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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

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

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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 *counter*offers—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 milage, 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

[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).

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 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 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 (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 h. 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 (t0) and the buyer's counteroffer (t1; $M_{\text{DaysPassed}} = 33.95$, $SD = 66.10$).

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

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%.

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

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).

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

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%.

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

In addition, a binary variable for impasse (0 = impasse, 1 = deal) was created for logistic regression analyses (see Sect. 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 Sect. 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, ($LogLikelihood = -16{,}006{,}516$, $p < .001$, 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

[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.

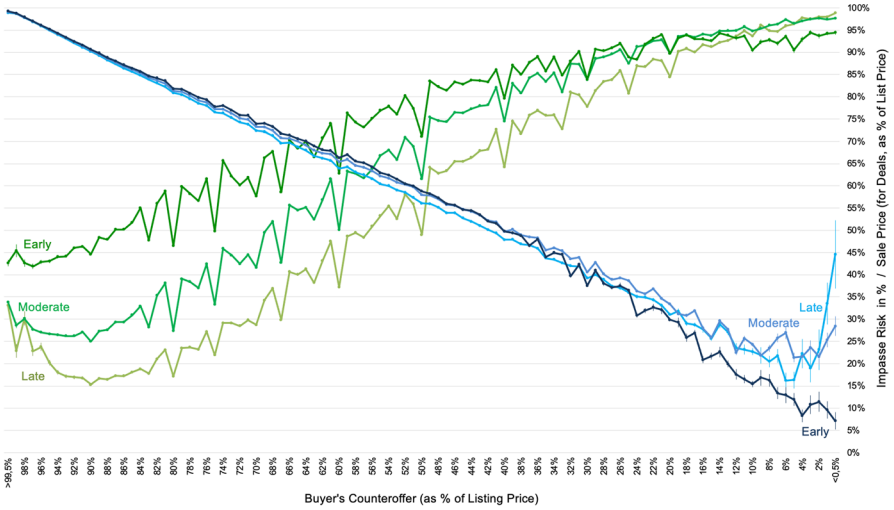

Fig. 1 Counteroffer timing moderates the effects of counteroffer magnitude on observed sale price (blue) and impasse risk (green)—displayed are actual, observed data points. Buyer's counteroffer magnitude (> 99.5% to < 0.5%, in steps of 2%) coincided with different patterns for sale prices and impasse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

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 ± 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.

Counteroffer timing moderated the effects of counteroffer magnitude on both impasse risk and sale price (i.e., significant slope differences). Early counteroffers

[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.

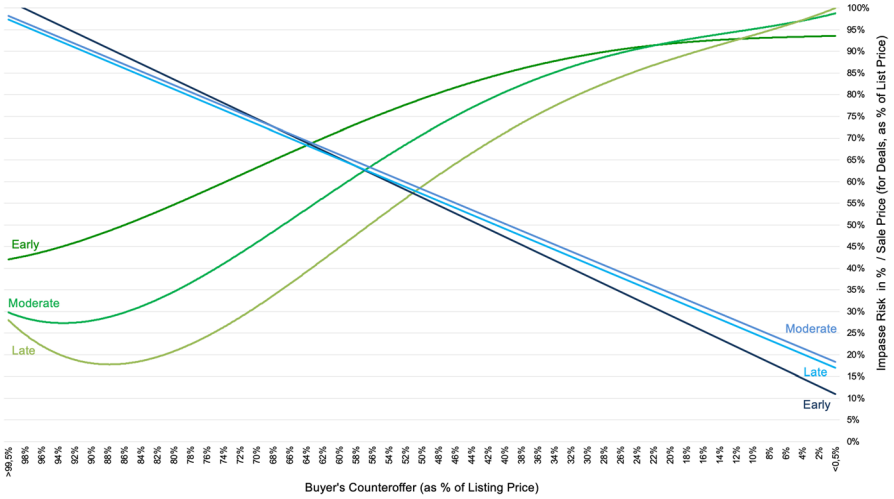

Fig. 2 Counteroffer timing moderates the effects of counteroffer magnitude on sale price and impasse risk. Fitted regression lines are displayed for buyer's counteroffer magnitude (> 99.5% to < 0.5%, in steps of 1%), illustrating different patterns for impasse risks and sale prices across counteroffer 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

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.

[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 Sect. 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, $M_{age} = 38.77$ 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 $f = 0.25$, $\alpha = .05$, $1 - ß = .95$. 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

[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).

preregistered protocol, all participants were included in the analyses, as none failed more than one of the three attention checks.

4.1.2 Design

The experiment employed a 2 (magnitude)×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 min (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

[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).

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 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.

[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).

