

Asking Open-Ended Questions Increases Personal Gains in Negotiations

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Abstract

A vast wisdom literature espouses the power of asking open-ended questions during negotiations: questions invite counterparts to disclose information, and, in doing so, put askers at an informational advantage. But is this advice necessary and, more importantly, is it effective? In the current work, we analyzed 53,612 speech turns from the transcripts of 305 dyadic interactions using Natural Language Processing to estimate the frequency and effectiveness of question-asking in negotiations (Study 1). Open-ended questions were uncommon, occurring in less than 9% of all negotiators' speech turns. But there was a robust positive linear relationship between asking open-ended questions and earning individual gains in the negotiation. In contrast, asking closed-ended questions and making non-question statements did not significantly impact individual gains. Open-ended questions solicited next-turn responses that were twice as long as those prompted by closed-ended questions or non-question statements—an informational edge that at least partly explains the success of more inquisitive negotiators. To experimentally substantiate this descriptive effect, we instructed some participants to prepare and ask either open-ended questions or statements prior to engaging in live chat negotiations. Participants who were instructed to ask open-ended questions realized significantly higher individual gains than those who were not (Study 2). Collectively, these findings offer empirical support for the widely accepted—but previously untested—assumption that negotiators focus excessively on influencing (by making statements) at the expense of learning (by asking questions).

Keywords: open-ended question, negotiation, conversation

Asking Open-Ended Questions Increases Personal Gains in Negotiations

If you open a negotiation handbook, you'll almost certainly read that asking open-ended questions is one of the most powerful tactics in a negotiator's toolkit (e.g., Fisher, Ury & Patton, 2011; Malhotra & Bazerman, 2007; Voss & Raz, 2016). Negotiation theorists and thought leaders alike suggest that negotiators mistakenly devote too much time at the bargaining table arguing and defending their positions rather than asking questions to understand their counterparts' points of view (Jeong, Minson & Gino, 2020; Pinkley, Griffith, & Northcraft, 1995). Open-ended questioning skills are integral to many negotiation training programs, ranging from mediation (Moore, 2003) and sales (Singh, Manrai, & Manrai, 2015) to hostage negotiation (Van Hasselt et al., 2006). However, to our knowledge, no empirical study has quantified negotiators' propensity to ask open-ended questions (vs. close-ended questions or non-question statements) in real dialogues between negotiators, nor demonstrated the impact of question-asking—prevalence or type—on negotiated outcomes.

Following an emerging emphasis in behavioral science to study turn-by-turn conversational behavior (e.g., O'Bryan et al., 2022; Templeton et al., 2022; 2023, Yeomans et al., 2021; 2023), recent work has begun to uncover links between question-asking and outcomes in cooperative domains. For example, asking more questions increases interpersonal liking on speed dates and get-to-know-you conversations between strangers (Huang et al., 2017; Yeomans et al., 2019), an effect driven by asking follow-up questions, a specific question type that elaborate on what an interlocutor has previously said. Earlier work suggests that preparing elaboration questions ahead of time caused participants to be more open to the idea of having a conversation at all (Chen et al., 2010), and current work lends support to the notion that thinking about conversational questions and topics before conversations begin improves fluency, topic selection, information exchange, and enjoyment (Abi-Esber, Brooks, Yeomans & Berger, 2022).

Other work investigates how structural variables and individual differences may influence the propensity to ask questions. For example, research by Carter et al. (2018) found that across 250 seminars in 10 countries, compared to men, women asked absolutely and relatively fewer questions during academic seminars, especially when a man was the first to ask a question or when there were fewer questions asked overall. The average question-asking rate in a group may establish a temporary conversational norm, one that made women feel disproportionately less welcome to ask questions. While the decision to ask questions is consequential, no empirical work has identified the effects of asking questions during unfolding negotiation dialogues.

Question Types and Negotiated Outcomes

A question is a sentence or phrase aimed to solicit information (Cambridge, 2023). Although numerous typologies of questions exist (based, for example, on how appropriate, productive, or expected they are; Griffiths & Milne, 2006; Milne & Bull, 1999; Vrij et al., 2009) or how a question relates to the verbal content that's preceded it (e.g., to follow up, switch topics, or mirror an earlier question; Huang et al., 2017), the majority of research on question-asking has focused on the distinction between open- and closed-ended questions (e.g., Dillon, 1988; Schuman & Presser, 1996). This distinction holds particular importance in the context of negotiation, where achieving one's goals often hinges crucially on extracting accurate information about a counterpart's preferences, goals, and beliefs (Yeomans et al., 2021). Indeed, while perspective-taking has been identified as the greatest psychological barrier to conflict management and resolution overall (Friend & Malhotra, 2019), asking questions through dialogue has been suggested as the most direct (and perhaps only) path to uncovering others' perspectives (Eyal, Steffel, & Epley, 2018).

Open-ended questions are defined as a specific type of inquiry that encourages free-narrative answers (Kelly & Valencia, 2021). They encompass questions using the "5WH"

interrogative adverbs (what, when, where, who, why, and how) or free-narrative style imperatives (“tell” or “explain”) and allow for a broad range of responses without being restricted by predetermined options (Dillon, 1988). In the context of negotiation, examples of open-ended questions might include "What are your primary concerns regarding this offer?" or "How do you feel about this issue?" Conversely, closed-ended questions are generally defined as a specific type of inquiry that limits respondents' answers to a fixed set of choices, often requiring a simple "yes" or "no" or a selection from a predefined list (Schuman & Presser, 1996). In a negotiation setting, closed-ended questions might include "Are you willing to accept a 10% discount?" or "Do you prefer option A or option B?" In our work, we will be able to differentiate between open-ended and closed-ended questions, as well as examine, in descriptive exploratory analysis, whether question formulation using the “5WH” words matters. Is asking "Why is this deadline important to you?" psychologically different – or better – than asking "How is this deadline important to you?" or "What is the importance of this deadline to you?"

There are at least two reasons why asking open-ended questions (compared to asking closed-ended questions or not asking questions at all) might lead to higher personal gains in negotiation. First, open-ended questions may facilitate a deeper understanding of the other party's positions, interests, and constraints, increasing the information available to adapt one's negotiation strategies accordingly. Second, open-ended questions may foster rapport and a collaborative atmosphere between the negotiating parties. These mechanisms track the informational and relational goals that underpin much of human-to-human conversation (Yeomans et al., 2021).

Informational Outcome. Success in negotiation hinges on a deep understanding of the position, needs, constraints, and interests of one's counterpart (e.g., Loschelder et al., 2016; Lee & Ames, 2017; Lee et al., 2018; Thompson, 1991). However, accurately discerning another

individual's thoughts and feelings can be a surprisingly difficult task (Yeomans et al., 2021). In a seminal paper, Eyal and colleagues (2018) conducted 25 experiments testing the accuracy of people's interpersonal insight across a wide range of domains—from predicting another person's emotions, preferences, and attitudes to discerning whether they were lying or telling the truth. In every study, people failed to guess others' inner states accurately. Notably, the only study in which participants demonstrated increased interpersonal accuracy (Study 25) was when they were instructed to ask questions about their counterparts' thoughts and feelings rather than attempting to guess what was on their minds.

Prior work using negotiation scenario studies suggests that different question formulations influence the veracity of information one receives in response. For example, “negative assumption” questions, which presuppose a problem (e.g., “You occasionally use work time for social media, right?”), have been found to increase the veracity of a counterpart’s response compared to “positive assumption” questions that presuppose the absence of a problem or general questions that don’t reference a problem (e.g., “You don’t occasionally use work time for social media, right?”). Despite soliciting more honest responses, “negative assumption” questions tend to be perceived as accusatory and can harm perceptions of the question asker (Minson et al., 2018). To achieve both high-informational and high-relational goals simultaneously (Yeomans et al., 2021), open-ended questions may be a particularly important tool for uncovering what’s on a negotiator’s mind, as they encourage respondents to provide more detailed and personal information than closed-ended questions, without making an accusation or conveying a negative assumption toward the counterpart.

Research suggests that open-ended questions can help create an environment of psychological safety and trust, encouraging individuals to share their thoughts, feelings, and experiences more openly (Tynan, 2005). This style of questioning also enables respondents to convey information in their own words, which can reveal greater insights into their attitudes,

motivations, and emotional states (Pennebaker, Mehl, & Niederhoffer, 2003) and even their trustworthiness (Turmunkh, Van den Assem, & Van Dolder, 2019). Further, open-ended questions offer more flexibility in the types of information that can be disclosed, allowing respondents to share unexpected or previously undisclosed details (Leach et al., 2023). This may be especially helpful as negotiators often don't have a complete understanding of the challenges, issues, constraints, or opportunities that may be relevant to the negotiation. By asking open-ended questions, negotiators should be more likely to uncover critical strategic information about the other party's preferences and priorities, enabling them to devise better deals.

