initial effort to establish how the communication principles relate to uncertainty perceptions and exchange outcomes in online freelance marketplaces.

Table 1. Communication Elements, Links to Uncertainty, and Examples.

Communication Element	Definition	Link to Uncertainty	Example
Task information	A content element of communication. In service exchanges, it is conveyed through functional, duty terms (Ma and Dubé 2011). The proportion of task terms to the total number of words in a message defines the degree of task information.	Greater (lesser) degrees of task information decrease (increase) uncertainty.	**Sparse degree of task information:** "I saw your project description and I would like to work for you. I have plenty experience in different settings where I have written content which users find interesting." **Dense degree of task information:** "I saw your project description and would like to write the content for your website. I have experience in writing articles, blogs & E-books which is user engaging and SEO friendly as well."
Personal information	A content element of communication that is conveyed through self-disclosing terms (Derlega, Harris, and Chaikin 1973). The proportion of self-disclosing terms to the total number of words in a message defines the degree of personal information.	Greater (lesser) degrees of personal information decrease (increase) uncertainty.	**Sparse degree of personal information:** "Saw your project description and would like to write the content for your site. I have experience in writing articles, blogs & E-books which is user engaging and SEO friendly as well." **Dense degree of personal information:** "I saw your project description and I would like to write the content for your site. I have 12 years of work experience in copy writing for articles, blogs & E-books. I have a Master's in Journalism and have worked fulltime for companies like Adobe."
Concreteness	A manner element of communication conveyed by terms that are perceptible, precise, or specific (Brysbaert, Warriner, and Kuperman 2014; Packard and Berger 2020). The proportion of concrete terms to the total number of words in a message defines the degree of concreteness.	Greater (lesser) degrees of concreteness decrease (increase) uncertainty.	**Sparse degree of concreteness:** "I noticed your project description and I would like to do work on it. I have plenty of experience in scripting text, which is engaging, compelling, and SEO friendly." **Dense degree of concreteness:** "I saw your posted project description on Upwork, and I would like to write the contents for your website. I have a lot of experience in article and weblog writing in an SEO friendly fashion."
Affective intensity	A manner element of communication that is conveyed through affective terms (Hamilton and Hunter 1998). The proportion of affective terms to the total number of words in a message defines the degree of affective intensity.	Greater (lesser) degrees of intensity decrease (increase) uncertainty.	**Sparse degree of affective intensity:** "I saw your project description and I can write the required content for your site. I have plenty of experience in writing articles, blogs & E-books which is user engaging and SEO friendly as well." **Dense degree of affective intensity:** "I liked your project description and would be happy to write the content for your site. I have great experience in writing articles, blogs & E-books which is user engaging and SEO friendly as well."

opportunity, or ability to process the information and submit bids (Jones, Ravid, and Rafaeli 2004). A buyer that self-discloses a high amount of personal information might also appear less attractive as a prospective business contact (Collins and Miller 1994). Because extensive self-disclosures are unusual in initial B2B online exchanges (Koponen and Rytsy 2020), such disclosures might be perceived as inappropriate (Moon 2000).

In summary, we argue that moderate degrees of task and personal information in calls for bids relate to more freelancer bids. Buyers who provide greater degrees of task and personal information should attract more bids, but beyond a moderate degree

(i.e., a very dense provision of relevant information), providing still greater degrees of task and personal information may decrease the number of bids. We thus propose a curvilinear relationship:

> **P_1:** Extremely sparse and extremely dense degrees of (a) task and (b) personal information in calls for bids yield fewer freelance bids than moderate degrees.

Communication manner. In calls for bids, buyers can vary the concreteness and affective intensity with which they describe the gig. Researchers disagree about whether more or less ambiguous communication leads to more efficacious speech (Bradac 2001; Eisenberg and Witten 1987; Hosman 2002), but in an online freelance marketplace, we posit that buyers must reduce ambiguity to at least some extent by being more concrete and intense. Greater concreteness and affective intensity can be more efficient because recipients can process the information with less time and effort (Hosman 2002; Packard and Berger 2020). These approaches also tend to result in communication that is more persuasive, memorable, and accessible than communication that uses predominantly abstract or unemotional wording (Hamilton and Hunter 1998; Hosman 2002). In other settings, greater concreteness increases consumer satisfaction with employee interactions and purchase likelihood (Packard and Berger 2020). Greater degrees of intensity achieved through proportionally more affective words provide accessible, diagnostic signals to customers (Ludwig et al. 2013). They can also sway business partners' decisions when used as inspirational appeals (Singh, Marinova, and Singh 2020). Finally, greater concreteness and affective intensity provide heuristic cues that allow freelancers to take mental shortcuts, which makes them more likely to bid (Hosman 2002).

However, if the calls for bids appear too concrete or too intense, the task might appear narrow, which reduces the appeal of performing the gig (Hosman 2002). Williams (1980) finds that greater vagueness (i.e., less concreteness) can enhance judgments of a speaker's character, message acceptance, and recall. Moreover, some research asserts that reducing uncertainty with more concrete formulations is ineffective (Brashers 2001; Eisenberg and Witten 1987), so managers instead should embrace strategic ambiguity to allow for interpretative freedom (Keleman 2000). In contracts, unexpected specificity even increases ex ante costs (Mooi and Ghosh 2010). Contrastingly, greater task ambiguity can lower costs as well as reduce the risk of litigation and enhance cooperation in B2B exchanges (Zheng et al. 2020). Greater degrees of concrete terms in communications with investors also can have adverse effects (Pan et al. 2018), and excessive degrees of positive affective words diminish the impact of customer reviews (Ludwig et al. 2013). Thus, we predict a stylistic trade-off: Overly ambiguous calls for bids, lacking any concreteness or affective intensity, may undercut buyers' success in attracting freelancers, but some degree of ambiguity (i.e., avoiding overly concrete, affectively intense communication) can allow for divergent interpretations to coexist. Thus, moderate degrees of concreteness and affective intensity may be most effective in encouraging freelancers to bid.

> **P_2:** Extremely sparse and extremely dense degrees of (a) concreteness and (b) affective intensity in calls for bids yield fewer freelance bids than moderate degrees.

Managing Buyers' Uncertainty in Bids

Buyers also face uncertainty when deciding whom to hire and how much to pay (Ba and Pavlou 2002; Constantinides, Henfridsson, and Parker 2018). By managing these uncertainties through their bids, freelancers can affect their chances of winning bids and their price premiums. To establish relevant predictions, we integrate Grice's (1975) communication principles with uncertainty research such that we anticipate a greater provision of relevant information communicated with greater concreteness and affective intensity allows buyers to draw inferences from freelancers' bids with more certainty. Beyond these communication principles, Berger and Calabrese (1975) suggest that perceived similarity to a message sender reduces receivers' uncertainty. Thus, both purchase likelihood and buyers' willingness to pay a price premium might be influenced by freelancers' adherence to certain communication principles, as well as by their communicative similarity to the buyer.

Winning bids. In other exchange contexts, research has established that when service employees relay greater degrees of service or personal information (Liu et al. 2015; Packard, Moore, and McFarran 2018), it improves customers' intentions to purchase. Willingness to purchase also increases if employees use greater concreteness in online service chats (Packard and Berger 2020) or greater degrees of affective words in their emails (Singh, Marinova, and Singh 2020).

However, the dense provision of relevant information in a bid risks information overload (Jones, Ravid, and Rafaeli 2004), and a freelancer being overly concrete or intense might signal a restrictive, narrow approach to the gig (Hosman 2002). Our reasoning here parallels that for buyers' formulations of calls for bids. We thus similarly predict that moderate degrees of task and personal information provided in a moderately unambiguous manner (i.e., moderate degrees of concreteness and affective intensity) enhance freelancers' chances of winning the gig.

Yet preferences for uncertainty also might be situational and dispositional (Brashers 2001), as reflected in buyers' own communicative choices (Holtgraves 1997). Specifically, calls for bids can reveal buyers' expectations and preferences for communication behaviors. For example, buyers might like to get to know freelancers, or they may prefer to keep their business relationships impersonal. The extent to which they disclose their own personal information in calls for bids should signal these preferences. An ambiguous bid offered in response to an ambiguous call for bids might lead the buyer to conclude that the freelancer is tactful, sensitive, and noncoercive (Brown and Levinson 1987). Adaptive communications also raise

perceptions of credibility, common social identity, approval, and trust (Ludwig et al. 2013; Soliz and Giles 2014), as well as similarity perceptions, all of which in turn reduce uncertainty (Berger and Calabrese 1975). Crafting responses that mimic the buyer's communication is a common personal selling recommendation (Verbeke, Dietz, and Verwaal 2011). As Singh, Marinova, and Singh (2020) show, when sellers mimic buyers' communicative manner, it increases buyers' attention. Accordingly, freelancers who mimic a buyer's communication content and manner might improve their exchange success.

In some situations, though, deviating from buyers' communications may be more beneficial (Afifi and Burgoon 2000). Even in studies that note the performance benefits of adaption, researchers highlight the importance of the degree of adaptivity (e.g., the degree to which salesperson behaviors adjust for each customer during interactions; Verbeke, Dietz, and Verwaal 2011). Similarly, studies of communication accommodation investigate the degree of accommodation used (Soliz and Giles 2014). Extending these insights, the outcomes of adaptation likely depend on communication levels (e.g., very informative vs. not informative). In keeping with uncertainty reduction theory, we expect that buyers are less likely to hire freelancers whose bids offer sparse information and are very ambiguous, even if the call for bids has these characteristics.

> **P_3:** When the degrees of (a) task and (b) personal information, (c) concreteness, and (d) affective intensity provided by the buyer are at least moderate (sparse), freelancers can increase (decrease) their chances of bid success by mimicking buyers' communications.

Achieving price premiums. Buyers' uncertainty about a freelancer should influence their willingness to pay a price premium (Ba and Pavlou 2002). Although there are many reasons for price variations (Grewal, Monroe, and Krishnan 1998) in online freelance marketplaces, buyers compensate (penalize) freelancers for reducing (increasing) their transaction uncertainty by deciding to accept a price above (below) their original payment offer (Ba and Pavlou 2002). In line with Rao and Monroe (1996), freelancers' greater provision of relevant task and personal information in a more concrete and intense manner in bids likely reduces buyers' information asymmetry and exchange-specific risks. Therefore, buyers who want to transact with high certainty may render a price premium for such bids (Liu et al. 2015).

