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The Effect of Response Timing in Negotiations

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Part II | Papers Included in this Cumulative Dissertation

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Part I | Dissertation Synopsis

1 Introduction

Conflicting interests are as natural to human interactions as settling these conflicts for cooperation (Brett & Thompson, 2016; Thompson et al., 2010). From early human societies negotiating over scarce resources, to modern-day bargaining over car purchases, salary discussions with supervisors, or even seeking harmony in romantic relationships—negotiations shape human relationships profoundly. Indeed, for over five decades, negotiations have attracted significant research attention across various disciplines, including psychology, economics, organizational behavior, and communication studies (e.g., Boothby et al., 2023; Brett & Thompson, 2016; Chertkoff & Conley, 1967; Kohls, 1970; Liebert et al., 1968; Neale & Bazerman, 1992; Northcraft & Neale, 1987; Raiffa, 1982; Yukl, 1974). And yet, despite the long history of negotiation research across several disciplines, scholars continue to seek a deeper understanding of how negotiation behaviors can be optimized to improve both individual and collective outcomes (Lipp et al., 2023).

One specific phenomenon that generated considerable research interest beginning in the early 2000s is the *effect of first offers* on negotiation outcomes (Galinsky & Mussweiler, 2001). This effect is among the strongest observed in negotiations, with empirical studies documenting correlations between first offers and outcomes as high as $r = .73$ to $.93$, explaining a remarkable variance of up to 86% in final negotiation prices (Galinsky & Mussweiler, 2001; Galinsky et al., 2002; Kray et al., 2001). Recent meta-analytic findings have confirmed the substantial magnitude of first-offer effects, estimating an overall effect size at $g = 1.56$, $r = .61$ (Petrowsky et al., 2025). Yet, despite extensive research on first offers, there is surprisingly little research on how second movers—those responding to initial offers with counteroffers—can strategically influence negotiation outcomes, leading to a rather one-sided academic perspective of negotiation openings (Lipp et al., 2023).

This dissertation addresses this crucial research gap by examining two essential but understudied elements of counteroffers: *how strong* a counteroffer should be and *when* it should be made. Drawing from established theoretical foundations such as anchoring (Mussweiler & Strack, 2000; Tversky & Kahneman, 1974) and emerging research on timing effects (Adair et al., 2007; Sinaceur et al., 2013), this work investigates how the magnitude and timing of counteroffers can alter the proposers' perceived intentions, thereby shaping negotiation dynamics and outcomes. To my knowledge, there is no research that systematically investigates how both counteroffer timing and magnitude affect 1) interpersonal perceptions, 2) economic outcomes and 3) impasse risks—simultaneously.

In addition, we theorize that this timing effect may extend beyond traditional economic bargaining, namely to romantic attraction, where social norms and psychological mechanisms may operate in comparable ways (Baumeister & Vohs, 2004; Birnbaum et al., 2020). Across the three articles of this dissertation, the central finding is clear: timing plays a substantial role in shaping economic and romantic responses. In sections 1.1 to 1.3, I will illustrate relevant research before outlining the three papers of this dissertation and discussing theoretical implications and future research avenues.

1.1 Counteroffer Magnitude & Anchoring Effects

Although there is only limited research on the magnitude of counteroffers (Lipp et al., 2023), initial studies suggest that more aggressive (i.e., ambitious) counteroffers yield more favorable negotiation outcomes, allowing proposers to reclaim value initially anchored by first offers (Lipp et al., 2023). This aligns with extensive research on the advantages of ambitious first offers, which leverage *anchoring effects* to bias subsequent negotiations in favor of the offer-maker (see Petrowsky et al., 2025 for a meta-analysis). The potency of anchoring effects of first offers, and by extension counteroffers, is explained by two major theoretical models: Selective Accessibility and Insufficient Adjustment.

The Selective Accessibility Model (Mussweiler & Strack, 1999, 2000) posits that an anchor—such as a first offer—selectively activates anchor-consistent information in the counterpart’s mind. For instance, when a car is listed at a high price, a buyer is more likely to focus on features that justify the higher valuation, reinforcing the anchor’s plausibility (Mussweiler et al., 2000). Consequently, subsequent judgments, including counteroffers, are biased toward the initial anchor.

The Insufficient Adjustment Theory (Tversky & Kahneman, 1974) proposes that people attempt to adjust away from an anchor but typically fall short. Adjustments require cognitive effort, and individuals often terminate the adjustment process prematurely, resulting in estimates that remain systematically influenced by the original anchor (Epley & Gilovich, 2006; Frech et al., 2019, 2020).

1.1.1 Anchoring and Backfiring Effects of Counteroffers

Beyond first offers, counteroffers likely also leverage these anchoring effects, hence acting as *counter*-anchors (Lipp et al., 2023; Petrowsky et al., 2023; Schweinsberg et al., 2023). By making more ambitious counteroffers, second-movers may be able to push back against the first-mover’s anchor, thereby limiting its potency and reshaping the first-mover’s price expectations. However, this counter-anchoring effect tends to be slightly weaker than the anchoring effect of first offers (Lipp et al., 2023).

Importantly, excessively ambitious counteroffers carry strategic risks: they can backfire if perceived as unrealistic, leading to negotiation breakdowns or impasses (Schweinsberg et al., 2012, 2022). Overly aggressive counteroffers can offend counterparts, erode trust, signal the absence of a viable zone of agreement, and ultimately may lead to the termination of the negotiation (Petrowsky et al., 2023).

1.2 Counteroffer Timing

Besides counteroffer magnitude, we aim to assess another crucial, yet often overlooked aspect of counteroffers with this dissertation: When should an offer be made? There is only emerging evidence suggesting that making *later first* offers can foster greater exchange of information and lead to better outcomes in integrative negotiations (Adair et al., 2007; Sinaceur et al., 2013; see also Curhan et al., 2022; Desai & Jundal, 2024; Fong & Waisman, 2023 for delay during negotiations). However, it remains unclear whether these findings extend to counteroffers (see Azmi & Voon, 2016; Kwon & Weingart, 2004). Does the timing of a buyer's counteroffer merely moderate the anchoring effect of the first offer (i.e., strengthening or mitigating its effect), or does it fundamentally impact negotiation outcomes?

1.2.1 Why Early Counteroffers Might be Advantageous

Some negotiation scholars have advocated making immediate counteroffers (Gunia, 2017), reasoning that quick counteroffers might weaken the influence of the first offer by preventing the full development of selective accessibility effects (Mussweiler & Strack, 1999, 2000), preventing the buyer from fully retrieving and selectively activating information that confirms the initial price. With additional time, the buyer may remain susceptible to anchor-consistent information, which can make the seller's initial price seem more plausible and fairer. Furthermore, when negotiations drag on without a counteroffer to challenge the initial anchor, sellers may increasingly rationalize and defend their original price, making them less open to later concessions. This tendency reflects the *myside bias*, where individuals selectively seek out information that reinforces their existing beliefs (Mercier, 2022; Peters, 2020). Furthermore, sellers may be inclined to accept a lower counteroffer early, rather than hold out for an uncertain higher offer (Karle et al., 2023). This would be in line with the

account of delay discounting (Luhmann, 2009) suggesting that people tend to value an immediate reward more than a delayed one (e.g., choosing \$100 now vs. \$200 in three years).

1.2.2 Why Late Counteroffers Might be Advantageous

Conversely, later counteroffers could enable or at least signal greater deliberation (Curhan et al., 2022; Loschelder et al., 2014; Mason et al., 2013). According to the Insufficient Adjustment Theory (Tversky & Kahneman, 1974), negotiators who respond too quickly possibly risk being susceptible to the first-mover's initial anchor. By relying on an intuitive, fast rather than a deliberate response, they may fail to fully adjust away from the anchor, ultimately favoring the first-mover.

Furthermore, immediate counteroffers may signal greater willingness to negotiate and concede (Thompson, 2011). In contrast, delayed counteroffers can lead sellers to infer limited market demand, prompting them to lower their price expectations to avoid losing the deal. Hence, when second-movers make their counteroffers later, first-movers may perceive them as less eager to reach an agreement and thus infer that the second-mover has a lower reservation price (i.e., the maximum price the second-mover is willing to pay before walking away from the negotiation, Raiffa, 1982; Thompson, 2011). In turn, first-movers who perceive a lower reservation price may adjust their expectations for the second-movers' concessions accordingly, often resulting in lower final sale prices (see Lee & Ames, 2017). In summary, despite untested practical suggestions of making immediate counteroffers (Gunia, 2017) to counter the first-mover's anchor, it remains unclear whether these suggestions can be supported empirically.

1.3 Extending Timing Effects to Romantic Relationships

Building on the broader importance of timing in social exchanges, this dissertation also explores whether similar effects, analogous to the demand-based inferences in negotiations extend to romantic relationship contexts. The dating marketplace shares

important features with negotiation contexts: individuals compete for scarce and desirable partners, and signals of interest (or scarcity) play crucial roles in shaping attraction (Baumeister & Vohs, 2004). Therefore, the timing of communication—such as how quickly one sends a text after a first date—may influence perceived mate value and relationship intentions. Yet, as there is competing evidence for both negotiation and romantic contexts in previous literature, we tested competing predictions in this dissertation.

1.3.1 Why Delaying Texts may be Advantageous

Although there is frequent debate in pop culture about when to text after the first date to gain the highest attraction, one dating strategy is especially common, namely *playing “hard-to-get”*. For example, specific tactics of playing hard-to-get may be to take longer to initiate contact after dates, to take longer to respond to messages or to give sexual hints but withhold sexual activities (Crawford & Popp, 2003; Hazel et al., 2022, Jonason & Li, 2013).

Playing “hard-to-get” increases perceived scarcity, which, according to the scarcity principle, boosts desirability because something that is difficult to obtain is seen as more desirable (Aggarwal et al., 2011; Cialdini, 2009). Conversely, and analogous to the demand-based inferences in negotiations, those who appear more needy of a relationship and generally show interest in multiple potential partners instead of being selective are perceived as less desirable (Eastwick et al., 2007).

1.3.2 Why Early Texts may be Advantageous

In contrast, waiting too long may also be disadvantageous. Attraction research emphasizes the importance of reciprocity: we like those who like us back (Aronson & Worchel, 1966; Finkel & Eastwick, 2009). Delays may undermine perceived interest, clarity about relationship intentions and reliability—traits highly desirable in potential mates (Birnbaum, 2018; Valentine et al., 2019).

1.3.3 Predicting a Curvilinear Inverted-U Relationship

Also, there may “too much of a good thing” (Grant & Schwarz, 2011), resulting in a curvilinear effect in the form of an inverted-U: While there may be initial benefits of letting some time pass before texting, waiting too long could backfire (see Loschelder et al., 2016a; Nols et al., 2024). This prediction is consistent with *motivational intensity theory*, which posits that goals are most attractive when moderately challenging (Brehm, 1999; Brehm & Self, 1989; Roberson & Wright, 1994; Wright & Brehm, 1984).

For texting after the first date, an initiator that texts too soon might be perceived as undesirable and needy of a relationship. The goal would be too easy to attain and would not appear attractive enough to pursue. Conversely, an initiator texting too late might appear uninterested. Consequently, a target might perceive that getting the initiator to like them is too difficult to achieve. Prior research supports this reasoning: When targets knew that a potential partner was unattracted to them (i.e., possibly by playing too hard-to-get) or highly attracted to them (i.e., too “easy” to get), they felt less attracted to the partner (Reysen & Katzarska-Miller, 2013).

2 The Present Dissertation

Collectively, by integrating comprehensive empirical data across diverse negotiation contexts and extending theoretical frameworks, this dissertation aims to test competing suggestions and advance our understanding of how magnitude and initial response timing influence economic negotiations and romantic relationships alike. The insights provided offer theoretical enhancements, practical recommendations, and a novel understanding of timing strategies.

Under this section (‘*The Present Dissertation*’), I will illustrate how each of the three articles contributes to addressing the central research questions of this dissertation. Second, I will elaborate on the broader contributions to theory and practical implications of the

empirical findings. Third, I will discuss limitations of the studies. Finally, I conclude by outlining potential avenues for future research and offering closing remarks. All three articles are included in full within this dissertation after the closing remarks (see *Part II*).

2.1 Paper I: Counteroffer Magnitude and Timing in Asynchronous, Electronically-Mediated Negotiations

As illustrated, despite related insights from the first-offer literature, little is known about how buyers can optimize their *counteroffers*. Hence, the first publication within my dissertation seeks to address this central research question within the increasingly relevant context of asynchronous, electronically-mediated negotiations (Engelmann et al., 2022): How do counteroffer magnitude and timing affect final sale prices and impasse risks?

To address this critical gap, we analyzed a large-scale dataset of over 26 million real-world, asynchronous, online negotiations between buyers and sellers (Study 1) and conducted a high-powered experiment (Study 2) to establish causal evidence for the effects of counteroffer timing and magnitude.

2.1.1 Study 1: Evidence from Over 26 Million eBay Negotiations

In the first study, we analyzed the eBay “Best Offer” dataset (Backus et al., 2020), which captures 26,454,176 unique buyer-seller negotiations across more than 30 product categories. In these negotiations, sellers posted list prices, which buyers could respond to by making counteroffers. Each negotiation could include up to three rounds of offers and concluded either in a deal or an impasse. This allows buyers and sellers to negotiate prices directly in a dyadic format. Further underlining the typical back-and-forth of interactive negotiations, sellers and buyers commonly exchange (short) messages together with their respective offers. Using multiple linear and logistic regression models, we found that:

- i. **Anchoring.** Ambitious counteroffers—offers that were substantially lower than the seller’s initial list price—led to significantly lower final sale prices, confirming well-

established anchoring effects. However, ambitious counteroffers also increased the likelihood of impasses.

- ii. **Timing.** Importantly, the study introduced a novel finding: *late* counteroffers (i.e., those made further after the item was listed) were associated with *both* lower final prices and reduced impasse risks compared to earlier counteroffers. Early counteroffers were generally linked to a higher impasse risk.
- iii. **Magnitude $\times$ Timing Interaction.** However, early counteroffers also seemed to reduce the negative impact that highly ambitious counteroffers can have on reaching an agreement. In contrast, late counteroffers were associated with a lower impasse risk, but they appeared to intensify the negative effect of ambitious counteroffers on impasse risk. When it comes to sale prices, the interaction revealed a different pattern: For high counteroffers, early responses tended to result in higher final sale prices. For low counteroffers, early responses were linked to lower sale prices.

In particular, very ambitious late counteroffers (less than 20% of the list price) led to the lowest sale prices overall. In contrast, for less ambitious counteroffers (e.g., more than 35% of the list price), late counteroffers consistently resulted in lower sale prices than early ones.
- iv. **Robustness.** The results remained robust even when controlling for actual demand (operationalized as the total number of unique bidders per product) and the number of photos which, according to prior research (Backus et al., 2020), were associated with the timing of when buyers make the counteroffer.

2.1.2 Study 2: Establishing Causality in a Controlled Experiment

To complement the correlational findings from Study 1 and provide causal evidence, we conducted a preregistered 2 $\times$ 2 experiment, manipulating counteroffer timing (early vs. late) and magnitude (accommodating vs. ambitious). Participants, acting as sellers,

responded to simulated counteroffers of buyers. The results partially confirmed and extended the field findings:

- i. **Main Effect of Magnitude and Timing.** Ambitious and later counteroffers led sellers to expect lower sale prices and higher impasse risks—supporting the results of study 1. Further, ambitious and late counteroffers led the sellers to estimate that buyers would have lower reservation prices, and to return a more accommodating offer towards the buyer.
- ii. **Magnitude $\times$ Timing Interaction.** We found a significant moderated mediation effect suggesting that the timing of counteroffers significantly amplifies the anchoring effect of ambitious offers, with late counteroffers exerting a more pronounced effect via returned seller offers on final prices than early ones.

Together, the two studies demonstrate that both the magnitude and timing of counteroffers substantially shape negotiation outcomes in asynchronous, electronically-mediated negotiations. Ambitious counteroffers improve economic buyer outcomes but increase impasse risk, confirming emerging research (Lipp et al., 2023). Most notably, later counteroffers were linked to more favorable sale prices and lower impasse risk. These findings lay the groundwork for understanding counteroffer dynamics in real-world settings and for investigating their psychological mechanisms and generalizability across domains.

2.2 Paper II: Counteroffer Magnitude and Timing in f2f-based Scenarios

To further compliment and extend the findings of counteroffer timing in asynchronous online negotiations, the second paper describes how the timing and magnitude of counteroffers affect negotiation outcomes, perceptions, and behaviors in distributive face-to-face (i.e., f2f) bargaining scenarios.

A 2 $\times$ 2 between-subjects experimental study was conducted ($N = 213$), who role-played as sellers in a simulated f2f negotiation scenario. Participants received counteroffers

from buyers that varied in magnitude (accommodating vs. ambitious) and timing (early vs. late; with a difference of a few minutes). The results revealed several key insights:

- i. **Magnitude.** Ambitious counteroffers—those far below the seller’s initial price—led sellers to expect (1) significantly lower final sale prices and (2) reservation prices of the buyer, and (3) expected the buyer to be much less eager to find an agreement, Further, sellers were (4) willing to accept lower sale prices and to return lower third offers. Also, ambitious counteroffers led the seller (5) to perceive the buyer as less moral and (6) to have put fewer efforts into the negotiation.
- ii. **Timing.** Second, we found that the counteroffer timing did not directly affect the economic outcomes. However, earlier counteroffers led sellers to behave more competitively when interacting with the buyer.
- iii. **Magnitude × Timing Interaction.** Third, and most importantly, while counteroffer timing alone did not significantly impact economic outcomes, it moderated the effect of magnitude on the sellers’ perceptions, partially confirming our moderated mediation model. The effects of counteroffer magnitude diverge in the late counteroffer conditions: If buyers made a *late accommodating* counteroffer, sellers perceived the buyer to be much more eager to close a deal and consequently expected a higher likelihood of finding an agreement, whereas if buyers made a *late ambitious* offer, sellers estimated a much lower eagerness and likelihood, compared to if they would have received an offer early during the negotiation. Also, buyers who made a late ambitious counteroffer were perceived to be much less moral.

In summary, the second paper of this dissertation significantly advances our understanding of counteroffer dynamics in more traditional distributive bargaining scenarios. Consistent with the findings from asynchronous negotiations, ambitious counteroffers negatively impacted sellers' economic expectations and perceptions of the buyer.

While in this study, counteroffer timing alone did not directly alter economic outcomes, it critically moderated sellers' perceptions and behaviors: Late accommodating counteroffers enhanced perceptions of buyers' eagerness and improved prospects for agreement, whereas late ambitious counteroffers had the opposite effect, drastically reducing perceived eagerness, morality, and likelihood of finding an agreement. These insights underscore the nuanced interplay of timing, and we will discuss possible future research outlooks in Section four.

2.3 Paper III: Text Timing After the First Date on Relationship Intentions

The third paper addresses the final research question of this dissertation: How does the timing of texting after the first date influences romantic attraction and relationship intentions, addressing a long-standing question in dating psychology? Drawing on three competing hypotheses—positive linear, negative linear, and inverted U-shaped effects—we tested which pattern best explains how the timing of texting after the first date affects relationship intentions, perceived chemistry, and motivation of the receiver.

We conducted a pre-study ($N = 100$) to determine common thresholds for texting “too soon”, “too late” or “ideally” to feel most attracted to the texter after a date. These findings informed the design of the main experiment ($N = 543$), which featured a 3 (text timing: immediately after [being too soon], next morning [optimal], or after two days [too late]) $\times$ 2 (receiver's gender) between-subjects design. Participants imagined receiving a message after a first date and reported their relationship intentions, chemistry, and motivation.

The main result supported an inverted U-shaped relationship: texting the *next morning* elicited the strongest relationship intentions and perceived chemistry. Texting immediately or after two days led to lower relationship intentions. This pattern was more pronounced among women, who were particularly sensitive to timing; men generally reported higher relationship intentions overall, regardless of timing.

To explain these effects, the study tested five proposed psychological mechanisms: (1) perceived thoughts about the initiator, (2) mate value ratio, (3) perceived neediness of the texter, (4) liking reciprocity, and (5) perceived texter's reliability. Mediation analyses revealed that reciprocity, meaning feeling liked back, and perceived reliability explained why next-morning texts enhanced relationship intentions. In contrast, delayed texting (two days later) decreased these perceptions—thereby leading to the lowest levels of romantic interest. Perceived neediness and mate value did not mediate the effects on romantic intentions.

The study also explored moderation effects of gender, attachment style, and uncertainty avoidance. While gender moderated the text timing effects, neither attachment style nor uncertainty avoidance significantly interacted with text timing.

Overall, the findings challenge pop-cultural advice about waiting days to text. Instead, the study suggests that a brief delay—specifically texting the next morning—optimizes romantic interest by balancing eagerness with reliability, while overly early and especially late messages backfire. This nuanced timing window can inform both, theories of interpersonal attraction and broader dating advice.

3 General Discussion

While first-offer effects have been extensively studied (Galinsky & Mussweiler, 2001; Petrowsky et al., 2025; Schweinsberg et al., 2023), little attention has been paid to how second movers—those responding to initial offers—can optimize their counteroffers. This dissertation addresses this critical gap by systematically investigating two fundamental features of counteroffers: their magnitude and timing (see Figure 1 for an overall model of the timing effects).

Consistent with prior research on the first-offer anchoring effect (Galinsky & Mussweiler, 2001; Loschelder et al., 2016b; Petrowsky et al., 2025), we consistently find that ambitious counteroffers result in lower final sale prices—demonstrating their ability to

effectively counter-anchor negotiations in the second-mover's favor. However, we also establish that such assertive offers come with an inherent trade-off: they increase the risk of impasses (Study 1; see also Schweinsberg et al., 2023).

Expanding prior research, we establish a novel *counteroffer timing effect*. Our findings reveal that late counteroffers confer distinct advantages in asynchronous online negotiations (Paper 1; Figure 1, top row): they are associated with lower returned counteroffers from sellers, reduced impasse risk, and more favorable sale prices. These advantages are supported by evidence from a large-scale analysis of asynchronous, real-world online negotiations (Study 1) and a controlled experiment (Study 2), which establishes causal effects of timing. Our model provides moderated mediation evidence indicating that buyers' later counteroffer prompts a lower subsequent offer from the seller, possibly resulting in a more favorable final sale price.

We further extended the negotiation context from asynchronous online negotiations to simulated f2f scenarios (Paper 2; Figure 1, bottom row). Although delaying counteroffers for few minutes did not directly affect the returned third offer or economic outcomes in f2f scenarios, immediate counteroffers led sellers to be acting more competitively. Interestingly, the interaction between counteroffer magnitude and timing revealed further nuanced effects: *late ambitious* counteroffers significantly decreased the overall perceived likelihood of finding an agreement, the perceived eagerness of the proposer to find an agreement and the perceived effort that the proposer put into the negotiation. These findings are particularly important because they inform the understudied phenomenon of negotiation impasses (see section 3.1 '*Theoretical Contributions to the Negotiation Context*'). Also, buyers who made a late ambitious counteroffer were perceived to be much less moral. Thus, while delayed counteroffers may offer economic advantages in some contexts, negative relational consequences should be considered.

Also, we expanded the investigation of timing effects beyond negotiation into the domain of interpersonal attraction (Paper 3). When simulating first-date interactions, we observed a curvilinear (inverted U-shaped) effect: texting too early or too late decreased romantic interest, while texting at an intermediate delay (e.g., the next morning) maximized relationship intentions. For chemistry and motivation, however, a negative linear relationship emerged, in that delaying the text after the first date for longer lead targets to be less motivated to engage with and to perceive less chemistry with the initiator. Our results showed that these effects were more pronounced for women than for men. Mediation analyses revealed that perceptions of reciprocity and reliability critically underpinned these timing effects. In sum, this dissertation advances the scientific understanding of negotiation and romantic dynamics by demonstrating that second-mover behaviors, particularly the strategic timing and magnitude, are critical determinants of both economic and relational outcomes.

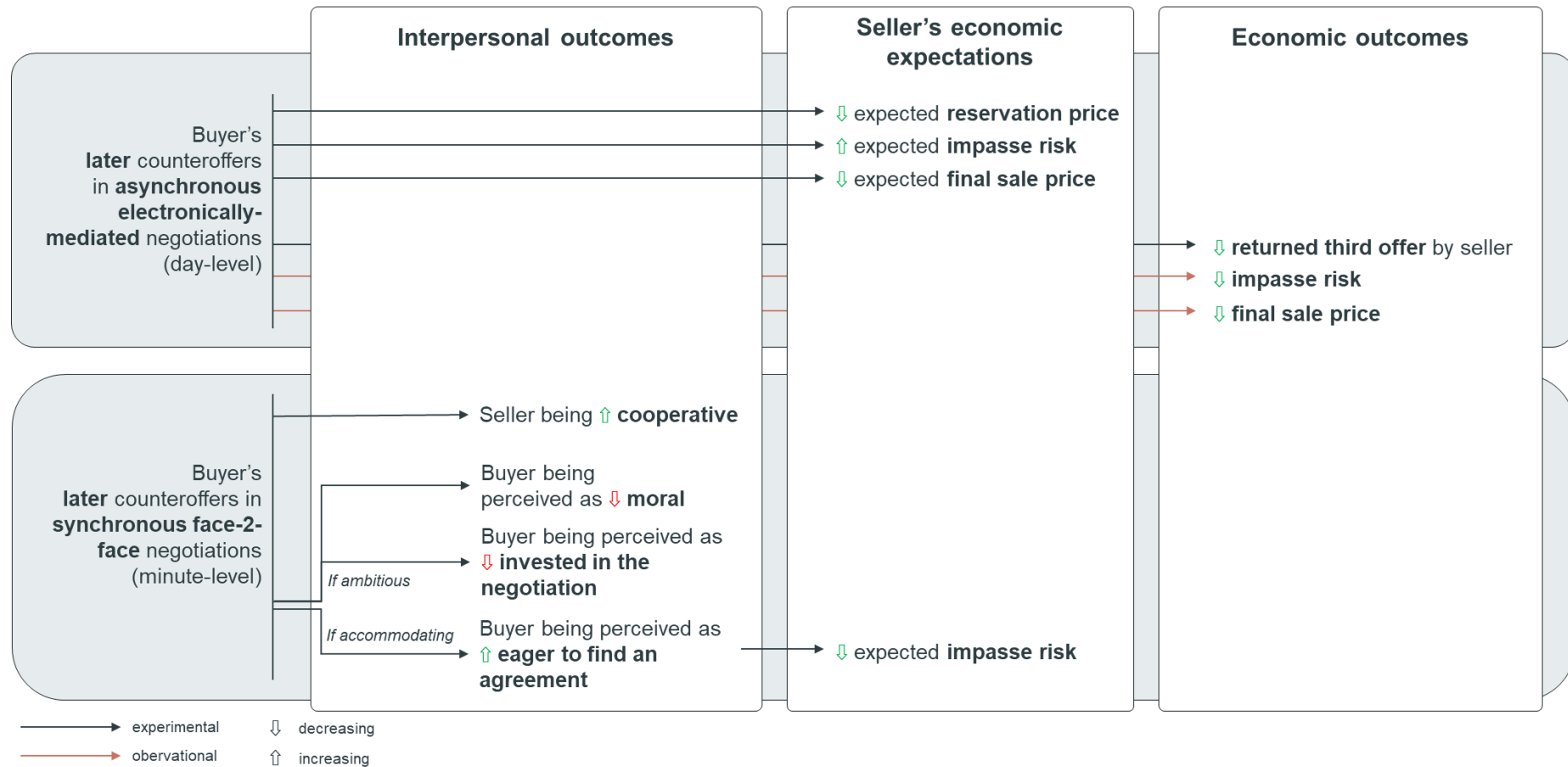
3.1 Theoretical Contributions to the Negotiation Context

This research offers several theoretical contributions to the negotiation literature by systematically examining the joint effects of counteroffer timing and magnitude—two critical but underexplored dimensions of negotiation strategy—in both asynchronous online negotiations and f2f scenarios. First, our work shifts the prevailing focus in negotiation research from the dominant perspective on first offers (e.g., Lipp et al., 2023; Mussweiler & Strack, 1999) toward a more comprehensive understanding of general negotiation openings. In doing so, we emphasize the often-overlooked role of second movers—typically buyers—and their ability to reshape the course of the negotiation. By analyzing how counteroffers can effectively re-anchor the negotiation process, our findings fill a notable gap in the literature, which has traditionally concentrated on the anchoring power of first offers (see Petrowsky et al., 2025).