Relational Outcome. Open-ended questions have been shown to increase liking and rapport between individuals due to their ability to foster a sense of intimacy and mutual understanding (Alison & Alison, 2020; Huang et al., 2017; Sprecher et al., 2013; Yeomans et al., 2019), without presupposing problems, making assumptions about the asker, or constraining their response by, for example, offering candidate answers (Minson et al., 2018; Pomerantz, 1988; Stokoe, 2010). In turn, increased rapport may help negotiators elicit “good will” (i.e., trust) and bigger concessions (Neale & Bazerman, 1992; Thompson, 2006). Supporting this idea, Kelly and Valencia (2021) studied police investigative interviews. They found that using appropriate questions (e.g., open-ended questions) positively predicted suspect cooperation, while accusatorial tactics were linked to resistance.

Overview of Current Studies

The present research aims to quantify the rate at which negotiators naturally ask questions and examine the link between question-asking rate and negotiated outcomes. In Study 1, we investigate how the frequency at which negotiators ask questions relates to individual gains using natural language processing in a large observational dataset. We then test the informational and relational mechanisms that might explain this relationship. Finally, we

explore, at the turn level, how different question formulations (e.g., how vs. why) predict informational and relational aspects of the counterpart's response (which we operationalize as information disclosure and sentiment, respectively). In Study 2, we test the causal relationship between asking open-ended questions in a controlled live-chat experiment, investigating the mediating roles of information disclosure and sentiment. Compared to prior work using hypothetical vignettes, confederate interaction partners, or post-hoc surveys after interactions have ended, our methods contribute to an emerging emphasis in behavioral science to capture and analyze transcript data from real interactions to understand the unfolding decisions people make—and could make more effectively—during dialogue.

Study 1: Question-Asking Rates and Negotiation Outcomes

Method

Participants. Our study consisted of 305 dyadic negotiation simulations recorded from a diverse pool of 512 MBA students across three European business schools (34% women). The majority of participants ($N = 368$) engaged in a firm resource allocation simulation (the Pacific Sentinel case; Valley & Witter, 2004). A smaller subset participated in a business units merger simulation ($N = 134$; the Web Service case; Eisenkraft, 2016) or a job offer simulation ($N = 108$; the McConsult case; Di Stasi, Templeton, & Quoidbach, in press). Of the total participants, 414 engaged in one case simulation, while 98 engaged in two separate cases (with a different partner each time). To incentivize performance, students' grades in the class were tied to their individual negotiation gains.

Procedure and Material. Participants were instructed to negotiate using the Zoom video conferencing system set on gallery view (i.e., with both negotiators always visible on screen). The negotiation simulations had no time limit ($M = 32$ min; $S.D. = 17$ min; Range = 8 to 120 min). Participants were asked to stop the recording immediately after the negotiation to

prevent non-negotiation-related topics from being included in the analyses (e.g., post-deal debriefing, practical discussion about uploading the recording).

We used three different scorable multi-issue two-party negotiation simulations with integrative potential (i.e., opportunities to create value by trading across multiple issues). The first simulation, the *Pacific Sentinel* negotiation (Valley & Witter, 2004), replicates a budget allocation discussion where the Executive Editor and Advertising Manager of a mid-sized newspaper decide on a one million dollar investment's distribution. They must reach a consensus on five key issues: two distributive issues (where a fixed value is contested), two integrative issues (enabling mutually beneficial value creation), and one compatible issue (with shared party preferences). The *Web Service* negotiation (Eisenkraft, 2016; see Supplemental Material – Note 1) emulates a departmental merger situation where unit leaders must agree on five similar issues: four integrative and one compatible. Finally, the *McConsult* negotiation (Di Stasi et al., in press) simulates an employment contract negotiation scenario between a consulting firm recruiter and a prospective job candidate, requiring agreement on one distributive issue and four integrative issues.

Measures.

Questions. We first diarized the negotiation audio recordings into speech turns and transcribed the content of the conversations using an automated speech recognition algorithm (see Supplemental Material - Note 2). Our final dataset comprised 53,612 speech turns from 166 hours of negotiation recordings. We then created a natural language processing algorithm to assess whether each speech turn included a question and, if so, whether it was open- or close-ended (see Supplemental Material - Note 3). We tested the reliability of our algorithm against human coders in a random subsample of approximately 5% of the turns ($N = 2,923$). The algorithm distinguished open-ended questions from closed-ended questions with over 95.6% accuracy compared to human annotation. For each negotiator and question type (open vs.

closed-ended), we computed the raw number and the rate of questions—defined as the percentage of the person’s speech turns that included a question.

Individual gains. Immediately after the negotiations, participants jointly completed an online “contract” where they entered the terms of their deal. We used this information to compute the *individual gains* for each negotiator. Because the different simulations and roles entail different success metrics (e.g., money vs. points), we standardized individual gains across roles and simulations ($M = 0$, $SD = 1$) to allow for comparable outcomes among negotiators.

Informational Outcome. Information was operationalized by the word count of each turn. Although word count is an objective measure of information, it is an imperfect proxy for strategic information. To compensate for this shortcoming, trained research assistants familiar with the negotiation cases but blind to our research question examined a random subset of approximately 5% of the turns. For each, they coded whether the speaker disclosed information that would be useful to the other side (0 = No; 1 = Yes). We then examined whether the preceding turn included an open-ended question, closed-ended question, or a non-question statement. Providing reassurance regarding our word count approach, we found that word count and human-coded strategic information disclosure were significantly correlated in our random subsample of 2,923 turns ($r = .30$, $p < .001$).

Relational Outcome. We used automated sentiment text analysis on a turn-by-turn basis to evaluate rapport. Our approach was influenced by recent research by Rathje and colleagues (2023), who demonstrated that OpenAI’s GPT large language model outperforms English-language dictionary-based text analysis when it comes to sentiment detection in extensive datasets. They reported strong correlations of approximately $r = .70$ between GPT and human coders, compared to correlations of around $r = 0.25$ for dictionary-based methods. Following Rathje and colleagues (2023), we used a simple prompt: “Is the sentiment of this text positive, neutral, or negative? Answer only with a number: 1 if positive, 2 if neutral, and 3 if negative.

Here is the text: [negotiation turn text]”. This prompt was iteratively applied to our corpus of 53,612 turns using R and GPT's application programming interface (API), configured to GPT 3.5 Turbo. Subsequently, we recoded the values in R into 1 if positive, 0 if neutral and -1 if negative to have a more intuitive interpretation of sentiment.

Analytical approach.

Question rate and negotiation outcomes. We operationalize question rate as the proportion of speech turns by a negotiator that contain at least one open-ended question. To estimate the rate of question-asking behaviors across negotiators, we used a random intercept-only model, which accommodates the nested structure of the data. Specifically, we accounted for the presence of negotiators who participated in two negotiations, thereby providing two observations. To investigate how different types of questions (open- vs. closed-ended questions) uniquely predict objective negotiation outcomes, we use multi-level linear models with random intercepts for negotiators, case, and dyad. In addition, we controlled for gender and negotiation length. Recognizing that negotiators may adapt their question-asking behavior in response to their counterparts (such as through verbal synchrony, reciprocity, or accommodation), we conducted supplementary analyses controlling for the questions posed by the negotiators' counterparts. Finally, for robustness, we report additional models in Supplemental Material in which used the raw number of questions asked rather than the proportion of speech turns containing a question as a predictor (see Notes 4 & 5). All analyses were performed using the *lme4* package for R (v.1.1.32).

Examining the informational and relational mechanisms. We investigate the relationships between open-ended questions, informational, and relational outcomes at two levels.

First, we perform analyses at the turn-level. We use time-lagged models to examine whether asking an open-ended question (vs. close-ended and non-question statements) at time

t relates to informational (word count) and relational (sentiment) features of the counterpart's response at time $t+1$, where t represents separate conversational turns.

Second, we perform analyses at the negotiator-level. We conduct a parallel mediation analysis to examine the role of informational and relational outcomes in the relationship between open-ended questions and individual gains. For each negotiator, we first compute the average word count and sentiment score across all the counterpart's turns that follow an open-ended question (vs. a closed-ended question or a non-question statement). Next, following the steps outlined by Hayes (2017), we conducted a parallel mediation analysis using PROCESS (Version 4.3) for R with 10000 bootstrap resamples. Control variables, including gender, length of the negotiation, and the counterpart's question rate were included in the model to account for potential confounding factors. Results are the same across models when excluding these control variables (see Supplemental Material – Note 5).