The degree to which freelancers mimic buyers' communication also may influence the price premium. For example, Mullins, Agnihotri, and Hall (2020) find that adaptive approaches for different customers help salespeople increase those customers' willingness to pay a price premium. However, in line with our arguments regarding bid success, we expect that the positive influence of a freelancer's communicative mimicry depends on the specific degree to which the buyer uses a specific communicative element. This reasoning aligns conceptually with the communication principles (Grice 1975), the recommendation that uncertainty should be carefully managed (Bradac 2001), and the benefits of mimicry identified in studies of communication accommodation (Soliz and Giles 2014) and adaptive selling (Verbeke, Dietz, and Verwaal 2011). However, we know of no studies that consider price premium implications of communicative trade-offs between reducing buyers' uncertainty and adapting to buyers' communication. In addition, we are not aware of any research that considers the possible negative effects when sellers mimic buyers who provide less task and personal information, are less concrete, or sparsely use affective intensity.

Buyers who want to transact with high certainty might render a price premium to freelancers who reduce uncertainty by providing greater degrees of relevant information in a more concrete and intense manner. But if buyers perceive that the provision of relevant information, degree of concreteness, and level of intensity surpasses their own reasonable level, they might feel overloaded or restricted and thus unwilling to pay a premium. We therefore predict that buyers offer a price premium to freelancers who provide degrees of relevant information, concreteness, and affective intensity at a level similar (but never too sparse) to their own communication, as only these bids help reduce buyers' exchange risks.

> **P_4:** When the degrees of (a) task and (b) personal information, (c) concreteness, and (d) affective intensity provided by the buyer are at least moderate (sparse), freelancers can increase (decrease) their chances of earning a price premium by mimicking the communication of the buyer.

Field Study of an Online Freelance Marketplace

Setting and Sample

We conducted a large-scale field study with a proprietary data set of calls for bids and corresponding bids posted on a leading, global online freelance marketplace. The marketplace hosts seven freelance service submarkets: (1) design; (2) writing and translation; (3) video, photo, and audio; (4) business support; (5) social media, sales, and marketing; (6) software and mobile development; and (7) web development. The bidding process follows a sequential, sealed-bid reverse auction format, and it concludes when the buyer chooses one winning bid (Hong, Wang, and Pavlou 2016; Jap 2007). As with recent marketing research that investigates large scales of communication (see Web Appendix B for an illustrative overview), this process depends on and is captured in text data. We used (1) text data from 343,796 calls for bids issued by 49,081 buyers (restricted to those who posted at least two gigs) to predict buyers' call for bids success, (2) 2,327,216 bids submitted by 34,851 freelancers (restricted to those who submitted at least two bids) to predict freelancers' bid success, and (3) 148,158 bids submitted by 30,851 freelancers (restricted to those who won and for which the payment was disclosed) to predict freelancers' price premium. Our multilevel approach required more than one observation (call for bid or bid) in each Level 2 unit (buyer or freelancer); otherwise, Level 2 and Level 1 variance

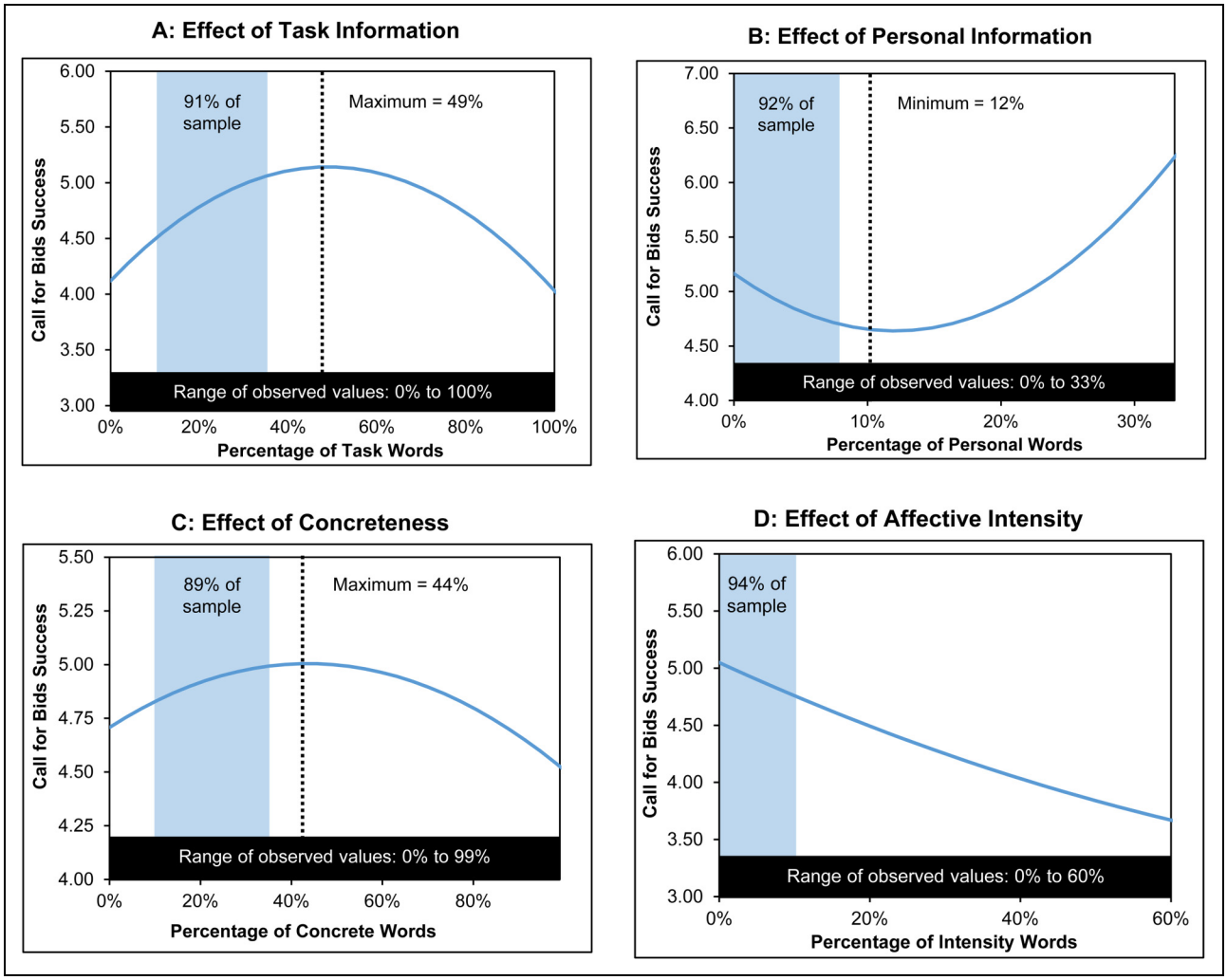

Figure 1. Effect of buyers' communication on call for bids success.
Note: The shaded area includes all values within ± 1.5 SD from the mean.

might have been confounded (Snijders and Bosker 2011). Web Appendix C summarizes the definitions and operationalizations, and Web Appendix J provides the descriptive statistics and correlations.

Measurement of Constructs

The number of freelancers who submit bids to offer their services provided the measure of success of buyers' call for bids. More submitted bids increases the probability that buyers can find an appropriate freelancer, whereas failing to find a suitable match is time consuming and costly because it requires further searches and delays the project (Horton 2017, 2019). We measured freelancers' bid success as a binary indicator of whether (1) or not (0) the freelancer was chosen by the buyer and won the bid (Hong and Pavlou 2017). For freelancers' price premium, we gauged the percentage by which the accepted bid price for the project exceeded (or fell short of) the buyer's original payment offered (i.e., benchmark price; Farris et al. 2010). This operationalization accounted for the difference between the final price a buyer paid and the original price they offered (i.e., what the buyer expected to pay) (Singh and Sirdeshmukh 2000).

To capture the independent communication variables, we mined the text of each call for bids and each bid. For the preprocessing and extraction steps, we used the R package Quanteda (Benoit et al. 2018), as well as a combination of newly developed and prevalidated text mining dictionaries. For the degree of task information in each text, we inductively sourced a list of context-specific task descriptor words. To start, we acquired all 34,851 freelancers' service skill tags (Berger et al. 2020; for an illustration, see Web Appendix D), which freelancers list in their profiles to describe the service tasks they offer (e.g., "developer," "illustrator"). After removing stop words and duplicates, two coders reviewed the remaining word list, deleted any misspelled words, and removed terms that did not describe a service (e.g., "great," "reliable"). Using Quanteda (Benoit et al.

2018), we stemmed the remaining words, leaving 1,912 unique word stems that describe service tasks. We mined each call for bids and bid, then summed word occurrences reflecting the new task dictionary. By dividing this sum by total words, we obtained a measure of the degree (ratio) of task information in each text. When people self-disclose personal information, they use singular, first-person pronouns. In line with previous research (e.g., Pennebaker and Stone 2003), we measured the degree of personal information as the ratio of first-person singular pronoun words (e.g., "I," "me") to the total words in each text. To determine the degree of communication concreteness, we mined each text for Brysbaert, Warriner, and Kuperman's (2014) list of generally known English lemmas that indicate whether a concept denoted by a term refers to a perceptible entity. Following their operationalization, we included all terms that received a rating of 3 or greater on their bipolar, five-point abstract-to-concrete rating scale.[2] That is, terms that score 3 or higher refer to relatively more specific objects, materials, people, processes, or relationships. We again divided the sum of the concrete terms by the total words in each text. Finally, the ratio of emotion-laden words (e.g., "problematic," "easy"; Hamilton and Hunter 1998; Hosman 2002) determined affective intensity. Using the Linguistc Inquiry and Word Count (LIWC) affect dictionary, we obtained a list of affect words, which we then summed for each text (Pennebaker et al. 2015) and divided each by the corresponding total word count to obtain the degree of affective intensity.

Pilot Studies

Validity of text-mined measures. To ensure the validity of our text-mined communication measures, we asked two coders to classify the texts of a random subsample of 100 calls for bids ($M_{length} = 129$ words) and 100 bids ($M_{length} = 102$ words). The coders indicated whether considerable task information, personal information, concreteness, and affective intensity were present in each text (1) or not (0). Comparing the coders' classifications with our text-mined classification revealed substantial agreement for both calls for bids (.73 to .94) and bids (.66 to .88) (Krippendorff 2013). The average F1 measure was sufficiently high for both bids (.79 to .95) and calls for bids (.80 to .95), as we detail in Web Appendix F.

Experimental evidence of uncertainty reduction. To establish the internal validity of the chosen communication aspects on receivers' uncertainty perceptions, we conducted a series of experimental pilot studies. We used single-factor, within-subject designs for (1) task information, (2) personal information, (3) concreteness, and (4) affective intensity. For each pilot study, we recruited between 50 and 53 U.S. consumers with a mean age of 37.6 years (50% women) from Amazon Mechanical Turk (for details, see Web Appendix G). In line with previous research (e.g., Hamilton and Hunter 1998; Larrimore et al. 2011; Ma et al. 2017; Packard and Berger 2020), we find that greater use of all four communication aspects in bids significantly reduces buyers' uncertainty perceptions and affects their hiring intentions.