Second, we extend anchoring theory by demonstrating that it is not only the magnitude of a counteroffer that matters, but also its timing, affecting interpersonal outcomes, sellers' economic expectations, and economic outcomes (see Figure 1). While extensive prior research has established the anchoring power of ambitious first offers (e.g., Galinsky & Mussweiler, 2001; Loschelder et al., 2016b; Petrowsky et al., 2025), our findings show that counteroffers function as counter-anchors whose impact is contingent upon both how extreme they are and when they are made. This introduces a novel perspective to the timing debate in negotiation strategy. Hence, our results shed new light on the immediate vs. late counteroffer dilemma, creating an interesting contrast to synchronous, f2f negotiations research (see Selective Accessibility Model, Mussweiler & Strack, 2000; Insufficient Adjustment, Tversky & Kahneman, 1974), which often suggests that *immediate* counteroffers should be more advantageous (Gunia et al., 2017).

Figure 1

Conceptual Model of the Counteroffer Timing Effects on Interpersonal Outcomes, Seller's Economic Expectations, and Economic Outcomes in Negotiations



Note. The figure summarizes empirically tested effects of delayed (day-level and minute-level) counteroffers on sellers' interpersonal outcomes, seller's economic expectations, and economic outcomes across two negotiation contexts: asynchronous electronically-mediated (grey top row) and synchronous face-to-face (grey bottom row) negotiations. Upward arrows (↑) indicate increases, while downward arrows (↓) indicate decreases in the respective outcome variable. Solid black arrows represent experimental evidence, while orange arrows indicate non-experimental findings from observational data.

Third, this dissertation makes a valuable contribution to the growing body of research that jointly considers negotiation outcomes and impasse risks (Petrowsky et al., 2023). While much of the negotiation literature has traditionally focused on final agreements and anchoring effects, the risk of negotiation breakdowns—impasses—has often been overlooked. This is in part because impasses are rare in laboratory or classroom studies, particularly those using student samples, and are therefore frequently excluded from systematic analysis (Tripp & Sondak, 1992). However, impasses are far more prevalent and consequential in real-world negotiations. For instance, over 55% of negotiations in large-scale online buyer-seller markets end in impasse (Backus et al., 2020), leading to increased transaction costs and lost opportunities for both parties. As such, impasse risks should not be neglected in academic research (Schweinsberg et al., 2022). Our findings help fill this important gap by showing that both the timing and magnitude of counteroffers not only shape psychological perceptions relevant to impasse—but also directly affect the likelihood of impasse itself. While several prominent studies have acknowledged the need to explore impasses more systematically (Boothby et al., 2023; Loschelder et al., 2016b; Maaravi & Levi, 2017; Schweinsberg, 2012), empirical research in this area remains limited.

Extending this contribution, our analyses further reveal that the relationship between counteroffer ambition and impasse risk is nonlinear. Specifically, we identify an initial "safety zone" of moderate ambition levels, beyond which impasse risk escalates steeply. Moreover, this relationship is moderated by counteroffer timing, highlighting the complex and dynamic interplay between negotiation tactics and breakdown risk. These findings enrich the emerging literature on nonlinear effects in negotiation (Loschelder et al., 2016a; Maaravi & Segal, 2022) and underscore the need to move beyond linear assumptions in modeling negotiation dynamics.

3.2 Theoretical Contributions to the Context of Romantic Relationships

Interestingly, in the domain of romantic relationships, the mechanisms that may explain the effect of late counteroffers—such as demand-based inferences—do not appear to apply in the same way. Nonetheless, our findings suggest that delaying a text message still yields clear interpersonal benefits. With the third paper, we set out to address the widespread anecdotal advice and conflicting empirical findings regarding whether the timing of follow-up messages after a first date has a positive, negative, or curvilinear effect on romantic interest. Our results provide strong support for a curvilinear, inverted U-shaped pattern, particularly among female participants.

Specifically, women reported significantly higher relationship intentions when they received a message the next morning compared to receiving it immediately after the date or after a longer delay of two days. In contrast, men were generally less sensitive to the timing of the message and reported consistently higher relationship intentions overall, regardless of when the text was sent. These gender differences offer theoretical insights that align with and extend *Sexual Scripting Theory* (Simon & Gagnon, 1969). According to this framework, culturally shared expectations around dating behavior cast men as the initiators—the active “pursuers”—and women as the more passive “gatekeepers,” who respond selectively and regulate sexual or emotional access (Sakaluk et al., 2014; Wiederman, 2005). Our findings support this interpretation: women appeared more attuned to the timing of follow-up communication, potentially using it as a diagnostic signal of relational quality or male intent. Men, conversely, may have interpreted any response—regardless of its timing—as confirmation to continue pursuing, consistent with “chase” narratives that reinforce traditional masculinity (Bowen & Gillath, 2020; Siegel & Meunier, 2018). Moreover, this gendered asymmetry appears consistent with evolutionary patterns observed in non-human species, where males are often more proactive in mate pursuit (Janicke et al., 2016).

Further, our findings reveal that the sooner the initiator sent the text after the date, the more strongly the recipient believed that the initiator liked them—an effect particularly pronounced among women. In turn, this perceived liking significantly increased both the recipient’s attraction to the initiator and their intentions to pursue a romantic relationship. These results underscore the central theory of reciprocity in early-stage romantic interactions: when individuals sense that their interest is returned, they are more likely to reciprocate that interest themselves (Aronson & Worchel, 1966; Finkel & Eastwick, 2009; Gouldner, 1960; Luo & Zhang, 2009).

4 Limitations & Future Research within the Negotiation Context

While our research offers several important contributions to understanding the impact of timing on negotiation outcomes, it is not without its limitations. These constraints pave the way for future investigations, providing a robust platform for further research in this intriguing field.

4.1 Large-Scale Data Sets & Hybrid Approaches

The analysis of real-world eBay negotiations in Paper 1 provides strong ecological validity, yet it does not allow for causal inferences or an examination of the underlying psychological processes. Study 2 addresses these limitations through experimental manipulation, enabling causal testing; however, the artificiality of the laboratory setting does not fully reflect the complexity of real-world negotiation environments. Future research could close this gap by adopting hybrid approaches that integrate experimental rigor with field data, thereby enabling the exploration of causal mechanisms in applied, incentivized, real-world contexts (e.g., Loschelder et al., 2014). However, if researchers are especially interested in real-life data, there promising opportunities developing with the growing availability of large-scale negotiation datasets for academic research (e.g., Backus et al., 2020; Chawla et al., 2021; Heddaya et al., 2023). As digitalization continues, more negotiation processes are

being recorded and made accessible for research purposes. These developments open new possibilities to investigate questions that were previously difficult to address—such as the nonlinearity of impasse risks—which would have been challenging to study with sufficient precision in traditional experimental settings.

4.2 Deliberate Delays vs. Product Discovery

Moreover, our real-world data do not allow us to discern whether buyers intentionally delayed their counteroffers as a strategic move or whether delays simply resulted from discovering the product later. Consequently, our conclusions regarding the eBay dataset pertain to the observed timing of counteroffers rather than to buyers' deliberate waiting behavior. Future research could address this limitation by directly assessing buyers' intentions or by experimentally manipulating the strategic delay of counteroffers—a design that would more closely parallel the short, controlled delays of several minutes employed in Paper 2. Importantly, across all studies, whether conducted in asynchronous online environments or f2f scenarios, we consistently examined how the timing of counteroffers affected sellers' perceptions and behaviors. From a theoretical standpoint, the proposer's intention should not significantly alter the receiver's reactions—unless the receiver is explicitly aware that the timing was a deliberate strategic choice.

4.3 Theoretical Mechanisms Underlying Counteroffer Timing and Magnitude Effects

While our theoretical framework draws on the Selective Accessibility Model (Mussweiler & Strack, 1999, 2000) and the Insufficient Adjustment Heuristic (Tversky & Kahneman, 1974) to explain why counteroffer magnitude may produce anchoring effects similar to those of first offers, these mechanisms were not directly tested in the current studies. Future research should empirically examine whether the psychological processes underlying first-offer effects extend to second-mover behavior. Specifically, it remains an open question whether ambitious counteroffers activate the same anchoring pathways—such

as selective information retrieval or insufficient cognitive adjustment—as initial offers typically do. Moreover, while we proposed that delayed counteroffers may benefit from allowing second-movers additional time for deliberation, aligning with the logic of insufficient adjustment (Tversky & Kahneman, 1974), we did not measure or manipulate the cognitive processes involved. Future work should test whether the effectiveness of late counteroffers is indeed driven by enhanced cognitive reflection, improved information processing, or the perception of expertise. For instance, delayed responses may be interpreted as more deliberate and informed (see Loschelder et al., 2014, 2017; Mason et al., 2013), thereby increasing their persuasive power. Empirical tests of these proposed mechanisms would advance theory and clarify whether the timing effects observed in asynchronous negotiations stem from rational deliberation, social perception, or a combination of both.

4.4 Evidence from Asynchronous Settings and f2f Scenarios vs. Actual f2f Negotiations

The first paper primarily focuses on asynchronous online negotiations, where substantial delays between offers are common and form an integral part of the interaction dynamic (see Backus et al., 2020; Swaab et al., 2011). Accordingly, the findings from Paper 1 likely exhibit strong ecological validity for negotiation contexts with similar characteristics, such as business-to-business (B2B) exchanges conducted electronically. However, these insights may not readily generalize to synchronous, f2f negotiations, where counteroffers are usually exchanged within seconds or minutes rather than across days. Whether short tactical delays could produce comparable effects in synchronous f2f negotiations remains an important question for future research—a topic we only partially explored in Paper 2.

Importantly, Paper 2 investigated controlled f2f scenarios, but did not capture actual real-world f2f negotiations. Although the experimental design enabled causal inferences about the effects of brief delays, it lacked the complexity, spontaneity, and high-stakes pressures characteristic of real negotiations. Moreover, the delays examined in Paper 2 were

relatively short, spanning only a few minutes. It remains unknown whether longer tactical delays—lasting several minutes or even hours—would yield stronger or qualitatively different effects.

Thus, an important avenue for future research is to examine how prolonged delays impact negotiation outcomes in authentic f2f negotiations.

4.5 Testing the Safety Zone and Non-Linearity in f2f Negotiations

Finally, we reveal that the relationship between counteroffer ambition and impasse risk is nonlinear, exhibiting an initial “safety zone” before escalating steeply with increasing ambition; moreover, the timing of counteroffers moderates this relationship, underscoring the intricate and dynamic nature of negotiation processes. This contribution advances the growing body of research on nonlinear effects in negotiation (Schweinsberg et al., 2023) and highlights the value of revisiting traditionally linear conceptualizations with greater empirical granularity. Indeed, emerging research increasingly documents nonlinear patterns in negotiation settings—for example, the inverted U-shaped relationship between offer precision and anchoring strength (“too-much-precision effect”; Loschelder et al., 2016a) and the ceiling effect for anchoring at very high salary demands (“diminishing anchoring response function”; Maaravi & Segal, 2022).

Building on these insights, future research could explore whether the nonlinear escalation of impasse risks replicates across broader negotiation contexts beyond online seller-buyer interactions. Important open questions include: Are there optimal time points for making offers of varying magnitudes? Are these nonlinear effects causal, and do they extend to synchronous, f2f negotiations? What psychological mechanisms underlie these dynamics—e.g., are sellers more easily offended by offers just below the list price, particularly if submitted after long delays?

Moreover, future research could investigate how negotiators might actively reduce impasse risks—for example, by using linguistic strategies such as hedging to soften ambitious counteroffers (see Lee et al., 2024). It is also important to consider that the relationship between counteroffer ambition and impasse risk may not always follow a nonlinear pattern. In certain negotiation contexts—such as business-to-business negotiations without the option to easily "relist" offers—impasse risks might increase in a more strictly linear fashion. As more large-scale negotiation datasets become available, researchers will have valuable opportunities to examine when and why nonlinear versus linear counteroffer effects arise.

4.6 Disentangling the Underlying Mediators of Effort, Urgency, and Market Demand

Our mediation analyses also offer insights into what may explain the observed effects, though some mechanisms require deeper investigation. To further deepen our understanding of the psychological processes triggered by counteroffer timing, future research should more precisely disentangle underlying mechanisms such as perceived effort, urgency, and market demands.

First, in the second paper, we examined whether the timing of counteroffers influenced sellers' perceptions of sunk costs. In our design, the actual effort invested in the negotiation—meaning the information exchange with the buyer—was held constant, regardless of whether the seller received the counteroffer before or after the interaction. This allowed us to isolate the perceptual effects of effort while controlling for real effort. However, it is important to note that in real-world f2f negotiations, where interactions are typically richer and more resource-intensive, sunk costs may vary more substantially over time depending on the timing of the counteroffer. Future research should explore whether longer delays in such dynamic negotiations lead to greater perceived or actual sunk costs, potentially altering sellers' willingness to make concessions.

Second, we explored whether sellers' perceptions of the buyer's eagerness to reach an agreement mediated the effects of counteroffer magnitude and timing on negotiation outcomes. Although theoretically plausible, our analyses did not reveal a significant moderated mediation effect in asynchronous online negotiations. This suggests that the buyer's perceived eagerness alone may not sufficiently explain the underlying dynamics. Instead, future studies could shift the focus toward the seller's own motivation and sense of urgency, particularly in contexts where an item remains unsold for prolonged periods. It is conceivable that late counteroffers might heighten the seller's eagerness to close a deal, whereas early counteroffers might signal sufficient demand, encouraging sellers to hold out for better offers. Investigating the seller's internal motivational shifts could thus provide a more nuanced understanding of how timing and counteroffer strategies shape perceived market demands.

4.7 Contextual Moderating Factors such as Monopolies, Extreme Counteroffers, Mimicry & Cultural Variations

While our findings provide support for the advantages of delayed counteroffers—which may be explained by the insufficient adjustment theory or based on inferences about market demand—important boundary conditions remain unexplored. One such boundary is the role of external competition. Although future research should assess the sellers' urgency to sell or perceived market demand, it should also explicitly examine whether the benefits of delayed counteroffers persist in monopolistic settings, where buyers have no alternative options, thereby ruling out any market demand inferences being imposed by late counteroffers. In negotiations without external competition, sellers might interpret delays differently, potentially diminishing or even reversing the advantageous effects of late counteroffers.

Another important avenue for future work concerns negotiators' risk *perceptions*. Although we measured participants' predictions of impasse risk, we did not systematically explore whether individual differences in risk sensitivity moderated negotiation behavior (Petrowsky et al., 2023). It is plausible that negotiators who generally overestimate risk are more likely to make cautious or accommodating adjustments, whereas those who underestimate risk may persist with more ambitious offers. Future studies could easily assess such risk perceptions using targeted questionnaires. Investigating the interplay between subjective risk assessments and actual negotiation outcomes could offer valuable insights into how expectations shape behavior and success rates.

A third important avenue concerns the magnitude of counteroffers. In our experiments, we only tested moderately ambitious counteroffers (i.e., 80% and 50% of the list price). However, Study 1 suggests that the relationship between ambition, timing, and outcomes may change for extremely ambitious counteroffers—such as offers below 20% of the list price. It would be valuable to investigate whether, in such extreme cases, early counteroffers might actually outperform late ones in terms of securing lower final prices and managing impasse risks, particularly in f2f negotiation settings where immediate reactions may be more salient.

Another promising line of inquiry is the role of mimicry in counteroffers. Prior research indicates that counteroffers numerically resembling sellers' list prices—such as matching the cents value (e.g., first offer: \$115.51; counteroffer: \$94.51)—can positively impact negotiation outcomes (Petrowsky et al., 2023). Future studies could examine whether mimicry interacts with timing and magnitude effects, potentially amplifying or mitigating the impact of delayed counteroffers.

Finally, cultural factors are likely to play a significant role in moderating timing effects. Prior research suggests that the timing of effects of *first offers* can diverge across

cultures, particularly in integrative negotiations (Adair et al., 2007; Sinaceur et al., 2013). Extending this work, it would be worthwhile to examine how counteroffer timing is perceived across different cultural contexts and whether cultural norms shape the effectiveness of early versus late responses. Moreover, while existing studies have primarily focused on first offers in integrative negotiations, future research should assess whether later counteroffers also bear potential benefits in integrative settings—such as fostering additional information exchange—where parties collaborate to create added value rather than merely claim it.

4.8 Expanding Negotiation Outcome Measures

While our studies offer important insights into the early stages of negotiation, future research should extend the investigation to later phases of the negotiation process. Except for Study 1, which analyzed real-world negotiation data to final outcomes, our experimental studies primarily focused on initial counteroffers—up to the third exchange, which prior research suggests is predictive of final results (Lipp et al., 2023). Nevertheless, subsequent interactions may reveal additional dynamics. Future studies should thus examine how counteroffer timing and magnitude influence not only early bargaining behavior but also ultimate negotiation outcomes.

In addition to assessing economic outcomes, future research should explore the role of *subjective value*—the negotiators' perceptions of trust, satisfaction, and willingness to negotiate again (Curhan et al., 2006). Our studies primarily concentrated on perceptions directly tied to economic behavior, such as reservation price estimations and the likelihood of reaching an agreement. However, subjective value is crucial for understanding longer-term consequences, particularly because we find that later counteroffers lead to more competitive behaviors, possibly harming trust or the long-term quality of relationships between negotiating parties.

Especially in contexts like high-stakes or collectivistic cultures, where delayed responses might be interpreted as disinterest or intentional withholding of information (see Adair et al., 2007), subjective perceptions could critically shape future negotiations.

5 Limitations & Future Research within the Romantic Context

5.1 Frequency of Thoughts as a Proxy for Uncertainty

Our findings indicate that moderately delaying a follow-up text message after a first date has a positive effect on relationship intentions, particularly among women. However, we did not find support for the assumption that this effect is driven by an increase in perceived mate value or a reduction in perceived neediness—two mechanisms typically linked to the principle of scarcity (Aggarwal et al., 2011; Cialdini, 2009; Jang et al., 2015). Instead, these results suggest that alternative psychological processes may account for the observed benefits of delayed communication.

In addition to mate value and neediness, we examined how intensely the receiver would expect to think about the other person before receiving a text during the waiting period, drawing on previous work that used thought frequency as a proxy for uncertainty about the other person's interest (Whitchurch et al., 2011). However, uncertainty about whether the initiator is interested should be measured more directly in future studies. For instance, rather than assessing thought frequency, future research could use direct self-reports measuring how unsure participants feel about being liked in return.

In addition, we used hypothetical scenarios in our study. This may have limited participants' ability to accurately estimate their emotional responses—particularly the intensity or frequency of thoughts they would experience in a real-life situation. In contrast, prior work used non-hypothetical designs (e.g., Whitchurch et al., 2011) and found that women expressed the highest attraction toward men in conditions where the men's interest was uncertain—greater even than when they were told they were liked.

This aligns with psychological research showing that unpredictable positive outcomes tend to generate more intense and longer-lasting positive emotions than predictable ones (Kurtz et al., 2007; Lee & Qiu, 2009). Once people become certain that a positive event has occurred—such as being liked—they begin to mentally process and “explain away” the event, which diminishes its emotional impact over time (Wilson & Gilbert, 2008). In contrast, ongoing uncertainty prevents this process of adaptation, thereby sustaining excitement and interest.

Building on this perspective, future research should directly test whether uncertainty about being liked, induced through delayed responses, mediates the effect of text timing on romantic interest. A more precise conceptualization and measurement of uncertainty—ideally in real or experience-sampled dating contexts—could offer a more valid and theoretically grounded understanding of why delayed communication heightens romantic attraction.

5.2 Moderating Factors of Commitment to the Relationship, Date Quality and Message Content

In developing our model, we focused on fundamental individual moderators such as gender, attachment style, and uncertainty avoidance. However, additional factors may further shape how the timing of post-date communication influences romantic interest. For instance, prior work by Dai et al. (2014) suggests that *commitment to a relationship*—even in its early stages—can influence the effectiveness of “playing hard-to-get” strategies. While our studies did not directly assess participants’ commitment intentions, incorporating this variable could provide deeper psychological insight into how and for whom delayed texting exerts its effects. Future research might explore whether individuals with stronger initial commitment motives are more responsive to early communication, or whether low-commitment individuals interpret delayed texting less negatively.

Furthermore, for reasons of experimental control, we standardized the *quality of the first date*, keeping it neutral to avoid ceiling or floor effects on attraction. Yet, in real-life settings, the quality of a first encounter likely plays a critical role in shaping relationship intentions. It is conceivable that timing effects interact with date quality—for example, a great date may buffer the negative effects of an early or late message, whereas a mediocre date may amplify them. Future studies could test this interaction to better understand the boundaries of the timing effect.

Another similar key factor that warrants attention is the *content of the message* itself. In our experiments, message content was held constant to isolate the effect of timing. However, the tone, warmth, humor, or specificity of a follow-up message may either enhance or mitigate the influence of when it is sent. For example, a witty or personalized message sent late may still be well-received, while a generic or dry message sent early may fail to generate interest. Future work should therefore investigate how message content and timing jointly shape attraction and intentions.

5.3 Longitudinal Designs

Finally, while our current studies assessed participants' immediate reactions and intentions, future research should adopt longitudinal designs to explore how these early timing effects influence downstream relationships. Specifically, tracking actual dating behavior—such as whether a second date occurs or whether a relationship forms—would provide a more ecologically valid test of the real-world consequences of texting strategies. Combining such real-life tracking with more nuanced measures of commitment, context, and message framing could significantly enhance our understanding of how communication timing shapes relationship trajectories.

6 Conclusion

This dissertation highlights the central role of response timing and magnitude in shaping negotiation and interpersonal outcomes. Across three studies, I demonstrate that *when* a counteroffer or message is communicated can significantly influence both economic results and social perceptions—also in ways that are nonlinear and context-dependent. In asynchronous online negotiations, delayed and ambitious counteroffers can improve outcomes and reduce impasse risk. In f2f scenarios, even delays of minutes affect how offers are perceived interpersonally. And in the domain of romantic attraction, a moderate delay of texting enhances relationship intentions, whereas excessive delay backfires.

Together, these findings show that strategic delay is a powerful yet often underestimated tool in human interaction. Timing is not merely a background variable—it is a meaningful psychological signal that shapes expectations, emotions, and decisions across a range of settings. By bridging negotiation research with insights from interpersonal psychology, this dissertation sets the stage for a more integrated understanding of how people influence one another not only through what they say, but precisely when they say it.

As the worlds of commerce and connection continue to evolve—becoming more digital, diverse, and dynamic—the study of timing opens up exciting frontiers. Whether in the boardroom or on a first date, understanding the subtle power of delay can help us negotiate better deals, build stronger relationships, and ultimately make wiser decisions in moments that matter.

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Part II | Papers Included in this Cumulative Dissertation

Note. The formatting requirements of the respective journals have been retained.

Paper 1: Optimizing Counteroffers: How Timing and Magnitude Shape Sale Prices and Impasses in 26 million Asynchronous Online Negotiations

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Abstract

Buyers often face a vexing decision regarding *when* and *how ambitiously* to counter a seller's first offer. Drawing on over 26 million real-world, asynchronous, electronically-mediated negotiations (Study 1) and a controlled experiment (Study 2), we examined how the timing (early vs. late) and magnitude (ambitious vs. accommodating) of buyers' counteroffers affect negotiation outcomes—specifically, final sale price and impasse risk. In Study 1, more ambitious counteroffers were associated with lower (i.e., more favorable) final prices for buyers, yet also increased the risk of impasse. Notably, we also uncovered a novel timing effect: late counteroffers led to more favorable final prices and reduced impasse risk. Study 2 ($N = 213$) provided causal evidence in a controlled experiment, demonstrating that both ambitious (vs. accommodating) and late (vs. early) counteroffers benefit buyers in asynchronous, electronically-mediated negotiations. Taken together, these findings underscore the importance of counteroffer timing and assertiveness in an increasingly common yet understudied context in negotiation research.

Keywords: negotiations, anchoring, first offer, counteroffer, impasse, conflict, offer timing

Optimizing Counteroffers: How Timing and Magnitude Shape Sale Prices and Impasses in 26 million Asynchronous Online Negotiations

1 Introduction

In many price negotiations—whether private or business-to-business (B2B)—sellers typically make the first offer (e.g., Schweinsberg et al. 2023), and much research has explored how first offers shape outcomes (Petrowsky et al. 2025). Much less is known, however, about what happens when buyers make counteroffers, particularly in increasingly popular, asynchronous, electronically-mediated negotiations where interactions can unfold over hours or days. These settings, such as eBay, Craigslist, and other online marketplaces (Engelmann et al. 2022), introduce unique temporal and interpersonal dynamics that may influence how the timing and magnitude of counteroffers affect negotiation outcomes. The specific impact of counteroffer strategies in asynchronous negotiations has received little scientific attention. Here, we aim to address this gap by examining how counteroffer magnitude and timing shape final sale prices and impasse risk in large-scale, asynchronous online negotiations.

Specifically, while decades of research have extensively investigated how offer magnitude shapes negotiation outcomes (Lipp et al. 2023; Petrowsky et al. 2025; Schweinsberg et al. 2023), the role of offer timing has remained surprisingly underexplored. Only a handful of studies have examined the benefits of late first offers in traditional, synchronous face-to-face negotiations, showing that later offers can foster integrative, win-win agreements (Adair et al. 2007; Sinaceur et al. 2013). Despite these insights from the first-offer literature, little is known about how buyers can optimize their *counteroffers* specifically in asynchronous, electronically mediated negotiations—where responses may unfold over hours or days rather than in real time. Platforms such as eBay, Craigslist, and other online marketplaces exemplify this growing mode of negotiation (Engelmann et al. 2022), yet research remains largely focused on synchronous, face-to-face settings. As a result, it is unclear whether principles established in traditional negotiation contexts carry over to these distinct temporal and interpersonal dynamics. To our knowledge, no prior research has systematically examined how counteroffer timing influences both impasse risk and anchoring effects on sale prices within such asynchronous negotiations. Given the scarcity of counteroffer-specific research, we draw on the related, but distinct, first-offer literature from mostly synchronous face-to-face negotiations (cf. Loschelder et al. 2014). Crucially, asynchronous, electronically-mediated negotiations involve distinct temporal and interpersonal dynamics that may alter how counteroffer timing and magnitude shape negotiation outcomes in this context.

1.1 Current Studies

To address this critical gap, we analyze a large-scale dataset of over 26 million real-world, asynchronous, online negotiations between buyers and sellers (Study 1) and conduct a pre-registered, high-powered experiment (Study 2) to establish causal evidence for the effects of counteroffer timing

and magnitude in asynchronous, electronically mediated negotiations. This research is the first to jointly examine two fundamental aspects of buyers' counteroffers: its magnitude and its timing in asynchronous online negotiations. We also explore the psychological mechanisms underlying these effects to provide a deeper understanding of how and why timing and magnitude shape negotiation outcomes. Shifting the focus from sellers' first offers to buyers' first *counteroffers*—typically made in response to sellers' list prices—this research provides key insights for buyers, especially those negotiating in conditions of information asymmetry or constrained by structural dynamics, such as seller-established listing prices in electronically-mediated contexts. Before outlining our two studies, we review relevant research and theorize on anchoring effects and impasse dynamics—primarily drawn from first-offer studies in synchronous, face-to-face negotiations. Although this earlier work does not directly address asynchronous buyer counteroffers, it provides a theoretical foundation for understanding how timing and magnitude might shape outcomes in electronically mediated settings, and we use these insights to develop our hypotheses.

1.2 Counteroffer Magnitude and Anchoring Effects

Ambitious counteroffers yield more favorable negotiation outcomes, enabling buyers to claim greater value than when making more accommodating counteroffers (Lipp et al. 2023; Schweinsberg et al. 2023). These findings are consistent with extensive research on the benefits of assertive *first* offers, which gives offer makers an advantage by anchoring the negotiation in their favor (Oesch and Galinsky 2003, see Petrowsky et al. 2025 for a meta-analysis). The effectiveness of first offers lies in their ability to act as potent psychological anchors, shaping recipients' judgments and framing the negotiation around the initial offer (Loschelder et al. 2016). Anchoring is among the strongest and most robust psychological effects in negotiation research (e.g., Jäger et al. 2017a; 2017b; Klein et al. 2014). Prior research has documented correlations of first offers and negotiation outcomes as high as $r = .73$ or even $r = .93$, accounting for over 50% and up to 80% of the variance in counteroffers and sale prices (e.g., Galinsky and Mussweiler 2001; Galinsky et al. 2002; Kray et al. 2001). Meta-analytic estimates place the overall effect size at $g = 1.56$, $r = .61$ (Petrowsky et al. 2025). Two theoretical accounts explain the mechanisms behind such strong anchoring effects: selective accessibility and insufficient adjustment.