Examining the impact of question formulation. Is asking "Why is this deadline important to you?" psychologically different – or better – than asking "How is this deadline important to you?" or "What is the importance of this deadline to you?" Our question-detection algorithm provides a break down for seven¹ specific subtypes of open-ended question formulations ("What", "How", "Which", "Why", "Where", "Who", and "When"). While the low occurrence of some formulations precludes a meaningful analysis when aggregated at the negotiator level (e.g., *when* and *where* questions both account for less than 2% of open-ended questions), our data can provide valuable insight at the turn-level.

Based on the Conversational Circumplex Framework (Yeomans, Schweitzer, & Brooks, 2021), we examine how various question formulations at turn t influence counterparts' responses at turn $t+1$ in terms of word count (informational outcome) and sentiment (relational

¹ The algorithm also detected "Whom" formulation. However, we found only one turn containing that formulation. For this reason, we excluded "Whom" formulation from the analysis.

outcome). For simplicity, *when*, *who*, and *where* questions, which typically invite brief, precise responses, were grouped under a *probing* formulation category due to their low frequencies (1.6%, 1.8%, and 3% respectively), leading to imprecise estimates.

To test whether various open-ended formulations lead to responses that significantly differ in terms of informational and relational outcomes, we focus on pair of consecutive turns in which a negotiator asked a least one open-ended question at time t . We used dummy variables for *what*, *how*, *why*, *which*, and *probing* formulations at turn t in mixed effects models to predict the word count and sentiment at turn $t+1$. To account for the data's nested structure, we included a random intercept for the negotiation dyad. We repeated these analyses in 1000 bootstrap resamples with replacement at the level of the participant, extracting each time the fixed effects from the two models. Finally, we computed the average coefficients (betas) for each question formulation and their 95% confidence intervals from the distribution of resampled estimates.

These average beta coefficients represent the estimated impact each open-ended formulation has on the subsequent response's word count and sentiment, while controlling for the concurrent use of other formulations. A positive beta value of X suggests that compared to other formulations, the question type generally increases the response's length or sentiment by X standard deviations. Conversely, a negative beta indicates a decrease. The 95% confidence intervals offer a range where the actual beta is likely to be, enabling meaningful comparisons to determine if question formulations significantly differ from each other on these variables.

Results

Question-Asking Rates and Negotiation Outcomes

Substantiating the idea that people spend more of their time arguing and defending their positions by making non-question statements rather than learning by asking questions, 16.2% (95% CI [15.4% - 17.0%]) of all the speech turns included a question (open-ended: 8.1%; close-

ended: 8.1%). Is this a bad thing? We relate participants' question rate to their individual negotiation gains. Dovetailing with decades of practical wisdom, negotiators who ask more open-ended questions earn higher individual gains (see Table 1). Specifically, we first test the effect of overall question rates (of any kind) compared to non-question statement rates on negotiation gains (model I). We find that negotiators who ask more questions obtain better deals than those who mainly make statements. We then examine the effect of closed and open-ended question rates separately (model II and III, respectively). Closed-ended question rates are not significantly related to negotiation gains ($\beta = 0.66, t = 0.90, p = .37$). In contrast, open-ended question rates are significantly related to negotiation gains ($\beta = 2.75, t = 3.84, p < .001$).

Finally, we consider the effect of open and closed-ended questions simultaneously in the same model (IV). We find, again, that negotiators with higher open-ended question rates reap larger gains ($\beta = 2.83, t = 3.70, p < .001$), whereas those with higher closed-ended question rates do not ($\beta = -0.18, t = -0.38, p = .81$). The effect of open-ended questions does not differ across the different negotiation cases ($\beta_{\text{open-ended question} \times \text{Pacific}} = 2.59, t = 1.15, p = .25$; $\beta_{\text{open-ended question} \times \text{Web}} = .28, t = .09, p = .92$) and remain robust when controlling for the overall word count of both negotiators ($\beta = 2.34, t = 3.23, p = .001$) and when using the raw number of questions rather than the question rate as predictors ($\beta = .04, t = 3.76, p < .001$).

Table 1. *Proportion of speech turns including a question and individual negotiation gains.*

	(I)		(II)		(III)		(IV)	
	β	<i>t-value</i>	β	<i>t-value</i>	β	<i>t-value</i>	β	<i>t-value</i>
Questions	1.36**	3.06						
Closed-Ended Questions			0.66	0.90			-0.18	-0.38
Open-Ended Questions					2.75** *	3.84	2.83** *	3.70
Marginal R ²	0.03		0.01		0.04		0.04	

Note. $n = 610$. Hierarchical linear modeling was applied for all the models. $^+ p < .10$. $^* p < .05$. $^{**} p < .01$. $^{***} p < .001$. (All two-tailed tests). Independent variables take values from 0 to 1. Random effect for individual, role, dyads and negotiation case. Control variables are the counterpart's same variable, length of the negotiation and gender.

Generalized additive model analyses further reveal that the link between question-asking and personal gains is linear (effective degrees of freedom; $edf = 1.00$, $p = .007$; see Figure 1). We find no evidence for the notion that one might ask too many open-ended questions within the natural range we observed in our negotiation recordings.

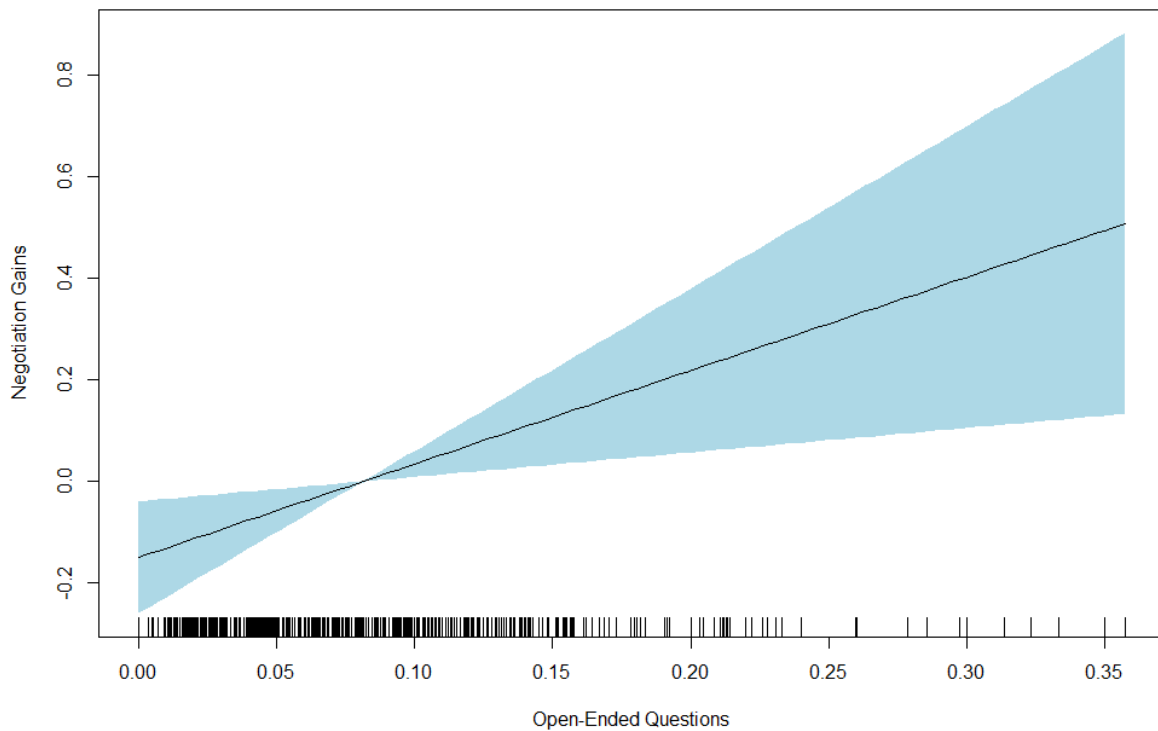


Figure 1. *Proportion of speech turns that include open-ended questions and individual negotiation gains.*

Examining informational and relational mechanisms

Why do inquisitive negotiators gain more? Examining data at the turn-by-turn level, we find robust evidence for the notion that asking open-ended questions helps negotiators uncover information. As depicted in Figure 2, open-ended questions at turn t lead to responses at turn $t+1$ that are about twice as long compared to responses to closed-ended questions and non-

question statements ($M_{opened} = 43$, $M_{closed} = 24$, $M_{statement} = 23$), $F(2, 53609) = 407$, $p < .0001$). Open-ended questions do not simply elicit longer turns. These turns are also crucially more informative. When examining strategic information disclosure in the human-coded sample of turns ($N = 2923$), asking an open-ended question at time t roughly triples the likelihood that a negotiator obtains useful information at time $t+1$, compared to asking a closed-ended questions or making a non-question statement (logistic regressions controlling for turn word count; open-ended questions: OR = 3.02, $p < .001$; closed-ended questions: OR = 1.5, $p = .03$; statement: OR = 1.22, $p = .19$). Finally, our turn-level analyses are also consistent with the notion that open-ended questions help build rapport. While conversational turns displayed positive sentiment overall ($M = .02$; $SD = .36$), turns that include an open-ended question a t elicit slightly more positive responses at turn $t+1$ on average than turns that include a closed-ended question and non-question statements ($M_{open} = .03$, $M_{closed} = .01$, $M_{statement} = .02$, open- vs. closed-ended: $t(7936) = 2.45$, $p = .01$, $d = .06$; open-ended vs. statement: $t(49567) = 1.56$, $p = .12$; $d = .03$).