Predicting the Success of Buyers' Calls for Bids

Model-free evidence. In Web Appendix H, we summarize the model-free findings. The mean-level comparison indicates that calls for bids with significantly greater degrees of task information and concreteness, as well as significantly lower degrees of personal information and affective intensity, receive more freelance bids than an average call for bids (M = 5).

Econometric model and identification. The success of calls for bids reflects a count variable. Noting the overdispersion in the data ($p < .001$), we used a negative binomial model instead of a Poisson model. Furthermore, calls for bids are nested within buyers, and thus, the call for bids and number of freelancers who offer their service might be interdependent. The significant between-group variance ($p < .001$) and $ICC_{(1)}$ of .27 suggests a multilevel structure. We therefore specified a multilevel model with a random intercept to control for time-invariant unobserved differences between buyers (e.g., education, country, gender) that could relate to differences in their success, using the following base equation:

$$\begin{aligned} CALSUC_{ij} = {} & y_{00} + y_{01}BTASK_{ij} + y_{02}BPERS_{ij} \\ & + y_{03}BCONC_{ij} + y_{04}BINTE_{ij} \\ & + y_{05}BTASK_SQ_{ij} + y_{06}BPERS_SQ_{ij} \\ & + y_{07}BCONC_SQ_{ij} + y_{08}BINTE_SQ_{ij} \\ & + \mu_{0j} + \varepsilon_{ij}, \end{aligned} \tag{1}$$

where $CALSUC_{ij}$ is the success of a call for bids i (i = 1, …, 343,796) issued by buyer j (j = 1, …, 49,081), $BTASK_{ij}$ is buyer task information, $BPERS_{ij}$ indicates buyer personal information, $BCONC_{ij}$ is buyer concreteness, and $BINTE_{ij}$ refers to buyer affective intensity in the call for bids. In turn, $BTASK_SQ_{ij}$ is buyer task information squared, $BPERS_SQ_{ij}$ is buyer personal information squared, $BCONC_SQ_{ij}$ is buyer concreteness squared, and $BINTE_SQ_{ij}$ is buyer affective intensity squared. Finally, μ_{0j} is the random intercept and ε_{ij} is the error term.

Some empirical challenges inhibited a robust model identification, which we addressed in several ways. To account for observed heterogeneity, we incorporated covariates that might influence how many freelancers respond to a particular call for bids. First, in line with extant text mining studies (Berger et al. 2020), we controlled for the word count in each call for bids. Second, as a reputation cue, we measured buyer experience as the number of projects a buyer had commissioned previously on the platform prior to posting the focal call for bids

[2] More stringent term lists using cutoff levels at 3.5 or 4 strongly correlate ($r > .60$, $p < .01$) with the list that uses 3 as a cutoff.

(Hong and Pavlou 2017). Third, a higher payment offer may attract more freelancers (Horton 2019), so we determined the payment offered by the buyer in U.S. dollars, multiplied by an undisclosed index for anonymity. We used a dummy for non-disclosed payments, but we replaced missing values with a grand mean to retain the observations. Fourth, we measured project duration, as longer projects attract more freelancers (Horton 2019). A dummy variable indicated whether the project was slated to last more (1) or less than a month (0). Fifth, more buyers demanding freelance services at the same time creates a relative shortage of freelancers (Horton 2019). To account for an excess supply of freelancers, we calculated the sum of all active freelancers in the specific submarket of the call for bids and divided by the sum of all calls for bids posted around the same time (±31 days) in the same submarket. Sixth, the marketplace grew over time, so we included fixed effects for the year of the call for bids. Seventh, we included fixed effects for the seven submarkets, since submarkets that feature more complex projects have fewer qualified freelancers.

Beyond these observed covariates, buyers' bid formulations might have varied by project characteristics unobservable to us. To the extent that these unobserved project characteristics influenced both the buyers' communication strategies and buyer outcomes, the estimated parameters might be biased. Therefore, we concatenated all service skill tags from the service profile of each freelancer who submitted a bid in response to a specific call. Then, to uncover the latent mixture of project types, we applied a latent Dirichlet allocation model to the project-specific skill tags (e.g., Berger et al. 2020; see Web Appendix I). We included the resulting 12 latent project characteristics as fixed effects to account for unobserved heterogeneity.

Buyers also strategically make their communication decisions in learned anticipation of a larger number of bids or other factors, which were potentially unobservable to us. This strategic behavior could make communication approaches endogenous (Kanuri, Chen, and Sridhar 2018). Because our data did not contain valid, strong instruments for buyers' communications, we adopted Park and Gupta's (2012) approach and used Gaussian copulas to model the correlation between each buyer communication $\mathrm{BCOM}_{ij}^{1\text{-}4}$and the error term. We added regressors to Equation 1, such that

$$\widetilde{\mathrm{BCOM}}_{ij}^{1-4} = \Phi^{-1}[\mathrm{H}(\mathrm{BCOM}_{ij}^{1-4})], \tag{2}$$

where Φ^{-1} is the inverse of the normal cumulative distribution function and $[\mathrm{H}(\mathrm{BCOM}_{ij}^{1-4})]$ represents the empirical distribution functions of the four buyer communication approaches. The endogenous regressors must be nonnormally distributed for identification (Park and Gupta 2012), and we confirmed this was true using Shapiro–Wilks tests (all $p < .001$). The updated equation to predict buyers' call for bids success, after correcting for endogeneity, was thus

$$\begin{aligned}\mathrm{CALSUC}_{ij} = {} & y_{00} + y_{01}\mathrm{BTASK}_{ij} + y_{02}\mathrm{BPERS}_{ij} \\ & + y_{03}\mathrm{BCONC}_{ij} + y_{04}\mathrm{BINTE}_{ij} \\ & + y_{05}\mathrm{BTASK_SQ}_{ij} + y_{06}\mathrm{BPERS_SQ}_{ij} \\ & + y_{07}\mathrm{BCONC_SQ}_{ij} + y_{08}\mathrm{BINTE_SQ}_{ij} \\ & + y_{09-14}\mathrm{CON}_{ij}^{1-6} + y_{15-20}\mathrm{YEAR}_{ij}^{1-6} \\ & + y_{21-26}\mathrm{SUBM}_{ij}^{1-6} + y_{27-37}\mathrm{PROJ}_{ij}^{1-11} \\ & + y_{38-41}\widetilde{\mathrm{BCOM}}_{ij}^{1-4} + \mu_{0j} + \varepsilon_{ij},\end{aligned} \tag{3}$$

where CON_{ij}^{1-5} is the vector of control variables, YEAR_{ij}^{1-6} are year effects, SUBM_{ij}^{1-6} are submarket effects, $\mathrm{PROJ}_{ij}^{1-11}$ are latent project clusters, and $\widetilde{\mathrm{BCOM}}_{ij}^{1-4}$ are Gaussian copulas. We used a robust estimator to account for correlated and clustered standard errors.

Results and discussion. The maximum variance inflation factor is 2.11, indicating no potential threat of multicollinearity. Table 2 contains the results of a main effects model and the full model, and Figure 1, Panels A–D, display the curvilinear effects from the full model. We have proposed that extremely sparse and extremely dense degrees of relevant information, concreteness, and affective intensity in calls for bids yield fewer freelance bids than moderate degrees of these communication elements. In line with our expectations, we find a positive linear effect (.152, $p < .01$) and negative squared effect for task information (−.026, $p < .01$), as displayed in Figure 1, Panel A. Moderate levels of the use of task information (50%: .222, $p < .01$) yield better results than sparse (10%: −.426, $p < .01$) and dense (90%: −.495, $p < .01$) uses. Furthermore, we find a positive linear effect (.052, $p < .01$) and negative squared effect for concreteness (−.080, $p < .01$) (Figure 1, Panel C). Moderate use (50%: .078, $p < .01$) yields better results than sparse use (10%: −.092, $p < .01$) or dense use (90%: −.251, $p < .01$) of concreteness. Contrary to our expectations, we find a negative linear effect (−.190, $p < .01$) and a positive squared effect (.032, $p < .01$) of personal information (Figure 1, Panel B). We also find a negative linear effect (−.084, $p < .01$) and a nonsignificant squared effect (.001, ns) of affective intensity (Figure 1, Panel D). Thus, it appears that any provision of personal information or greater use of affective intensity by the buyer is always ineffective. As a possible explanation, we note that in B2B online conversations, self-disclosure and emotions may be valued only after business relations have been established, not at the moment they form (Koponen and Rytsy 2020). Most of the exchanges in our data were between strangers, rather than being repeat exchanges, so it may be more appropriate for buyers to avoid personal details and appear rational rather than emotive.

To entice more freelancers to bid, buyers should keep their calls for bids brief (−.027, $p < .01$ for word count), which emphasizes the need for careful formulations. Higher payment offers (.168, $p < .01$), longer project durations (.117, $p < .01$),

Table 2. Predicting the Success of Buyers' Calls for Bids.

	Model 1: Main Effects			Model 2: Full Model		
	β	SE	95% CI	β	SE	95% CI
Buyer Communication						
Task information	.123**	.003	.117, .128	.152**	.003	.146, .159
Personal information	−.149**	.004	−.157, −.141	−.190**	.004	−.199, −.181
Concreteness	.040**	.003	.035, .045	.052**	.003	.046, .057
Affective intensity	−.098**	.007	−.112, −.085	−.084**	.008	−.100, −.068
Buyer Communication Squared						
Task information squared				−.026**	.001	−.028, −.024
Personal information squared				.032**	.002	.029, .035
Concreteness squared				−.008**	.001	−.011, −.007
Affective intensity squared				.001	.001	−.001, .004
Controls						
Word count	−.025**	.003	−.031, −.019	−.027**	.003	−.033, −.021
Buyer experience	−.033**	.007	−.046, −.020	−.033**	.007	−.046, −.020
Project payment	.170**	.005	.159, .181	.168**	.005	.158, .179
Payment not disclosed	.073**	.005	.063, .083	.071**	.005	.061, .081
Project duration	.116**	.003	.110, .122	.117**	.003	.111, .123
Excess supply of freelancers	.614**	.004	.606, .622	.606**	.004	.598, .613
Fixed Effects						
Years		included			included	
Submarkets		included			included	
Unobserved Heterogeneity						
Project characteristics		included			included	
Endogeneity Corrections						
Gaussian copulas		included			included	
Buyers			49,081			
Call for bids			343,796			

Notes: Standardized results. Significance is based on two-tailed tests. The dependent variable is the count of all bids received. The sample included all projects listed by buyers with at least two projects to which at least one freelancer submitted a bid. Effects for years, submarkets, project characteristics, and Gaussian copulas are detailed in Web Appendix Q.
*$p < .05$.
**$p < .01$.

and an excess supply of freelancers (.606, $p < .01$) all increase the number of bids. Notably, the number of projects a buyer has previously commissioned relates negatively to the number of freelancers who bid (−.033, $p < .01$). These experienced buyers might have established relationships with specific freelancers, which reduces other freelancers' chances and causes them to refrain from bidding (Lanzolla and Frankort 2016).