1.2.1 Selective Accessibility Model

The Selective Accessibility Model (Mussweiler and Strack 1999, 2000) provides a framework for how anchoring influences the exchange of offers and negotiation outcomes. This model suggests that once an anchor is introduced—such as the first offer in a negotiation (Galinsky and Mussweiler 2001)—it directs attention toward anchor-consistent information, making details that support the anchor more cognitively accessible. For instance, when a car is listed at a high price, a potential buyer may focus on aspects that justify this valuation (e.g., high-end interior, low mileage, or sports package) rather than actively questioning whether the price is inflated (Mussweiler and Strack 2000;

Mussweiler et al. 2000). As a result of this selectively higher accessibility of anchor-consistent information, estimates and subsequent counteroffers are biased towards the first-offer anchor.

1.2.2 Insufficient Adjustment Theory

The Insufficient Adjustment Theory (Tversky and Kahneman 1974) offers another key explanation for how the magnitude of initial offers influences negotiation outcomes. This model suggests that individuals attempt to adjust away from an initial anchor but often fail to fully disengage from it, leading to estimates that remain systematically biased in the direction of the anchor (Epley and Gilovich 2006). Since adjusting away from an anchor requires cognitive effort, negotiators tend to stop their adjustment process prematurely once they reach a figure that feels subjectively reasonable, rather than continuing until they reach a truly independent, unaffected valuation (Frech et al. 2019, 2020). This phenomenon further explains why initial offers exert such a powerful influence on subsequent offers and final agreement terms (Magee et al. 2007).

1.2.3 Anchoring and Backfiring Effects of Counteroffers

Beyond first offers, counteroffers can also exert anchoring effects, hence acting as *counter-*anchors capable of mitigating the initial anchoring advantage of the first offer (Lipp et al. 2023; Petrowsky et al. 2023; Schweinsberg et al. 2023). By making more ambitious counteroffers, first-offer recipients can push back against the first mover's anchor, thereby limiting its potency and reshaping the first mover's price expectations. However, this counter-anchoring effect tends to be slightly weaker than the anchoring effect of first offers (Lipp et al. 2023). Importantly, overly ambitious counteroffers may also backfire. If a counteroffer is perceived as unrealistically far from the seller's reference point, the seller may dismiss it entirely, leading to a breakdown of negotiations (i.e., an impasse; Petrowsky et al. 2023; Schweinsberg et al. 2023). Thus, while adjusting substantially away from the seller's anchor is beneficial to mitigate it, there is a strategic limit—pushing too aggressively increases the risk of an impasse. Overly aggressive offers may alienate counterparts, cause offense, erode trust, violate norms of “appropriate” behavior, and signal that no zone of possible agreements exists (Lipp et al. 2023; Schweinsberg et al. 2012, 2022). In line with these theoretical considerations, we hypothesize that:

H1: Lower (i.e., more ambitious) counteroffers from buyers will be associated with three primary outcomes: (1a) less ambitious subsequent offers from sellers, (1b) lower final sale prices, and (1c) a higher impasse risk compared to higher (less ambitious) counteroffers in asynchronous online negotiations.

H2: Lower (i.e., more ambitious) counteroffers will cause sellers to (2a) perceive a higher impasse risk and (2b) infer a lower reservation price for the buyer, compared to higher counteroffers. These psychological mechanisms help explain how and why counteroffer magnitude influences negotiation outcomes in asynchronous online settings.

1.3 Counteroffer Timing

An often overlooked, yet presumably crucial aspect of first offers and counteroffers, is their timing: *When* should an offer be made? While extensive research has explored the anchoring effects of first-offer magnitude, the timing of first offers and counteroffers, especially in asynchronous online contexts, remains largely understudied. As an exception to this general statement, some research suggests that making first offers later can foster greater information exchange and lead to better outcomes in integrative negotiations (Adair et al. 2007; Sinaceur et al. 2013). However, it remains unclear whether these findings extend to counteroffers in distributive, asynchronous settings—particularly with respect to final sale prices and impasse risk.

Does the timing of a buyer's counteroffer merely moderate the anchoring effect of the first offer (i.e., strengthening or mitigating its effect), or does it fundamentally shift perceptions of demand and negotiators' willingness to negotiate? This study aims to explore these questions empirically and establish a potential *counteroffer-timing effect* within the context of distributive, single-issue, asynchronous, online negotiations. Additionally, we investigate whether counteroffer timing significantly influences key price perceptions and outcomes—such as impasse risks and sale price.

1.3.1 Why Early Counteroffers Might be Advantageous

Some negotiation scholars have advocated making immediate counteroffers (Gunia 2017), reasoning that quick counteroffers can swiftly counteract the anchor established by the first offer and redirect the negotiation process. While these suggestions and the broader anchoring theory (i.e., the Selective Accessibility Model) are largely rooted in first-offer research from synchronous, face-to-face negotiations, they may still provide valuable insights into how counteroffers function in asynchronous, digitally-mediated exchanges. Nonetheless, caution is warranted when generalizing to such distinct contexts, and further research is needed to confirm whether these mechanisms fully apply.

Drawing on the Selective Accessibility Model (Mussweiler and Strack 1999, 2000) and assuming that the buyer has seen the listing and the list price, one might argue that early counteroffers weaken the seller's initial anchor by preventing the buyer from fully retrieving and selectively activating information that confirms the initial price. Instead, the buyer's immediate counteroffer could function as a counter-anchor, making opposing information more salient. By contrast, a later counteroffer (and thus a later counter-anchor) may inadvertently reinforce the seller's anchor. Importantly, regardless of whether buyers deliberately wait or simply encounter the listing later, the absence of an early counteroffer may leave sellers more committed to their original price, as they generate additional justifications for their asking price over time—their offer stands unopposed,

further strengthening the original anchor. This process aligns with the notion of *myside bias* or *confirmatory bias*, where individuals overweigh information that supports their beliefs (Peters 2020).¹

From a temporal decision-making perspective, delay discounting (Luhmann 2009) suggests that people tend to value an immediate reward more than a delayed one (e.g., choosing \$100 now vs. \$200 in three years). In asynchronous negotiations, sellers may similarly discount future opportunities and be inclined to accept a slightly lower counteroffer if it arrives early, rather than hold out for an uncertain higher offer. Thus, early counteroffers may contribute to more favorable final sale prices and a reduced risk of impasse—not necessarily because of strategic buyer behavior but because of how sellers interpret and react to the timing of the counteroffer they receive. Consequently, one could hypothesize:

H3a: *Early* (vs. late) counteroffers lead to (1) more favorable final sale prices and (2) reduced impasse risk in asynchronous online negotiations.

1.3.2 Why Late Counteroffers Might be Advantageous

In contrast to early offers, later counteroffers may offer strategic advantages. According to the Insufficient Adjustment Theory (Tversky and Kahneman 1974) and presuming that the buyer already noticed the item and list price, buyers who respond too quickly risk anchoring on the seller's initial price. By relying on an intuitive rather than a deliberative process, they may fail to fully adjust away from the anchor, ultimately favoring the seller.

If the buyer did not intentionally delay their counteroffer in asynchronous contexts where negotiations unfold over extended periods, counteroffers that arrive later in the process may still reflect greater deliberation or at least create the impression that the buyer has had more time to consider their counteroffer (Curhan et al. 2022). The delayed counteroffer timing may help buyers (or be perceived by sellers as helping buyers) to systematically reassess the seller's initial offer and generate information that contradicts it (Mussweiler and Strack 2000), thereby crafting a counteroffer that more effectively challenges the seller's initial position.

Furthermore, when sellers receive late counteroffers, they may infer limited market demand—particularly if no other offers have emerged. Anticipating that they might miss out on any sale at all, sellers could lower their price expectations, which in turn reduces the risk of an impasse. Additionally, a late counteroffer may be perceived as more sincere and deliberate (see Loschelder et al. 2014; 2017; Mason et al. 2013), signaling that the buyer has carefully evaluated the initial offer rather than respond impulsively, regardless of whether the buyer intentionally delayed the counteroffer or not. In asynchronous negotiations where offers can remain pending for days, the mere

¹ Some researchers prefer the term “myside” bias over “confirmatory” bias because people only selectively search for information confirming their own beliefs and not just any hypothesis (Mercier 2022).

passage of time without competing offers can heighten the seller's willingness to concede. Taken together, this reasoning suggests a competing hypothesis:

H3b: *Late* (vs. early) counteroffers lead to (1) more favorable final sale prices and (2) reduced impasse risk in asynchronous online negotiations.

1.3.3 Interpersonal Mechanisms of Counteroffer Timing

When buyers make their counteroffers later, sellers may perceive them as less eager to reach an agreement and thus infer that the buyer has a lower reservation price (i.e., the maximum price the buyer is willing to pay before walking away from the negotiation, Raiffa 1982; Thompson et al. 2011). In turn, sellers who perceive a lower reservation price may adjust their expectations for concessions accordingly, often resulting in lower final sale prices (see Lee and Ames 2017). Consistent with this logic, Thompson et al. (2011) suggest that immediate counteroffers might signal a greater willingness to negotiate and concede, although direct empirical support for this claim remains limited (see Lipp et al. 2023).

In addition, a second psychological mechanism may also explain why late counteroffers confer advantages: namely, that sellers may interpret delayed offers as signaling low(er) demand. When sellers perceive fewer interested buyers, they may be more inclined to accept late (and possibly lower) counteroffers rather than risk waiting for alternative offers. Late offers can also reduce impasse risk if sellers choose to finalize a deal rather than hold out for higher offers (that may never materialize).

Importantly, this demand-based reasoning is not limited to counteroffer timing. Ambitious (i.e., lower) counteroffers may likewise indicate a lower willingness to pay and reduced eagerness to reach an agreement, prompting sellers to adjust their expectations downward. As with later counteroffers, these perceptions can affect both the seller's subsequent offers and their motivation to avoid an impasse—particularly if they believe the buyer is close to walking away.

Thus, while prior theorizing and empirical research have predominantly focused on synchronous, in-person negotiations and the first-offer anchoring literature, we build on these insights and hypothesize the following:

H4: The effects of counteroffer magnitude and timing in asynchronous online negotiations are mediated by perceptions of the buyer's eagerness to reach an agreement (as a proxy for the overall perceived demand for the product).

2 Open Science and Transparency Statement

We preregistered both Study 1 and 2, and have made all documents, data, and Supporting Online Materials (SOM) publicly available on the Open Science Framework (OSF, see https://osf.io/52nvx/?view_only=c5675f3e719441c5b5fa561c085bb9dc).

3 Study 1

Study 1 tested our hypotheses using a large-scale dataset of over 26 million naturally incentivized, asynchronous, online negotiations between buyers and sellers.

3.1 Method

3.1.1 Data Set

eBay is widely known as an auction-based marketplace, where interested buyers place bids—with the highest bid at the end of the auction securing the item. In contrast, the present data stem from eBay's second and alternative mechanism to sell goods, namely the *Best Offer mechanism* (see Schweinsberg et al. 2023). This allows buyers and sellers to negotiate prices directly in a dyadic format. Sellers list an item at a specific price, and buyers submit an offer in response to this list price. In turn, the seller can then accept, reject, or counter the offer, creating a traditional back-and-forth negotiation process. Each negotiation progresses through a maximum of three rounds of (counter-)offers, ultimately ending either in a deal (i.e., one party accepting the other's offer) or an impasse (i.e., the final offer goes unaccepted). Each offer made after the buyer's first counteroffer expires after 48 hours. Further underlining the typical back-and-forth of interactive negotiations, sellers and buyers commonly exchange (short) messages together with their respective offers.

The analyzed eBay Best Offer dataset (Backus et al. 2020) captures 28,203,943 unique real-world buyer-seller negotiations across more than 30 product categories.

3.1.2 Data Set Preparation

To prepare the dataset, we removed invalid offers and data errors, closely adhering to the exclusion criteria established in prior research (e.g., negotiations with offers above the list price; see Backus et al. 2020; Petrowsky et al. 2023; Schweinsberg et al. 2023). After these exclusions, the final sample included 26,454,176 unique buyer-seller negotiations for 18,751,993 products, with 11,772,313 negotiations concluding in a sale.

3.1.3 Operationalization of Key Variables

This dataset features negotiations for a diverse array of products spanning a wide range of monetary values ($M_{\text{ListPrice}} = \$202.28$, $SD = \$353.80$; $M_{\text{Counteroffer}} = \117.92 , $SD = \$219.00$). To ensure comparability across negotiations and control for variations in absolute price levels, we standardized the following variables:

Counteroffer Timing. Sellers' list prices were treated as first offers, and buyer's responses as counteroffers. Timing was operationalized as the number of days between the product's listing (t_0) and the buyer's counteroffer (t_1 ; $M_{\text{DaysPassed}} = 33.95$, $SD = 66.10$).

$$\text{Counteroffer Timing} = \text{Date of Counteroffer} - \text{Date of Listing}$$

Counteroffer Magnitude. Counteroffer magnitude was calculated as the percentage of the buyer's first counteroffer relative to the seller's list price (see Schweinsberg et al. 2023). For example, a buyer's counteroffer of \$80 for a product listed at \$100 corresponds to a counteroffer magnitude of 80%.

$$\text{Counteroffer Magnitude} = \frac{\text{Buyer's First Counteroffer}}{\text{Seller's List Price}} \times 100$$

Sale Price. Similarly, sale price was calculated as a percentage of the final price relative to the seller's list price for negotiations that ended in a deal, providing a standardized value for easy comparison (Schweinsberg et al. 2023).

$$\text{Sale Price} = \frac{\text{Final Price}}{\text{Seller's List Price}} \times 100$$

Impasse Risk. Impasse risk was calculated as the percentage of negotiations within each counteroffer magnitude range (e.g., 80%) that ended without a deal (Petrowsky et al. 2023). For example, if 40,000 out of 100,000 negotiations with an 80% counteroffer magnitude ended in an impasse (i.e., no deal), the impasse risk for that magnitude was 40%.

$$\text{Impasse Risk} = \frac{\text{Number of Impasses}}{\text{Number of Negotiations}} \times 100$$

In addition, a binary variable for impasse (0 = impasse, 1 = deal) was created for logistic regression analyses (see section 3.2.2).

3.2 Analysis and Results

3.2.1 How Counteroffer Magnitude and Timing Relate to Sale Prices

We examined the effects of counteroffer magnitude and timing on sale price using multiple linear regression (overall model: $F[3, 11,772,809] = 10,484,017, p < .001, R^2 = .728$). Consistent with H1b and prior research, we found a strong main effect for counteroffer magnitude ($b = 0.797, t[11,772,809] = 4,811.08, p < .001$), with more ambitious (i.e., lower) counteroffers associated with lower sale prices.² Supporting H3b, we also found a significant timing effect ($b = -0.016, t[11,772,809] = -122.13, p < .001$), indicating that *later* counteroffers were associated with more favorable (i.e., lower) sale prices. Additionally, a significant interaction between counteroffer magnitude and timing emerged ($b = 0.0001, t(11,772,809) = 73.09, p < .001$), which we explore further in subsequent analyses (see section 3.2.3).

3.2.2 How Counteroffer Timing and Magnitude Relate to Impasses

We examined the effect of counteroffer magnitude and timing on impasse likelihood (i.e., the binary variable for impasse vs. deal) using multiple logistic regression, ($\text{LogLikelihood} =$

² The reported effects remained robust after controlling for product demand and number of listing photos. We operationalized product demand as the total number of unique bidders per product, recognizing that actual (rather than perceived) demand could spur both earlier counteroffers and higher sales prices. We also controlled for the number of photos uploaded for each listing as prior research (Backus et al. 2020) suggests this factor is associated with when buyers make the first offer.

$-16,006,516$, $p < .001$, Pseudo- $R^2 = .119$). Consistent with H1c and prior research, lower counteroffers were associated with a higher impasse likelihood, $b = 0.045$, $z(26,454,172) = 1,549.99$, $p < .001$. Additionally, later counteroffers were associated with a lower impasse likelihood, $b = -0.0004$, $z(26,454,172) = -15.40$, $p < .001$, which was qualified by an interaction between counteroffer magnitude and timing, $b = 0.00007$, $z(26,454,172) = 177.08$, $p < .001$. We investigate this interaction pattern in greater detail in the following section.

3.2.3 How Counteroffer Timing Moderates Magnitude Effects on Price and Impasses

To further investigate the interaction effects, we conducted simple slope analyses by dividing the data into three subsets based on counteroffer timing (mean $\pm$ 1SD: early: $n = 3,207,842$, moderate: $n = 20,551,195$, late: $n = 2,695,139$; see Aiken et al. 1991). For each subset, we regressed (a) impasse risk (i.e., the continuous % variable)³ and (b) sale price on counteroffer magnitude to test for slope differences moderated as a function of counteroffer timing. We fitted linear regression models for sale price and nonlinear (quartic, 4th order polynomial) regression models for impasse risk (see Schweinsberg et al. 2023). The results of these analyses are depicted in Figs. 1 and 2.

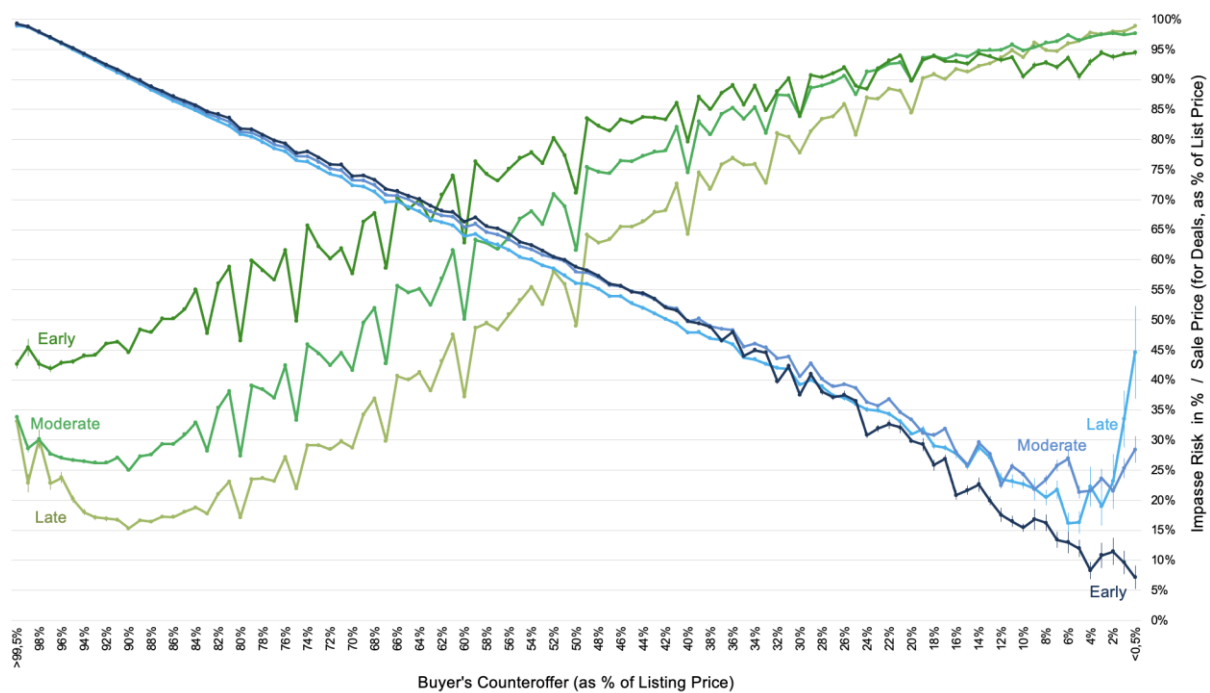


Fig. 1 Counteroffer timing moderates the effects of counteroffer magnitude on observed sale price (blue) and impasse risk (green)—displayed are actual, observed data points. Buyer's counteroffer magnitude ($>99.5\%$ to $<0.5\%$, in steps of 2%) coincided with different patterns for sale prices and impasse risks depending on counteroffer timing subsets (i.e., early $[-1\text{ SD}]$ vs. moderate $[M]$ vs. late $[+1\text{ SD}]$). Error bars denote 95% CIs, which are short and barely visible. Fig. 1 shows observed sale prices and impasse risks. Please refer to Fig. 2 for fitted regression lines

³ For these analyses, we switch from the binary impasse variable (*agreement* vs. *impasse*) to a continuous measure of impasse risk, defined as the percentage of negotiations ending in impasse at each counteroffer magnitude (see x-axis in Figs. 1 and 2). While the binary variable captures outcomes at an individual negotiation level, the continuous measure provides a more holistic view across all negotiations within a given counteroffer magnitude, thereby illustrating how impasse risk varies with timing and magnitude.

Counteroffer timing moderated the effects of counteroffer magnitude on both impasse risk and sale price (i.e., significant slope differences). Early counteroffers coincided with generally higher impasse risks and a significantly flatter slope (dark green line) compared to moderate (medium green line, $Z = 2.19, p = .029$) and late counteroffers (light green line, $Z = 2.73, p = .006$)⁴. Note that early counteroffers do not exhibit a “safety zone” (see Schweinsberg et al. 2023), with impasse risks increasing immediately as counteroffers decrease in size. Conversely, moderate and late counteroffers maintained low impasse risks (i.e., a safety zone) for offers above approximately 85% of the seller’s list price, with impasse risks only accelerating thereafter.

For sale prices, early counteroffers (Fig. 2, dark blue line) produced steeper slopes—i.e., stronger anchoring effects—than both moderate (medium blue line; $Z = 10.72, p < .001$) and late counteroffers (light blue line, $Z = 7.13, p < .001$)⁵. The interaction showed that early counteroffers were associated with higher sale prices for high counteroffers (left side of x-axis) but lower sale prices for low counteroffers (right side of x-axis), resulting in the blue lines crossing over in Fig. 2.

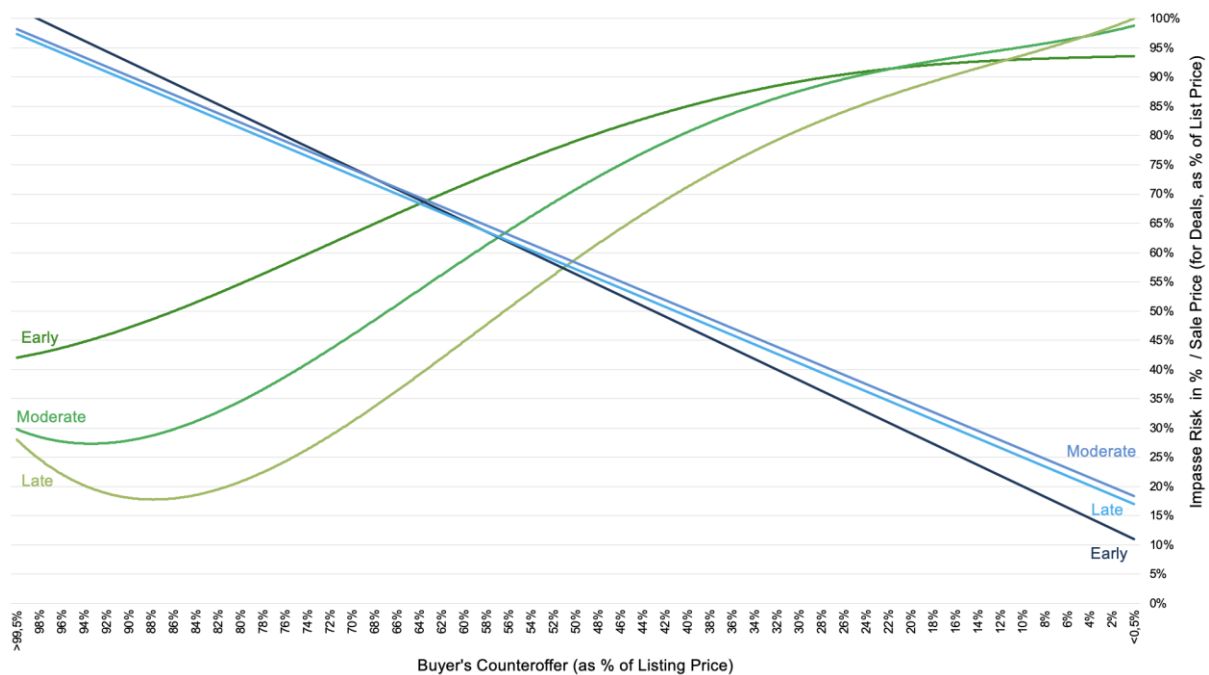


Fig. 2 Counteroffer timing moderates the effects of counteroffer magnitude on sale price and impasse risk. Fitted regression lines are displayed for buyer’s counteroffer magnitude (>99.5% to <0.5%, in steps of 1%), illustrating different patterns for impasse risks and sale prices across counteroffer timing subsets. Early counteroffers (−1 *SD*) generally showed higher impasse risks and flatter slopes (dark green line) compared to moderate and late counteroffers (+1 *SD*; lighter green lines). Early counteroffers also exhibited steeper sale price slopes (dark blue line) than moderate and late counteroffers (lighter blue lines). See Fig. 1 for actual data points

⁴ The comparison of moderate vs. late counteroffers on impasse risk was not significant, $Z = 0.50, p = .617$.

⁵ The comparison of moderate vs. late counteroffers on sale price was not significant, $Z = 0.40, p = .689$.

3.3 Interim Discussion

The analysis of over 26 million asynchronous, real-life online negotiations establishes novel effects of counteroffer timing on sale price and impasse risk: late counteroffers were consistently associated with lower impasse risks compared to early and moderately timed counteroffers. The relationship between counteroffer timing and sale prices proved more intricate, as timing and magnitude interacted to produce crossover patterns in regression lines (Fig. 2, blue lines).⁶ These findings suggest that timing exerts a meaningful influence on negotiation behavior and outcomes, moderating the anchoring effects of counteroffer magnitude.

Despite the strength of these patterns, the correlational nature of this archival dataset precludes causal interpretation. Unobservable factors like product demand could potentially confound the present effects. For instance, later counteroffers might be disproportionately linked to items perceived as less desirable or in lower demand, though our supplementary analyses controlling for product demand do not support this alternative explanation (see section 3.2.1). To address these limitations and to establish causal relationships, we conducted a controlled experiment in Study 2.

4 Study 2

Study 2 was designed to build on the real-world findings from Study 1 by using a pre-registered, controlled experiment to establish causal evidence for the effects of counteroffer magnitude and timing on outcomes in asynchronous, electronically-mediated negotiations.

4.1 Methods

4.1.1 Participants and Sample Size Analysis

We recruited 213 participants from the U.S. and U.K. (117 women, 95 men, and one non-binary individual, $M_{\text{age}} = 38.77$ years, $SD = 12.95$, range: 19–72 years) via Prolific. The sample size was determined through an a-priori power analysis using *G*Power* (Faul et al. 2007) for a 2×2 ANOVA, assuming a medium effect size of $f = 0.25$, $\alpha = .05$, $1 - \beta = .95$. Participants were required to be native English speakers, at least 18 years old, and were compensated at an hourly rate of £7.00. Following the preregistered protocol, all participants were included in the analyses, as none failed more than one of the three attention checks.

⁶ Note that when only inspecting Fig. 2, one might presume early counteroffers exert a stronger anchoring effect due to the steeper dark blue line on the far right. However, this segment of the curve largely reflects a small number of extremely aggressive early offers (approx. <20% of the list price). In fact, only 0.36% ($n = 42,406$) of all 11,772,313 deals fell into this category. For less aggressive offers in Fig. 1 (e.g., approx. >35%), the raw data show that late counteroffers (light blue line) consistently coincide with lower final sale prices compared to early counteroffers (dark blue line).

4.1.2 Design

The experiment employed a 2 (magnitude) $\times$ 2 (timing) randomized between-subjects design, manipulating counteroffer *magnitude* (accommodating vs. ambitious) and counteroffer *timing* (early vs. late).