At the negotiator-level, the informational advantage at least partially explains why inquisitive negotiators earn more personal gains. Participants who uncover more information (as measured by the total number of words across all their counterpart's responses over the counterpart's average word count, i.e., how much they talk) achieve better outcomes ($\beta = 0.13$, $t = 3.13$, $p = .002$). This information outcome mediates the link between open-ended question rates and individual gains (bootstrapped parallel mediation indirect effect: 95% CI [0.01 - .24], $p = .03$). Results are similar when including the questioner's own word count and other controls in the regression, as well as when using different proxies of information outcome (see Supplemental Material - Note 5). In contrast, the small relational advantage observed at the turn-level does not explain why inquisitive negotiators earn more. Negotiators' rates of open-ended questions do not significantly predict their counterparts' average sentiment across the

entire negotiation ($\beta = .04, t = .96, p = .34$), nor does the counterpart’s average sentiment relate to negotiators’ gains ($\beta = 0.4, t = 1.04, p = .30$). Still, asking open-ended questions does not harm rapport in the way that previous work has found that asking “negative assumptions” questions can harm rapport (Minson et al., 2018).

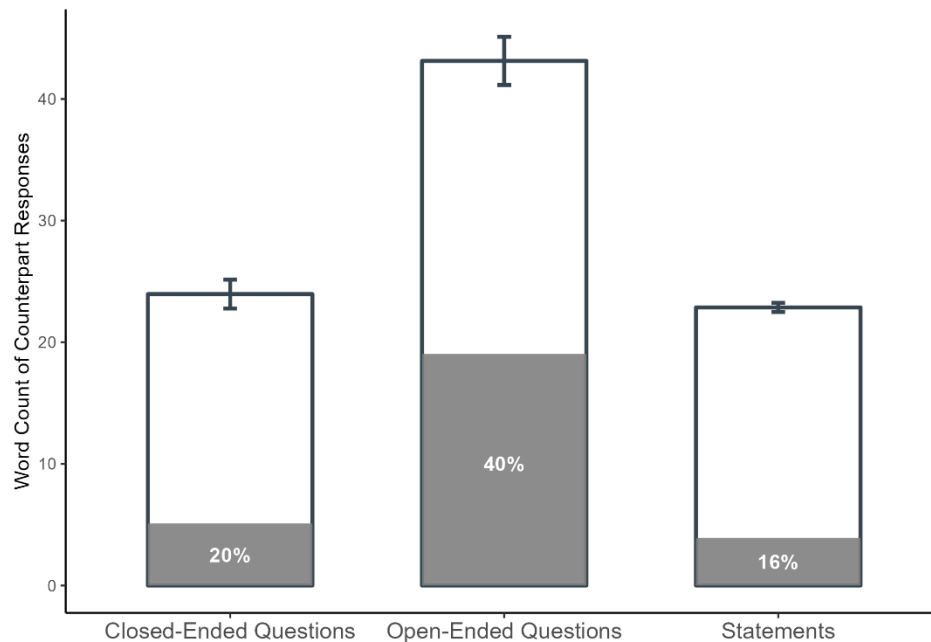


Figure 2. Information yield in turn $t+1$ based on content of turn t . Asking open-ended questions (vs. asking closed-ended and making non-question statements) solicited longer responses from counterparts (mean word count). Further, a higher proportion of the counterparts’ responses following open-ended questions included strategic information disclosure (based on human ratings of strategic disclosure, displayed in the gray portions of the bars). Error bars represent 95% confidence intervals.

Which open-ended questions should negotiators ask?

We find robust support for the idea that negotiators who ask more open-ended questions—broadly defined—get better deals, and that asking such questions elicit responses that are a lot more informative and a bit more positive. But does the specific open-ended question formulation matter? We conducted exploratory analyses. As depicted in Figure 3, *what*-questions are the most frequent (58% of all open-ended questions) and lead to responses that are relatively informative ($M_{beta} = 0.19, 95\% \text{ CI } [0.08, 0.30]$), but slightly reduce sentiment ($M_{beta} = -0.15, 95\% \text{ CI } [-0.26, -0.04]$). *How*-questions, which makes up around 21% of all open-

ended questions, lead to the most positive responses ($M_{beta} = 0.11$, 95% CI [-0.006, 0.236]), but yield relatively lower information ($M_{beta} = 0.019$, 95% CI [-0.096, 0.129]). In contrast, *why*-questions, although constituting just 6% of all queries, had the most notable positive effect on word count ($M_{beta} = 0.28$, 95% CI [0.10, 0.47]), but the strongest negative effect on sentiment ($M_{beta} = -0.29$, 95% CI [-0.43, -0.16]). *Which*-questions, comprising roughly 9% of all questions, had no apparent impact on the word count ($M_{beta} = -0.01$, 95% CI [-0.13, 0.11]) and but a negative effect on sentiment ($M_{beta} = -0.21$, 95% CI [-0.34, -0.08]). Finally, *probing*-questions, which include "when", "who", and "where", marginally raised the word count ($M_{beta} = 0.05$, 95% CI [-0.08, 0.17]), but decreased sentiment (beta = -0.13, 95% CI [-0.25, -0.0002]). These represented about 6% of all questions.

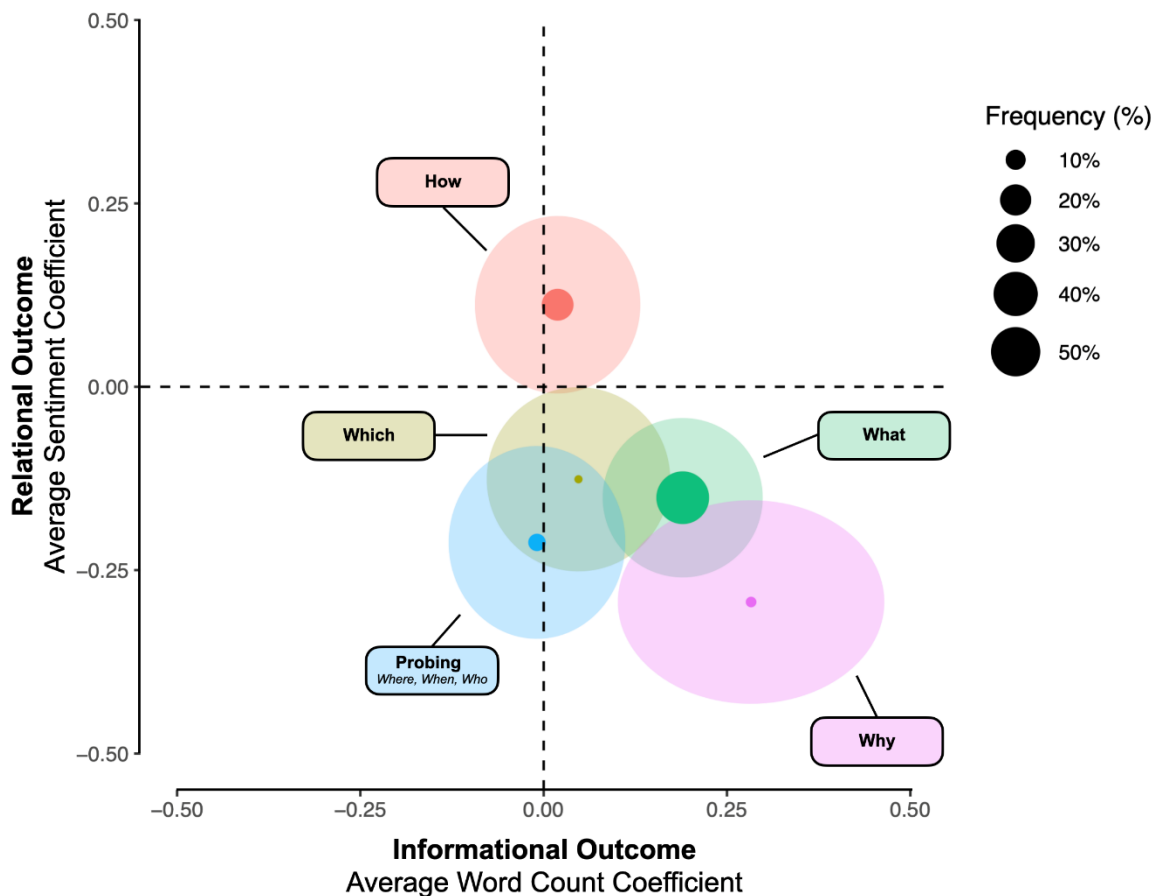


Figure 3. *Conversational circumplex and open-ended question formulations*. The informational and relational axes display the average standardized regression coefficients for five question

formulations along with their 95% confidence ellipses obtained through a 1000 bootstrap resamples of the data. The dot size represents the relative frequency of each formulation.