Predicting Freelancers' Bid Success

Model-free evidence. Bids that offer less personal information and greater task information, concreteness, and affective intensity are more successful in winning projects. Among bids that won, the mean-level comparisons indicate nonlinear effects of mimicry. That is, successful freelancers mimic buyers' use of task information, personal information, and concreteness closely. If a buyer uses very sparse or very dense degrees of these communication aspects, the winning freelancers deviate more, indicating a nonlinear impact of mimicry. We do not find evidence of this mimicry relationship for affective intensity (see Web Appendix H).

Measurement of similarity. Previous studies often operationalize communication similarity as the absolute difference between two measures (e.g., Ludwig et al. 2013; Soliz and Giles 2014), but this approach suffers some implicit constraints (Edwards and Parry 1993). In particular, difference scores suggest that one party's communication increases at the same magnitude as the other's decreases. They also ignore the degree at which the relative mimicry occurs. As a preferable alternative, we use polynomial regression, which allows for simultaneous testing of similarity and dissimilarity effects on bid success, at different levels of freelancers' and buyers' uses of the four communication aspects. In their study of positive and negative emotional tone convergence, Gooty et al. (2019) also use polynomial regression to explore the nuanced effects of convergence in leader–follower relationships on leader–member exchange quality. A simple regression model that captures absolute deviation cannot simultaneously assess the degree

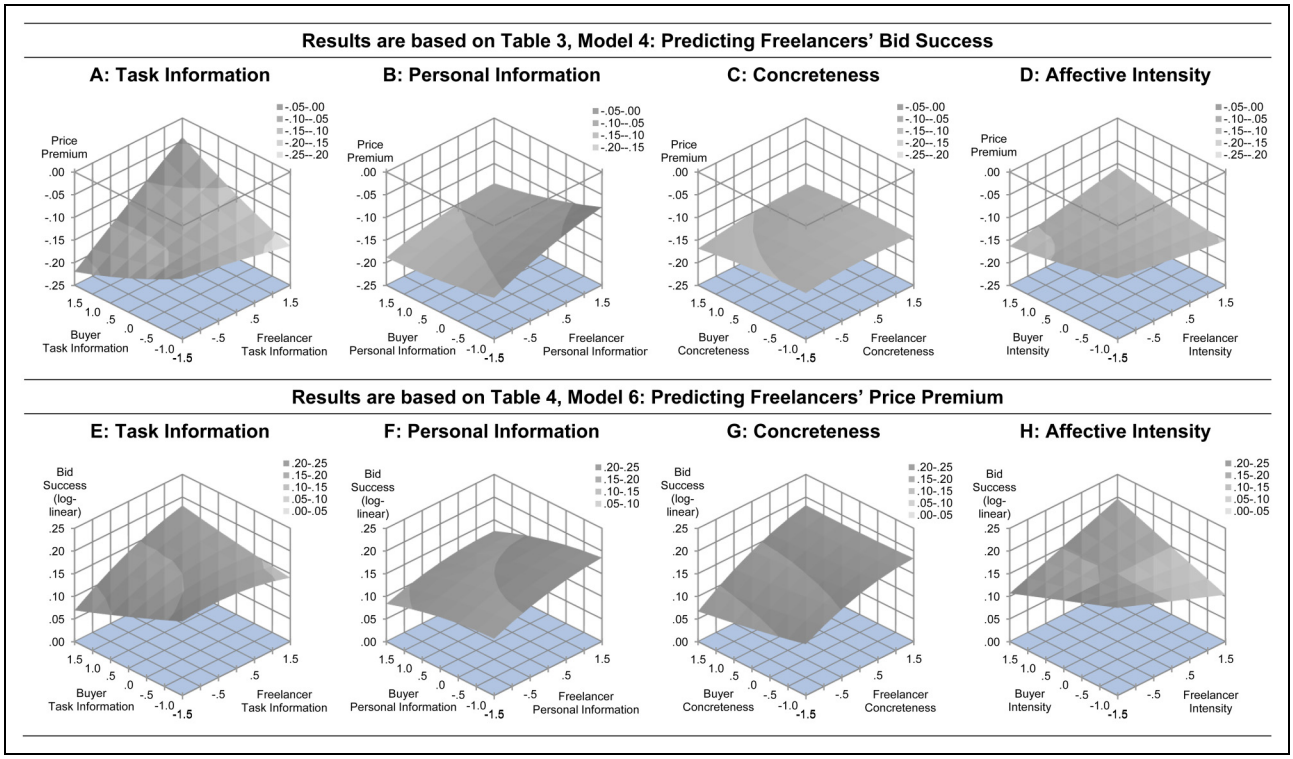

Figure 2. Response surfaces for bid success and price premium.

Notes: We detail the response surfaces in the Web Appendix. Web Appendix L displays similarity and dissimilarity effects for bid success, Web Appendix M displays simple slope analyses of low versus high levels of buyers' communication elements in relation to bid success, Web Appendix O displays similarity and dissimilarity effects for price premium, and Web Appendix P displays simple slope analyses of low versus high levels of buyers' communication elements in relation to price premiums.

of task information by the buyer and the potential nonlinear effects of task information mimicry by the freelancer. So, we performed a polynomial regression with response surface analyses for each communication aspect to capture the extent to which freelancers mimicked a prospective buyer's provision of relevant information and communication manner. We detail this polynomial modeling approach that led to Equation 4 and the calculation of all polynomial terms, using task information as an example, in Web Appendix E.

Econometric model and identification. We tested freelancers' trade-off between adding more uncertainty-reducing communication versus mimicking the buyer's communication in a polynomial regression model that included linear terms, quadratic terms, and interactions. In the multilevel base equation to predict freelancers' bid success ($ICC_{(1)} = .09$, $p < .001$),

$$\begin{aligned} BIDSUC_{kl} = {} & y_{00} + y_{01-04}FCOM_{kl}^{1-4} + y_{05-08}BCOM_{kl}^{1-4} \\ & + y_{09-12}FCOM_SQ_{kl}^{1-4} \\ & + y_{13-16}(FCOM_{kl}^{1-4} \times BCOM_{kl}^{1-4}) \\ & + y_{17-20}BCOM_SQ_{kl}^{1-4} + \mu_{0l} + \varepsilon_{kl}, \end{aligned} \tag{4}$$

$BIDSUC_{kl}$ is the success of bid k (k = 1, …, 2,327,216) by freelancer l (l = 1, …, 34,851), $FCOM_{kl}^{1-4}$ are the four freelancer communication aspects, $BCOM_{kl}^{1-4}$ indicate the four buyer communication aspects, $FCOM_SQ_{kl}^{1-4}$ are freelancer communication aspects squared, ($FCOM_{kl}^{1-4} \times BCOM_{kl}^{1-4}$) are interactions of freelancer and buyer communication aspects, $BCOM_SQ_{kl}^{1-4}$ are buyer communication squared, μ_{0l} is the random intercept, and ε_{kl} is the error term.

We incorporated several covariates that might influence freelancers' bid success. As in the buyer model, we controlled for word count, project payment, project duration, and excess supply of active freelancers. We also included fixed effects for years, submarkets, and latent project characteristics. We accounted for the number of projects the freelancer completed prior to submitting the focal bid as a reputation cue that might determine bid success (Hong and Pavlou 2017). Freelancer rating is an average five-point satisfaction rating that a freelancer has received for all completed projects. To retain observations of unrated freelancers, we included a dummy for observations without star ratings and replaced the missing values with a grand mean rating.

Several additional controls relate to whether a bid is successful. First, following prior research, we assessed linguistic style matching, or the similarity between each bid and the respective call for bids, across nine function word categories (Ludwig et al. 2013). Second, we accounted for any previous relationship in which the freelancer had completed at least one project for the same buyer prior to the specific call for bids (Hong and Pavlou

2017). Third, freelancers submit a bid price that may differ from the payment offered by the buyer, and a higher bid price may reduce the likelihood of bid success (Hong and Pavlou 2017). In light of this, we measured each bid price as a ratio between the asking price and the average indexed bid price requested by all competing freelancers for the same call for bids. Fourth, the longer it takes freelancers to submit a bid, the lower their chances of success (Hong, Wang, and Pavlou 2016). So, we measured time-to-bid as the number of days between the posting of the call for bids and the bid submission. A dummy variable also indicates whether the bid was submitted late (1) or on time (0). Fifth, competition for a specific call for bid should impact each bid's success chances, so we controlled for the number of bids for the same call (Hong, Wang, and Pavlou 2016).

Similar to buyers, freelancers make communication decisions strategically in anticipation of higher bid success or other, unobservable factors. Thus, freelancer communication is potentially endogenous, so we again used Gaussian copulas (Shapiro–Wilks tests: all $p < .001$). The updated equation to predict freelancers' bid success is as follows:

$$\begin{aligned} \mathrm{BIDSUC}_{kl} = {} & y_{00} + y_{01-04}\mathrm{FCOM}_{kl}^{1-4} + y_{05-08}\mathrm{BCOM}_{kl}^{1-4} \\ & + y_{09-12}\mathrm{FCOM_SQ}_{kl}^{1-4} \\ & + y_{13-16}(\mathrm{FCOM}_{kl}^{1-4} \times \mathrm{BCOM}_{kl}^{1-4}) \\ & + y_{17-20}\mathrm{BCOM_SQ}_{kl}^{1-4} + y_{21-33}\mathrm{CON}_{kl}^{1-13} \\ & + y_{34-39}\mathrm{YEAR}_{kl}^{1-6} + y_{40-45}\mathrm{SUBM}_{kl}^{1-6} \\ & + y_{46-56}\mathrm{PROJ}_{kl}^{1-11} + y_{57-60}\widetilde{\mathrm{FCOM}}_{kl}^{1-4} \\ & + y_{61-64}\widetilde{\mathrm{BCOM}}_{kl}^{1-4} + \mu_{0l} + \varepsilon_{kl}, \end{aligned} \tag{5}$$

where CON_{kl}^{1-14} is the vector of control variables, YEAR_{kl}^{1-6} are year effects, SUBM_{kl}^{1-6} are submarket effects, $\mathrm{PROJ}_{kl}^{1-11}$ are latent project clusters, $\widetilde{\mathrm{FCOM}}_{kl}^{1-4}$ are Gaussian copulas for bid text, and $\widetilde{\mathrm{BCOM}}_{kl}^{1-4}$ are Gaussian copulas for calls for bids text.