4.1.3 Procedure

Participants assumed the role of sellers in a simulated negotiation scenario.⁷ Sellers were informed that they were selling a bike on an online marketplace, where they had already uploaded a listing with details and images, and had set a list price of \$160 (i.e., their first offer).

4.1.4 Experimental Manipulations

Counteroffer Timing. Participants were randomly assigned to receive a counteroffer from the buyer either 10 minutes (early condition) or 2.5 weeks (late condition) after posting their listing.

Counteroffer Magnitude. Participants were randomly assigned to one of two conditions in which the buyer offered a high (accommodating: \$120) or low (ambitious: \$80) counteroffer. These magnitudes correspond to 25% and 50% below the seller's list price, respectively, consistent with suggestions from prior research (Lipp et al. 2023).

4.1.5 Dependent Measures

Participants first indicated whether they would accept the buyer's counteroffer or return a counteroffer of their own (Loschelder et al. 2017). In line with prior research (see Lipp et al. 2023), those who chose to return a counteroffer were asked to specify their proposed price. Next, participants assessed the likelihood of reaching an agreement with the buyer (in %; i.e., the impasse risk). To control for potential order effects, the presentation sequence of these measurements was randomized.

Finally, we followed prior research (see Ames and Mason 2015) in asking participants to estimate the buyer's reservation price ("In your opinion, what is the highest price the buyer would be willing to pay for the bike?") and to predict the final price they would agree upon ("If you would further negotiate with the buyer: What do you think is a realistic settlement price?"). We used these measures as proxies for the final settlements as previous research has shown that negotiators' expectations of the final agreement are highly predictive of actual negotiation outcomes (e.g., Ames and Mason 2015; Cohen 2003).

4.1.6 Measured Psychological Mediators

To explore the psychological mechanism(s) underlying the effects of counteroffer timing and magnitude, we measured two competing mediators. First, participants rated the perceived eagerness of the buyer to purchase the bike using a seven-item scale ($\alpha = .87$; 1=*not at all*, 7=*very much*, e.g., "Did you perceive the buyer as highly motivated to make a deal?"). Second, for exploratory analyses, we measured participants' perceptions of the effort the buyer had invested in the negotiation as a proxy

⁷ Previous research generally shows that anchoring effects hold similarly for sellers and buyers. We hence did not expect this role factor to affect the results (see Petrowsky et al. 2025).

for sunk costs using a single item: “How much effort do you feel has the buyer put into the negotiation (in %)?”.⁸ Finally, participants provided demographic information, including age, gender, negotiation experience, and profession.

4.1.7 Attention and Sincerity Check

Participants completed an attention check by indicating when they received the buyer’s counteroffer, selecting from a set of predefined options (Oppenheimer et al. 2009). Additionally, they answered a sincerity check question, confirming whether they responded truthfully throughout the questionnaire.

4.1.8 Data Analysis

All data were stored separately from any personal information to ensure complete anonymity. Analyses were conducted using *SPSS 29*, and the moderated mediation model was tested using the PROCESS macro by Hayes (2023).

4.2 Results

In line with our pre-registered criteria, we identified seven participants that deviated more than ± 2.5 *SD* from their condition means as outliers. Including or excluding these participants did not affect the overall pattern of results; we therefore retained them in the analyses reported in this manuscript to preserve statistical power.

4.2.1 How Counteroffer Magnitude and Timing Affect the Final Price

We first analyzed the final price sellers expected to achieve.⁹ Consistent with extensive anchoring research (e.g., Schweinsberg et al. 2023; see H1b), we found that counteroffer magnitude significantly affected the expected final price, $F(1, 209) = 134.24, p < .001, \eta_p^2 = .391$. Sellers who received accommodating (i.e., higher) counteroffers anticipated higher final prices ($M = 135.74, SD = 8.81$) than those who received ambitious (i.e., lower) counteroffers ($M = 116.46, SD = 15.54$; see H1b; Fig. 3).

⁸ The rationale behind this exploratory mechanism is that buyers who invest more effort in a negotiation may feel increasingly committed to finalizing the deal, partly to avoid perceiving their time and resources as wasted (Ellingsen and Johannesson 2005). Under these circumstances, they may be more likely to make concessions or accept less favorable outcomes, rather than walk away and potentially repeat the process elsewhere (Arp et al. 2018; Sofis et al. 2015).

⁹ The main analysis includes 19 participants who immediately accepted the buyer’s counteroffer. Because these participants did not engage in further bargaining, their final sale price is identical to the counteroffer itself. Consequently, they do not have an ‘expected’ final price distinct from this accepted offer. The results remain largely similar when excluding these participants. Specifically, a main effect of magnitude emerged, $F(1, 190) = 177.61, p < .001, \eta_p^2 = .483$, indicating that sellers who received an accommodating (i.e., higher) counteroffer anticipated higher final prices ($M = 138.11, SD = 6.78$) than those who received an ambitious (i.e., lower) counteroffer ($M = 118.27, SD = 13.55$; see H1b). Timing also affected final prices, $F(1, 190) = 14.55, p < .001, \eta_p^2 = .071$, with later counteroffers leading sellers to accept lower final prices ($M = 124.19, SD = 15.81$) than earlier counteroffers ($M = 131.08, SD = 12.75$). Moreover, a significant magnitude $\times$ timing interaction, $F(1, 190) = 8.52, p = .004, \eta_p^2 = .043$, showed that timing had no discernible effect for accommodating counteroffers, but, for ambitious (lower) counteroffers, later counteroffers resulted in markedly lower final prices ($M = 113.33, SD = 12.23$) compared to earlier counteroffers ($M = 123.30, SD = 13.08$).

In line with H3b, counteroffer timing also significantly affected the final price, $F(1, 209) = 18.03, p < .001, \eta_p^2 = .079$. Sellers who received later counteroffers were willing to accept lower, and therefore less favorable, final prices ($M = 122.52, SD = 16.50$) than those who received earlier counteroffers ($M = 129.80, SD = 14.37$). The effects of early vs. late counteroffers were descriptively stronger for ambitious counteroffers, $d = 0.69, t(104) = 3.54, p < .001$, compared to the differences for accommodating counteroffers, $d = 0.45, t(105) = 2.33, p = .011$ (see Fig. 3). The frequentist interaction analysis did not reach the conventional threshold of statistical significance, $F(1, 209) = 3.58, p = .060, \eta_p^2 = .017$. Bayesian analyses yielded markedly stronger support for a difference of early vs. late offers in the ambitious condition ($BF_{10} = 46.07$) compared to the accommodating condition ($BF_{10} = 2.27$). As Figure 3 illustrates, ambitious *and* late counteroffers led to the overall lowest final sale price ($M = 111.48, SD = 14.16$ vs. $M = 121.63, SD = 15.33$ for ambitious early counteroffers).

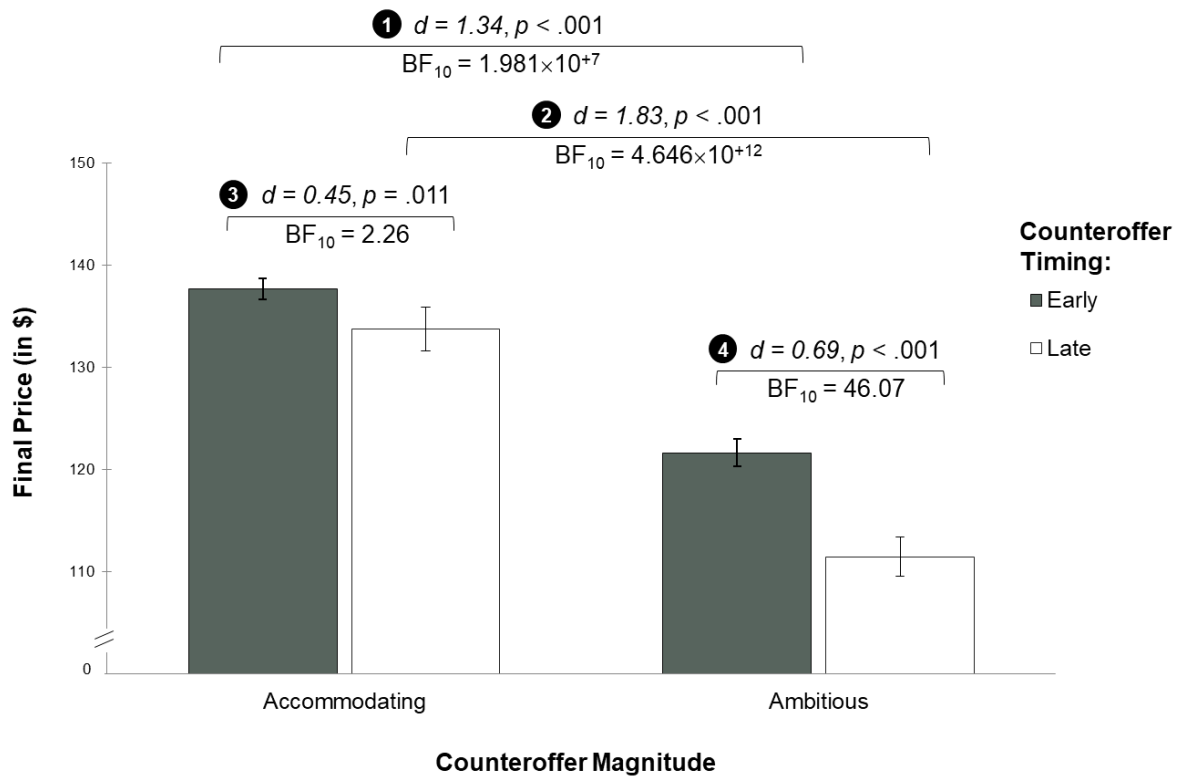


Fig. 3 Effect of counteroffer timing $\times$ magnitude on expected final price in Study 2. Reported final sale prices are shown as a function of buyers' counteroffer magnitude (accommodating vs. ambitious) and timing (early vs. late). Results revealed significant main effects of magnitude and timing. Bayesian contrasts for early accommodating vs. late ambitious counteroffers: $d = 2.32, p < .001, BF_{10} = 2.165 \times 10^{+18}$; for late accommodating vs. early ambitious counteroffers: $d = 0.95, p < .001, BF_{10} = 3,644.21$

4.2.2 Effects on the Seller's Returned Offer

We next conducted a chi-square test to examine whether sellers were more likely to immediately accept a buyer's late (vs. early) counteroffer. Supporting H3b, sellers were significantly

more likely to accept late counteroffers (14 accepted, compared to an expected 9.5) than early counteroffers (5 accepted), $\chi^2(1, N = 213) = 4.59, p = .032$.

Participants who immediately accepted the buyer's counteroffer were retained in these analyses by coding their accepted price as the returned counteroffer. A 2×2 ANOVA on sellers' counteroffers replicated prior anchoring research. Sellers who received a lower counteroffer returned a less ambitious offer ($M = 130.94$) compared to those who received an accommodating counteroffer ($M = 141.44$), $F(1, 209) = 27.56, p < .001, \eta_p^2 = .116$ (see H1a).

The experiment further supported Study 1's novel effect of counteroffer *timing*. In line with H3b, sellers who received a late counteroffer returned a less ambitious offer ($M = 131.44, SD = 15.98$) than sellers who received an early counteroffer ($M = 141.04, SD = 14.60$), $F(1, 209) = 23.06, p < .001, \eta_p^2 = .099$. The magnitude $\times$ timing interaction was not significant, $F(1, 209) = 2.36, p = .126$.

4.2.3 Effects on the Expected Impasse Risk

Sellers who received an accommodating counteroffer predicted a lower impasse risk ($M = 34.08, SD = 20.42$) compared to those who received an ambitious counteroffer ($M = 59.18, SD = 24.33$), $F(1, 200) = 69.18, p < .001, \eta_p^2 = .257$, supporting H2a (see Study 1, Fig. 1 and 2, green lines). In line with H3b, counteroffer timing also significantly influenced sellers' impasse risk predictions. Sellers who received a late counteroffer anticipated a lower likelihood of impasses ($M = 41.24, SD = 23.50$) than those who received an early counteroffer ($M = 52.06, SD = 26.72$), $F(1, 200) = 14.30, p < .001, \eta_p^2 = .067$. The interaction was not significant, $F(1, 200) = 0.15, p = .704$.

4.2.4 Effects on the Expected Reservation Price

In line with H2b, counteroffer magnitude significantly affected sellers' expectations of the buyer's reservation price, $F(1, 209) = 127.74, p < .001, \eta_p^2 = .379$. Sellers who received an accommodating counteroffer expected that the buyer would ultimately pay a higher price for the bike ($M = 135.77, SD = 14.82$) compared to those who received an ambitious counteroffer ($M = 110.75, SD = 17.60$). Counteroffer timing also significantly affected expected reservation prices, $F(1, 209) = 6.50, p = .011, \eta_p^2 = .030$. Sellers who received an early counteroffer expected the buyer to pay more ($M = 126.32, SD = 20.18$) than those who received a late counteroffer ($M = 120.35, SD = 20.48$; see H3b). The interaction was not significant, $F(1, 209) = 0.04, p = .841$.

4.2.5 Psychological Mediators

Buyers' Eagerness to Find an Agreement. Counteroffer magnitude significantly affected sellers' perceptions of the buyer's eagerness to close the deal, $F(1, 209) = 71.52, p < .001, \eta_p^2 = .255$. Sellers who received an accommodating counteroffer perceived the buyer as more eager to reach an agreement ($M = 4.35, SD = 0.93$) compared to sellers who received an ambitious counteroffer ($M = 3.22, SD = 1.01$). Counteroffer timing did not significantly affect perceptions of buyers' eagerness, $F(1, 209) = 1.55, p = .215$, nor was there an interaction effect, $F(1, 209) = 0.15, p = .696$.

Buyers' Sunk Costs (Exploratory). Counteroffer magnitude significantly influenced sellers' perceptions of the buyer's sunk costs in the negotiation, $F(1, 209) = 48.24, p < .001, \eta_p^2 = .188$. Sellers who received an accommodating counteroffer perceived the buyer to have invested greater effort ($M = 47.45, SD = 20.96$) compared to those who received an ambitious counteroffer ($M = 28.53, SD = 18.84$). Counteroffer timing did not affect sunk-cost perceptions, $F(1, 209) = 0.32, p = .570$, and no interaction effect emerged, $F(1, 209) = 1.96, p = .163$.¹⁰

Moderated Mediation Model. We conducted a preregistered moderated mediation analysis with 5,000 bootstrapping samples (Hayes 2023, model 8) to test the proposed model (see Fig. 4). Counteroffer magnitude served as the predictor, counteroffer timing as the moderator, and the perceived (1) buyer's eagerness to close the deal and (2) buyer's sunk costs (exploratory) as simultaneous mediators. We included accepted counteroffers alongside expected final prices, as these directly represent the price agreed upon.

For perceived buyer eagerness, we found significant conditional indirect effects for both early ($b = 3.88, CI_{95\%} [1.535, 6.708]$) and late counteroffers ($b = 3.54, CI_{95\%} [1.345, 6.140]$). Yet, we did not observe significant conditional indirect effects through perceived sunk costs for early ($b = 2.10, CI_{95\%} [-0.227, 4.543]$) and late counteroffers ($b = 1.40, CI_{95\%} [-0.118, 3.694]$).

The interaction effect of counteroffer magnitude and timing on the final price was not significant, $b = -5.21, p = .097, \Delta R^2 = .007$. Further, the moderated mediation effects via the perceived eagerness of the buyer, $CI_{95\%} [-2.279, 1.402]$, and perceived sunk costs, $CI_{95\%} [-2.043, 0.449]$ were not significant (see dashed lines in Fig.4).

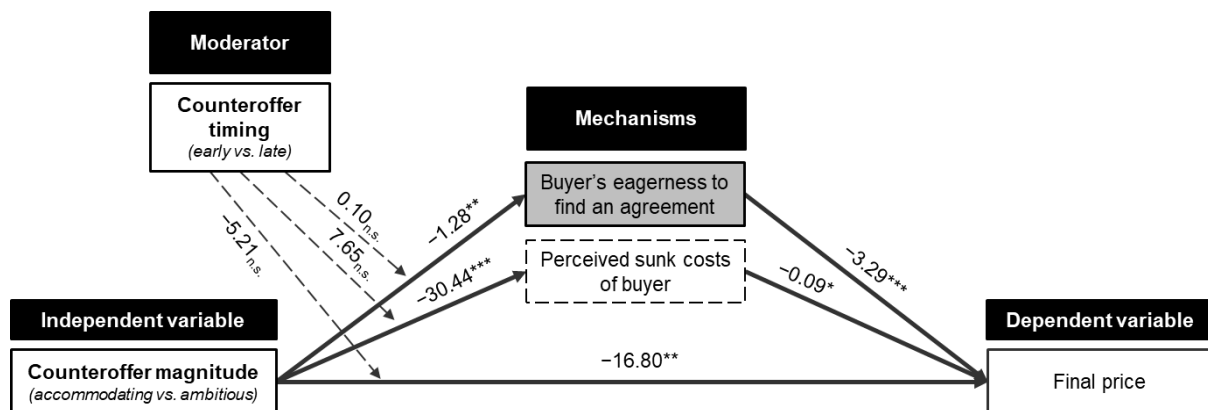


Fig. 4 Moderated mediation model of counteroffer timing and magnitude on the final price via buyers' eagerness and sunk cost perceptions. The Fig. illustrates the regression coefficients for the moderated mediation analysis. Sellers' perceptions of buyers' eagerness to reach an agreement (gray box) but not their sunk-cost-perceptions (dashed) mediated the relationship between counteroffer magnitude and final prices. n.s. = non-significant, $* = p < .05$, $** = p < .01$ and $*** = p < .001$

¹⁰ For full transparency and as mentioned above, the effects on sunk costs were exploratory and not preregistered.

4.2.6 Moderated Mediation Model Assessing the Behavioral Effects

To explore how counteroffer timing and magnitude (jointly) affect final prices (see Fig. 3), we conducted an exploratory moderated mediation analysis. We entered counteroffer magnitude as the predictor, counteroffer timing as the moderator, and examined two competing mediators: the magnitude of sellers' returned counteroffers and their perceived likelihood of reaching an impasse.¹¹ Final price served as the outcome variable (see Fig. 5; 5,000 bootstrapped samples; Hayes 2023, model 8).

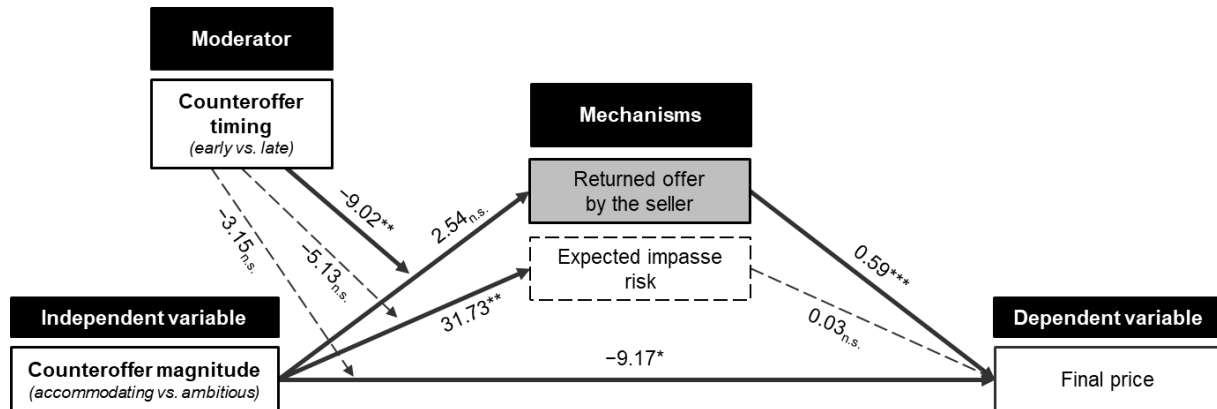


Fig. 5 Moderated mediation model of counteroffer timing and magnitude on final price via the seller's returned offer (and the expected impasse risk). The Fig. displays regression coefficients. The seller's returned offer mediated the effect of counteroffer magnitude on final prices, with counteroffer timing moderating the mediation effect. n.s. = non-significant, * = $p < .05$, ** = $p < .01$ and *** = $p < .001$

We observed a significant moderated mediation effect, $b = -5.34$ $SE = 1.99$, $CI_{95\%} [-9.510, -1.352]$, with the seller's returned offer in response to the buyer's counteroffer mediating the relationship between counteroffer magnitude and the final price. Specifically, the indirect effects of counteroffer magnitude via sellers' returned offer differed as a function of timing: for early counteroffers, $b = -3.84$ $SE = 1.37$, $CI_{95\%} [-6.741, -1.352]$, and for late counteroffers, $b = -9.18$ $SE = 1.65$, $CI_{95\%} [-12.559, -6.066]$. These results suggest that the timing of counteroffers significantly amplifies the anchoring effect of ambitious offers, with late counteroffers exerting a more pronounced effect via returned seller offers on final prices than early ones.

The main effect of counteroffer magnitude on the returned offer by the seller, commonly referred to as the 'a-path' in a mediation model (see Hayes 2023), was not significant ($p = .61$), but the interaction between counteroffer magnitude and timing was $b = -9.02$, $p = .005$, $\Delta R^2 = .029$. Further, the seller's returned offer significantly predicted the expected final price (referred to as the

¹¹ We found a weak correlation between the magnitude of sellers' returned counteroffers and their expected impasse risk, $r(194) = .14$, $p = .048$, with a shared, explained variance of 1.96%. To ensure consistency with our real-life data analyses in Study 1 and to capture each factor's distinct contribution, we included both variables in the mediation analysis. Participants who immediately accepted the buyer's counteroffer ($n = 19$) were excluded from these analyses as they (1) did not expect any impasse risk, and (2) their returned offer was identical to the final sale price, which would have yielded a perfect relationship for the b-path in Fig. 5.

‘b-path’; $b = 0.59$, $SE = 0.05$, $t = 10.92$, $p < .001$). The analysis further revealed an overall effect of counteroffer magnitude on the expected final price (referred to as the ‘c’-path’; $b = -9.17$, $SE = 3.57$, $t = -2.57$, $p = .011$). In contrast, for the second mediator (impasse risk), the moderated mediation was not significant ($b = -0.15$, $SE = 0.28$, $CI_{95\%} [-0.840, 0.314]$), and no significant indirect effects were observed (all CIs included zero).

Overall, these findings suggest that the interaction between counteroffer magnitude and timing on final price can be explained by the mediating role of the seller’s returned offer following the buyer’s counteroffer. Notably, the indirect anchoring effect of counteroffers on final price was stronger for late counteroffers than for early ones (see Fig. 3).

5 Discussion

The present paper seeks to advance negotiation research by examining the dual roles of counteroffer magnitude and timing, in shaping outcomes in asynchronous online negotiations. Addressing a gap in the existing literature, which has predominantly focused on first-offer magnitude (see Petrowsky et al. 2025), we provide novel evidence demonstrating how buyers may strategically manage both *when* and *how ambitiously* they design their counteroffers to optimize their outcomes.

Consistent with prior research on the first-offer anchoring effect (Galinsky and Mussweiler 2001; Loschelder et al. 2016; Petrowsky et al. 2025), we consistently find that ambitious counteroffers result in lower final sale prices—demonstrating their ability to effectively counter-anchor negotiations in the buyer’s favor. However, we also establish that such assertive offers come with an inherent trade-off: they increase the risk of impasses (Study 1; see also Schweinsberg et al. 2023).

Expanding prior research, we establish a novel *counteroffer-timing effect*. Our findings reveal that late counteroffers confer distinct advantages in asynchronous online negotiations: they are associated with lower returned counteroffers from sellers, reduced impasse risk, and more favorable sale prices. These advantages are supported by evidence from a large-scale analysis of asynchronous, real-world online negotiations (Study 1) and a controlled experiment (Study 2), which establishes causal effects of timing. Our model provides mediation evidence that buyers’ later counteroffer prompts a lower subsequent offer from the seller, resulting in a more favorable final sales price. Together, these results underscore the strategic importance of counteroffer timing, highlighting how timing can complement magnitude to improve negotiation outcomes.

5.1 Practical Implications

This research offers actionable implications for buyers and sellers, specifically in asynchronous online negotiations. For buyers, our findings suggest that ambitious counteroffers can effectively lower final sale prices, but that timing should also be considered. When compelled to make an early offer, buyers may opt for a highly ambitious approach to counteract the seller’s anchor and secure a lower final price; however, our findings also indicate that early offers come with an elevated risk of impasse. Nevertheless, our results demonstrate that late counteroffers provide additional advantages, such as a reduced impasse risk and more favorable economic outcomes.

Sellers, in turn, can use these insights to anticipate and respond to buyers' strategic behavior. Understanding the effects of counteroffer magnitude and timing can inform sellers' initial pricing strategies and their responses to buyer counteroffers. For example, sellers might adjust their list prices or prepare to justify higher prices (see Lee and Ames 2017) when facing late counteroffers, which may signal lower buyer demand or interest. Incorporating these findings into procurement training programs can better prepare negotiation professionals, particularly in asynchronous, high-stakes settings common in B2B negotiations.

5.2 Theoretical Contributions to the Literature

This research seeks to make several theoretical contributions to the negotiation literature by systematically examining the joint effects of counteroffer timing *and* magnitude in asynchronous online negotiations—two fundamental, yet often separately studied dimensions of negotiation strategy. First, this research expands the field's focus from the unilateral effects of first offers (see Lipp et al. 2023; Mussweiler and Strack 1999) to the subsequent impact of counteroffers, emphasizing the role of buyers who move second. Our investigation therefore covers important phases of the negotiation process and focuses on the capabilities of counteroffers to re-anchor the negotiation process, a finding that has been often neglected by research that focuses on first offers (see Petrowsky et al. 2025).

Second, we extend anchor theorizing by establishing that not only the magnitude but also the timing of counteroffers meaningfully shape negotiation outcomes. While extensive prior research has emphasized the power of ambitious first offers in anchoring negotiations (Galinsky and Mussweiler 2001; Loschelder et al. 2016; see Petrowsky et al. 2025 for a systematic review), our findings reveal that counteroffers serve as counter-anchors with varying efficacy depending on their magnitude *and* timing. Notably, we find that late counteroffers may amplify the anchoring effect, resulting in more favorable sale prices and lower impasse risks in asynchronous online negotiations. These findings also create an interesting contrast to synchronous, face-to-face negotiations research (see Selective Accessibility Model, Mussweiler and Strack 2000; Insufficient Adjustment, Tversky and Kahneman 1974), which often suggests that immediate counteroffers are more advantageous.

Third, our results shed new light on the immediate vs. late counteroffer dilemma, reconciling past research that has broadly advocated for swift counteroffers (at least in synchronous settings): the present evidence suggests that late counteroffers may have strategic advantages in the context of asynchronous online negotiations. Future research should explore whether these findings extend to synchronous negotiations and whether a longer interval between the first offer and counteroffer enables deliberate more thoroughly—thus preventing intuitive, more biased counteroffers in line with Insufficient Adjustment Theory (Tversky and Kahneman 1974)—or whether earlier offers might still be advantageous, as implied by the Selective Accessibility Model (Mussweiler and Strack 1999),

Finally, we reveal that the relationship between counteroffer ambition and impasse risk is nonlinear, exhibiting an initial “safety zone” before escalating steeply with increasing ambition; in

addition, the timing of counteroffers moderates this relationship, underscoring the complexity of negotiation dynamics. This contribution advances research on nonlinear effects in negotiation (Schweinsberg et al. 2023) and opens new avenues for research: for instance, whether there are optimal time points to make offers of specific magnitude, whether these effects are causal and also apply to synchronous negotiations, which psychological mechanisms underlie these nonlinear effects (e.g., sellers being offended by late counteroffers just below the list price), or what practical implications they have in real-world negotiations (e.g., mitigating potential offense through linguistic hedges; see Lee et al. 2024).

5.3 Limitations and Future Research

While our research provides robust evidence across field and experimental settings, it has limitations that warrant further investigation. The real-world eBay negotiations analyzed in Study 1 offer extensive ecological validity but cannot establish causality or probe underlying psychological mechanisms. Study 2 addresses these gaps through experimental manipulation, yet its controlled setting does not capture the complexity of real-world negotiations. Future studies could adopt hybrid methodologies to bridge these gaps, combining field and experimental data to explore causal mechanisms in applied, incentivized, real-world contexts (e.g., Loschelder et al. 2014).