Study 2: Online Chat Experiment

Taken together, Study 1 suggests that asking open-ended questions can be a very effective—and underused—negotiation strategy. However, the observational nature of this data precludes causal inference. Some unobserved variable(s) (e.g., personality) could explain the higher gains of inquisitive negotiators. Therefore, in Study 2, we examine open-ended question asking in a controlled experiment during live interactions.

Method

Participants. We recruited 577 participants on Prolific Academic to negotiate in dyads via live text-based chat using SMARTRIQS (Molnar, 2019). As preregistered (aspredicted.org/NH4_3Y8), we applied several exclusion criteria to ensure our analysis only considered dyads who completed the full experiment and followed instructions. Accordingly, we excluded 122 participants that could not be matched with another participant or quit the experiment before the live interaction started (e.g., abandoned the experiment while preparing questions). We excluded six dyads for which at least one partner reported that s/he was unable to finish the conversation (e.g., Internet connectivity issue) and 15 participants whose counterpart did not report the terms of the agreement. Lastly, we excluded seven dyads in which at least one participant did not follow the experimental instructions (i.e., did not prepare questions or statements) and seven dyads in which one of the negotiators agreed to a deal below their reservation value. The final sample included 400 participants (217 males, 172 females, 4 preferred not to say and 7 other; 54% male; mean age $M = 38$; $SD = 12$), or 200 dyads, for our analyses. Participants were paid a flat 1.5£ participation fee and up to 1.1£ as an additional variable compensation based on their performance.

Material and Procedure. Immediately after being paired with a peer, participants received role instructions for a lease negotiation they would complete over text-based online chat. The case, adapted from Eisenkraft (2016), featured an office rental discussion between a landlord and a prospective tenant over three issues with integrative potential (2 tradable issues and 1 compatible issue).

In each dyad, we randomly assigned the participant assigned to the role of tenant to an open-ended question condition or to a control condition. In the open-ended question condition, we asked participants to “write down a minimum of three open-ended questions to ask the landlord,” as part of their negotiation preparation. In the control condition, we asked participants to “write down a minimum of three things to say to the landlord.” Landlords were naïve: they were not assigned to an experimental manipulation and did not know that their counterpart had extra preparation instructions. Participants were given 10 minutes to prepare the case before entering the live chat.

To incentivize performance, participants’ outcomes in the negotiation were tied to their compensation. Specifically, participants could accept any deal above 8 points, but each point earned above that reservation value was worth an extra 10 cents in bonus. The best possible deal that was still viable to the counterpart was worth 19 points (i.e., a 1.10 GBP bonus). After the conversation, participants ended the chat and reported independently the terms of the agreement (or lack thereof). When the deal reported by the two negotiators did not match, we manually check the chat and report the deal (or absence) that was agreed by both. A detailed description of instructions can be found in Supplemental Material – Note 6.

Results

Open-Ended Questions. Following our pre-registration plan, we first applied our question-detection algorithm to the chat transcripts to compute participants’ open-ended

question rates—the proportion of their conversational turns that included at least one open-ended question. Consistent with our intended manipulation, tenants who were instructed to prepare open-ended questions asked open-ended questions on average twice as frequently ($M = .14$, $SD = .12$) than tenants in the control condition ($M = .07$, $SD = .10$), $t(198) = 4.82$, $p < .001$, Cohen's $d = .69$. Landlords, who received no instructions, displayed similar open-ended question rates than tenants in the control condition ($M = .08$, $SD = .09$), $t(198) = .91$, $p = .37$.

Negotiation Gains. The primary dependent measure for this study was the number of points that the Tenant earned in the final deal reached with the Landlord (see Supplemental Material – Note 6). As shown in Figure 4, tenants in the question condition obtained higher individual gains ($M = 5.10$, $SD = 2.79$) than tenants in the control condition ($M = 4.16$, $SD = 2.97$), $t(198) = 2.31$, $p = .02$; $d = .33$. The increased gains of inquisitive tenants did not come at the expense of their landlords. Exploratory analyses revealed that landlords paired with question-condition tenants earned equivalent gains ($M = 5.35$, $SD = 2.82$) compared to landlords paired with control-condition tenants ($M = 4.97$, $SD = 3.25$), $t(198) = .90$, $p = .37$; $d = .13$). Moreover, joint gains (measured as the sum of both roles' earnings) were higher in the question condition than in the control condition ($M_{question} = 10.45$, $SD_{question} = 3.93$ vs. $M_{control} = 9.12$, $SD_{control} = 4.86$, $t(198) = 2.13$, $p = .03$, $d = .30$). When measured as the overall agreement efficiency², which identifies the distance of the negotiation agreement with a Pareto efficient deal, joint gains showed the same effect ($M_{question} = 87$, $SD_{question} = 24$ vs. $M_{control} = 77$, $SD_{control} = 35$, $t(198) = 2.4$, $p = .02$; $d = .33$).

² The score is computed by $1 - [(B)/(B + W)]$, where B is the number of solutions that would be strictly better than the joint outcome, and W is the number of solutions that would be strictly worse for both negotiators (Hyder et al., 2000; Tripp & Sondak, 1992).

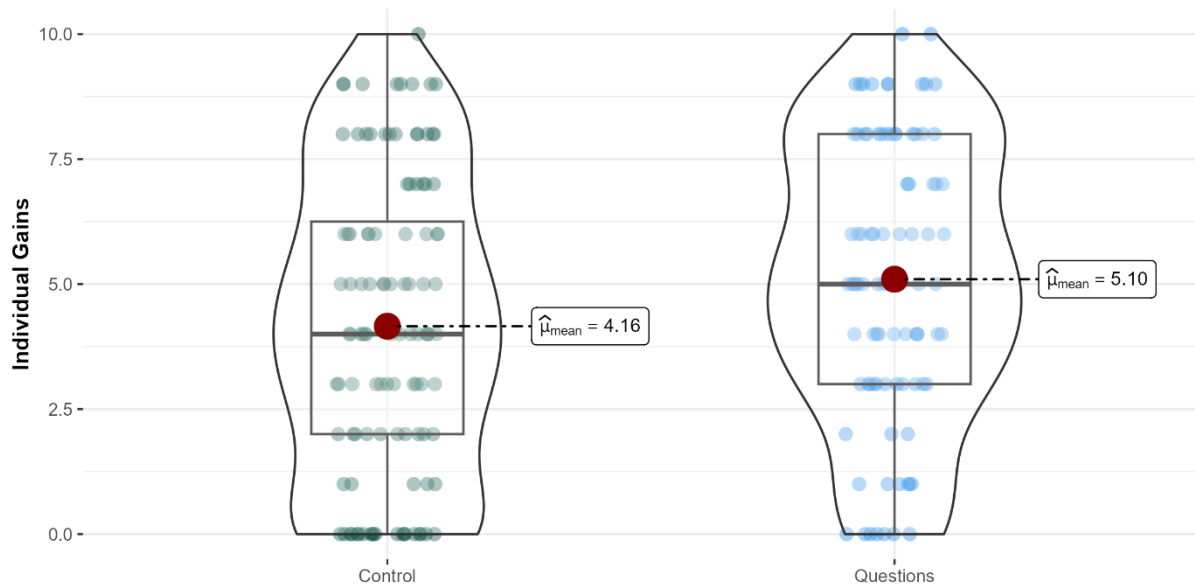


Figure 4. *The effect of open-ended question-asking on individual gains.*

Informational Outcome. We manually coded information from the chat transcripts from which participants' condition had been previously obscured (Procedure in Supplemental Material – Note 7). Most conversational turns did not contain strategic information disclosure ($M = 7.5\%$, $SD = 9.94$). However, tenants in the open-ended question condition obtained more information (% of turns containing information) ($M = 9.50\%$, $SD = 10.76$) from the landlord than did tenants in the control condition ($M = 5.71\%$, $SD = 8.89$), $t(198) = 2.68$, $p = .008$, Cohen's $d = .39$. And tenants who obtained more information obtained better deals ($\beta = .07$, $t = 3.62$, $p < .001$).