Results and discussion. The maximum variance inflation factor is 3.86, indicating no threat of multicollinearity. Table 3 contains the results of the freelancer bid success models, Web Appendix K summarizes the response surface coefficients, and Figure 2 displays these coefficients on three-dimensional surfaces, reflecting relationships among freelancer communication, buyer communication, and bid success. We also highlight the misfit line used to explore the trade-off between exceeding and falling short of buyers' communication levels.

We have proposed that when the degree of relevant information, concreteness, and affective intensity provided by the buyer is at least moderately dense (sparse), freelancers can increase (decrease) their chances of bid success by mimicking the buyer's communication. The surface-level tests along the plotted misfit line (Web Appendix K) display negative curvatures for task information (−.020, $p < .01$), personal information (−.007, $p < .01$), concreteness (−.011, $p < .01$), and affective intensity (−.020, $p < .01$). These results indicate that mimicking the buyer's communication increases bid success (see Web Appendix L for further clarification).

In line with our proposition, we qualify this effect for sparse degrees of task and personal information, concreteness, and affective intensity provided by the buyer in Web Appendix M. If we were to find positive slope coefficients at lower levels, it would suggest that freelancers can increase their chances of bid success by exceeding, rather than mimicking, the buyer's communication. This prediction holds for personal information (.020, $p < .01$) and concreteness (.024, $p < .01$), according to the slopes at low levels of buyer communication. However, contrary to our expectations, we find negative effects for the slopes of task information (−.008, $p < .01$) and affective intensity (−.030, $p < .01$) at low levels of buyer communication. Therefore, freelancers should always mimic the degree of task information and affective intensity provided by the buyer. For these two communication aspects, the tenets of communication accommodation theory (Soliz and Giles 2014) and adaptive selling (Verbecke, Dietz, and Verwaal 2011) hold: mimicking the buyer is always better. To increase their chances of bid success further, freelancers also must keep their bids concise (−.021, $p < .01$ for word count). Reputation cues (experience: .002, $p < .01$; rating: .010, $p < .01$) increase freelancers' chances of bid success, as do linguistic style matching (.051, $p < .01$), previous business relations with the buyer (.078, $p < .01$), lower bid prices (−.006, $p < .01$), timely (cf. late) bid submissions (−.004, $p < .01$), lack of competition (−.251, $p < .01$), and reduced supply of freelancers (−.042, $p < .01$).

Predicting Freelancers' Price Premium

Model-free evidence. Bids with significantly less affective intensity and significantly more task information, personal information, and concreteness achieve greater price premiums than an average bid (M = 14% discount). Moreover, 96% of freelancers completed projects without any price premium, indicating the prevalence of value traps. The bids that achieved price premiums mimicked those buyers that made moderate use of task information, concreteness, and affective intensity closely, yet they deviated from buyers that made very sparse or very dense use of them. For personal information, we find a distinctive, positive, linear relationship for mimicry. Successful freelancers mimicked buyers that supplied a lot of personal details but deviated if buyers supplied very little or moderate degrees of personal information (Web Appendix H).

Econometric model and identification. The price premium analysis is restricted to bids that win and buyers that disclose their payment offer upfront. Thus, our estimates may be biased by buyers' self-selection, in terms of which bid they chose and whether they disclosed payments. Therefore, we employed a two-stage selection model. In the first stage, we estimated a choice model, with the availability of the necessary data as a binary dependent variable (i.e., bid was won and payment was disclosed). Using this model, we computed the inverse Mills ratio to account for the

Table 3. Predicting Freelancers' Bid Success.

	Model 3: Freelancer Communication			Model 4: Full Model		
	β	SE	95% CI	β	SE	95% CI
Freelancer Communication						
y_{01}: Task information	.014**	.001	.013, .015	.015**	.001	.014, .016
y_{02}: Personal information	.018**	.001	.016, .019	.017**	.001	.016, .017
y_{03}: Concreteness	.030**	.001	.029, .031	.031**	.001	.030, .032
y_{04}: Affective intensity	.001	.001	−.001, .003	.000	.001	−.002, .001
Buyer Communication						
y_{05}: Task information				−.009**	.000	−.009, −.008
y_{06}: Personal information				−.017**	.000	−.018, −.017
y_{07}: Concreteness				−.008**	.000	−.009, −.008
y_{08}: Affective intensity				.001**	.000	.001, .002
Freelancer Communication Squared						
y_{09}: Task information squared	−.006**	.000	−.006, −.005	−.006**	.000	−.007, −.006
y_{10}: Personal information squared	−.005**	.000	−.005, −.004	−.005**	.000	−.005, −.004
y_{11}: Concreteness squared	−.006**	.000	−.007, −.006	−.007**	.000	−.007, −.007
y_{12}: Affective intensity squared	.000**	.000	.000, .001	.000**	.000	.000, .001
Freelancer–Buyer Interactions						
y_{13}: Task information interaction				.015**	.000	.015, .016
y_{14}: Personal information interaction				−.002**	.000	−.002, −.001
y_{15}: Concreteness interaction				.005**	.000	.004, .005
y_{16}: Affective intensity interaction				.020**	.000	.020, .021
Buyer Communication Squared						
y_{17}: Task information squared				.001**	.000	.001, .002
y_{18}: Personal information squared				−.004**	.000	−.005, −.004
y_{19}: Concreteness squared				.001**	.000	.001, .001
y_{20}: Affective intensity squared				.000*	.000	.000, .000
Controls						
Word count	−.022**	.001	−.024, −.021	−.021**	.001	−.022, −.020
Linguistic style matching	.051**	.001	.048, .053	.051**	.001	.048, .053
Freelancer experience	.002**	.001	.001, .003	.002**	.001	.001, .003
Freelancer rating	.010**	.001	.009, .010	.010**	.001	.009, .010
Project payment	−.001**	.000	−.001, −.001	−.001**	.000	−.001, −.001
Payment not disclosed	−.028**	.000	−.029, −.028	−.029**	.000	−.030, −.028
Previous relationship	.078**	.001	.076, .081	.078**	.001	.075, .080
Bid price	−.006**	.000	−.006, −.006	−.006**	.000	−.007, −.006
Time-to-bid	.001	.000	.000, .001	.001	.000	.000, .001
Late submission	−.005**	.000	−.005, −.004	−.004**	.000	−.005, −.004
Competition	−.251**	.007	−.265, −.238	−.251**	.007	−.264, −.238
Excess supply of freelancers	−.044**	.000	−.045, −.043	−.042**	.000	−.043, −.042
Fixed Effects						
Years		included			included	
Submarkets		included			included	
Unobserved Heterogeneity						
Project characteristics		included			included	
Endogeneity Corrections						
Gaussian copulas		included			included	
Freelancers			34,851			
Bids			2,327,216			

Notes: Standardized results. Significance is based on two-tailed tests. The dependent variable is whether the freelancer was chosen and won the bidding process. The sample included all bids by freelancers with at least one winning and at least one losing bid. Effects for years, submarkets, project characteristics, and Gaussian copulas are detailed in Web Appendix Q.

*$p < .05$.

**$p < .01$.

potential selection bias (probit model in Web Appendix N) and included this correction term in the final model estimation. To identify second-stage parameters, there needed to be one term in the first-stage equation that was unrelated to the error term in the freelance price premium equation. We thus included the dummy that indicates if the bid was submitted late only in the first-stage equation because this term explained buyers' choice of the bid, but we did not expect it to be conceptually related with the eventual price premium. Thus, this term satisfied both relevance and exogeneity requirements. The updated equation of our multilevel model ($ICC_{(1)} = .13$, $p < .001$) is as follows:

$$\begin{aligned} PREMIUM_{kl} = {} & y_{00} + y_{01-04}FCOM_{kl}^{1-4} \\ & + y_{05-08}BCOM_{kl}^{1-4} \\ & + y_{09-12}FCOM_SQ_{kl}^{1-4} \\ & + y_{13-16}(FCOM_{kl}^{1-4} \times BCOM_{kl}^{1-4}) \\ & + y_{17-20}BCOM_SQ_{kl}^{1-4} \\ & + y_{21-31}CON_{kl}^{1-11} + y_{32-37}YEAR_{kl}^{1-6} \\ & + y_{39-43}SUBM_{kl}^{1-6} + y_{44-54}PROJ_{kl}^{1-11} \\ & + y_{55-58}\widetilde{FCOM}_{kl}^{1-4} + y_{59-62}\widetilde{BCOM}_{kl}^{1-4} \\ & + y_{63}IMR_{kl} + \mu_{0l} + \varepsilon_{kl}, \end{aligned} \tag{6}$$

where $PREMIUM_{kl}$ is the price premium of bid k (k = 1, …, 148,158) offered by freelancer l (l = 1, …, 30,851), and IMR_{kl} is the correction term.

Results and discussion. The maximum variance inflation factor is 2.74, indicating no threat of multicollinearity. Table 4 contains the results of the freelancer price premium models, Web Appendix K details the response surface coefficients, and Figure 2 displays the surfaces.

We proposed that when the degree of relevant information and communication manner provided by the buyer is at least moderately high (low), freelancers increase (decrease) their chances of earning a price premium by mimicking this communication. Web Appendix O displays the misfit lines on two-dimensional planes. In line with our expectations, the surface-level tests along the plotted misfit line show a negative curvature for task information (−.023, $p < .01$), concreteness (−.007, $p < .01$), and affective intensity (−.008, $p < .01$), such that mimicking the buyer's communication increases bid success. However, for personal information, we find a positive curvature (.003, $p < .05$), which implies freelancers should always offer more personal information than the buyer. For these B2B services, the provider and the service are inseparable, which may lead buyers to place more value on personal information about freelancers, even if their own provision of personal details in the calls for bids is sparse.

If a buyer provides little relevant information or is less concrete (Web Appendix P), a positive slope would suggest that freelancers can increase their chances of earning a price premium by exceeding rather than mimicking the buyer. We find support for this prediction in the slope of personal information (.027, $p < .01$) at low levels of buyer personal information. However, negative effects emerge from the slopes of task information (−.016, $p < .01$) and affective intensity (−.012, $p < .01$), and we find a nonsignificant effect for concreteness (.002, n.s.). Mimicking the buyer's task information and affective intensity is always better, which is in line with accommodation theory and adaptive selling (Soliz and Giles 2014; Verbecke, Dietz, and Verwaal 2011).

Freelancers also increase their price premiums by avoiding lengthy bids (−.014, $p < .01$). Although platform reputation cues (experience and rating) can boost freelancers' chances of bid success, they do not determine the final price buyers pay. The skew in the ratings toward very high scores may limit their ability to help prospective buyers determine an appropriate price (Kokkodis and Iperirotis 2016). Linguistic style matching (.023, $p < .01$), a previous relationship with the prospective buyer (.056, $p < .01$), submitting early in the bid process (.009, $p < .01$), and reduced competition (−.015, $p < .01$) all increase buyers' acceptance of a price premium.