In addition, our data do not allow us to determine whether buyers strategically delayed their counteroffers (i.e., intentionally waited to make an offer) or simply discovered the product later. This limitation is particularly relevant in Study 1, where a later counteroffer may reflect a buyer first encountering the listing later rather than deliberately postponing the offer. Therefore, our conclusions focus on the observed timing of counteroffers rather than deliberate waiting behavior. Future studies could address this limitation by directly measuring buyers' intentions or experimentally manipulating the strategical delay of (counter-)offers.

It is also important to note that our research focuses on asynchronous online negotiations, in which significant delays between offers are common (see Swaab et al. 2011). Accordingly, our findings are likely ecologically valid for negotiations with similar characteristics, such as B2B negotiations where offers are exchanged electronically, thereby allowing notable time lapses before responding. However, our conclusions do not necessarily generalize to synchronous, face-to-face negotiations, where counteroffer delays typically last only seconds to minutes, rather than days. The question of whether shorter tactical delays (of seconds or minutes) might yield comparable benefits in synchronous face-to-face (and other online) contexts remains an important avenue for future research.

We also tested whether sellers' perceptions of the buyer's eagerness to reach an agreement would mediate the effects of counteroffer magnitude and timing on negotiation outcomes. This analysis did not yield a significant moderated mediation effect, suggesting that focusing on the buyer's eagerness alone may not fully capture the relevant dynamics. Future research might instead examine how the *seller's* eagerness or sense of urgency drives subsequent negotiation behavior, particularly when an item remains unsold for extended periods. In such cases, late buyer counteroffers

could increase the sellers' motivation to secure a sale, whereas early offers might embolden sellers to hold out for a more favorable deal.

Finally, cultural variations may also shape how timing influences negotiation outcomes. Prior research suggests that the timing of first offers can vary across cultures, particularly in integrative negotiations (Adair et al. 2007). Examining how cultural norms and expectations may interact with counteroffer timing could help refine negotiation strategies for culturally more diverse settings.

6 Conclusion

This paper advances our understanding of negotiation dynamics by examining how counteroffer timing and magnitude jointly shape outcomes in asynchronous, electronically-mediated negotiations. Our findings reveal that later, more ambitious counteroffers can yield more favorable sale prices and simultaneously reduce impasse risk. By strategically calibrating *when* and *how much* to counter, negotiators may achieve greater economic value. Because our investigation focuses on asynchronous exchanges—where counteroffer research remains comparatively limited—future work should explore whether and under what conditions these effects generalize to synchronous, face-to-face negotiations or extend to first-offer strategies. We hope these insights spark additional inquiry into timing and magnitude as key levers in a variety of negotiation settings.

Statements and Declarations

The authors have no relevant financial or non-financial interests to disclose. The authors have no competing interests to declare that are relevant to the content of this article. The present research was granted an ethical exemption by the lead author's institutional research committee.

All relevant materials and data can be accessed via:

https://osf.io/52nvx/?view_only=c5675f3e719441c5b5fa561c085bb9dc

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Paper 2: Countering the First-Offer Anchor: How Counteroffer Timing and Magnitude Affect Distributive Negotiation Outcomes

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Abstract

A plethora of research has demonstrated the powerful anchoring impact of first offers. As a result, negotiators face a critical decision in determining how and when to present their counteroffer to these first-offer anchors. This study investigates the effects of counteroffer timing (early vs. late) and magnitude (ambitious vs. accommodating) on negotiation outcomes. In a controlled laboratory experiment ($N = 213$), we examined the interplay of these factors, focusing on the impact of buyers' counteroffers on sellers' pricing behavior, psychological perceptions, and the likelihood of reaching an agreement in a synchronous, distributive bargaining scenario. Consistent with anchoring theory, ambitious counteroffers led to lower expected sale prices. At the same time, however, they also increased the risk of impasses. Notably, we also identified a novel counteroffer timing effect: later counteroffers, particularly when accommodating, increased the perceived eagerness of the countering buyer to reach an agreement, resulting in a higher perceived likelihood of successfully reaching an agreement by sellers. Conversely, later and ambitious counteroffers exacerbated the impasse risk and reduced sellers' perceptions of buyer effort and morality. These findings add important nuance to the conventional advice to counter immediately and highlight the strategic advantages of timing in negotiation tactics.

Keywords: negotiations, anchoring, first offer, counteroffer, impasse, conflict, offer timing

Countering the First-Offer Anchor: How Counteroffer Timing and Magnitude Affect Distributive Negotiation Outcomes

In business-to-business and private negotiations alike, a well-established and validated practice for sellers is to make the initial offer (e.g., Backus et al., 2020; Galinsky & Mussweiler, 2001; Loschelder et al., 2016a). The rationale behind this is that sellers typically have more detailed information about the value of their products (or services) compared to buyers. Consequently, buyers often move second, leveraging the information provided by the seller's first offer to make more informed decisions and mitigate the risks associated with this information asymmetry (Schweinsberg et al., 2023). If less informed buyers were to make the first offer, they could make an offer that is too high, possibly resulting in substantially overpaying for the product or service (Jiang & Ma, 2019; Maaravi & Levy, 2017), or they could inadvertently propose an offer that is too low, thereby offending the seller and leading to an impasse (Petrowsky et al., 2023; Schweinsberg et al., 2012).

While decades of research have highlighted the beneficial effects of making the first offer on negotiation outcomes (see Petrowsky et al., 2025, for a review), there is a notable lack of research on optimizing subsequent counteroffers made by buyers (Lipp et al., 2023; Teichmann et al., 2025). Given that buyers frequently find themselves in the position of making the second negotiation proposal, it seems crucial to understand how to effectively make counteroffers. This paper aims to investigate two critical aspects of counteroffers that can enhance negotiation outcomes for the second mover: the magnitude (ambitious vs. accommodating) and the timing (late vs. early) of the buyer's counteroffer. Before detailing the experimental study, we shall first review extant theorizing and empirical findings on the effects of counteroffer magnitude and timing on distributive negotiation outcomes.

Counteroffer Magnitude

Research on the effect of counteroffer magnitude currently remains surprisingly scarce. Yet, the selective studies examining this effect indicate that ambitious counteroffers have consistently yielded more favorable negotiation outcomes, enabling buyers to claim greater value compared to making more accommodating counteroffers (e.g., Lipp et al., 2023). These findings are consistent with extensive research on the benefits of more assertive *first* offers, which give offer makers an advantage by anchoring the negotiation in their favor (Loschelder et al., 2016a; see Petrowsky et al., 2025, for a meta-analysis). Anchoring stands out as one of the most robust effects in negotiation research (Klein et al., 2014). First offers show particularly strong correlations with final negotiation outcomes, with coefficients ranging from $r = .73$ to $r = .93$, explaining up to 80% of the variance in counteroffers and final agreements (e.g., Galinsky & Mussweiler, 2001; Galinsky et al., 2002; Kray et al., 2001). Meta-analytic estimates find a conventionally large effect of $g = 1.56$ and $r = .62$ (Petrowsky et al., 2025). The two most prominent theoretical accounts explaining the mechanisms behind such strong anchoring effects are insufficient adjustment and selective accessibility.

Insufficient Adjustment

The Insufficient Adjustment account (Tversky & Kahneman, 1974) presents a key psychological mechanism through which initial offers influence and anchor negotiation outcomes. When people are confronted with a first-offer anchor, they will adjust their estimates away from it; these adjustments, however, are typically terminated once the first plausible estimate is reached—the adjustment is thus often insufficient (Epley & Gilovich, 2006). Because moving away from an anchor demands mental effort, individuals often settle on a figure that merely feels acceptable rather than continuing until they arrive at a fully independent (and sufficiently adjusted) estimate (Frech et al., 2019, 2020). As a result, negotiators' final estimates tend to remain anchored, at least partially, to the initial figure

(i.e., the first-offer anchor). This tendency helps explain the strong and persistent influence that first offers have on the trajectory and result of negotiations (Magee et al., 2007).

Selective Accessibility Model

The Selective Accessibility Model (SAM; Mussweiler & Strack, 1999, 2000; Petrowsky et al., 2025) may also explain how anchoring shapes the negotiation process and its outcomes. According to the SAM, the introduction of an anchor (e.g., the first offer; Galinsky & Mussweiler 2001)—guides attention toward information that aligns with the anchor, making such details more readily available (i.e., “selectively accessible”) in the mind of anchor recipients. For example, if a house is advertised at a high(er) price, a buyer is more likely to notice features that justify the price (e.g., premium interior, quiet neighborhood, or exceptional energy efficiency) rather than to critically assess aspects of the house that speak against the house’s price (see Mussweiler & Strack, 2000; Mussweiler et al., 2000). Because anchor-consistent information becomes selectively more accessible, judgments and counteroffers tend to be biased in the direction of the initial anchor (i.e., the first offer).

Potential Effects of Counteroffer Magnitude

Despite the influence of first offers, counteroffers can also serve as anchors in negotiations, potentially functioning as counterweights to the first mover’s advantage (Lipp et al., 2023; Petrowsky et al., 2023; Schweinsberg et al., 2023). When recipients of a first offer respond with assertive counteroffers, they can challenge the initial anchor’s influence and potentially shift the first mover’s price expectations in their own favor. The anchoring impact of counteroffers, however, is generally somewhat weaker than that of first offers (Lipp et al., 2023). Moreover, counteroffers that stray too far from the counterpart’s reference point may have unintended negative consequences: If a counteroffer appears excessively unrealistic, it risks being rejected outright, increasing the likelihood of negotiation failure or impasse (Petrowsky et al., 2023; Schweinsberg et al., 2023; Teichmann et al., 2025). Overly extreme

offers may alienate the other party, be perceived as inappropriate or disrespectful, undermine trust, or convey that no mutually acceptable agreement is possible (Lipp et al., 2023; Schweinsberg et al., 2012, 2022; see also Ames & Mason, 2015). Drawing on this theoretical framework, we propose the following hypothesis:

H1. More ambitious (i.e., lower) counteroffers from buyers lead sellers to (a) expect lower reservation prices of buyers,¹ (b) expect lower final sale prices, (c) estimate a lower likelihood of finding an agreement, (d) return less ambitious subsequent offers, and (e) react more competitively, compared to more accommodating (i.e., higher) counteroffers.

Counteroffer Timing

Although the impact of first-offer size has been extensively examined, the role of timing—that is *when* first offers and counteroffers are made—remains under-researched and oftentimes underestimated. A few studies provide exceptions to this claim, suggesting that delaying a first offer may promote greater information exchange between two negotiating parties and ultimately lead to better *integrative* outcomes (see Adair et al., 2007; Sinaceur et al., 2013). These studies have focused on Pareto efficiency in integrative negotiations, however. It is still unknown how the timing of counteroffers impacts distributive settings—particularly in terms of how timing might influence negotiators’ perceptions of each other, their subsequent behavior, final deal terms, and the likelihood of finding an agreement in synchronous face-to-face negotiations (see Teichmann et al., 2025 for asynchronous contexts). The open question of whether (and how) the timing of a buyer’s counteroffer alters the strength of the anchoring effect created by the seller’s initial offer within this context

¹ For full transparency, note that H1a and H2a (both hypotheses concerning reservation prices) have not been included in the pre-registration. All other hypotheses included in H1 and H2 were preregistered.

remains. The present study's main focus is to examine and establish a novel *counteroffer timing effect*. Based on prior research, we derived two competing hypotheses about whether and why early (vs. late) counteroffers might be more advantageous or disadvantageous.

Why Early Counteroffers Might be Advantageous

Some researchers have advocated for immediate counteroffers (e.g., Gunia, 2017), arguing that earlier responses may blunt the anchoring power of the initial offer and help steer the negotiation in a new direction. In terms of underlying theorizing, drawing from the Selective Accessibility Model (Mussweiler & Strack, 1999, 2000), earlier counteroffers may indeed interfere with the buyer's tendency to selectively retrieve anchor-confirming information. Rather than allowing the seller's first offer (the initial price) to shape perceptions and to selectively activate anchor-consistent information, an immediate counteroffer could activate contrasting information and serve as a counter-anchor that refocuses negotiators' attention on information that speaks *against* the first-offer anchor (Maraavi & Levy, 2017). In contrast, if a buyer delays their response, the seller's anchor has more time to settle in with the selectively accessible information exerting an anchoring effect. With additional time, the buyer might remain susceptible to anchor-consistent information, which can make the seller's initial price seem more plausible and fairer.

Additionally, a delayed response may be interpreted by the seller as tacit agreement or acceptance, further establishing their original position. Over time, sellers may even begin to generate further reasons to justify their initial asking price, thus becoming more resistant to later attempts to steer away from this initial anchor. This phenomenon reflects the 'myside bias', where people selectively search for information confirming their own beliefs (Mercier, 2022; Peters, 2020).

According to delay discounting, people often exhibit a preference for immediate over delayed rewards, assigning less subjective value to outcomes that are further in the future

(Luhmann, 2009). Applied to negotiations, sellers could prefer early counteroffers—even if slightly lower in magnitude—over uncertain future offers. By responding quickly, buyers might exploit this preference for a timely resolution, potentially gaining better outcomes in terms of both final price and reduced risk of ending up without a deal. Hence, based on this extant research, one could hypothesize:

H2. Early (vs. late) counteroffers lead sellers (a) to expect lower reservation prices of buyers, (b) to expect lower final sale prices, (c) to estimate a lower likelihood of finding an agreement, and (d) to return less ambitious subsequent offers.

Why Late Counteroffers Might be Advantageous

In contrast to early offers, later counteroffers could also offer strategic negotiation advantages. Based on the Insufficient Adjustment account (Tversky & Kahneman, 1974), a quick(er) reaction to the seller's first-offer anchor may lead buyers to adjust *insufficiently* away from the seller's initial asking price. Such immediate responses may often be driven by intuition rather than thoughtful analysis, increasing the likelihood that the seller's first-offer anchor will continue to shape the negotiation in their favor. In contrast, delayed responses of late(r) counteroffers provide buyers with more time to pause and reflect, allowing for a more deliberate counteroffer and anchor-adjustment process (Curhan et al., 2022). This added time can help buyers to critically evaluate the seller's proposal and to access information that challenges the initial anchor (Mussweiler & Strack, 2000), resulting in a counteroffer that more effectively contrasts with the seller's anchoring position. However, regardless of whether the buyer truly took more time to deliberate the price, counteroffers that arrive later may come across as more thoughtful and reasoned (Loschelder et al., 2014, 2017; Mason et

al., 2013), suggesting the buyer took time to seriously assess the offer rather than to reject it hastily.

Further, buyers' later counteroffers may affect the sellers' cooperativeness. Thompson (2000) proposed that earlier counteroffers signal a willingness to negotiate. However, buyers who respond too quickly might push both parties into a more competitive mindset, affecting their subsequent behavior (Rackham & Carlisle, 1978). When an immediate counteroffer is made, both sides may become more focused on their respective anchors, thereby shifting the price back and forth rather than addressing each other's needs, exploring integrative solutions (Adair et al., 2007), or even acting more cooperatively. Taken together, this reasoning suggests the following competing hypotheses:

H3. Late (vs. early) counteroffers lead sellers (a) to expect lower reservation prices of buyers, (b) to expect lower final sale prices, (c) to estimate a lower likelihood of finding an agreement, (d) to return less ambitious subsequent offers, and (e) to react more cooperatively.

Underlying Mechanisms Explaining the Advantageous Effects of Late Counteroffers

To better understand these effects and their underlying theorizing, we will test the mediating effects of four mediators. For one, we investigate whether *late* (vs. *early*) counteroffers lead to higher perceived eagerness of the buyer to find an agreement and greater perceived sunk costs of the seller into the negotiation (see Figure 1, mediators [1] and [2] below). For another, the effects on parties' negotiation behaviors and outcomes may be explained by how the counteroffer timing shapes how the first mover perceives the proposer (i.e., testing the "Big Two"; see Figure 1, mediators [3] and [4] below).²

² For full transparency, all four mediators have been preregistered as such, but the specific direction of the effects has not been preregistered.

Eagerness to Find an Agreement. Later counteroffers may influence how seller's perceive the buyer's eagerness to reach an agreement. For instance, consider a seller offering a car for €10,000. If a buyer responds immediately with a counteroffer of €8,500, the seller may interpret this as a sign of strong interest and believe a deal is likely. In contrast, if the buyer is more hesitant waits an hour before responding with the same offer, the seller might begin to doubt the buyer's commitment or urgency. To avoid losing the deal, the seller might become more flexible and consider accepting the lower price—especially if they infer that the buyer is hesitant or considering other options.

H4. Late (vs. early) counteroffers lead sellers to expect that buyers have a lower eagerness to find an agreement.

Seller's Sunk Costs. Additionally, the *sunk-cost fallacy* may also explain why the timing of a buyer's counteroffer could affect the seller's willingness to make concessions (Arp et al., 2018; Escher et al., 2025). This fallacy refers to the tendency for individuals to persist with a course of action once they've already invested resources—such as time, effort, or money—even when future benefits no longer justify a continued investment (Arp et al., 2018; Escher et al., 2025). In the negotiation context, sellers who have already spent considerable time and effort responding to buyer inquiries—such as providing detailed product information, calculations, or customized proposals—before receiving a counteroffer may feel increasingly committed to closing the deal (Ellingsen & Johannesson, 2005). Rather than letting these efforts go to waste (i.e., “sunk cost”), they may become more flexible, offering further concessions (Arp et al., 2018; Karle et al., 2023; Sofis, 2015). By contrast, when a buyer responds with an early counteroffer—before the seller has invested much

effort—the seller may feel less psychologically committed to the exchange and less inclined to negotiate or compromise.

H5. Late (vs. early) counteroffers lead sellers to feel as if they have put more effort into the negotiation.

Interpersonal Perceptions. As hypothesized above, making a counteroffer too early might push both parties into a more competitive mindset, leaving both parties in back-and-forth bargaining (Rackham & Carlisle, 1978). Consequently, negotiators who receive an immediate counteroffer may thus view the other party psychologically as more competitive and assertive but less warm on a personal level (Abele & Wojciszke, 2007; Binmore, 2014). Immediate first offers can lead negotiators to exchange less information, act less cooperatively, and find fewer integrative solutions as a result (Sinaceur et al., 2013). Hence, we examine whether early (vs. late) counteroffers would impact sellers' perceptions of the buyers' agency and communion (i.e., the “Big Two”; see Figure 1):

H6. Early (vs. late) counteroffers lead sellers to perceive the buyer as more agentic and less communal.

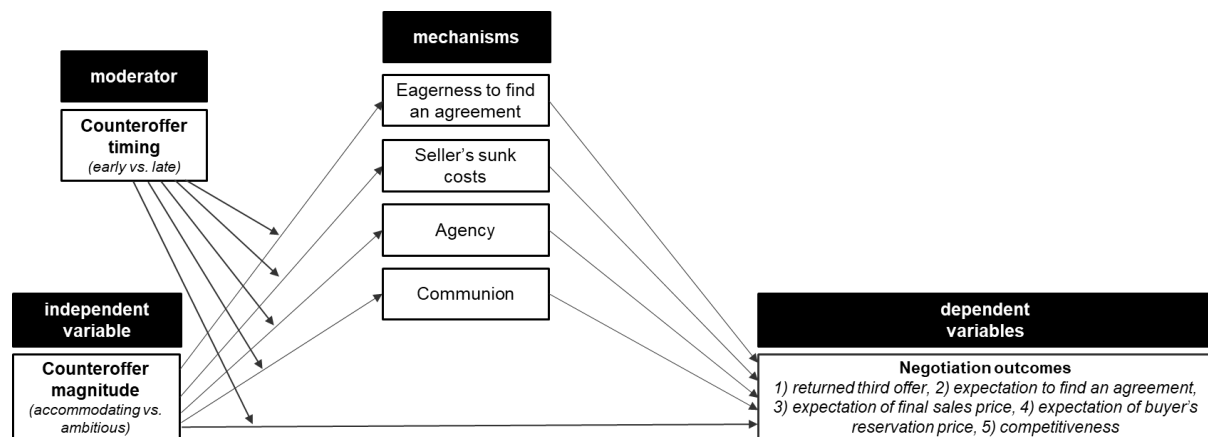
Current Study

There is a fundamental lack of research on how (and when) to make counteroffers (Lipp et al., 2023). This is especially relevant for buyers who are often forced to move second in negotiations because of an information asymmetry between sellers and buyers. With the current study, we intend to close this research gap and examine the psychological mechanisms of why and how both the counteroffer magnitude and timing affect negotiation

dynamics and outcomes. Thereby, we seek to further shift the general understanding of opening moves in negotiations from a somewhat one-sided view on first offers to a more comprehensive view by considering both first offers and counteroffers of second movers (Lipp et al., 2023). While recent work has investigated the role of offer timing in asynchronous online negotiations (Teichmann et al., 2025), we turn to direct, synchronous negotiations with reduced time spans and investigate additional mediators (seller's sunk costs and interpersonal perceptions; i.e., how agentic and communal the buyer is perceived to be) and outcome variables (i.e., cooperative behavior) to get deeper psychological insights. Based on the previously reviewed literature and theorizing, we developed the following moderated mediation model to analyze the underlying psychological effects that account for the interplay of counteroffer magnitude and timing on various negotiation outcomes (displayed in Figure 1 below).

Figure 1

Moderated Mediation Model of the Counteroffer Timing on Negotiation Outcomes



Note. The model shows the proposed moderated mediation effects of timing and magnitude on several economic, behavioral, and perceptive outcome variables.

Methods

Open Science and Transparency Statement

We preregistered this study prior to data collection, and all data, experimental materials, and supplementary materials have been made publicly available in the Supporting Online Materials (SOM) on the Open Science Framework (OSF, see https://osf.io/dqyz2/?view_only=80003f16c4404d19a5e5bca5e8d227e6).

Participants and Sample Size Analysis

We recruited 213 participants via Prolific from the U.S. and U.K. (112 women, 98 men, and three non-binary, $M_{\text{age}} = 40.12$ years, $SD = 12.77$, age range: 21-73 years). The required minimal sample size of $N = 210$ was determined through an a priori sample-size analysis using G*Power (Faul et al., 2007) for a 2×2 ANOVA with two independent variables (i.e., 1 degree of freedom for both main and interaction effects) and a conventionally medium effect size of $f = 0.25$, $\alpha = .05$, $1 - \beta = .95$.

Participants were required to be native English speakers, at least 18 years old, and were compensated at an hourly rate of £7.00. Participants were moderately experienced in negotiations based on two items ($M = 4.02$, $SD = 1.53$, on a 7-point Likert scale ranging from 1 = *no experience* to 7 = *lots of experience*). Following the preregistered protocol, all participants were included in the analyses, as none failed more than one of the three attention checks.

Design

The experiment employed a 2 (magnitude: accommodating vs. ambitious) $\times$ 2 (timing: early vs. late) randomized between-subjects design. Participants were randomly assigned to one of the four conditions. First, for counteroffer magnitude, participants were randomly assigned to one of two conditions with buyers making either a high (*accommodating*: \$120) or low (*ambitious*: \$80) counteroffer. These magnitudes correspond to 25% and 50% below

the seller's list price, respectively (see Lipp et al., 2023). Second, for counteroffer timing, participants were randomly assigned to receive a counteroffer from the buyer before (early condition) or after (late condition) they had interacted with the buyer (see Adair et al., 2007).

Procedure and Materials

Participants assumed the role of sellers in a simulated negotiation scenario and were asked to negotiate with an interested buyer. They were informed that they were selling a bike at a flea market, where they had already made their asking price of \$160 public (their first offer). Also, participants received further information on the situational background (e.g., they intend to sell because they move to another city) among graphical illustrations.

To make this negotiation as realistic as possible, we asked participants to also engage in an interaction with the respective buyer. Specifically, participants were asked to respond to six successive statements of the buyer (e.g., buyer: "I'm really searching for a reliable bike. Can you tell me about this one?") by choosing one of three possible reactions. Specifically, for each statement, participants could choose between a cooperative ("Of course! This bike has served me well for several years, and I think it's just what you're looking for"), a competitive ("This bike is exceptional and competitively priced"), and a neutral reaction ("This bike has been used but is still in good shape"). The statements were displayed in randomized order. In the *early* condition, sellers received a counteroffer from the buyer and responded to all key dependent measures (i.e., the sellers' returned third offer and the expected likelihood of finding an agreement) *before* this interaction. In the *late* condition, sellers received a counteroffer and responded to all dependent measures *after* this interaction.

Dependent Measures

Immediately after receiving the buyer's counteroffer, participants indicated whether they would accept this counteroffer or return another offer of their own (which they then specified; Lipp et al., 2023; Mason et al., 2013). Next, participants estimated the likelihood of

reaching an agreement with the buyer in % (i.e., impasse risk; Lee & Ames, 2017). To control for potential order effects, the order of presenting these two measurements was counterbalanced.

Subsequently, participants were asked to estimate the buyer's reservation price ("In your opinion, what is the highest price the buyer would be willing to pay for the bike?") and to predict the final settlement price for this negotiation ("If you would further negotiate with the buyer: What do you think is a realistic settlement price?"). We used these measures as proxies for the final settlements as previous research has shown that negotiators' expectations of the final agreement are highly predictive of actual negotiation outcomes (e.g., Ames & Mason, 2015; Cohen, 2003).

Finally, we assessed the competitiveness of participants' negotiation behavior during the scripted interactions with buyers. Specifically, we calculated a competitiveness score based on the six responses that the sellers gave during the interaction with the buyer. We scored a competitive answer with a 3, a neutral answer with a 2, and a cooperative answer with a 1. Then, we calculated the sum across all seven items as an indication of the competitiveness of the seller, ranging from six (very cooperative) to 18 (very competitive).

Measured Psychological Mediators

To explore the psychological mechanisms underlying the effects of counteroffer timing and magnitude, we followed our theoretical reasoning and model (see Figure 1) and measured the four specified mediators which were measured after the dependent variables and interaction.

Buyers' Eagerness to Find an Agreement

Participants rated the perceived eagerness of the opposing buyer to purchase the bike on a 7-point Likert scale (7 items; $\alpha = .87$; 1 = *not at all*, 7 = *very much*, e.g., "Did you perceive the buyer as highly motivated to make a deal?").

Sunk Cost Perceptions

We measured how much effort sellers had already mentally invested in the negotiation (3 items; $\alpha = .87$; e.g., “How much effort did you personally put into the negotiation [in %]?”). Participants also indicated via one item how much effort they felt the opposing buyer had already invested in the negotiation (1 item; “How much effort do you feel did the buyer put into the negotiation [in %]?”) for further exploratory analyses.³

Perceived Agency and Communion

Sellers indicated how communal—with the subdimensions warmth ($\alpha = .80$) and morality ($\alpha = .83$)—and how agentic—with the subdimensions assertiveness ($\alpha = .78$) and competence ($\alpha = .83$)—they perceived the buyer (see Abele et al., 2016; 20 bipolar items on a 5-point Likert scale; e.g., *little caring* – *very caring*).

Demographics

Finally, participants provided demographic information, including age, gender, and negotiation experience. The sequence of these measurements was randomized.

Attention and Sincerity Checks

We included an attention check that asked participants which reaction to a specific statement they had chosen during the interaction with the buyer, selecting from a set of predefined options (see Oppenheimer et al., 2009). Further, in the agency and communion item battery, we asked participants to select the ‘middle option’ in another attention check item. Additionally, they answered a sincerity check question on whether they had responded truthfully and conscientiously in the questionnaire or not with all participants confirming this statement.

³ The sunk costs of the buyer have not been preregistered and serve as a mediator for exploratory analyses.

Data Analysis

All data were stored separately from any personal information to ensure complete anonymity. Analyses were conducted using *SPSS 29*, and the moderated mediation model was tested using the PROCESS macro (Model 8; Hayes, 2023).

Results

Following our pre-registered exclusion criteria, five participants deviated more than ± 2.5 *SD* from their respective condition mean and were identified as outliers. Given that including or excluding these participants did not affect the overall pattern and significance of results, we retained these five participants in the analyses to preserve statistical power and to preempt any concerns that the present results might be driven by the exclusion of outliers.

We present our findings in four parts: (1) Replicating anchoring effects in counteroffers, (2) novel counteroffer timing effects, (3) effects of counteroffer magnitude and timing on psychological mechanisms, and (4) full moderated mediation model.