Relational Outcome. As in Study 1, we used OpenAI's GPT 3.5 Turbo API to code turn-by-turn sentiment using R (Rathje et al., 2023). The average turns' sentiment was positive ($M = .14$, $SD = .22$). The difference in sentiment conveyed by landlords paired with question-condition tenants ($M = .17$, $SD = .22$) and control tenants ($M = .14$, $SD = .24$) did not reach significance, $t(198) = .76$, $p = .45$, Cohen's $d = .11$. And tenants who received more positive sentiment from their landlord counterparts did not obtain better deals ($\beta = .86$, $t = 0.93$, $p = .35$).

Mediation. We conducted a parallel mediation analysis with 5000 bootstrap resamples using PROCESS (Version 4.3) for R (Hayes, 2017). The model included the experimental condition as the predictor variable (0 = control; 1 = question), average information and rapport as parallel mediators, and gains as the outcome variable. Control variables, such as number of turns and sentiment of the tenant, were included in the analysis, but results were virtually identical without these control variables. As depicted in Figure 5, the total effect of the question (vs. statement) condition on gains was significant ($\beta = .29$, $SE = 0.13$, 95% CI [0.02, 0.55], $p = .03$), and this relationship was partially mediated by the overall amount of strategic information obtained (indirect effect of information: $\beta = 0.07$, $SE = 0.04$, 95% CI [0.01, 0.16], $p < .05$). In contrast, the indirect effect for the average rapport elicited was not significant ($\beta = 0.003$, $SE = 0.01$, 95% CI [-0.02, 0.04], $p = .85$). These parallel mediation effects were observed after controlling for our set of covariates, suggesting again that strategic information gains partially explain why inquisitive negotiators earn more.

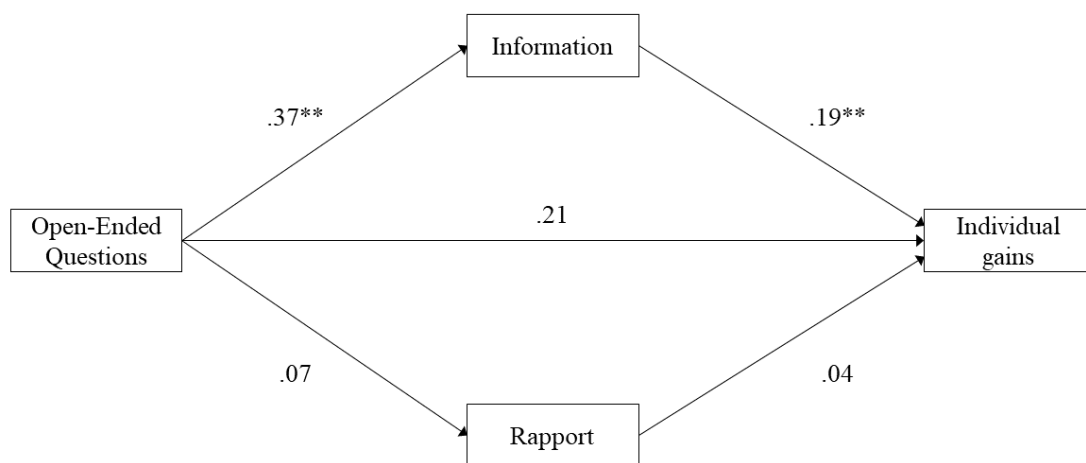


Figure 5. *Parallel mediation analysis.* Open-ended Questions is a dummy variable (1 = question condition); Information, Rapport and Individual gains are expressed in standardized units (Z-scores).

Discussion

Over one in four of the interactions people have everyday involve some form of negotiation (Di Stasi, Schweinsberg, & Quoidbach, 2023). Recent work suggests that, in the context of live interaction, negotiation may be conceptualized as *topics* on which interlocutors' motives or beliefs conflict—and the duration of these topics can range along a spectrum from brief, fleeting moments of conflict embedded in more cooperative interactions, to whole conversations underpinned by conflict, to multiple conversations or relationships defined almost entirely by conflict (Yeomans et al., 2021). Despite the tremendous pervasiveness of negotiation, though, people seem to overlook a simple strategy to obtain better outcomes during them: asking more open-ended questions. Confirming long-standing expert observations (e.g., Fisher, Ury & Patton, 2011; Malhotra & Bazerman, 2007; Voss & Raz, 2016), our analyses of large-scale negotiation transcripts revealed that negotiators ask a surprisingly low number of open-ended questions—less than one in ten speech turns incorporated an open-ended question. Neglecting to ask is a costly strategic error. Through both observational and experimental data, we found that asking more open-ended questions predicted higher individual outcomes. Inquisitive negotiators (those instructed to ask open-ended questions for which ~14% of turns contain an open-ended question) gain on average 23% more than less inquisitive negotiators (those instructed to prepare statements for which ~7% of turns contain an open-ended question). Our studies have identified one simple underlying reason: the more questions one asks, the more critical strategic information counterparts reveal in response. In our samples, open-ended questions triggered responses that were twice as extensive and informative as responses elicited by asking closed-ended questions or by making non-question statements. In turn, learning more information from a counterpart led to more beneficial personal outcomes.

Our studies quantify, for the first time, people's tendency to spend excessive amounts of time trying to influence the other party (by making statements) and insufficient time learning

(by asking questions) during negotiations. We found an astonishing gap: over 80% of the dialogue in the negotiations in our samples were geared toward influence rather than inquiry. In our studies, participants were equally inclined to ask open-ended and closed-ended questions, a contrast to previous research demonstrating a human tendency to pose more closed-ended questions (Baldwin, 1993; Oxburgh et al., 2012; Snook et al., 2012).

Our findings contribute to a renewed and rapidly burgeoning interest in behavioral science to understand the key ingredients of successful conversations (e.g., Di Stasi, Templeton, & Quoidbach, in press; Templeton et al., 2022, 2023; Reece et al., 2023; Huang et al., 2017; Yeomans et al., 2021; Yeomans et al., 2023). While previous studies have underscored the surprising benefits of asking even seemingly sensitive questions in cooperative conversations to pursue relational motives (Hart et al., 2021; Huang et al., 2017), we demonstrate that asking questions can boost informational and economic outcomes, without harming relational ones, in competitive contexts as well (Yeomans et al., 2019). Notably, in line with Huang et al.'s (2017) findings that follow-up questions are a powerful question type to establish interpersonal liking and signal responsiveness among strangers, and Minson et al.'s (2018) findings that “negative assumption” questions increase the veracity of counterpart responses, our research also finds that question types matter. Specifically, our data suggests that while open-ended questions increase information exchange, closed-ended questions may not improve negotiated outcomes.

Future Directions

Our findings open the door to exciting avenues for future research. By studying conversational transcripts at large scale (Stokoe, 2021; Yeomans et al., 2023), more work is surely needed to understand the trade-offs that come along with asking questions across the vast array of conversational objectives people pursue (Yeomans et al., 2021). For example, contrary to previous studies on cooperative conversations, we did not observe an increase in liking as a result of asking more open-ended questions in our data—there was no effect on

liking. Prior work has theorized that question-asking may operate differently in cooperative versus competitive contexts, a hypothesis that warrants further investigation, likely at the topic or turn level of analysis, rather than thinking of conversations as wholly defined by cooperative versus competitive motives (e.g., Brooks & John, 2018).

Further, we need more data to more deeply understand what an ideal balance between influencing and learning might look like. While we observed no adverse effects of posing too many questions within the natural range of question-asking in our study (the maximum open-ended question rate was 35% of turns), it remains to be investigated how an excessive tilt towards asking questions (and a scarcity of statements) may impact negotiation outcomes.

Our results underscore the importance of differentiating between different formulations of questions. While our study focused on the fundamental distinction between open- and closed-ended questions, future research may reveal insightful negotiation strategies by investigating other or more nuanced distinctions. Should negotiators prefer "how" to "why" questions as some experts suggest (Voss & Raz, 2016)? Are indirect queries such as "tell me about..." as effective as direct ones?

The distinction between closed- and open-ended seems straightforward, but how they play out in practice hinges on many aspects of context—and how interlocutors choose to respond to them. For instance, "how" or "why" questions that may appear to be open-ended may yield a limited set of responses, while seemingly closed-ended questions like "Can you describe your priorities?" may prompt a glut of information disclosure in practice. Scholars in the field of police interviewing have proposed categories that attempt to capture these practical tendencies, for example, describing questions as appropriate versus inappropriate, or productive versus unproductive (Milne and Bull, 1999; Griffiths and Milne, 2006). Theorizing by Griffiths (2008) suggests that productive questions typically include open-queries ("Tell me about..."), probing questions (the "5WH"), and closed-ended questions to clarify information.