General Discussion

Across disciplines, substantial research has identified various success determinants in online freelance marketplaces (e.g., Horton 2019; Srivastava and Chandra 2018). For example, studies of B2B exchanges and two-sided marketplaces emphasize communication (see Web Appendix A). But at the specific word level, we lack insights into the optimal information or manner of communication (Berger et al. 2020). With this initial investigation of how buyers' and freelancers' success might be enhanced by appropriately managing the other party's uncertainty, we postulate, in line with uncertainty reduction (Berger and Calabrese 1975) and uncertainty management (Brashers 2001) theories, that communication that is not completely informative and clear may still be effective. Accordingly, we investigate how buyers' communication can attract freelance bids and how freelancers' communication can determine their bid success and price most effectively, and the results offer both theoretical and practical implications.

Theoretical Contributions

First, we advance research on how buyers' communication determines their ability to attract freelancers. Drawing on prior communication research, we identify communication principles that critically relate to receivers' uncertainty, such as relevant task and personal information and the relative concreteness and affective intensity with which this information is communicated (Bradac 2001; Grice 1975). To entice more freelancers to bid, buyers should carefully formulate their calls for bids to keep them brief. Freelancers' information processing motivation, time, skills, and proficiency likely are limited, so buyers must choose their wording carefully and select from various effective communicative aspects. They can attract a larger pool of bids if they provide moderate degrees of task information in a moderately concrete manner. Offering too little of these features leaves

Table 4. Predicting Freelancers' Price Premium.

	Model 5: Freelancer Communication			Model 6: Full Model		
	β	SE	95% CI	β	SE	95% CI
Freelancer Communication						
y_{01}: Task information	.023**	.002	.020, .026	.022**	.002	.019, .025
y_{02}: Personal information	.021**	.002	.017, .025	.021**	.002	.017, .026
y_{03}: Concreteness	.006**	.001	.004, .007	.005**	.001	.003, .007
y_{04}: Affective intensity	.004	.003	−.002, .010	.003	.003	−.003, .009
Buyer Communication						
y_{05}: Task information				.003*	.001	.001, .005
y_{06}: Personal information				−.016**	.002	−.019, −.012
y_{07}: Concreteness				−.004**	.001	−.006, −.002
y_{08}: Affective intensity				−.001	.002	−.005, .003
Freelancer Communication Squared						
y_{09}: Task information squared	−.001	.001	−.002, .000	−.001	.001	−.002, .001
y_{10}: Personal information squared	−.004**	.001	−.006, −.002	−.004**	.001	−.006, −.002
y_{11}: Concreteness squared	−.003**	.001	−.004, −.002	−.003**	.001	−.005, −.002
y_{12}: Affective intensity squared	.000	.000	−.001, .000	.000	.000	−.001, .000
Freelancer–Buyer Interactions						
y_{13}: Task information interaction				.025**	.003	.024, .027
y_{14}: Personal information interaction				−.004**	.001	−.005, −.002
y_{15}: Concreteness interaction				.002**	.000	.001, .002
y_{16}: Affective intensity interaction				.010**	.003	.008, .012
Buyer Communication Squared						,
y_{17}: Task information squared				.003**	.001	.001, .004
y_{18}: Personal information squared				.003**	.001	.002, .005
y_{19}: Concreteness squared				−.002**	.001	−.004, −.001
y_{20}: Affective intensity squared				.002**	.001	.000, .003
Controls						
Word count	−.014**	.002	−.018, −.011	−.014**	.002	−.018, −.011
Linguistic style matching	.022**	.004	.013, .030	.023**	.004	.015, .032
Freelancer experience	−.001	.001	−.004, .001	−.001	.001	−.004, .001
Freelancer rating	−.001	.001	−.003, .001	−.001	.001	−.003, .001
Project payment	−.029**	.010	−.049, −.009	−.029**	.010	−.049, −.009
Previous relationship	.057**	.001	.054, .059	.056**	.001	.054, .059
Time-to-bid	.009**	.001	.007, .012	.009**	.001	.006, .011
Competition	−.015**	.002	−.019, −.011	−.015**	.002	−.019, −.011
Excess supply of freelancers	−.001	.001	−.002, .001	−.001	.001	−.002, .001
Fixed Effects						
Years		included			included	
Submarkets		included			included	
Unobserved Heterogeneity						
Project characteristics		included			included	
Endogeneity Corrections						
Gaussian copulas		included			included	
Sample-Selection Correction						
Inverse Mills ratio	−.016**	.002	−.020, −.012	−.016**	.002	−.020, −.012
Freelancers			30,851			
Bids			148,158			

Notes: Standardized results. Significance is based on two-tailed tests. The dependent variable is price premium for the chosen bid. The sample includes all winning bids for which the payment was disclosed. Effects for years, submarkets, project characteristics, and Gaussian copulas are detailed in Web Appendix Q.
*$p < .05$.
**$p < .01$.

freelancers with too much uncertainty, and dense information provision or being very concrete is too restrictive. If buyers provide greater degrees of personal information or express greater affective intensity in their calls for bids, it reduces the number of service offers they receive. This finding contrasts with uncertainty reduction theory (Berger and Calabrese 1975) and B2B research that suggests self-disclosure strengthens buyer–seller cooperativeness (Joshi 2009). However, instead of ongoing B2B relationships, our study refers mostly to initial interactions between strangers (in 98% of cases, the freelancer had never worked for the prospective buyer). Evidence obtained from buyer–seller online chats similarly suggests that self-disclosure and emotive expressions are valued only in existing B2B relationships, not in new ones (Koponen and Rytsy 2020). Overall, we offer empirical support for communication theorists' suggestions that common communication principles can be purposefully flouted to achieve better conversation outcomes (Goffman 2008).

Second, freelancers must keep their bids concise. They too face a trade-off between reducing the buyer's uncertainty and offering overly dense information. In line with research on communication accommodation (Soliz and Giles 2014) and adaptive selling (Verbeke, Dietz, and Verwaal 2011), we show that freelancers can improve their bid success by mimicking the prospective buyer's communication. Adding to these research streams, we introduce a contingency perspective that reveals the efficacy of mimicry depends on the degree to which buyers use specific communication elements. In line with accommodation theory and adaptive selling, bid success always improves when freelancers mimic buyers' provision of task information and use of affective intensity. However, in line with uncertainty reduction theory (Berger and Calabrese 1975) and expectancy violations (Afifi and Burgoon 2000) when buyers supply little personal information and are less concrete, freelancers can increase their chances of bid success by diverging and providing more personal information and concreteness.

Third, freelancers often struggle to avoid value traps in which they sell more of their services for less (Sridhar and Mittal 2020). Rational buyer expectations should allow high-quality freelancers to charge price premiums (Rao and Monroe 1996), but the quality of freelance services is unobservable prior to purchase, and rational buyers might refuse to pay any price premium if they feel uncertain and suspect the freelancer may be hiding information (Dimoka, Hong, and Pavlou 2012). Therefore, to achieve premiums, freelancers should offer short, appropriately formulated bids. Buyers are more willing to pay a premium to freelancers who mimic their provision of task information, concreteness, and affective intensity, which is in line with communication accommodation theory (Soliz and Giles 2014) and adaptive selling research (Verbeke, Dietz, and Verwaal 2011). However, similar to the findings for bid success, freelancers should offer more personal information than buyers, rather than mimicking buyers' provision of such information. In most service settings, a "bad" seller might provide a great product by chance; however, almost by definition, a bad freelancer produces bad service (Horton 2019). This tight coupling between the freelancer and service quality represents a conceptual distinction in our study, which accordingly shows that buyers' willingness to pay a premium increases with more personal information issued by the freelancer.

Practical Implications

Our findings offer actionable insights for the millions of buyers and freelancers utilizing online freelance marketplaces, the collective value of which is predicted to reach $2.7 trillion by 2025 (Manyika et al. 2015). In detail, being informative and unambiguous may be a common assumption, but it is not an imperative, nor does it always lead to success.

Implications for buyers. Although 59% of U.S. companies use a flexible workforce to some degree, more than one-third of contracted projects are never completed (Hong and Shao 2021). To attract freelancers, buyers should keep their calls for bids succinct. Beyond that recommendation, we offer several tips for formulating calls for bids in Table 5. In particular, a task description with a moderate amount of information helps freelancers anticipate the task without overloading them with details. Due to the relative anonymity of online freelance marketplaces, buyers might assume that freelancers will need to know who they are, but instead, we find that the less buyers describe themselves (to focus on describing the task), the better the outcomes. Relatable and imaginable (rather than abstract) descriptions of the project help freelancers grasp the requirements. However, being excessively concrete becomes prescriptive, which deters freelancers. Using emotion words makes the content of a call for bids relatively more intense. Such intensity can remove ambiguity and make opinions quickly accessible, but we find that calls for bids are more effective if they are formulated relatively impassively. Enthusiastic project descriptions seemingly might raise freelancers' suspicion that the project is too good to be true. Also, offering higher payment might attract a larger pool of freelance bids, as do long- rather than short-term gigs. Finally, more freelancers bid when there are fewer calls for bids in the subsector.

Implications for freelancers. Freelancers are not necessarily natural marketers, but their bid formulations determine their marketability. Existing online reputation systems provide some assistance, but they also create entry barriers to new freelancers who first must earn good overall ratings (Constantinides, Henfridsson, and Parker 2018). Fortunately, winning gigs and achieving price premiums also depends on freelancers' communication. Table 5 includes advice to help freelancers formulate more successful bids and avoid the value trap. In line with the mantra of adaptive selling, the call for bids provides a starting point in which mimicking the buyer's task information and affective intensity increases freelancers' success—even if they provide few task details or seem very impassive. But freelancers should always offer personal information and be concrete. Even if a buyer does not provide personal information or the call is relatively abstract, freelancers' chances of success and

Table 5. Buying and Selling Services in Online Freelance Marketplaces.