Analyses of Negotiation Behavior and Outcomes Replicate First-offer Anchoring Effects

In the first step, we report the main effects of counteroffer magnitude, thereby replicating established anchoring effects in our counteroffer paradigm. That is, we initially investigated the main effects of counteroffer magnitude on three relevant negotiation outcomes: (i) acceptance rates, (ii) magnitudes of returned third offers, (iii) expected final sale prices, and (iv) buyers' expected reservation prices.

Immediate Acceptance of Buyers' Counteroffers

We conducted an exploratory chi-square test to examine whether sellers were more likely to immediately accept a buyer's accommodating (vs. ambitious) counteroffer. In line with previous research (e.g., Petrowsky et al., 2025), sellers were significantly more likely to accept more accommodating counteroffers (7 accepted; compared to an expected count of 3.5) than the more ambitious counteroffers (0 accepted), $\chi^2(1, N = 213) = 10.01, p = .002$.

The timing did not affect the likelihood of sellers immediately accepting the buyer's counteroffer, $\chi^2(1, N = 213) = 1.99, p = .159$.

Sellers' Returned Third Offer

To analyze the sellers' returned third offers (and expected final sales prices; see subsequent section), we excluded those seven participants who immediately accepted the buyer's counteroffer. These cases did not involve any further negotiation, precluding the assessment of continued negotiation behavior and resulting expected final prices. A 2×2 ANOVA on sellers' returned offers replicated prior anchoring research. Sellers who received a more ambitious counteroffer from buyers also returned a lower (more concessionary) offer themselves ($M = \$134.07, SD = 13.51$) compared to those who received an accommodating (higher) counteroffer ($M = \$146.52, SD = 5.41$), $F(1, 202) = 71.23, p < .001, \eta_p^2 = .261$, confirming H1d. Counteroffer timing did not significantly affect sellers' returned offers, $F(1, 202) = 1.09, p = .298, \eta_p^2 = .005$, and no interaction effect emerged, $F(1, 202) = 0.16, p = .692, \eta_p^2 = .001$.

Expected Final Sales Price

Consistent with extensive anchoring research (e.g., Schweinsberg et al., 2023) and our H1b, we found that counteroffer magnitude significantly affected final sales prices, $F(1, 202) = 175.85, p < .001, \eta_p^2 = .465$. Sellers who received an accommodating (i.e., higher) counteroffer expected higher final sales prices ($M = \$139.04, SD = 6.09$) than those who received ambitious (i.e., lower) counteroffers ($M = \$118.41, SD = 14.14$). Counteroffer timing did not affect final sales price, $F(1, 202) = 0.44, p = .510, \eta_p^2 = .002$, and no interaction emerged, $F(1, 202) = 0.04, p = .839, \eta_p^2 = .000$.

Expected Reservation Prices

In line with H1a, counteroffer magnitude influenced which price the sellers expected the buyers would ultimately pay for the product, $F(1, 209) = 215.82, p < .001, \eta_p^2 = .508$,

which was higher in the accommodating ($M = \$140.84$, $SD = 10.06$) compared to the ambitious counteroffer condition ($M = \$115.09$, $SD = 15.06$). Counteroffer timing did not significantly impact expected reservation prices, $F(1, 209) = 3.52$, $p = .062$, $\eta_p^2 = .017$, nor did a significant interaction emerge, $F(1, 209) = 0.33$, $p = .566$, $\eta_p^2 = .002$.

Put together, these results largely show the expected patterns from first-offer anchoring research being applicable to counteroffers. A more ambitious counteroffer (compared to an accommodating counteroffer) led to a higher impasse risk, lower expected reservation (H1a) and final sale prices (H1b), and more concessionary third offers by the sellers (H1d).

Novel Effects of Counteroffer Timing in Conjunction with Magnitude Effects

After replicating these established anchoring effects, we turned to two negotiation outcomes in which novel timing effects played a role: (v) the expected likelihood of finding an agreement and (vi) competitiveness in negotiation behavior.

Timing Impacts the Expected Likelihood of Finding an Agreement

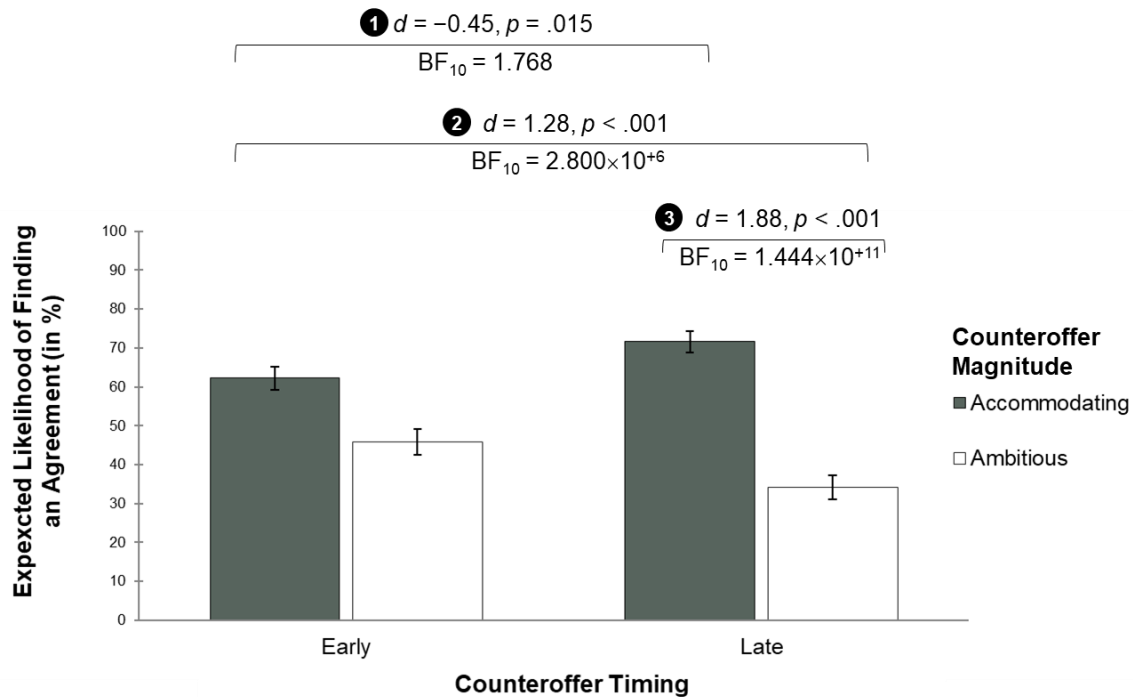
First, consistent with previous research, sellers who received an accommodating counteroffer expected a higher likelihood of finding an agreement ($M = 66.42\%$, $SD = 21.31$) compared to those who received an ambitious counteroffer ($M = 40.63\%$, $SD = 23.89$), $F(1, 202) = 74.86$, $p < .001$, $\eta_p^2 = .270$, thus confirming H1c.

A magnitude $\times$ timing interaction, $F(1, 202) = 11.33$, $p < .001$, $\eta_p^2 = .053$, further showed that the timing of counteroffers moderated the impact of counteroffer magnitude: When buyers made a late *and* accommodating counteroffer, sellers expected the highest likelihood of finding an agreement ($M = 71.59\%$, $SD = 18.54$), even higher than for an accommodating and early counteroffer, $t(97) = -2.20$, $p = .015$, $d = -0.45$, $BF_{10} = 1.768$ (see contrast 1 in Figure 2). If buyers made a late *and* ambitious counteroffer, however, sellers predicted a much lower likelihood ($M = 34.21\%$, $SD = 21.08$), compared to receiving an

accommodating early ($M = 62.29\%$, $SD = 22.63$; $t(101) = 6.49$, $p < .001$, $d = 1.28$, $BF_{10} = 2.800 \times 10^{+6}$, see contrast 2) and an accommodating late counteroffer ($M = 71.59\%$, $SD = 18.54$, $t(90) = -9.00$, $p < .001$, $d = 1.88$, $BF_{10} = 1.444 \times 10^{+11}$, see contrast 3). We did not find a significant main effect of timing, $F(1, 202) = 0.14$, $p = .707$, $\eta_p^2 = .001$.

Figure 2

The Effect of Counteroffer Timing $\times$ Magnitude on the Expected Likelihood of Finding an Agreement



Note. The expected likelihood of finding an agreement is displayed as a function of buyers' counteroffer magnitude (accommodating vs. ambitious) and timing (early vs. late). Results show a main effect of counteroffer magnitude, as well as an interaction showing that later counteroffers decrease (ambitious counteroffers) or increase (accommodating) the expected likelihood of finding an agreement. Bayesian contrasts for early accommodating vs. ambitious (left panel): $d = 0.69$, $p < .001$, $BF_{10} = 70.283$; for ambitious early vs. late (white bars): $d = 0.50$, $p = .006$, $BF_{10} = 3.751$; for early ambitious vs. late accommodating (white left vs. grey right bar): $d = -1.15$, $p < .001$, $BF_{10} = 127,143.12$. Error bars represent the standard error of the mean (SEM).

Timing Impacts the Competitiveness of Sellers' Negotiation Behavior

In addition to the *expected* outcome of the negotiation (i.e., agreement likelihood), sellers also engaged in a simulated negotiation, and we analyzed their behavioral competitiveness. Interestingly, counteroffer magnitude did not significantly affect the sellers' competitiveness in their scripted negotiation interactions, $F(1, 207) = 1.50$, $p = .223$,

$\eta_p^2 = .007$. However, counteroffer timing affected the sellers' competitiveness, $F(1, 207) = 3.94, p = .049, \eta_p^2 = .019$: Sellers who received earlier counteroffers decided more competitively ($M = 10.58, SD = 2.06$) than those who received late counteroffers ($M = 10.05, SD = 1.86$). While this main effect was in line with H3e, no interaction effect emerged, $F(1, 207) = 1.00, p = .319, \eta_p^2 = .005$.

Timing and Magnitude Impact (Some) Psychological Perceptions

In the third step, we sought to illuminate the interactive effects of magnitude and timing on the following psychological mechanisms: (i) eagerness to find an agreement, (ii) sunk-cost perceptions, and (iii) interpersonal perceptions of agency and communion (see Figure 1).

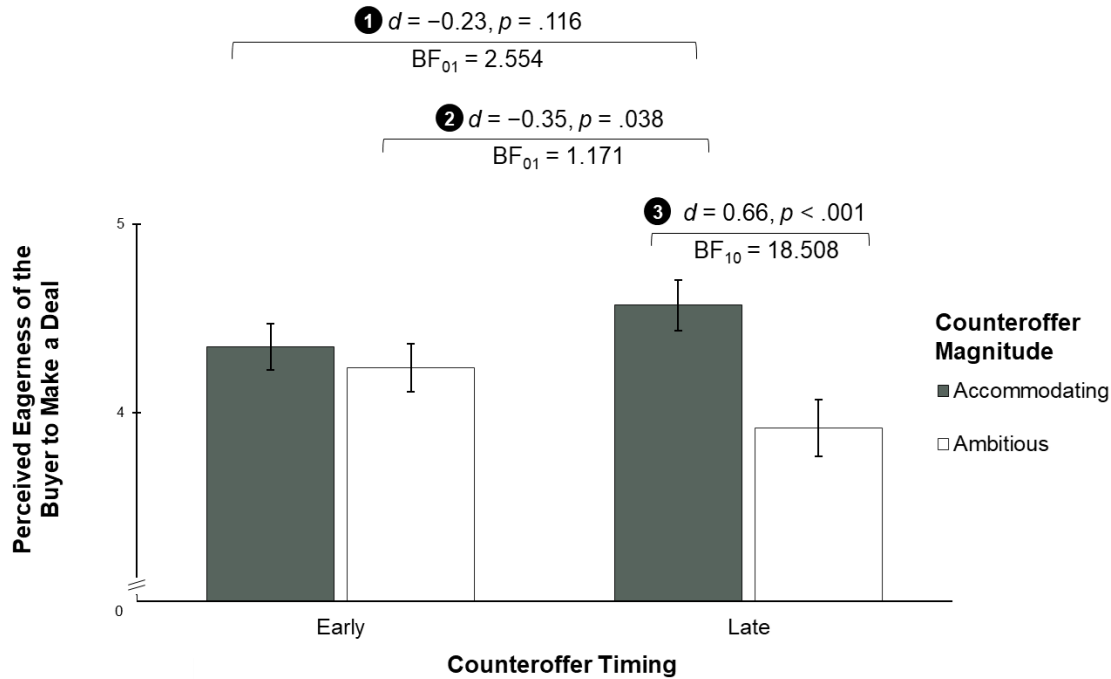
Timing and Magnitude Impact Buyers' Perceived Eagerness to Find an Agreement

Counteroffer magnitude affected how eager sellers perceived buyers to purchase the bike, $F(1, 209) = 8.15, p = .005, \eta_p^2 = .038$. Sellers perceived buyers who made an accommodating counteroffer as more eager to close the deal ($M = 4.45, SD = 0.94$), compared to buyers who made an ambitious counteroffer ($M = 4.09, SD = 1.01$). More interestingly, counteroffer timing moderated this magnitude effect, $F(1, 209) = 3.98, p = .047, \eta_p^2 = .019$: Buyers who made an ambitious counteroffer *late* in the negotiation were perceived as least eager to close a deal ($M = 3.92, SD = 1.04$; see Figure 3). Conversely, buyers who made an accommodating counteroffer late in the negotiation were perceived as *most* eager to close a deal ($M = 4.57, SD = 0.95$; see Figure 3). Put differently, while counteroffer magnitude was not relevant in early counteroffers, $t(114) = 0.65, p = .259, d = 0.12, BF_{01} = 4.192$, late counteroffers amplified the impact of counteroffer magnitude on the perceived eagerness to make a deal, $t(95) = 3.22, p < .001, d = 0.66, BF_{10} = 18.508$ (see contrast 3 in Figure 3). That is, late accommodating counteroffers were perceived as

particularly indicative of a high eagerness in buyers. Yet, we did not find a significant main effect of timing on the perceived eagerness, $F(1, 209) = 0.12, p = .725, \eta_p^2 = .001$.

Figure 3

The Effect of Counteroffer Timing $\times$ Magnitude on Buyers' Perceived Eagerness to Reach a Deal



Note. The buyers' perceived eagerness to reach an agreement as a function of counteroffer magnitude (accommodating vs. ambitious) and timing (early vs. late). Results reveal a magnitude main effect—accommodating offers signal more eagerness than ambitious ones—as well as an interaction in that late counteroffers increase (ambitious counteroffers) or decrease (accommodating) the buyer's perceived eagerness. Bayesian contrasts for early accommodating vs. ambitious (left panel): $d = 0.12, p = .259, BF_{01} = 4.192$; for ambitious early vs. late (white bars): $d = 0.31, p = .055, BF_{01} = 1.536$; and for early accommodating vs. late ambitious (grey left vs. white right bar): $d = 0.44, p = .014, BF_{10} = 1.879$. Error bars represent the standard error of the mean (SEM).

Timing and Magnitude Impact Sunk-Cost Perceptions

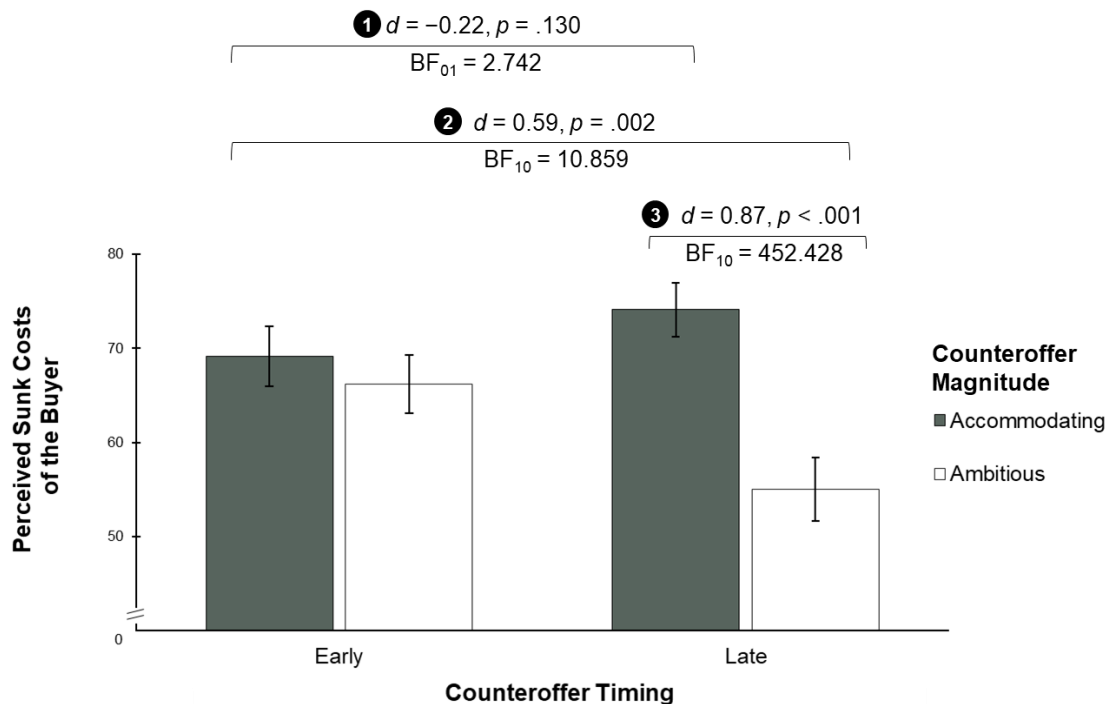
Sellers' own perceived sunk costs were not affected by counteroffer magnitude, $F(1, 209) = 2.87, p = .092, \eta_p^2 = .014$, nor timing, $F(1, 209) = 0.96, p = .329, \eta_p^2 = .005$ (interaction: $F[1, 209] = 2.12, p = .147, \eta_p^2 = .010$).

However, counteroffer magnitude significantly affected sellers' perceptions of buyers' sunk costs, $F(1, 209) = 12.09, p < .001, \eta_p^2 = .055$: Sellers perceived buyers who sent an accommodating counteroffer to have put more effort into the negotiation ($M = 71.46\%$,

$SD = 22.47$), compared to buyers who made an ambitious counteroffer ($M = 61.19\%$, $SD = 24.21$). In addition, counteroffer timing moderated the magnitude effect, $F(1, 209) = 6.43, p = .012, \eta_p^2 = .030$: When buyers made an ambitious counteroffer *late* in the negotiation, sellers perceived the buyer to have put least effort into the negotiation ($M = 55.04\%$, $SD = 23.59$), compared to buyers making an early and accommodating ($M = 69.18\%$, $SD = 24.18$), $t(103) = 3.02, p = .002, d = 0.59, BF_{10} = 10.859$ (see contrast 2 in Figure 4), or late and accommodating counteroffer ($M = 74.12\%$, $SD = 20.21$), $t(95) = 4.28, p < .001, d = 0.87, BF_{10} = 452.428$ (see contrast 3 in Figure 4). The main effect of timing on the perceived buyers' sunk costs was not significant, $F(1, 209) = 0.95, p = .330, \eta_p^2 = .005$, ($M = 67.66\%$, $SD = 23.89$ for early and $M = 64.68\%$, $SD = 23.85$ for late).

Figure 4

The Effect of Counteroffer Timing $\times$ Magnitude on the Perceived Sunk Costs of the Buyer



Note. Sellers' perceptions of buyers' sunk costs as a function of counteroffer magnitude (accommodating vs. ambitious) and timing (early vs. late). Results reveal an interaction in that late accommodating (ambitious) counteroffers substantially increase (decrease) the perceived sunk costs of the buyer. Bayesian contrasts for early accommodating vs. ambitious (left panel): $d = 0.13, p = .251, BF_{01} = 4.133$; for ambitious early vs. late (white bars): $d = 0.47, p = .009, BF_{10} = 2.720$; and for early ambitious vs. late accommodating (white left vs. grey right bar): $d = -0.36, p = .034, BF_{01} = 1.072$. Error bars represent the standard error of the mean (SEM).

Magnitude and Timing Impact Perceptions of Morality

Sellers perceived buyers who made an accommodating counteroffer as more moral ($M = 3.34$, $SD = 0.58$) compared to buyers who made an ambitious counteroffer ($M = 2.96$, $SD = 0.59$), $F(1, 209) = 24.51$, $p < .001$, $\eta_p^2 = .105$. Again, a significant interaction effect emerged, $F(1, 209) = 24.51$, $p = .013$, $\eta_p^2 = .029$: Buyers who made an ambitious counteroffer late in the negotiation were perceived as markedly less moral ($M = 2.80$, $SD = 0.53$) than buyers who made an accommodating late counteroffer ($M = 3.39$, $SD = 0.55$, $t(95) = -5.36$, $p < .001$, $d = -1.09$), or buyers who made early counteroffers ($M = 3.30$, $SD = 0.60$ for accommodating, $t(103) = -4.45$, $p < .001$, $d = -0.87$, and $M = 3.10$, $SD = 0.60$ for ambitious, $t(105) = -2.75$, $p = .004$, $d = -0.53$). No significant effects emerged for the main effect of timing on morality, $F(1, 209) = 1.80$, $p = .181$, $\eta_p^2 = .009$, nor the other Big Two dimensions (all $F_s[1, 209] < 3.14$, all $p_s > .078$).

Moderated Mediation Model

Given that the results of the previously performed analyses show moderation effects for the expected likelihood of reaching an agreement, we next conducted moderated mediation analyses as depicted in Figure 5 below.⁴ Counteroffer magnitude served as the main predictor, counteroffer timing as the moderator, and—in line with the previously established mediation a-paths—perceived morality and eagerness to find an agreement as multiple mediators.⁵ The moderated mediation model was tested with 5,000 bootstrapped samples (Hayes 2023, Model 8).

We found a significant index of a moderated mediation for the perceived eagerness of the buyer to close a deal, $IMM = 2.54$, 95% CI [0.024, 6.395]. The conditional indirect effect

⁴ For the results of the full model (Figure 1), please refer to the SOM.

⁵ We decided to exclude perceptions of the buyers' sunk costs as a mediator for multicollinearity concerns; that is, the mediator correlated and conceptually overlapped with buyers' perceived eagerness to find an agreement ($r = .41$, $p < .001$). When including the perceptions of the buyers' sunk costs, the moderated mediation of eagerness became marginally insignificant with $b = 2.27$, 95% CI [-0.062, 6.237].

was not significant for early counteroffers, $b = 0.37$, 95% CI $[-1.314, 2.355]$, but it was significant for late counteroffers, $b = 2.91$, 95% CI $[0.491, 6.604]$. In other words, sellers who received an accommodating counteroffer late during the negotiation perceived the buyer to be more eager to close a deal and hence had higher expectations of finding an agreement than sellers who received an ambitious late counteroffer.

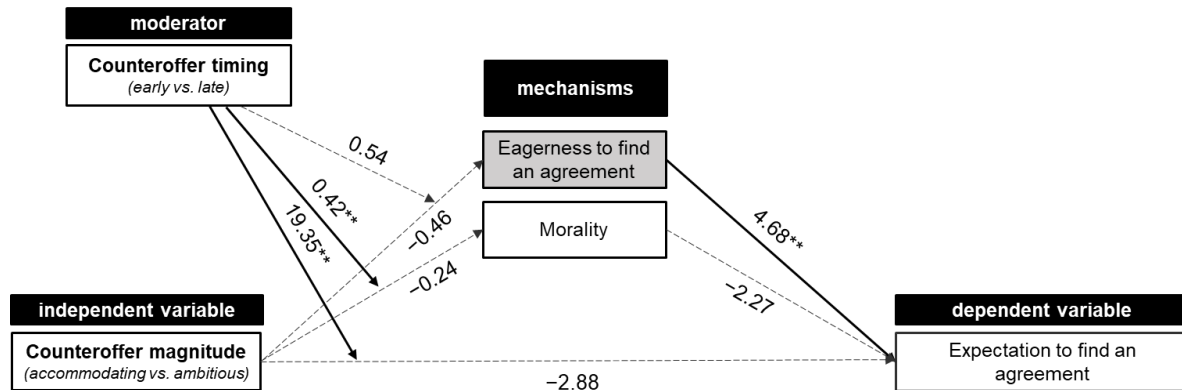
Corroborating prior findings, results indicated that the interactions between magnitude and timing on (1) buyers' perceived eagerness was marginally significant, $b = 0.54$, $p = .050$, $\Delta R^2 = .018$, and (2) on the seller's expected likelihood to find an agreement was significant, $b = 19.35$, $p = .002$, $\Delta R^2 = .033$.

Underlining the effects of the moderated mediation, the conditional effects of magnitude on perceived eagerness (see 'a-path'; Hayes 2023), were not significant for early counteroffers, $b = 0.08$, $SE = 0.18$, $t = 0.43$, $p = .668$, but were significant for late counteroffers, with $b = 0.62$, $SE = 0.20$, $t = 3.03$, $p = .003$. Finally, the perceived eagerness significantly affected the expected likelihood of finding an agreement (see 'b-path'; $b = 4.68$, $SE = 1.59$, $t = 2.95$, $p = .004$). For the direct effect of counteroffer magnitude on the expected agreement likelihood (see c' path), we did not find a significant effect, $b = -2.88$, $p = .760$, suggesting full mediation.

The moderated mediation for morality was not significant, $IMM = -0.96$, 95% CI $[-3.538, 1.438]$.

Figure 5

Moderated Mediation Model of Counteroffer Timing and Magnitude on Expected Likelihood of Finding an Agreement



Note. The figure illustrates the regression coefficients for the moderated mediation analysis. Sellers' perceptions of buyers' eagerness to reach an agreement mediated the relationship between counteroffer magnitude and impasse risk. Counteroffer timing moderated the direct effect (c-path). Dashed arrows represent non-significant effects, * $p < .05$, ** $p < .01$, *** $p < .001$. For the results of the full model (Figure 1), please refer to the SOM.

Discussion

This study sought to elucidate the influence of counteroffer timing and magnitude on distributive negotiation behaviors and outcomes in synchronous negotiations. We specifically focused on the impact that these two factors have on the counteroffer receivers' perceptions and subsequent negotiation behavior. Our findings provide new insights that contribute to the broader theoretical understanding of negotiation dynamics and suggest practical implications for negotiation strategies.

First, the data extend a well-documented first-offer anchoring effect to counteroffers. The findings demonstrate that the magnitude of the counteroffer significantly influences negotiation outcomes: Sellers who received ambitious counteroffers expected lower reservation and settlement prices and returned lower subsequent offers than those who received an accommodating counteroffer from opposing buyers. This aligns with prior theorizing and empirical findings on anchoring (e.g., Kahneman & Tversky, 1974; Petrowsky et al., 2025; Schweinsberg et al., 2023), where ambitious counteroffers have been shown to

serve as counter-anchors, guiding the negotiation towards more favorable outcomes for the second-moving negotiator. Hence, this empirical finding corroborates the preliminary results of Lipp et al. (2023).

Second, this study establishes a novel effect in showing that the timing of the counteroffer also plays a critical role in synchronous negotiations. Although delaying counteroffers for a couple of minutes did not directly affect the returned third offer nor the final settlement prices, psychological perceptions and the expectation to reach an agreement (see Schweinsberg et al., 2023) were markedly impacted: Buyers' immediate counteroffers caused sellers to act less cooperatively compared to later counteroffers (see Adair et al., 2007). The interaction of counteroffer magnitude and timing revealed further nuanced effects: *late and ambitious* counteroffers decreased (1) the expected likelihood of finding an agreement, (2) the perceived eagerness of the buyer to find an agreement, and (3) the perceived effort that the buyer put into the negotiation. In contrast, *late and accommodating* counteroffers (4) increased the deal likelihood, as well as (5) buyers' perceived invested effort and eagerness to reach a deal. These timing effects thus also address the comparably understudied phenomenon of impasses (see also Boothby et al., 2023; Maaravi & Levy, 2017; Petrowsky et al., 2023; Schweinsberg, 2012; 2022; 2023). Impasses can result in substantial economic and relational costs and understanding the factors that influence the likelihood of reaching an agreement helps to mitigate these negative outcomes. The present findings offer new empirical evidence on how counteroffer strategies can prevent negotiation breakdowns.