In contrast, unproductive questions include inappropriate closed questions (yes/no questions unrelated to information already disclosed), leading open-ended questions (those presuming the desired answer), multiple questions (asking about several topics simultaneously), and inquiries that are, in reality, statements of the interviewer's opinion. Undoubtedly, these categorizations demand more empirical examination, but they could provide a valuable roadmap for future investigations into question-asking in negotiations.

Huang et al. (2017) suggest a question typology based largely on the verbal content that precedes each question—whether the question follows up on something said previously (follow-up), mirrors a question stated before (mirror), or switches to a new topic (topic-switching). Because conversations unfold as a cascade of speaker turns, what comes *after* a question provides context and meaning for questions, too. Emerging work on “boomerasking” suggests that how questioners respond to a counterpart’s response in a question-answer-response pattern influences how the counterpart views the sincerity of the original question (Brooks, Yeomans & Norton, 2022). Questioners who quickly answer their own questions seem more interested in disclosing their own views than interested in learning their counterpart’s.

Indeed, moving beyond question typologies, future research can examine many aspects of question delivery—other verbal, nonverbal, and paralinguistic cues—and how these variables impact the effects of questions. For example, factors such as tone (e.g. warm or aggressive), volume (e.g. soft or loud), pace (e.g., fast or slow), eye gaze, and strategic pauses can significantly influence negotiation outcomes (Abi-Esber, Brooks & Burriss, 2022; Curhan et al., 2022; Jeong et al., 2019; Di Stasi, Templeton, & Quoidbach, in press; Van Zant & Berger, 2020). The dynamic communication context is also essential to consider. For example, Muir et al. (2020) revealed that negotiators who mirror each other's communication style—particularly in the use of interrogative phrases—achieve more substantial joint and individual gains. Though different scholarly fields use different terminology to refer to the shifting congruence between

interlocutors' behaviors (e.g. accommodation, contagion, synchrony, mirroring), there is much work to be done to understand how interpersonal congruence and accommodation do and should play out during live interaction—and their impact on negotiated outcomes.

Future research should also examine the potential moderators of the benefit derived from open-ended questions in negotiations, both from individual, situational, and cultural perspectives. Do the benefits of asking open-ended questions extend equally across different demographic or personality backgrounds? To what extent does the efficacy of open-ended questions apply to various types of negotiations? And is it equally the case in Barcelona, New-York, or Tokyo? While we observed no moderating effects of the negotiation topic (resource allocation, department merger, job offer) in our initial study, it should be noted that our cases all featured integrative negotiations marked by relatively balanced power dynamics and high value-creation potential. Future investigations should assess whether more inquisitive negotiators also enjoy a negotiating advantage in other contexts, particularly those characterized by clear power asymmetries (e.g., do lower power employees who ask many questions risk antagonizing a higher-power boss?) as well as in purely distributive situations, where questions may seem more prying or interrogative more quickly (e.g., Brooks & John, 2018).

Conclusion

Our research offers novel evidence that substantiates the widely-accepted yet previously unexplored assumption that negotiators often excessively focus on influencing rather than learning. The road ahead calls for meticulous exploration into the nuance of question types, the delicate art of delivery and framing, and the identification of specific contexts in which question-asking may be more or less advantageous. Despite these open questions, our findings unambiguously emphasize the importance of fostering an inquisitive mindset in negotiations

by asking more open-ended questions, which solicit information disclosure to understand a counterpart's point of view (rather than spending excessive time asserting one's own).

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Supplemental Material

Note 1 - Web Service Case Payoffs

Options		Points	
		Business	Government
BATNA		100	114
Compensation Scheme	60% fixed salary, 40% bonus	10	32
	70% fixed salary, 30% bonus	16	27
	80% fixed salary, 20% bonus	23	23
	90% fixed salary, 10% bonus	29	18
	100% fixed salary, 0% bonus	35	13
Overall Leadership Plan	Promote from Business Services	18	-2
	Promote from Government Services	12	32
Transition Time	3 months	30	10
	6 months	22	11
	9 months	13	13
	12 months	4	15
	15 months	-4	16
Team Leadership Plan	0 leaders from Business Services, 4 from Government	10	32
	1 leaders from Business Services, 3 from Government	15	26
	2 leaders from Business Services, 2 from Government	19	19
	3 leaders from Business Services, 1 from Government	24	13
	4 leaders from Business Services, 0 from Government	29	6
Engineer Redundancy Plan	0 engineers removed from Business Services, 4 from Government	32	32
	1 engineers removed from Business Services, 3 from Government	30	30
	2 engineers removed from Business Services, 2 from Government	27	27
	3 engineers removed from Business Services, 1 from Government	24	24
	4 engineers removed from Business Services, 0 from Government	22	22

Note 2 - Study 1: text processing

Speech turns. The primary unit of analysis is “speech turn” which we define in the following ways. A turn is a succession of words a speaker said before their partner began talking. In a dyadic conversation, speakers alternate speech turns.

Data Structure. As illustrated in the table below our transcripts included for each turn: (i) a progress variable (Progress), (ii) the speaker identifier (Id), (iii) a start timestamp, (iv) an end timestamp, and (v) text.

Progress	Id	Time Start ³	Time End ¹	Text
1	55	00:00:03:48	00:00:04:48	Hello.
2	32	00:00:04:61	00:00:05:61	Hello.
3	55	00:00:05:114	00:00:09:89	I'm Mr... Well, we already know. I'm Mr. Martinez.
4	32	00:00:10:07	00:00:12:99	OK. and I am Mr. Colleman.
5	55	00:00:14:52	00:00:15:91	Hello. Hello, how are you?
6	32	00:00:16:95	00:00:20:77	Fine, and you? It's good to talk to you.
7	55	00:00:21:29	00:00:25:17	Yeah, the same. How's the advertising department going?
8	32	00:00:25:106	00:00:42:85	Yeah, it's pretty good. But we can always improve something. And this is a good opportunity for a solid job, to make some improvements and to give like some impulse to our company, to our newspaper.
9	55	00:00:44:73	00:00:48:28	Yeah. I like I am liking this improvement's of this new of our new bosses.
10	32	00:00:49:62	00:00:50:62	Yes.
11	55	00:00:52:13	00:00:56:65	And I think it's good that they are letting us do these investments.

³ The unit of measure is hh:mm:ss:fps. fps: 120 frames per second.

Note 3 - Open-Ended Questions Detector Features

Using the R package “sentimentr”, we obtained the word count per turn. Then, using the R package “politeness” (Yeomans, Kantor, & Tingley, 2018), we obtained the number of question marks per turn.

Algorithm

Table S1 lists all of the features that were used for constructing the Open-Ended Questions detection model in Study 1. These features were primarily drawn from Huang, Yeomans, Brooks, Minson, & Gino (2017). We used a relatively simple algorithm. The text from each turn was tokenized into sentences delimited by a period, exclamation mark, semicolon, and question mark. Then, we detect open-ended questions when a sentence contains (1) a question mark and (2) at least one of the Open-Ended Question features (Table S1). We use the R package “*stringr*” to detect Open-Ended Question features.

One possible limitation is that some of the features can be used with other grammatical roles. For example, which can form a question or be used as a function word to introduce a relative clause (Merriam-Webster Dictionary). However, the number of false positives was very limited in our dataset (4.2% in human coded turns) such that training and testing may not be internally and externally valid. Please contact the authors for more information.

Table S1: Relative frequency and examples of open-ended formulations in Study 1.

Formulation	Relative Frequency (N observations)	Examples
What	57.8% (2441)	What's your preference? What do you think about X? What's your priority?
How	20.7% (873)	How do you assess this? How do you feel about X? How many X do you need?
Which	8.6% (361)	Which do you prefer? Which one are you thinking of? Which one is that?
Why	6.5% (273)	Why? Why do you think so? Why don't we look at X?
Where	3.0% (128)	Where would you like to invest this money? Where should we start? Where do you see your department lacking?
Who	1.8% (78)	Who pays for X? Who would join us? Who are you hiring?
When	1.6% (67)	When? When can you increase my signing bonus to X? When is X necessary?

Note 4 - Main Effect Robustness checks

Table S2: We control for amount of words spoken by both negotiators.