	How to Formulate Calls for Bids to Attract Freelancers		
	Bad Practice Excerpt	**Good Practice Excerpt**	**Lift in Bids**
Specify tasks and skills	"I need a website to showcase the full range of my fitness workouts."	"I need a website designer who can design a WordPress website using a WordPress premium theme."	An increase in task terms from 18% to 29%, resulting in 5% more bids.
Avoid personal information	"I have been creating my own classes for almost 10 years now…clients tend to especially love my classes on strength and flexibility. Now I need help setting up my website."	"I am a Fitness Trainer and need help with building my website to showcase my mixed services and home workouts."	A decrease in personal terms from 9% to 4%, resulting in 4% more bids.
Be moderately concrete	"I require a professional who is savvy in configuring a stylish website employing a premium theme."	"You should have got very good creative skills but know how to design for web and also know how to include calls to actions within a good design."	An increase in concrete terms from 21% to 26%, resulting in 1% more bids.
Avoid being affectively intense	"I have created a fantastic theme but you should be confident and eager about WordPress and help optimize."	"The theme and examples will be provided, but you should also know about WordPress and optimize."	A decrease in affective terms from 11% to 4%, resulting in 4% more bids.
	How to Formulate Successful Bids and Achieve Price Premiums		
	Bad Practice Excerpt	**Good Practice Excerpt**	**Lift in Bid Success**
Mimic task description	"Dear Sir, would love to work for you…"	"Hi Gary, I am happy to help you with your fitness website development and design…"	An increase in task terms from 16% to 25%, resulting in 7% higher bid success and 8% higher price premium.
Exceed buyers who supply little personal information	"I am an enthusiastic designer and expert in Web development…"	"I am a WordPress Freelancer with 15 years of work experience…"	An increase in personal terms from 6% to 8%, resulting in 3% higher bid success and 4% higher price premium.
Exceed buyers who are not concrete	"I have great skills and plenty of fantastic experience in creating relevant websites…"	"I have worked on several similar projects, designing websites, also using WordPress, including premium themes and I can deliver to a tight schedule…"	An increase in concrete terms from 24% to 30%, resulting in 7% higher bid success (but no effect on price premium).
Mimic the buyer's affective intensity	"The content will be creative and fun, attractive, and thoughtful…"	"Website content that I produce will be creative and include original designs…"	A decrease in affective terms from 18% to 6%, resulting in 11% higher bid success and 7% higher price premium.

Notes: Web Appendix S provides the full call for bids and bid examples we used for calculating the degrees of each communicative principle and the corresponding expected lift success. We used the "good practice" call for bids example to devise the bad and good examples for the corresponding freelance bid.

obtaining price premiums increase if their bids contain more personal information and are at least somewhat concrete. The strongest predictor of bid success is a preexisting buyer relationship, so more broadly, freelancers should grow their buyer relations.

Limitations and Directions for Further Research

In examining theoretically grounded communicative aspects, we offer novel insights into how to manage uncertainty in buyer–freelancer exchanges. Intriguingly, we find that communication approaches that do not aim to minimize uncertainty can be effective. Continued research should investigate this notion further and develop additional insights into the exchange implications of linguistic choices in B2B but also B2C and C2C communication on multisided platforms (Luo et al. 2021). For example, affiliative (Pennebaker et al. 2015) or collaborative terms might affect uncertainty and influence exchanges as well. Arguably, the personal characteristics of buyers and freelancers (e.g., gender, education, experience), channel choices (Lawrence et al. 2019), different sources of uncertainty (Heide and Weiss 1995), perceived risks (Grewal, Gotlieb, and Marmorstein 1994), and spatial distances between buyers and freelancers also might moderate the efficacy of communication aspects, so additional research should specify their influences. For example, if buyers lack the expertise to specify what they want, they might benefit from more ambiguous calls for bids (Humphreys et al. 2020). Perhaps buyers' communication or alternative factors that we cannot account for (e.g., underestimation of the amount of work required to fulfill the task) influence

the final price they pay, too. Efforts to specify these additional effects also might address some of our more controversial findings, such as the evidence that the number of previously commissioned projects by a buyer relates negatively to the number of freelancers who bid. We posit that experienced buyers might prefer freelancers whom they have hired in the past (Lanzolla and Frankort 2016). Buyers also might have incurred switching costs or supplier dependencies (Heide and Weiss 1995). Methodologically, we estimated all the models sequentially, as buyers' calls for bids and their success occur prior to freelancers' bids and their success. But an equilibrium approach that estimates these models simultaneously at the bid level could reflect an alternative way to think about the data structure. The concreteness word list we used (Brysbaert, Warriner, and Kuperman 2014) may also require further refinement to differentiate specific concreteness levels among the word set. Finally, the anonymity and speed of exchanges in online freelance marketplaces may make communication particularly important in this context. A comparative analysis of the influence of uncertainty management efforts across different B2B contexts beyond these marketplaces could offer interesting insights, especially if uncertainty avoidance is a central goal.

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References

Afifi, Walid A. and Judee K. Burgoon (2000), "The Impact of Violations on Uncertainty and the Consequences for Attractiveness," *Human Communication Research*, 26 (2), 203–33.

Ba, Sulin and Paul A. Pavlou (2002), "Evidence of the Effect of Trust Building Technology in Electronic Markets: Price Premiums and Buyer Behavior," *MIS Quarterly*, 26 (3) 243–68.

Bayer, Emanuel, Kapil R. Tuli, and Bernd Skiera (2017), "Do Disclosures of Customer Metrics Lower Investors' and Analysts' Uncertainty but Hurt Firm Performance?" *Journal of Marketing Research*, 54 (2), 239–59.

Benoit, Kenneth, Paul Nulty, Pablo Barber, Kohei Watanabe, and Benjamin Lauderdale (2018), "Quanteda: Quantitative Analysis of Textual Data," (accessed September 10, 2021), https://cran.r-project.org/web/packages/quanteda/.

Berger, Charles R. (2011), "From Explanation to Application," *Journal of Applied Communication Research*, 39 (2), 214–22.

Berger, Charles R. and Richard J. Calabrese (1975), "Some Explorations in Initial Interaction and Beyond: Toward a Developmental Theory of Interpersonal Communication," *Human Communication Research*, 1 (2), 99–112.

Berger, Jonah, Ashlee Humphreys, Stephan Ludwig, Wendy W. Moe, Oded Netzer, and David A. Schweidel (2020), "Uniting the Tribes: Using Text for Marketing Insight," *Journal of Marketing*, 84 (1), 1–25.

Bradac, James J. (2001), "Theory Comparison: Uncertainty Reduction, Problematic Integration, Uncertainty Management, and Other Curious Constructs," *Journal of Communication*, 51 (3), 456–76.

Brashers, Dale E. (2001), "Communication and Uncertainty Management," *Journal of Communication*, 51(3), 477–97.

Brown, Penelope and Stephen C. Levinson (1987), *Politeness: Some Universals in Language Usage*. Cambridge, UK: Cambridge University Press.

Brysbaert, Marc, Amy Beth Warriner, and Victor Kuperman (2014), "Concreteness Ratings for 40 Thousand Generally Known English Word Lemmas," *Behavior Research Methods*, 46 (3), 904–11.

Collins, Nancy L. and Lynn C. Miller (1994), "Self-Disclosure and Liking: A Meta-Analytic Review," *Psychological Bulletin*, 116 (3), 457–75.

Constantinides, Panos, Ola Henfridsson, and Geoffrey G. Parker (2018), "Introduction—Platforms and Infrastructures in the Digital Age," *Information Systems Research*, 29 (2), 381–400.

Crosby, Lawrence A., Kenneth R. Evans, and Deborah Cowles (1990), "Relationship Quality in Services Selling: An Interpersonal Influence Perspective," *Journal of Marketing*, 54 (3), 68–81.

Derlega, Valerian J., Marian Sue Harris, and Alan L. Chaikin (1973), "Self-Disclosure Reciprocity, Liking, and the Deviant," *Journal of Experimental Social Psychology*, 9 (4), 277–84.

Dimoka, Angelika, Yili Hong, and Paul A. Pavlou (2012), "On Product Uncertainty in Online Markets: Theory and Evidence," *MIS Quarterly*, 36 (2), 395–426.

Edwards, Jeffrey R. and Mark E. Parry (1993), "On the Use of Polynomial Regression Equations as an Alternative to Difference Scores in Organizational Research," *Academy of Management Journal*, 36 (6), 1577–613.

Eisenberg, Eric M. and Marsha G. Witten (1987), "Reconsidering Openness in Organizational Communication," *Academy of Management Review*, 12 (3), 418–26.

Engelhardt, Paul E., Karl Bailey, and Fernanda Ferreira (2006), "Do Speakers and Listeners Observe the Gricean Maxim of Quantity?" *Journal of Memory and Language*, 54 (4), 554–73.

Farris, Paul W., Neil Bendle, Phillip E. Pfeifer, and David Reibstein (2010), *Marketing Metrics: The Definitive Guide to Measuring Marketing Performance*. London: Pearson Education.

Ghosh, Mrinal and George John (2005), "Strategic Fit in Industrial Alliances: An Empirical Test of Governance Value Analysis," *Journal of Marketing Research*, 42 (3), 346–57.

Goffman, Erving (1959), *The Presentation of Self in Everyday Life*. New York: Doubleday.

Goffman, Erving (2008), *Interaction Ritual: Essays on Face-to-Face Behavior*. New York: Pantheon Books.

Gooty, Janaki, Jane S. Thomas, Francis J. Yammarino, Jayoung Kim, and Melissa Medaugh (2019), "Positive and Negative Emotional Tone Convergence: An Empirical Examination of Associations with Leader and Follower LMX," *The Leadership Quarterly*, 30 (4), 427–39.

Grewal, Dhruv, Jerry Gotlieb, and Howard Marmorstein (1994), "The Moderating Effects of Message Framing and Source Credibility on the Price–Perceived Risk Relationship," *Journal of Consumer Research*, 21 (1), 145–53.

Grewal, Dhruv, Kent B. Monroe, and Ramayya Krishnan (1998), "The Effects of Price-Comparison Advertising on Buyers' Perceptions of Acquisition Value, Transaction Value, and Behavioral Intentions," *Journal of Marketing*, 62 (2), 46–59.

Grice, Herbert P. (1975), *"Logic and Conversation," in Syntax and Semantics: Speech Acts*, Vol. 3, Peter Cole and Jerry L. Morgan, eds. New York: Academic Press, 41–58.

Hamilton, Mark A. and John E. Hunter (1998), "The Effect of Language Intensity on Receiver Evaluations of Message, Source, and Topic," in *Persuasion: Advances Through Meta-Analysis*, Mike Allen and Raymond W. Preiss, eds. Cresskill, NJ: Hampton Press, 99–138.

Heide, Jan B. and Allen M. Weiss (1995), "Vendor Consideration and Switching Behavior for Buyers in High-Technology Markets," *Journal of Marketing*, 59 (3), 30–43.

Holtgraves, Thomas (1997), "Styles of Language Use: Individual and Cultural Variability in Conversational Indirectness," *Journal of Personality and Social Psychology*, 73 (3), 624–37.

Homburg, Christian, Martin Klarmann, and Sabine Staritz (2012), "Customer Uncertainty Following Downsizing: The Effects of Extent of Downsizing and Open Communication," *Journal of Marketing*, 76 (3), 112–29.

Hong, Yili and Paul A. Pavlou (2017), "On Buyer Selection of Service Providers in Online Outsourcing Platforms for IT Services," *Information Systems Research*, 28 (3), 547–62.

Hong, Yili and Benjamin B. M. Shao (2021), "On Factors that Moderate the Effect of Buyer–Supplier Experience on E-Procurement Platforms," *Production and Operations Management*, 30 (4), 1034–51.