Limitations and Future Research

As with any research, the present study is not without limitations that warrant further exploration. One notable limitation is common to the negotiation literature (see Petrowsky et al., 2025)—the experimental setting is controlled but also somewhat artificial in nature, thereby not fully capturing the complexity of real-world negotiations. Future research should

replicate the present findings in other (real-world) settings across diverse negotiation contexts to test the generalizability and external validity of the present results. Second, we wish to transparently disclose that the tactical delay in making a “later” counteroffer was only a few minutes—that is, after an exchange of several scripted messages with the opposing buyer. Future studies may assess whether (1) there are potentially stronger (or weaker) effects for longer delays (i.e., hours or days) in face-to-face negotiations (see Teichmann et al., 2025 for effects of longer delays in asynchronous online negotiations) and (2) the relationship of timing and negotiation outcomes is even linear or rather of non-linear (e.g., quadratic) nature (see Loschelder et al., 2016b; Schweinsberg et al., 2023).

Third, the present findings did not find that the timing affected the sunk costs of the seller (our participants). Specifically, we manipulated the timing of buyers’ counteroffer but held the effort that had been put into the negotiation (i.e., interaction with buyers via scripted statements) consistent across both timing conditions. Although this allows for experimentally control for the actual invested effort and isolates the effect of counteroffer timing on perceived sunk costs to a perceptual level, future studies should assess whether real-world face-to-face interactions may lead to factually higher sunk costs on behalf of sellers as their actual invested effort may also increase due to delayed counteroffers from potential buyers.

Fourth, our study focused on the initial stages of negotiation and did not find systematic effects of buyers’ counteroffer timing on sellers’ subsequent offers or predicted final settlement prices. Future research should expand this focus to the ongoing negotiation process of dyadic negotiations, as well as to potential effects on long-term relationships between parties. Although we do not find a direct effect of counteroffer timing on sellers’ subsequent offers and expected final settlement prices, we do *not* mean to claim that such timing effects would be absent under any circumstance. Longer timing delays, longer interactive, dyadic negotiation exchanges, and/or actual real-world incentives from lower sale

prices might lead to an emergence of significant counteroffer timing effects. The present study seeks to make a first contribution to this important, yet under-researched aspect of making counteroffers in buyer-seller negotiations.

Conclusion

In conclusion, we seek to offer novel insights into the strategic importance of counteroffer timing and magnitude in distributive negotiations. By understanding the psychological underpinnings of these variables and their effect on impasse risks, negotiators can make more informed decisions, optimizing their strategies to achieve better outcomes. The findings underscore the need for a balanced approach, where negotiators' perceived competitiveness is tempered with strategic timing. Future research should continue to explore these dynamics, contributing to a deeper understanding of counteroffer timing that extends the literature's focus beyond the ubiquitous effects of offer magnitude.

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Paper 3: How the Timing of Texting Triggers Romantic Interest After the First Date: A Curvilinear U-Shaped Effect and its Underlying Mechanisms

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Abstract

How and why does the timing of texting after a first date impact people's relationship intentions? Based on previous literature, we developed and empirically tested three competing predictions—a linearly positive, negative, or inverted U-shaped effect—of text timing on relationship intentions. We also explored the underlying mechanisms (i.e., thoughts about the sender, relative mate value, perceived neediness, reciprocity, and reliability of the texter). Based on a pre-study ($N = 100$), we determined the experimental manipulation with texting (a) immediately after the date, (b) the next morning, or (c) after two days. The main experiment ($N = 543$) showed a curvilinear effect: texting the next morning led to the highest relationship intentions and perceived chemistry. Women were more sensitive to these text timing effects. Mediation analyses highlighted the roles of perceived reciprocity and reliability in influencing attraction and relationship intentions.

Keywords: love, texting, romantic relationships, attractiveness, dating

How the Timing of Texting Triggers Romantic Interest After the First Date:

A Curvilinear U-Shaped Effect and its Underlying Mechanisms

I'm gonna call her right now. I'm gonna do that whole: "Hey, remember me? It's been so long." See, it's funny because I just saw her.

- Ted Mosby

Dude, you can't call her. You have to wait three days to call a woman. That's the rule.

- Barney Stinson

(Malins, 2009)

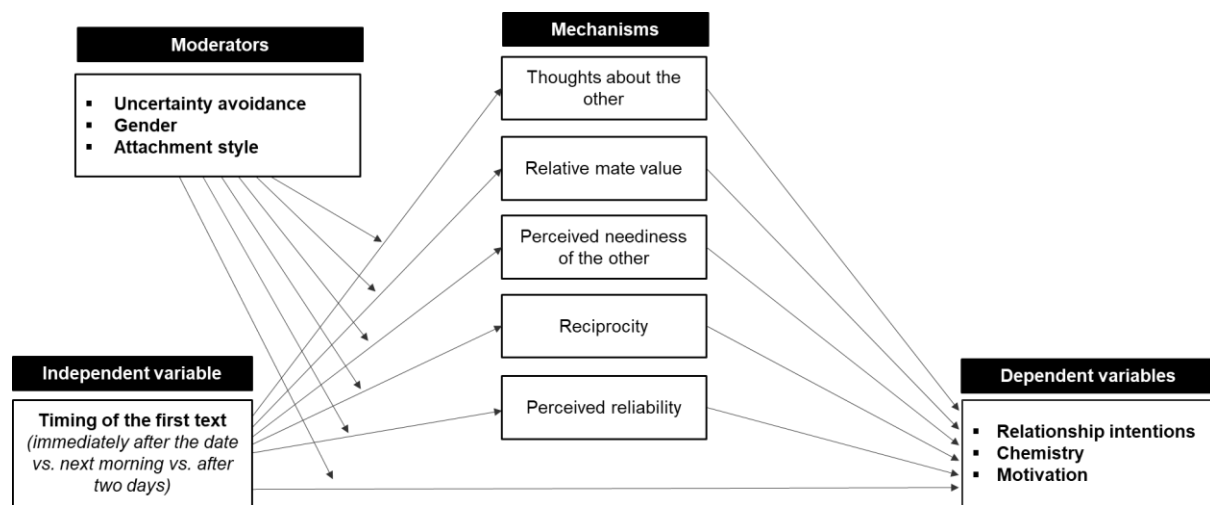
Pop culture often highlights the uncertainties around the timing of reinitiating contact after a date. A notable example comes from the TV series *How I Met Your Mother*, where Ted, after getting a woman's number in a pub, wants to call her immediately. His friend Barney, however, strongly advises him to follow the "Three-Day Rule", suggesting that one should wait three days before contacting a potential date to avoid appearing too eager and needy. Similarly, a substantial amount of anecdotal advice on when to reinitiate contact is available in pop cultural guidebooks and online, with 9.2 billion Google search results for "when to text after the first date". Recommendations range from "to shoot them a text if you're into them" (Keegan & McClure, 2021) to "follow up within 2-3 days to meet up again" (Drillinger & Rising, 2021). To the best of our knowledge, no empirical evidence supports any of these arbitrary claims. We thus intend to better understand how the timing of texting impacts the chances of a desired partner being more (less) interested in entering a romantic relationship (i.e., relationship intentions).

So, when do you best text after the first date? Immediately afterwards? On the next morning? Or play hard-to-get and wait two days before writing? We conducted two studies with the aim to provide insights into (a) the optimal point in time to text after the first date to

increase relationship intentions, (b) the psychological mechanisms (thoughts about the other person, perceived reliability, perceived neediness, status imbalance, and reciprocity) that can explain the effect of text timing on relationship intentions, and (c) the interpersonal characteristics that moderate how individuals react to different message timing (uncertainty avoidance, attachment style, gender; Figure 1).

Figure 1

Moderated Mediation Model of the Text Timing on Romantic Outcomes



Note. The five competing mechanisms mediate the impact of text timing on relationship outcomes with potential moderating impacts of gender, attachment style and uncertainty avoidance.

Theoretical Background and Competing Predictions

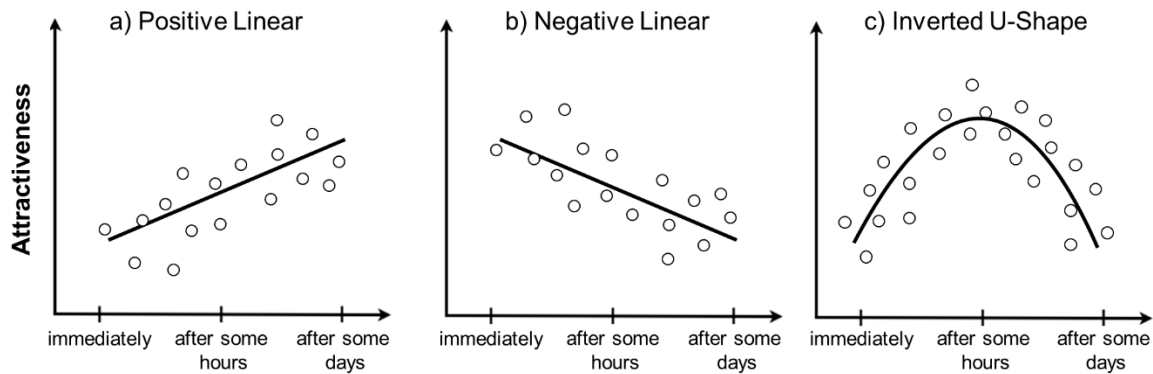
Based on extant research and theorizing (see below), we can plausibly predict three different patterns of results for how the timing of texting after the first date impacts the relationship intentions, chemistry, and motivation of the text receiver (Figure 2; see Loschelder et al., 2017): (a) a positive linear relationship—with waiting longer evoking *higher* relationship intentions, perceived chemistry, and motivation to engage in a romantic relationship (Figure 2a)¹, (b) a negative linear relationship—with waiting longer evoking *less*

¹ This prediction refers to a timeframe of minutes to multiple days. By a positive linear relationship, we are referring to a maximum of a week. Of course, we do not expect that taking months or years to respond leads to higher relationship intentions.

relationship intentions, chemistry and motivation (Figure 2b), or (c) a curvilinear, inverted-U effect—with waiting a moderate amount of time having benefits but waiting for too long backfiring (Figure 2c).

Figure 2

Plausible Effects of How Text Timing Impacts Relationship Intentions



Note. The data points are exemplary to illustrate possible types of effects.

Predicting a Positive Relationship

A common dating strategy is “playing hard-to-get” to increase one’s own perceived attractiveness and attracting potential mates (e.g., Birnbaum et al., 2020; Hudson, 2016; Merriam-Webster, 2022; Nicholson, 2016; University of Rochester, 2020; Wright & Contrada, 1986). For example, specific tactics of playing hard-to-get may be to take longer to initiate contact after dates, to take longer to respond to messages or to give sexual hints but withhold sexual activities (Crawford & Popp, 2003; Hazel et al., 2023, Jonason & Li, 2013). For readability and simplicity (see Dai et al., 2014), we will describe the person who applies this strategy as the *initiator* and the person who is the target of the strategy as the *target* (because the aim is to influence this person’s evaluation).

Why should taking longer to reach out after the first date increase the relationship intentions towards the initiator (Figure 2a)? First, by making use of this strategy, people

create *uncertainty* about their romantic or sexual interest toward a potential target, and hence, create a scenario where the interested mate must exert significant effort to gain their attention (Bowen & Gillath, 2020). This uncertainty can enhance excitement and curiosity about a potential partner (Birnbaum, 2018).

Second, not knowing when the initiator will text after the first date may lead the target to think more about the initiator. These recurring thoughts may be interpreted as feeling attracted to the other person (e.g., “The person continually comes to my mind. That must mean I have feelings for her”; Hazel et al., 2023). Bem’s established self-perception theory (1972) supports this, positing that targets associate more frequent thoughts about a particular person as a sign of attraction (Whitchurch et al., 2010).

Third, playing hard to get may also be beneficial because of the scarcity principle, in that something that is difficult to obtain is seen as more desirable (Aggarwal et al., 2011; Cialdini, 2009; Jang et al., 2015). Initiators who play hard-to-get intentionally aim to be romantically elusive to attract potential mates (Finkel & Eastwick, 2009). They bet on the assumption that having to work hard to convince a potential initiator must imply the best possible outcome for the target. Accordingly, people who are difficult to attract in dating are perceived as more desirable or having a potentially higher mate value (Birnbaum et al., 2020; Eastwick et al., 2007). Conversely, those who appear more needy of a relationship and generally show interest in multiple potential partners instead of being selective may be perceived as less desirable (Eastwick et al., 2007).

Predicting a Negative Relationship

In stark contrast, at least three streams of prior research suggest a potentially negative influence of text timing on relationship intentions (Figure 2b). First, people generally like reciprocity, also in the case of romantic attraction: we like those who like us back (Aronson & Worchel, 1966; Finkel & Eastwick, 2009; Gouldner, 1960; Koranyi & Rothermund, 2012;

Luo & Zhang, 2009). The reciprocity of attraction occurs in the in the early stages of contact and people strongly expect their attraction and flirting to be reciprocated; they feel discomfort when it is not (Back et al., 2011; Clark et al., 2019). Conversely, showing less affection or taking longer to reinitiate contact after the first date might therefore be perceived as a violation of reciprocity, leading to adverse effects on attractiveness perceptions and relationship intentions.

Second, people feel most attracted to those that are clear and decided about their intentions and those who like us best (Birnbaum, 2018; Montoya et al., 2015; Spielmann & MacDonald, 2016). Hence, the initiator taking longer to initiate contact after the first date may lead the target to perceive the initiator as being less interested and having more unclear intentions. This, in turn, would lead the target to feel less attracted to the initiator. Third, taking longer to respond may be perceived as being less reliable. Reliability is seen as a desirable trait in potential mates (Valentine et al., 2019), which may result in hard-to-get initiators being perceived as less attractive. In sum, these findings suggest a negative relationship in that texting later after the first date leads to impaired interpersonal perceptions, attractiveness, and relationship intentions (see Figure 1b).

Predicting a Curvilinear Inverted-U Relationship

Finally, there may “too much of a good thing” (Grant & Schwarz, 2011), resulting in a curvilinear effect in the form of an inverted-U: While there may be initial benefits of letting some time pass before texting, waiting too long could backfire (see Loschelder et al., 2016; Nols et al., 2024). In all, a sweet spot for ideal texting after the first date exists. Supporting this notion, a goal becomes more attractive when it is moderately difficult to reach compared to when it is too easy or too difficult to reach (Richter et al., 2016). This is sported by motivational intensity theory (Brehm, 1999; Brehm & Self, 1989; Roberson & Wright, 1994; Wright & Brehm, 1984), which assumes that emotional intensity and goal attractiveness

increase with difficulty of goal attainment but drop off if the task seems too costly or even impossible. For texting after the first date, an initiator that texts too soon might be perceived as undesirable and needy of a relationship. The goal would be too easy to attain and would not appear attractive enough to pursue. Conversely, an initiator texting too late might appear uninterested. Consequently, a target might perceive that getting the initiator to like them is too difficult to attain. Prior research supports this reasoning: When targets knew that a potential partner was unattracted to them (i.e., possibly by playing too hard-to-get) or highly attracted to them (i.e., too “easy” to get), they felt less attracted to the partner (Reysen & Katzarska-Miller, 2013). Similarly, initiators who were described as moderately available (vs. unavailable or highly available) were preferred for dating and committed relationships (Jonason & Li, 2013).

Contrasting Predictions

With this study, we intend to empirically examine these competing predictions (Figure 2), assessing whether text timing texting after the first date exerts a positive or negative linear, or an inverted U-shaped effect on relationship intentions. Although one can derive all three competing predictions from prior theorizing and findings, we deemed the inverted U-shape effect as most plausible and thus pre-registered the respective hypotheses (see below).

Exploratory Moderators

Beyond the nature of the timing effects and their underlying mechanisms, we intended to examine possible moderating factors—namely, target’s gender, attachment style, and uncertainty avoidance (Figure 1).

Target’s gender

Men have a greater tendency to pursue initiators who play hard-to-get compared to women (i.e., “enjoying the chase”; see Bowen & Gillath, 2020). This may be due to

traditional sex and gender stereotypes that present men as relatively more active and dominant, whereas women are presented as relatively more passive and submissive (Siegel & Meunier, 2018). Specifically, these predictions align with the Sexual Scripting Theory, or sexual scripts (Simon & Gagnon, 1969). According to this theory, there are culturally shared guidelines for sexual behaviour that operate at cultural level, with men typically being more active in chasing a partner and sex, whereas women's "gatekeeper" script suggests that women delay sexual activity and build boundaries that men should overcome (Sakaluk et al., 2014; Wiederman, 2005). These gendered scripts not only shape behaviors but also reinforce societal expectations, influencing how individuals interpret and respond to courtship dynamics. For instance, the "chase" narrative may serve to validate traditional notions of masculinity and sexual success, while the "gatekeeping" script reinforces perceptions of femininity tied to restraint and selectivity. Interestingly, these differences are not only based on societal guidelines but are widespread in the animal kingdom (e.g., Janicke et al., 2016).

Attachment Style

Attachment style constitutes the patterns of expectations, needs, and emotions that individuals exhibit in interpersonal relationships (e.g., secure and anxious attachment, Shalit et al., 2010; Travis et al., 2001). Previous research indicates that anxiously attached targets pursue others who play hard-to-get for challenge reasons (see prediction for men), capturing their desire to find a partner representing the reward of long-term commitment, compared to more avoidant or securely attached targets (Bowen & Gillath, 2020).

Uncertainty Avoidance

Uncertainty avoidance is defined as the extent to which individuals feel threatened by some unknown of an uncertain situation (Hofstede, 2011). Individuals who are more likely to avoid uncertainty should (a) think less about, and (b) have fewer relationship intentions with initiators who play hard-to-get and who evoke uncertainty (see Richards, 2013).

Present Study – Contributions and Overview

It is currently unclear how playing hard-to-get—operationalized as the timing of texting after a first date—impacts individuals' relationship intentions. Following the call for further research on this topic (e.g., Hazel et al., 2023), we seek to establish a comprehensive understanding of when, how, and why the timing of texting after the first date is more versus less effective in fostering relationship intentions. We seek to expand prior research in three ways: First, we aim to establish the effect of text-timing after a first date on relationship intentions and to assess whether this effect is positive, negative, or inverted-U-shaped. Second, we seek to explore various competing underlying mechanisms (liking, reciprocity, mate value imbalance, etc.) that illuminate the respective relationship. Third, we want to investigate whether and how gender, attachment style, uncertainty avoidance moderate the text-timing effect. In all, we aim to test a moderated mediation model (Figure 1) that comprises enhancing (thoughts, higher partner value) as well as hindering mediators (reciprocity, reliability) simultaneously.

To empirically test this moderated mediation model, as well as the nature of the relationship of text timing and relationship intentions, we first conducted a pre-study to examine plausible time intervals for texting after the first date. Based on these data, we then conducted an Experiment 1 with a 3 (*timing*: text immediately after the date vs. next morning vs. after two days) $\times$ 2 (*gender*: men vs. women) between-subjects design.

Summary of Hypotheses

As mentioned before, we deemed the quadratic inverted U-shape effect most plausible prior to conducting this experiment and pre-registered these predictions accordingly. We thus proposed the main hypothesis that letting a moderate amount of time pass (texting on the next morning) after the first date should be most impactful: Participants who receive the first text on the next morning will (H1a) perceive higher relationship intentions, (H1b) want the

initiator more, and (H1c) feel more chemistry than participants who received the text immediately after the date or after two days.

For the mediators, we predicted:

(H2): *Delaying the text until the next morning* will lead participants to think about the initiator more intensely than participants who received the text immediately after the date or after two days.

(H3): *Texting immediately after the date* will lead to a divergent set of (both positive and negative) interpersonal perceptions. Specifically, participants who receive the first text immediately after the date perceive (a) perceive a greater status imbalance between the initiator and themselves, perceive the initiator (b) to desire a relationship more, (c) to be liking the participant more, and (c) to be more reliable, compared to participants who received the text on the next morning or after two days.

Mediation Hypotheses

(H4): We predict that the psychological mediators listed above would account for the effect of text-timing on the dependent variables as (see Figure 1).

Moderation Hypotheses

We hypothesized the following moderation effects:

(H5a): An anxious attachment style of the target is expected to strengthen the positive effect of texting after a moderate amount of time has passed, compared to an avoidant or secure attachment style.

(H5b): Male targets are more influenced by the effects of text timing, hence strengthening the positive effects of texting after a moderate amount of time has passed, compared to female participants.

(H5c): Targets who are uncertainty avoidant are less prone to the positive effects of texting after a moderate amount of time has passed, compared to not being avoidant of uncertainty.

Open Science and Transparency Statement

We preregistered the present study. We made all data, analyses scripts, preregistration, and additional files publicly available in the Supporting Online Materials (SOM) on the Open Science Framework (OSF, https://osf.io/kfdth/?view_only=bc9e006698b547efb0646ad8d87ffd1d).

Pre-study

Participants and Method

To identify which timepoints for texting after the first date we should convert into manipulations, we conducted a pre-study with $N = 100$ U.S. & UK participants (50 women and 50 men, $M_{\text{age}} = 37.82$ years, $SD = 12.40$, range: 18–68 years). We recruited participants via Prolific—a participant recruitment network with high data quality (Peer et al., 2021)—and asked them when their date should text for them to have the highest relationship intentions with the initiator. To explore the possibility of an inverted U-shaped effect (i.e., an initiator texting too early or too late) and to define comparable manipulation categories, we also asked participants what would be ‘too soon’ and ‘too late’ for their date to text. Participants received the recommended hourly wage of above £6.00 at Prolific.

Results

On average, participants had the highest relationship intentions to an initiator who texted after almost six hours ($M_{\text{hours}} = 5.86$, $SD = 10.88$). Participants also indicated that texting sooner than approximately 20 minutes after the date would be too soon, ($M_{\text{hours}} = 0.30$; $SD = 2.96$) and texting later than 40 hours after the date would be too late ($M_{\text{hours}} = 40.42$, $SD = 34.08$). In all, this result pattern is most compatible with a curvilinear, inverted-U

pattern of results (see Figure 2c). There were no significant gender differences in the indicated timepoints of texting too early, too late, or ideally (all $t_s < 0.39$ and $p_s > .695$).

Main Experiment

Methods

Participants and Sample Size Analysis

The target sample size of 508 resulted from an a priori power analysis using G*Power (Faul et al., 2007) for a 3×2 ANOVA (i.e., 2 dfs for main and interaction effects), with an assumed conventionally ‘small-to-medium’ effect size of $f = 0.175$, $\alpha = .05$, $1 - \beta = .95$.

Anticipating failed attention checks, we recruited 543 heterosexual participants from the U.S. and UK in April 2024 (270 women and 273 men, $M_{\text{age}} = 40.31$ years, $SD = 12.98$, range: 18–79 years, native English speakers) via Prolific. Of all participants, 73.52% were born in the UK, 13.52% were born in the U.S., and 12.96% were born in other countries, with 54.26% being employed full-time, 16.11% part-time, and 29.63% among “other”. On average, participants completed 229.70 studies and were approved by other study administrators. Participants were reimbursed with an average hourly wage of £8.44.

Experimental Design and Procedure

The experiment realized a 3 (timing: immediately after vs. on the next morning vs. after two days) $\times$ 2 (gender: male vs. female) between-subjects design. We administered the online questionnaire via SoSciSurvey. Participants read a fictitious scenario of a first date—dinner in a nice Italian restaurant (for the full verbatim description, see SOM). After immersing in this scenario, participants received, as a function of their randomly assigned between-subjects condition, the following information: (a) “After your date, the other person texted you immediately after having said goodbye at the end of your date”, (b) “After your date, the other person texted you on the next morning”, or (c) “After your date, the other person texted you after two days”.

Dependent Variables: Relationship Intentions, Chemistry, and Motivation

We assessed three key dependent variables. First, participants reported their relationship intentions with their date (five items², Cronbach's $\alpha = .90$; e.g., "I am willing to form a long-term relationship with my date"; adapted from Eastwick et al., 2007). Second, participants reported how much chemistry they perceived with their date (three items, Cronbach's $\alpha = .93$; e.g., "my date and I had a real connection", also adapted from Eastwick et al., 2007). Finally, as adapted from Dai et al. (2014), they reported how motivated they were to get in touch with the other again (three items, Cronbach's $\alpha = .93$; e.g., "how motivated are you to talk to your date again?"). All items consisted of a 9-point Likert scale.

Psychological Mediators

Participants completed a questionnaire measuring the five mediators (see Figure 1). All items were accompanied by a 9-point-Likert scale ranging from *not at all* to *very much* and for mate value, they ranged from e.g., *other more desirable* to *yourself more desirable*, depending on the item.

Thoughts About the Other. Participants answered "how intensively they would expect to think about the other person between the date and the other person's text message" (single item; adapted from Whitchurch et al., 2010).

Mate Value. Further, they were asked how balanced they perceived their own and the other's mate value (i.e., the relative mate value; four items, Cronbach's $\alpha = .85$; e.g., "overall, how would members of the opposite sex rate your level of desirability as a partner compared to your date?", adapted from Edlund & Sagarin, 2014).

² We performed exploratory factor analyses for all dependent variables to test whether the included items indeed assess the one assumed underlying construct. Indeed, for all dependent measures, all items loaded on one single factor with Eigenvalues > 2.43 , more than 68.52% of explained variance, and consistently high factor loadings, $\lambda_s \geq .369$ (see supplementary materials for factor analyses of all outcome variables).

Perceived Neediness. We asked participants how needy they perceived the other to form a relationship (three items, Cronbach's $\alpha = .88$; e.g., "How much does the other person crave a romantic connection?").

Perceived Reciprocity. Participants also indicated how much they expected the other to like him/her (five items, Cronbach's $\alpha = .91$; e.g., "my date is sexually attracted to me"; adapted from Eastwick et al., 2007).

Perceived Reliability. Participants rated how reliable they perceived their date (five items, Cronbach's $\alpha = .94$; e.g., "Do you feel confident relying on the other person in times of need?").

Three Potential Moderators

For the moderated mediation model (see Figure 2), we also measured three potential moderators: (1) participants' attachment style with the ECR-RS (eight items, Cronbach's $\alpha = .88$; adapted from Fraley et al., 2006; e.g., "I don't feel comfortable opening up to this person" about their current, former, or prospective partner). We measured (2) uncertainty avoidance, particularly cognitive uncertainty (CU) and emotional uncertainty (EU), with the Uncertainty Response Scale (eight items, Cronbach's $\alpha = .90$ and $.86$; adapted from Greco & Roger, 2001; e.g., "I like to plan ahead in detail rather than leaving things to chance" [CU] and "I feel anxious when things are changing" [EU]). Finally, participants reported (3) which gender they identified with as the third and final moderator. Item order within batteries was randomized.

Data Analysis

We stored the data separately from any personal information to ensure complete data anonymity. We analyzed the data using SPSS 29. To assess the moderated mediation model, we used the Process macro by Hayes (2023) and model 8.

Results

Main Analyses

Relationship Intentions. In line with (H1a), a 3 (*timing of text*) $\times$ 2 (*gender*) ANOVA³ showed that the timing of texting after the first date significantly impacted the relationship intentions of the target, $F(2, 537) = 11.27, p < .001, \eta_p^2 = .040$. As Figure 3 shows, those who received a text on the next morning reported greater relationship intentions ($M = 6.15, SD = 1.26$), compared to those who received the text immediately after the date ($M = 5.80, SD = 1.33$), or after two days ($M = 5.50, SD = 1.59$). Post-hoc contrasts showed that all conditions differed significantly (all LSD $ps \leq .031$). In addition, polynomial contrast analysis established a highly significant quadratic effect ($b = -0.403, p < .001$), in the shape of an inverted U (see Figure 3 and Figure 2c; linear contrast: $b = -0.244, p = .014$).