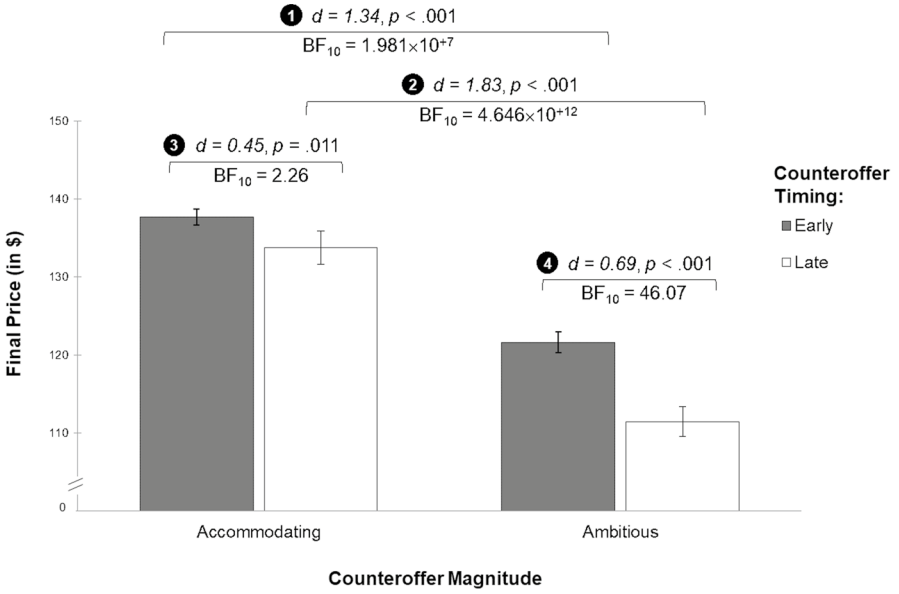

Fig. 3 Effect of counteroffer timing × magnitude on expected final price in Study 2. Reported final sale prices are shown as a function of buyers' counteroffer magnitude (accommodating vs. ambitious) and timing (early vs. late). Results revealed significant main effects of magnitude and timing. Bayesian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

4.2.1 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

[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 × 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 ($M = 123.30$, $SD = 13.08$).

those who received ambitious (i.e., lower) counteroffers ($M = 116.46$, $SD = 15.54$; see H1b; Fig. 3).

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 Fig. 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).

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), $X^2(1, N = 213) = 4.59$, $p = .032$.

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 × 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, $F(1, 200) = 0.15$, $p = .704$.

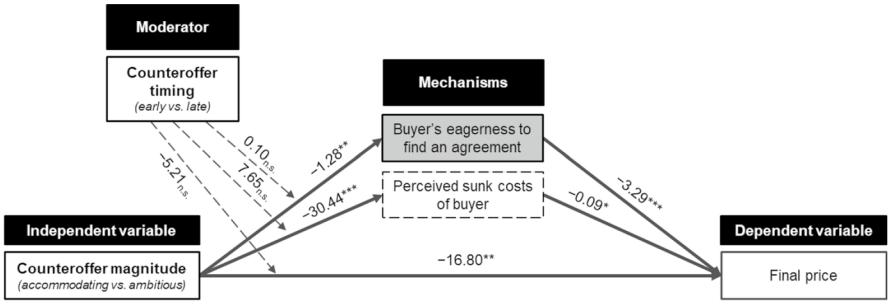

Fig. 4 Moderated mediation model of counteroffer timing and magnitude on the final price via buyers' eagerness and sunk cost perceptions. The Fig. illustrates the regression coefficients for the moderated mediation analysis. Sellers' perceptions of buyers' eagerness to reach an agreement (gray box) but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

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

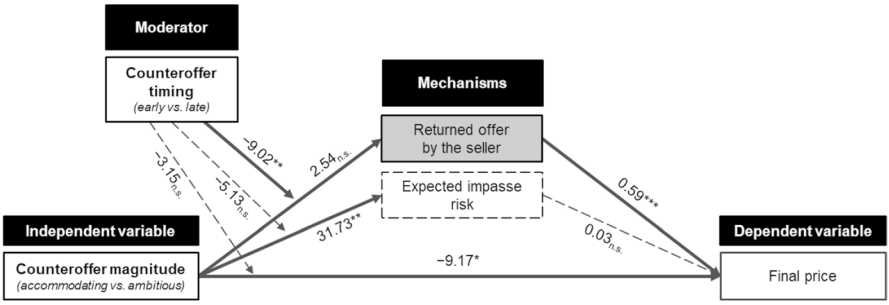

Fig. 5 Moderated mediation model of counteroffer timing and magnitude on final price via the seller's returned offer (and the expected impasse risk). The Fig. displays regression coefficients. The seller's returned offer mediated the effect of counteroffer magnitude on final prices, with counteroffer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

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).

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

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

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).

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 '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

[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.

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.

Author Contributions L.T., H.P., Y.E., and D.L. contributed to the study conception, design, Material preparation, data collection and analysis. The main manuscript was written by L.T. and H.P. All authors commented on and adjusted previous versions of the manuscript. All authors approved the manuscript.

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Data Availability All relevant materials and data can be accessed via: https://osf.io/52nvx/?view_only=c5675f3e719441c5b5fa561c085bb9dc.

Declarations

Competing interests 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.

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