Hong, Yili, Chong Wang, and Paul A. Pavlou (2016), "Comparing Open and Sealed Bid Auctions: Evidence from Online Labor Markets," *Information Systems Research*, 27 (1), 49–69.

Horton, John J. (2017), "The Effects of Algorithmic Labor Market Recommendations: Evidence from a Field Experiment," *Journal of Labor Economics*, 35 (2), 345–85.

Horton, John J. (2019), "Buyer Uncertainty About Seller Capacity: Causes, Consequences, and a Partial Solution," *Management Science*, 65 (8), 3518–40.

Hosman, Lawrence A. (2002), "Language and Persuasion," in *The Persuasion Handbook: Developments in Theory and Practice*, James Price Dillard and Michael Pfau, eds. Thousand Oaks, CA: SAGE Publications, 371–90.

Humphreys, Ashlee, Mathew S. Isaac, and Rebecca Jen-Hui Wang (2020), "Construal Matching in Online Search: Applying Text Analysis to Illuminate the Consumer Decision Journey," *Journal of Marketing Research* (published online September 2), DOI:10.1177/0022243720940693.

Jap, Sandy D. (2007), "The Impact of Online Reverse Auction Design on Buyer–Supplier Relationships," *Journal of Marketing*, 71 (1), 146–59.

Jones, Quentin, Gilad Ravid, and Sheizaf Rafaeli (2004), "Information Overload and the Message Dynamics of Online Interaction Spaces: A Theoretical Model and Empirical Exploration," *Information Systems Research*, 15 (2), 194–210.

Joshi, Ashwin W. (2009), "Continuous Supplier Performance Improvement: Effects of Collaborative Communication and Control," *Journal of Marketing*, 73 (1), 133–50.

Kanuri, Vamsi K., Yixing Chen, and Shrihari Sridhar (2018), "Scheduling Content on Social Media: Theory, Evidence, and Application," *Journal of Marketing*, 82 (6), 89–108.

Keleman, Mihaela (2000), "Too Much or Too Little Ambiguity: The Language of Total Quality Management," *Journal of Management Studies*, 37 (4), 483–89.

Khosarvizadeh, Parvaneh and Nikan Sadehvandi (2011), "Some Instances of Violations and Flouting of the Maxim of Quantity by the Main Character (Barry and Tim) in Dinner for Schmucks," *IPEDR*, 26. Singapore: IACSIT Press, http://ipedr.com/vol26/25-ICLLL%202011-L00061.pdf.

Kokkodis, Marios and Panagiotis G. Ipeirotis (2016), "Reputation Transferability in Online Labor Markets," *Management Science*, 62 (6), 1687–706.

Koponen, Jonna Pauliina and Saara Rytsy (2020), "Social Presence and E-Commerce B2B Chat Functions," *European Journal of Marketing*, 54 (6), 1205–24.

Krippendorff, Klaus (2013), *Content Analysis. An Introduction to Its Methodology*, 3rd ed. Thousand Oaks, CA: SAGE Publications.

Lanzolla, Gianvito and Hans T. W. Frankort (2016), "The Online Shadow of Offline Signals: Which Sellers Get Contracted in Online B2B Marketplaces?" *Academy of Management Journal*, 59 (1), 207–31.

Larrimore, Laura, Li Jiang, Jeff Larrimore, David Markowitz, and Scott Gorski (2011), "Peer to Peer Lending: The Relationship Between Language Features, Trustworthiness, and Persuasion Success," *Journal of Applied Communication Research*, 39 (1), 19–37.

Lawrence, Justin M., Andrew T. Crecelius, Lisa K. Scheer, and Ashutosh Patil (2019), "Multichannel Strategies for Managing the Profitability of Business-to-Business Customers," *Journal of Marketing Research*, 56 (3), 479–97.

Liu, Yeyi, Andreas B. Eisingerich, Seigyoung Auh, Omar Merlo, and Hae Eun Helen Chun (2015), "Service Firm Performance Transparency: How, When, and Why Does it Pay Off?" *Journal of Service Research*, 18 (4), 451–67.

Ludwig, Stephan, Ko de Ruyter, Mike Friedman, Elisabeth C. Brüggen, Martin Wetzels, and Gerard Pfann (2013), "More Than Words: The Influence on Affective Content and Linguistic Style Matches in Online Reviews on Conversion Rates," *Journal of Marketing*, 77 (1), 87–103.

Luo, Xueming, Siliang Tong, Zhijie Lin, and Cheng Zhang (2021), "The Impact of Platform Protection Insurance on Buyers and

Sellers in the Sharing Economy: A Natural Experiment," *Journal of Marketing*, 85 (2), 50–69.

Ma, Zhenfeng and Laurette Dubé (2011), "Process and Outcome Interdependency in Frontline Service Encounters," *Journal of Marketing*, 75 (3), 83–98.

Ma, Xiao, Jeffery T. Hancock, Kenneth Lim Mingjie, and Mor Naaman (2017), "Self-Disclosure and Perceived Trustworthiness of Airbnb Host Profiles," in CSCW '17: Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing. New York: ACM, 2397–409.

Manyika, James, Susan Lund, Kelsey Robinson, John Valentino, and Richard Dobbs (2015), *A Labor Market that Works: Connecting Talent with Opportunity in the Digital Age*. San Francisco, CA: McKinsey Global Institute.

McFarland, Richard G., Goutam N. Challagalla, and Tasadduq A. Shervani (2006), "Influence Tactics for Effective Adaptive Selling," *Journal of Marketing*, 70 (4), 103–17.

Mooi, Erik A. and Mrinal Ghosh (2010), "Contract Specificity and its Performance Implications," *Journal of Marketing*, 74 (2), 105–20.

Moon, Youngme (2000), "Intimate Exchanges: Using Computers to Elicit Self-Disclosure from Consumers," *Journal of Consumer Research*, 26 (3), 323–39.

Mullins, Ryan, Raj Agnihotri, and Zachary Hall (2020), "The Ambidextrous Sales Force: Aligning Salesperson Polychronicity and Selling Contexts for Sales-Service Behaviors and Customer Value," *Journal of Service Research*, 23 (1), 33–52.

Packard, Grant and Jonah Berger (2020), "How Concrete Language Shapes Customer Satisfaction," *Journal of Consumer Research*, 47 (5), 787–806.

Packard, Grant, Sarah G. Moore, and Brent McFerran (2018), "(I'm) Happy to Help (You): The Impact of Personal Pronoun Use in Customer–Firm Interactions," *Journal of Marketing Research*, 55 (4), 541–55.

Palmatier, Robert W., Rajiv P. Dant, and Dhruv Grewal (2007), "A Comparative Longitudinal Analysis of Theoretical Perspectives of Interorganizational Relationship Performance," *Journal of Marketing*, 71 (4), 172–94.

Pan, Lingling, Gerry McNamara, Jennifer J. Lee, Jerayr Haleblian, and Cynthia E. Devers (2018), "Give It to Us Straight (Most of the Time): Top Managers' Use of Concrete Language and its Effect on Investor Reactions," *Strategic Management Journal*, 39 (8), 2204–25.

Park, Sungho and Sachin Gupta (2012), "Handling Endogenous Regressors by Joint Estimation Using Copulas," *Marketing Science*, 31 (4), 567–86.

Pennebaker, James W., Ryan L. Boyd, Kayla Jordan, and Kate Blackburn (2015), "The Development and Psychometric Properties of LIWC2015," Austin, TX: University of Texas at Austin, https://repositories.lib.utexas.edu/bitstream/handle/2152/31333/LIWC2015_LanguageManual.pdf.

Pennebaker, James W. and Lori D. Stone (2003), "Words of Wisdom: Language Use Over the Life Span," *Journal of Personality and Social Psychology*, 85 (2), 291–301.

Pollock, Patrick, Dirk Lüttgens, and Frank T. Piller (2019), "Attracting Solutions in Crowdsourcing Contests: The Role of Knowledge Distance, Identity Disclosure, and Seeker Status," *Research Policy*, 48 (1), 98–114.

Putman, Linda and Tricia Jones (1982), "The Role of Communications in Bargaining," *Human Communications Research*, 8, 262–80.

Rao, Akshay R. and Kent B. Monroe (1996), "Causes and Consequences of Price Premiums," *Journal of Business*, 69 (4), 511–35.

Shannon, Claude E. and Warren Weaver (1949), *A Mathematical Model of Communication*. Urbana, IL: University of Illinois Press.

Singh, Sunil K., Detelina Marinova, and Jagdip Singh (2020), "Business-to-Business E-Negotiations and Influence Tactics," *Journal of Marketing*, 84 (2) 47–68.

Singh, Jagdip and Deepak Sirdeshmukh (2000), "Agency and Trust Mechanisms in Consumer Satisfaction and Loyalty Judgments," *Journal of the Academy of Marketing Science*, 28 (1), 150–67.

Snijders, Tom A. and Roel J. Bosker (2011), *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling*. London: SAGE Publications.

Soliz, Jordan and Howard Giles (2014), "Relational and Identity Processes in Communication: A Contextual and Meta-Analytical Review of Communication Accommodation Theory," *Annals of the International Communication Association*, 38 (1), 107–44.

Sridhar, Hari and Vikas Mittal (2020), "Busting the Value Trap: How B2B Companies Can Increase Sales," BrandExtract (accessed September 10, 2021), https://www.brandextract.com/Insights/Articles/Busting-the-Value-Trap-How-B2B-Companies-Can-Increase-Sales/.

Srivastava, Shirish C. and Shalini Chandra (2018), "Social Presence in Virtual World Collaboration: An Uncertainty Reduction Perspective Using a Mixed Methods Approach," *MIS Quarterly*, 42 (3), 779–803.

Verbeke, Willem, Bart Dietz, and Ernst Verwaal (2011), "Drivers of Sales Performance: A Contemporary Meta-Analysis. Have Salespeople Become Knowledge Brokers?" *Journal of the Academy of Marketing Science*, 39 (3), 407–28.

Weiss, Allen M., Nicholas H. Lurie, and Deborah J. MacInnis (2008), "Listening to Strangers: Whose Responses Are Valuable, How Valuable Are They, and Why?" *Journal of Marketing Research*, 45 (3), 425–36.

Williams, M. Lee (1980), "The Effect of Deliberate Vagueness on Receiver Recall and Agreement," *Communication Studies*, 31 (1), 30–41.

Zheng, Xu, David A. Griffith, Ling Ge, and Uri Benoliel (2020), "Effects of Contract Ambiguity in Interorganizational Governance," *Journal of Marketing*, 84 (4), 147–67.

Zhou, Qiang (Kris), B.J. Allen, Richard T. Gretz, and Mark B. Houston (2021), "Platform Exploitation: When Service Agents Defect with Customers from Online Service Platforms," *Journal of Marketing* (published online February 22), DOI:10.1177/00222429211001311.