As Figure 3 also illustrates, the quadratic, inverted-U effect was more pronounced for women than for men, as reflected in a 3 (*timing of text*) $\times$ 2 (*gender*) interaction effect, $F(2, 537) = 2.97, p = .052, \eta_p^2 = .11$, that slightly missed conventional levels of significance (H5b). We should disclose transparently that when excluding the three participants who did not pass the attention check, this interaction was significant— $F(2, 534) = 3.06, p = .048, \eta_p^2 = .11$. To explore this descriptive interaction further, we investigated the effect for men and women separately. Women showed a significant quadratic effect of an inverted-U (Figure 3, contrasts 1–3), $b = -0.56, p < .001$, meaning that women reported highest relationship intentions when men wrote the next morning, compared to immediately after the date or after two days. In contrast, men were much less influenced by the timing of their date's first text—

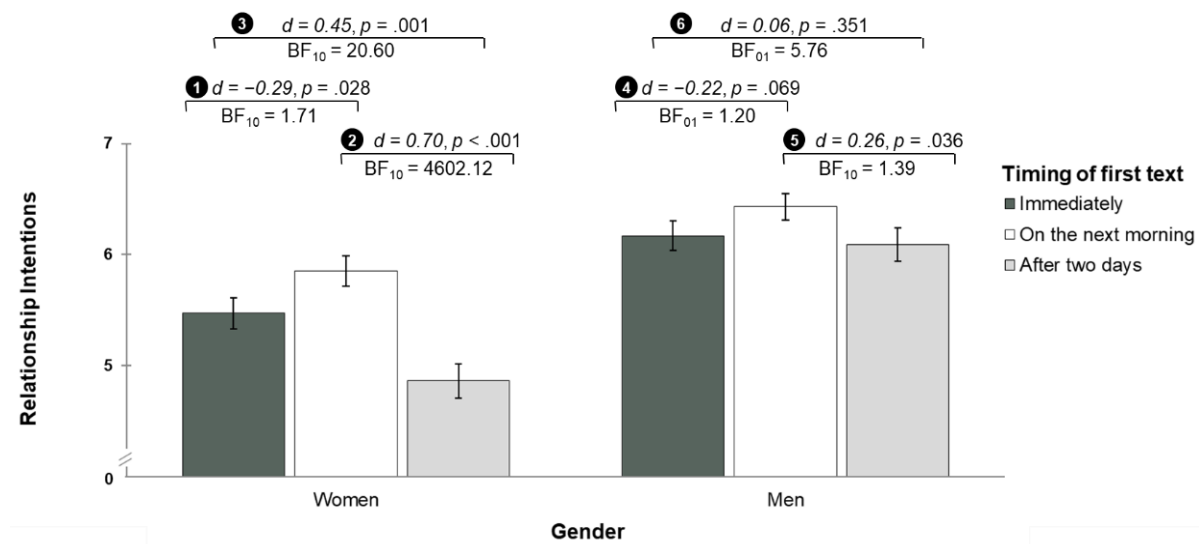
³ We explored how excluding three participants who failed more than one attention check and outliers who deviated more than 2.5 *SD* from the condition mean affected the results. The pattern of results was highly robust when excluding these participants. Hence, for maximal statistical power, we report the results including all participants.

both the quadratic and the linear contrast were not significant, $b = -0.25$, $p = .066$; and $b = -0.06$, $p = .683$, respectively).

In general, men also reported an overall higher level of relationship intentions ($M = 6.23$, $SD = 1.31$) than women did ($M = 5.39$, $SD = 1.42$), $F(1, 541) = 51.24$, $p < .001$, $\eta_p^2 = .09$.

Figure 3

The Effect of Timing of the Text $\times$ Gender on Relationship Intentions



Note. Participants' reported relationship intentions as a function of their date's text timing and the participants own gender. The quadratic, inverted-U effect was more pronounced for women than it was for men, who on average reported markedly higher relationship intentions. For the Bayesian tests, BF₁₀ represents the alternative hypothesis whereas BF₀₁ represents the null hypothesis.

Motivation. The timing of texting after the first date significantly impacted the motivation of the target, $F(2, 537) = 16.56$, $p < .001$, $\eta_p^2 = .058$. Specifically, those who received a text on the next morning ($M = 6.85$, $SD = 1.21$) or immediately after the date ($M = 6.80$, $SD = 1.32$) had more motivation to translate their relationship intentions into action, compared to those who received the text after two days ($M = 6.12$, $SD = 1.71$), with comparisons of the immediately vs. next morning ($p = .682$), immediately vs. two days ($p <$

.001), and next morning vs. two days after ($p < .001$), partially confirming (H1c). We found stronger evidence for a linear, negative effect on motivation, $b = -0.50$, $p < .001$ (see Figure 2b; quadratic effect: $b = -0.32$, $p = .002$).

Further, men had higher motivation to meet up again and to build a relationship ($M = 6.25$, $SD = 1.41$) than women ($M = 5.99$, $SD = 1.44$), $F(1, 537) = 32.11$, $p < .001$, $\eta_p^2 = .056$. Gender and text timing did not interact ($p = .358$).

Perceived Chemistry. Confirming (H1c), the timing of texting after the first date significantly impacted the perceived chemistry of the target, $F(2, 537) = 15.57$, $p < .001$, $\eta_p^2 = .055$. Specifically, those who received a text on the next morning perceived more chemistry ($M = 6.49$, $SD = 1.28$), compared those who received the text immediately after the date ($M = 6.41$, $SD = 1.32$), or after two days ($M = 5.77$, $SD = 1.57$). When testing the individual contrasts, receiving a text after two days led to significantly lower perceived chemistry compared to the other two conditions (immediately vs. two days: $p = .001$; next morning vs. two days: $p < .001$; immediately vs. next morning: $p = .555$), partially confirming (H1b). Similar to the results for motivation, we found stronger evidence for a linear (compare Figure 2b; $b = -0.47$, $p < .001$) than for a quadratic effect ($b = -0.33$, $p = .002$).

Further, men perceived higher chemistry ($M = 6.45$, $SD = 1.41$), compared to women ($M = 5.99$, $SD = 1.41$), $F(1, 537) = 16.05$, $p < .001$, $\eta_p^2 = .029$. Gender and text timing did not interact ($p = .522$).

Moderation of Uncertainty Avoidance and Attachment Style

In addition to the reported moderation effects of participants' gender, we also conducted moderation analyses for uncertainty avoidance and attachment style as preregistered. We did not find moderating effects of uncertainty avoidance ($ps \geq .530$;

subcategories CU: $ps \geq .085$ and EU: $ps \geq .653$), or attachment style ($ps \geq .634$) on the effect of text timing on relationship intentions, contradicting (H5a) and (H5c). Subsequent analyses thus concentrate on the moderating impact of participants' gender.

Text-Timing and Gender Effects on the Five Mechanisms

Thoughts about the other. Contrary to (H2), the timing of texting after the first date did not significantly impact how intensely the target would think about their date before receiving the text, $p = .060$. For full transparency, however, please note that this effect became significant without ten participants who were outliers for this variable or who did not pass the attention check, $F(2, 527) = 4.20, p = .015$. Further, the target's gender affected the thoughts about the other, $F(1, 537) = 8.51, p = .004, \eta_p^2 = .016$. Men would think more intensely about the other while waiting for the first text ($M = 6.62, SD = 1.44$), compared to women ($M = 6.26, SD = 1.52$). We did not find a significant interaction between gender and timing of the text ($p = .559$).

Mate Value. We did not find any significant effects of timing, $F(2, 537) = 0.18, p = .837$, gender, $F(1, 537) = 2.22, p = .137$, or their interaction, $F(2, 537) = 1.17, p = .310$ on mate value.

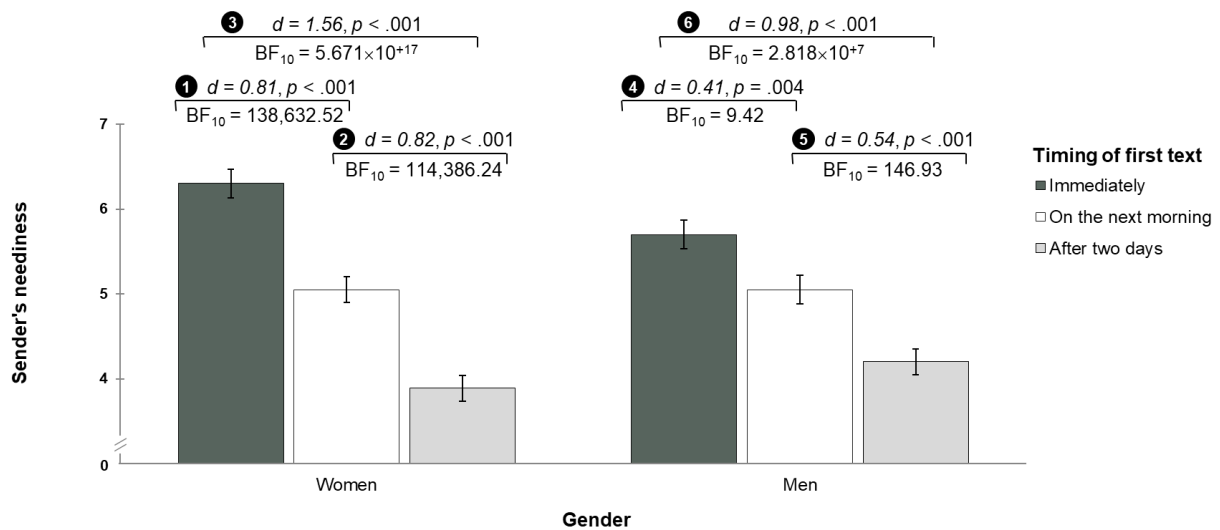
Perceived Neediness. The timing of texting significantly impacted the perceived neediness of the initiator, with $F(2, 537) = 72.80, p < .001, \eta_p^2 = .213$. Specifically, initiators who texted immediately were perceived as being more needy ($M = 6.02, SD = 1.63$) compared to those who sent the text on the next morning ($M = 5.05, SD = 1.66$), or after two days ($M = 4.05, SD = 1.47$), confirming (H3b). All three timing conditions differed significantly from each other (all $ps < .001$).

The target's gender did not affect the perceived neediness of the other, $F(1, 537) = 0.56, p = .456$, but we found a significant interaction effect, $F(2, 537) = 4.01, p = .019, \eta_p^2 = .015$. As Figure 4 illustrates, women show a stronger decline of perceived neediness (i.e.,

men texting sooner than later; left panel) than men perceived women who texted sooner (right panel).

Figure 4

The Effect of Gender $\times$ Text Timing on Neediness Perceptions



Note. Participants' perceived neediness of the initiator as a function of their date's text timing and the participants own gender. The negative linear effect was more pronounced for women than it was for men. For the Bayesian tests, BF_{10} represents the alternative hypothesis whereas BF_{01} represents the null hypothesis.

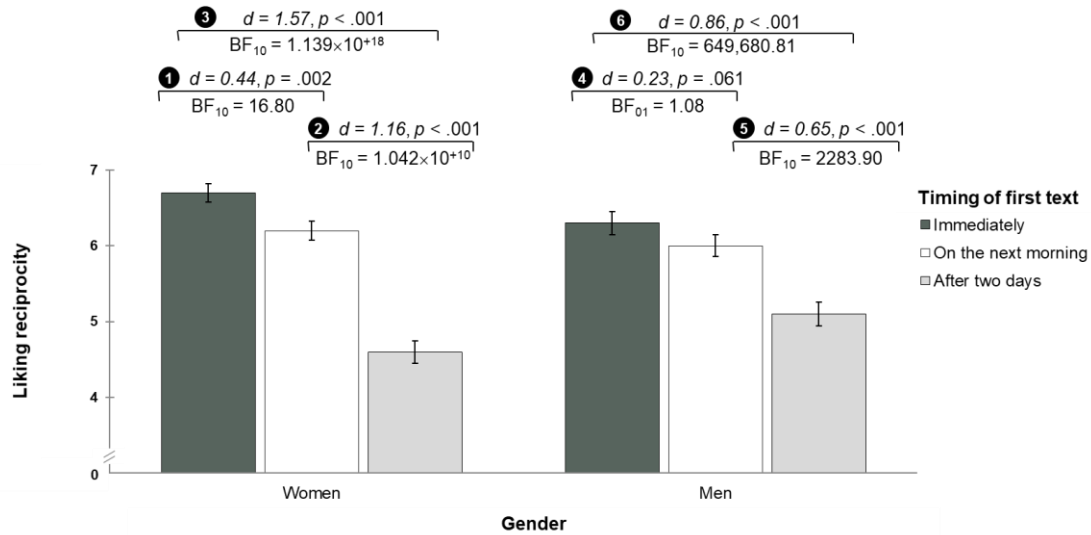
Reciprocity Perceptions. The timing of texting after the first date significantly impacted how much the target thinks that the initiator likes them, $F(2, 537) = 73.50, p < .001, \eta_p^2 = .215$. Specifically, those who received a text immediately after the date thought the initiator liked them more ($M = 6.54, SD = 1.31$), compared to those who received the text the next morning ($M = 6.01, SD = 1.31$), or after two days ($M = 4.86, SD = 1.51$), confirming (H3c). All conditions differed significantly, all $ps < .002$.

While the target's gender did not affect perceived reciprocity, $F(1, 537) = 0.33, p = .566$, we found a significant interaction effect, $F(2, 537) = 4.34, p = .014, \eta_p^2 = .016$. In other words, men assumed that women who take two days to text after the first date liked them

less, compared to when they texted immediately or the next morning. The same holds for women with even more pronounced effects (see Figure 5, left vs. right panel).

Figure 5

The Effect of Gender $\times$ Timing of the Text on Perceived Reciprocity



Note. How much the participants perceive to be liked by the initiator as a function of their date's text timing and the participants own gender. The negative linear effect was more pronounced for women than it was for men. For the Bayesian tests, BF_{10} represents the alternative hypothesis whereas BF_{01} represents the null hypothesis.

Reliability Perceptions. The timing of texting after the first date significantly impacted reliability perceptions, $F(2, 537) = 24.32, p < .001, \eta_p^2 = .083$. Those who received a text immediately ($M = 5.48, SD = 1.34$), $t(359) = 5.76, p < .001$, or the next morning ($M = 5.56, SD = 1.51$) $t(364) = 5.95, p < .001$, thought the initiator to be more reliable compared to those who received a text after two days ($M = 4.62, SD = 1.50$), confirming (H3d). The target's gender also significantly affected how reliable the initiator was perceived, $F(1, 537) = 12.58, p < .001, \eta_p^2 = .023$. Male participants perceived their female dates as more reliable ($M = 5.43, SD = 1.43$) than female participants perceived their male dates ($M = 5.00, SD = 1.56$). The interaction was not significant, $F(2, 537) = 1.64, p = .195$.

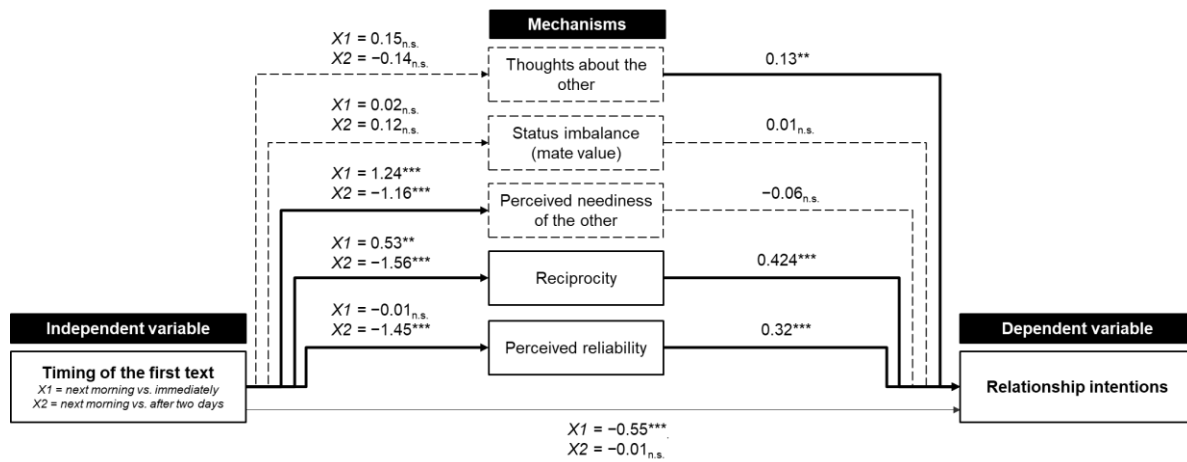
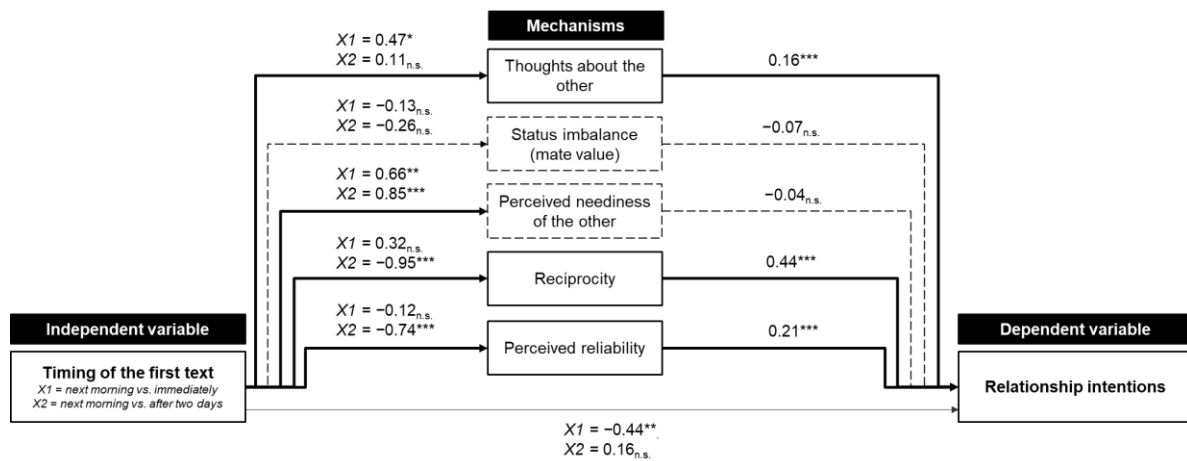
Mediation Analyses

We conducted a mediation analysis to understand why the timing of texting after the first date impacts the target's relationship intentions. For readability and because we found different patterns of results for men and women, we report the analyses separated by gender⁴ (see Figure 6 below). Yet, for transparency, we also report the indirect effects of the moderated mediation analysis. We entered the timing of the text as the between-subjects factor and relationship intentions as the primary outcome variable with 5,000 bootstrapped samples.

We found an indirect effect via reciprocity when comparing texting on the next morning vs. immediately after the date, $b = 0.23$, $SE = 0.09$, and $CI_{95\%} [0.072, 0.403]$ and for the comparison of on the next morning vs. after two days with $b = -0.66$, $SE = 0.12$, and $CI_{95\%} [-0.915, -0.429]$, partially confirming (H4). The index of moderated mediation of gender was significant, $b = 0.26$, $SE = 0.13$, and $CI_{95\%} [0.030, 0.521]$.

We also found an indirect effect via reliability when comparing next morning vs. after two days, $b = -0.37$, $SE = 0.11$, and $CI_{95\%} [-0.605, -0.188]$, partially confirming (H4). Here, the index of moderated mediation of gender was not significant, $b = 0.11$, $SE = 0.09$, and $CI_{95\%} [-0.053, 0.289]$ (Figure 6, top).

⁴ Note that the power analysis for indirect effects showed that our recruited sample was sufficiently large to detect small to medium effects for the a- and b-paths, with a minimum sample of $N = 172$ (see Fritz & MacKinnon, 2007)

Figure 6*Women: Mediation Model of Text Timing of Text on Relationship Intentions**Men: Mediation Model of Text Timing on Relationship Intentions*

Note. The figure displays the respective coefficients for the effects on the relationship intentions. The corresponding significance values are marked with n.s. being non-significant, $p > .05$, * being $< .05$, ** being $< .01$ and *** being $< .001$.

For men, an indirect effect via thoughts emerged when comparing next morning vs. immediately, $b = 0.07$, $SE = 0.04$, and $CI_{95\%} [0.003, 0.178]$, as well as indirect effects when comparing next morning vs. after two days via reciprocity, $b = .042$, $SE = 0.12$, $CI_{95\%} [-0.689, -0.210]$, and via reliability, $b = -0.15$, $SE = 0.08$, $CI_{95\%} [-0.332, -0.032]$ (Figure 6, bottom).

Discussion

With this study, we intended to examine how the timing of sending a text message after the first date impacts the target's relationship intentions. Thereby, we aimed to address the substantial amount of anecdotal evidence and the contradictions in previous literature on whether this effect is linearly positive, negative or inverted U-shaped. Further, we aimed to establish a model that allows to psychologically explain why this effect occurs, including both facilitating and hindering mediators.

In summary, confirming our main hypotheses, we found evidence for an inverted U-shaped effect: Initiators who texted the next morning caused the targets to have higher relationship intentions compared to being texted immediately or two days after the date. This suggests that a moderate delay in texting strikes the right balance. This result pattern emerged for relationship intentions. For chemistry and motivation, however, a negative linear relationship emerged, in that delaying the text after the first date for longer lead targets to be less motivated to engage with and to perceive less chemistry with the initiator.

In line with the moderation assumptions, our results showed that these effects were more pronounced for women than for men. Women were more susceptible to the timing of the text and displayed higher relationship intentions when they received the text on the next morning (vs. immediately and after two days). Men, on the other hand, showed overall higher relationship intentions and were much less affected by the text timing. This gender difference aligns with traditional gender roles and cultural expectations surrounding dating behaviors (Siegel & Meunier, 2018), with women being more selective (Baumeister & Vohs, 2004). Nevertheless, across both genders, men and women had the highest relationship intentions to

those who texted the next morning and felt least attracted to those potential mates who texted after two days.

Our explanatory model sought to expand our understanding of the underlying effects. We found that men would think more intensely about their date while waiting for the first text compared to women. Yet, we did not find that the text timing after the date impact how intensely the target would think about the initiator. Hence, this could not explain the timing-of-texting effect.

Initiators who texted immediately after the date were perceived as being more needy of a relationship. Again, women were more sensitive to this text timing effect. However, perceiving the initiator as needy did not relate to attractiveness perceptions or relationship intentions. Hence, the present data do not confirm the hypothesis that more needy initiators are also perceived as being less attractive, thereby explaining the timing-of-texting effect. Finally, initiators who delayed their message were not perceived as having a higher mate value, plausibly because taking longer to respond is an indication of unreliability which people perceive as an undesirable trait in potential partners.

Interestingly, although we found that delaying sending the text after the first date leads to higher relationship intentions of the target, we simultaneously identified two factors that explain why it may be disadvantageous to delay the text. Results show that the sooner the initiator sent the text, the more the target thought that the initiator would like them, with women being more sensitive to this effect. In turn, how much targets think the initiator likes them positively affected how attractive they themselves found the initiator and how strongly they intended to engage in a relationship. Hence, it appears that the principle of reciprocity holds true when texting after the first date, with texting earlier leaving a stronger impression of interest and affection (Aronson & Worchel, 1966; Finkel & Eastwick, 2009; Gouldner,

1960; Luo & Zhang, 2009). In addition, those who received a text immediately or on the next morning perceived the initiator to be more reliable, compared to receiving a text after two days. In turn, this lead to increased relationship intentions and attraction, with women perceiving their date to be less reliable in general. This may further underline why we did not find that delaying texting leads targets to think of the initiator as having a higher mate value because higher reliability is related to higher relationship intentions.

Limitations and Future Research

The results indicate a direct beneficial effect of (moderately) delaying a text message on relationship intentions. Our study did not find support that this may be caused by an increase in perceived mate value, or a decrease in perceived neediness, leveraging the principle of scarcity (Aggarwal et al., 2011; Cialdini, 2009; Jang et al., 2015). Although we tested how intensely the target would think about the initiator while waiting for the message as a proxy for uncertainty of whether the initiator feels attracted to the target, it may be that the uncertainty should be considered as a separate concept to be tested in future research. Specifically, uncertainty about whether the initiator likes the target due to the text delay may create excitement, in turn, explaining the increasing relationship intentions towards the initiator.

Contrary to prior research on playing hard-to-get, we did not find moderating effects of uncertainty avoidance and attachment style on the timing of the text (Bowen & Gillath, 2020; Richards, 2013). Although we tested attachment style as a predisposition, future research may manipulate and prime attachment style to attain a better understanding of its moderating effects. Further, Dai et al., (2014) illustrated that commitment to a relationship may be relevant when considering playing hard-to-get tactics. Although we decided to focus on the illustrated moderating factors as a comprehensive model, testing commitment may be

worthwhile in the next step of getting a better psychological understanding of this timing-of-text effect.

Additionally, for experimental control we kept the quality of the first date constant (and rather neutral) to prevent any ceiling (and floor) effects. It is plausible, of course, that the date quality affects relationship intentions and moderates the timing-of-texting effects. Future research may also consider the content of the specific text message and whether this further strengthens or weakens (i.e., moderates) the illustrated effects.

Conclusion

Our study establishes novel insights into the timing of texting after a first date and its impact on romantic attraction. Our data suggests that while texting early is beneficial, delaying the text until the next morning not only maintains the positive effects of being perceived as interested and reliable but also enhances relationship intentions of the target. Waiting for too long, however, exerts detrimental, backfiring effects. In all, neither Ted Mosby nor Barney Stinson was right with their statements regarding when to reinitiate romantic contact. Instead, the balance between immediate and delayed digital communication can create an effective window that fosters romantic relationship intentions and increase the likelihood of a positive outcome.

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Supplementary Materials

Appendix A: Table 1

Cronbach's α and Factor Analyses for all Outcome Variables

	Cronbach's α	Factor analysis		
		Eigenvalue	% of Variance	$\lambda \geq$
Relationship intentions	.904	3.67	73.37	.483
Chemistry	.930	2.64	87.94	.755
Wanting	.930	2.64	87.84	.754
Neediness	.879	2.43	80.95	.614
Reciprocity	.910	3.69	73.83	.522
Mate Value	.846	2.74	68.52	.369
Reliability	.935	3.99	79.69	.721
Attachment Style	.876	4.31	53.89	.504
UACO	.895	3.06	76.37	.467
UAEMO	.857	2.81	70.13	.474

Appendix B:

Mediation Analysis on Perceived Chemistry

We again conducted the mediation analyses with 5,000 bootstrapped samples separated by gender. Similar to the reported main analysis, we submitted the following mediators: intensity of thoughts about the initiator until receiving the text, neediness of the initiator, reciprocity of liking, relative mate value, and reliability of the initiator.

Results for Women

For women, we found no direct effect on chemistry when comparing texting on the next morning vs. immediately after the date ($p = .180$) nor texting on the next morning vs. after two days ($p = .783$). Yet, results showed an indirect effect via reciprocity when comparing texting on the next morning vs. vs. after two days with $b = -0.49$, $SE = 0.12$, and $CI_{95\%} [-0.730, -0.276]$. Also, we found an indirect effect via reliability when comparing the next morning vs. after two days, with $b = -0.32$, $SE = 0.09$, and $CI_{95\%} [-0.525, -0.165]$.

Results for Men

For men, we found no direct effect on chemistry when comparing texting on the next morning vs. immediately after the date ($p = .190$) and texting on the next morning vs. after two days ($p = .794$). Yet, results showed an indirect effect via intensity of thoughts when comparing texting on the next morning vs. vs. immediately with $b = 0.62$, $SE = 0.04$, and $CI_{95\%} [0.000, 0.077]$. Further, we found an indirect effect via reciprocity when comparing texting on the next morning vs. vs. after two days with $b = -0.34$, $SE = 0.11$, and $CI_{95\%} [-0.584, -0.158]$. Also, we found an indirect effect via reliability when comparing the next morning vs. after two days, with $b = -0.21$, $SE = 0.09$, and $CI_{95\%} [-0.410, -0.068]$.

Mediation Analysis on Wanting

Results for Women

We found no direct effect on chemistry when comparing texting on the next morning vs. immediately after the date ($p = .244$) and texting on the next morning vs. after two days ($p = .320$). Yet, results showed an indirect effect via reciprocity when comparing texting on the next morning vs. vs. after two days with $b = -0.36$, $SE = 0.13$, and $CI_{95\%} [-0.619, -0.130]$. Also, we found an indirect effect via reliability when comparing the next morning vs. after two days, with $b = -0.35$, $SE = 0.10$, and $CI_{95\%} [-0.566, -0.174]$.

Results for Men

We found no direct effect on wanting when comparing texting on the next morning vs. immediately after the date ($p = .297$) and texting on the next morning vs. after two days ($p = .631$). Yet, results showed an indirect effect via intensity of thoughts when comparing texting on the next morning vs. immediately with $b = 0.07$, $SE = 0.04$, and $CI_{95\%} [0.002, 0.174]$. Further, we found an indirect effect via reciprocity when comparing texting on the next morning vs. after two days with $b = -0.37$, $SE = 0.12$, and $CI_{95\%} [-0.619, -0.165]$. Also, we found an indirect effect via reliability when comparing the next morning vs. after two days, with $b = -0.144$, $SE = 0.096$, and $CI_{95\%} [-0.371, -0.001]$.