	(I)		(II)		(III)		(IV)	
	β	<i>t-value</i>	β	<i>t-value</i>	β	<i>t-value</i>	β	<i>t-value</i>
Questions	1.04*	2.30						
Closed-Ended Questions			.21	.29			-.47	-.61
Open-Ended Questions					2.33**	3.23	2.5***	3.25
Marginal R ²	0.06		0.04		0.07		0.07	

Note. n = 610. Hierarchical linear modeling was applied for all the models. + p < .10. * p < .05. ** p < .01. *** p < .001. (All two-tailed tests). Independent variables take values from 0 to 1. Random effect for individual, role, dyads and negotiation case. Control variables are the counterpart's same variable, length of the negotiation and gender.

Table S3: Total open-ended questions.

	(I)		(II)		(III)		(IV)	
	β	<i>t-value</i>	β	<i>t-value</i>	β	<i>t-value</i>	β	<i>t-value</i>
Questions	.02**	2.76						
Closed-Ended Questions			.002	.22			-.01	-.89
Open-Ended Questions					.03***	3.71	.04***	3.76
Marginal R ²	0.03		0.003		0.04		0.04	

Note. n = 610. Hierarchical linear modeling was applied for all the models. ⁺p < .10. * p < .05. ** p < .01. *** p < .001. (All two-tailed tests). Random effect for individual, role, dyads and negotiation case. Control variables are the counterpart's same variable, length of the negotiation and gender.

Table S4: Interaction of Open-Ended questions by case.

Interaction term	Questions		Closed-Ended Questions		Open-Ended Questions	
	β	<i>t-value</i>	β	<i>t-value</i>	β	<i>t-value</i>
Pacific	.5	.37	-.73	-.33	2.59	1.15
Mc Consult	.12	.58	.009	.53	.18	1.1
Web	-2.8	-1.29	-8*	-2.29	.28	.09
Marginal R ²	0.04		0.04		0.05	

Note. n = 610. Hierarchical linear modeling was applied for all the models. + p < .10. * p < .05. ** p < .01. *** p < .001. (All two-tailed tests). Random effect for individual, role, dyads and negotiation case. Control variables are the counterpart's same variable, length of the negotiation and gender.

Table S5: Cluster standard errors at individual level.

	(I)		(II)		(III)		(IV)	
	β	<i>t-value</i>	β	<i>t-value</i>	β	<i>t-value</i>	β	<i>t-value</i>
Questions	1.38**	3.01						
Closed-Ended Questions			.60	.83			-.27	-.35
Open-Ended Questions					2.84** *	3.97	2.96** *	3.86
Adjusted R ²	0.02		0.00		0.03		0.03	

Note. n = 610. Hierarchical linear modeling was applied for all the models. + p < .10. * p < .05. ** p < .01. *** p < .001. (All two-tailed tests). Random effect for individual, role, dyads and negotiation case. Control variables are the counterpart's same variable, length of the negotiation and gender.

Note 5 - Mediation Robustness Checks

Results are virtually identical without control variables (bootstrapped parallel mediation indirect effect: 95% CI [0.0051 - 0.1961], $p = .04$).

Results are robust using different proxies of length of counterpart response, such as the difference between the sum of counterpart's response word count and sum of word count of all their counterpart's responses. In addition, counterpart's average word count was negatively related to individual gains ($\beta = -0.09$, $t = -2.2$, $p = .03$). This rule out a possible alternative explanation that the association between lead word count and individual gains is driven by counterpart's average word count. Another alternative explanation is that counterpart long responses at $t+1$ led the negotiator to have more time to think about better arguments at $t+2$. However, turn length at $t+2$ did not mediate the link between open-ended questions and individual gains (Sobel test: $z = -1.35$, $p = .18$; bootstrapped indirect effect: $p = .13$).

Note 6 - Study 2: Online Chat Experiment Material

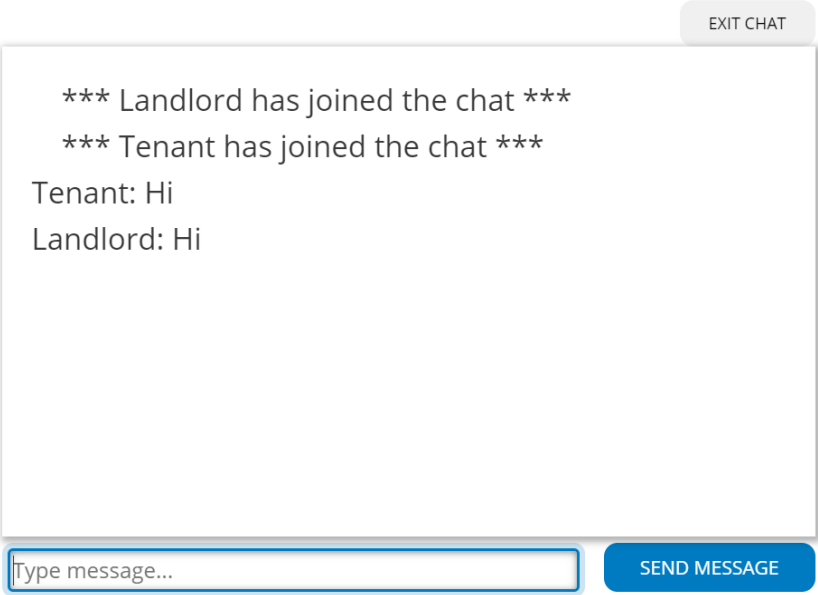
Instructions

We instructed participants that they would (1) “be assigned to the role of a tenant or a landlord in a fictional negotiation case”, (2) “negotiate the case with another participant via a live chat”, and (3) “be asked to enter the terms of your deal” at the end of the conversation. The fictitious case consisted of negotiating the conditions of the lease of an office in London (UK).

Table S5 - Office Rental Payoffs

	Tenant	Landlord
BATNA (points)	8	8
Parking	<ol style="list-style-type: none"> 1. A. No space, 0 points 2. B. One space, 2 points 3. C. Two spaces, 4 points 4. D. Three spaces, 7 points 5. E. Four spaces, 10 points 	<ol style="list-style-type: none"> 6. A. No space, 4 points 7. B. One space, 3 points 8. C. Two spaces, 2 points 9. D. Three spaces, 1 points 10. E. Four spaces, 0 points
Internet Cables	<ul style="list-style-type: none"> ● A. Old cables, 0 points ● B. High-speed cables, 3 points ● C. Optical fiber, 6 points ● D. Micro wireless, 7 points 	<ul style="list-style-type: none"> ● A. Old cables, 7 points ● B. High-speed cables, 3 points ● C. Optical fiber, 6 points ● D. Micro wireless, 0 points
Start Date	<ul style="list-style-type: none"> ● A. Next week, 0 points ● B. Next month, 1 points ● C. Two months from now, 2 points ● D. Three months from now, 3 points ● E. Four months from now, 4 points 	<ul style="list-style-type: none"> ● A. Next week, 10 points ● B. Next month, 7 points ● C. Two months from now, 4 points ● D. Three months from now, 2 points ● E. Four months from now, 0 points

Figure S1: Example of SMARTRIQS Live Chat Interface



Note 7 - Instructions to code for information of Landlord text

“Examine the transcript from a negotiation conversation provided below. Your task is to evaluate if the speaker is disclosing personal preferences in one of the following ways: Inter-issue disclosure: Revealing the relative importance of one issue over another (e.g., 'Starting date is more crucial to me than Parking allocation'). Intra-issue disclosure: Revealing the relative importance of options within the same issue (e.g., 'I favor old cables over micro wireless'). Combined preference disclosure: Revealing intra and inter-issue preferences simultaneously (e.g., 'Starting next week is more important to me than conceding all the parking spaces you want'). Consider the preference points associated with each option in the following issues: Parking Allocation Issue: No spaces (4 points), one space (3 points), two spaces (2 points), three spaces (1 point), four spaces (0 points). Internet Cable Connection Issue: Old cables (7 points), optical fiber (6 points), high-speed cables (3 points), micro wireless (0 points). Start Date Issue: Starting next week (10 points), next month (7 points), two months from now (4 points), three months from now (2 points), and four months from now (0 points). Please note that simply making offers is not considered disclosing preferences. After examining the provided text, determine whether the speaker is revealing personal preferences. Respond with '1' if 'Yes, the speaker is disclosing preferences' or '0' if 'No, the speaker is not disclosing preferences.'”

References

- Huang, K., Yeomans, M., Brooks, A. W., Minson, J., & Gino, F. (2017). It doesn't hurt to ask: Question-asking increases liking. *Journal of Personality and Social Psychology*, *113*(3), 430–452.
- Rathje, S., Mirea, D., Sucholutsky, I., Marjeh, R., Robertson, C., & Van Bavel, J. J. (2023). GPT is an effective tool for multilingual psychological text analysis. <https://doi.org/10.31234/osf.io/sekf5>
- Yeomans, M., Kantor, A., & Tingley, D. (2018). The politeness Package: Detecting Politeness in Natural Language. *R Journal*, *10*(2).