

From Hypothetical to Real: Analyzing WTA Bias in Pawn Shop Deals

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Abstract

Understanding the divergence between hypothetical and actual willingness-to-accept (WTA) valuations is important for both economic theory and real-world applications. This study analyzes this divergence using a unique dataset from the reality television series *Pawn Stars*, which captures authentic bargaining interactions. We examine how item characteristics - such as type, origin, price range - and negotiation factors - like buyer experience and expert appraisal - influence hypothetical bias and negotiation outcomes. Our empirical findings reveal a persistent positive hypothetical bias, mainly driven by higher price ranges and specific item categories. Items acquired through purchase or discovery exhibit less bias than personal possessions, and high-value goods display smaller disparities between hypothetical and actual WTA valuations. These results enhance our understanding of real-world bargaining dynamics and provide valuable insights into mitigating hypothetical biases in economic assessments.

JEL Classification: C90, D82, Q51

Keywords

hypothetical bias — WTA — bargaining game — pawnshop — field experiment

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Introduction

This study explores the disparity between hypothetical and actual valuations within the willingness to accept (WTA) framework. Despite significant advancements in decision-making research, WTA examination remains comparatively underdeveloped relative to willingness to pay (WTP), particularly concerning hypothetical bias. This bias is extremely relevant as it directly influences the validity of economic and psychological valuation models.

Seminal works (Diamond and Hausman, 1994; Harrison and Rutström, 2008) have shown the presence of hypothetical bias,¹ which tends to be more pronounced on WTA valuations compared to WTP valuations. Specifically, Diamond and Hausman (1994) were among the first to systematically document that individuals often overstate valuations in hypothetical contexts compared to real transactions. Additional research by Harrison and Rutström (2008), reinforced this finding across diverse settings, underscoring significant implications for contingent valuation and decision-making processes. Loomis (2011) further demonstrated how hypothetical bias distorts stated preference methods, emphasizing the need for methodological advancements to calibrate such biases effectively.

Nonetheless, Murphy et al. (2005), through a meta-analysis, highlighted the scarcity of empirical research in this domain,

particularly with studies validating theoretical assumptions with real-world data. Among the limited empirical efforts, List and Shogren (2002) investigated WTA calibration, identifying patterns of overstatement in hypothetical valuations. However, much of this work has been confined to laboratory settings, and most primarily focus on the disparity between preferences for WTA and WTP, rather than addressing hypothetical bias directly.² Therefore, the literature remains scant in terms of analyses and deductions concerning the WTA, primarily due to the challenges in calibrating and reducing the disparity generated by the hypothetical bias. Calibration studies employing "pattern recognition" techniques have yielded contrasting results, with subjects sometimes underestimating, overestimating, or accurately aligning their hypothetical valuations with real WTP. These inconsistencies may stem from variables such as the subject pools, the commodity, the context, or a combination of these factors. Improving the calibration model's effectiveness, gaining a better understanding of how individuals respond to contingency valuation method questions, and encouraging more precise answers could address this issue.

As Murphy et al. (2005) found, "*there are not enough WTA studies to truly capture any such effects*". Surveys with private goods have a lower and less relevant calibration factor than public goods, as participants are familiar with the object

¹With the term hypothetical bias, we refer to the classical disparity between hypothetical and actual stated values.

²Table A1 in Appendix summarizes the key studies in the field from 1999 to 2015.

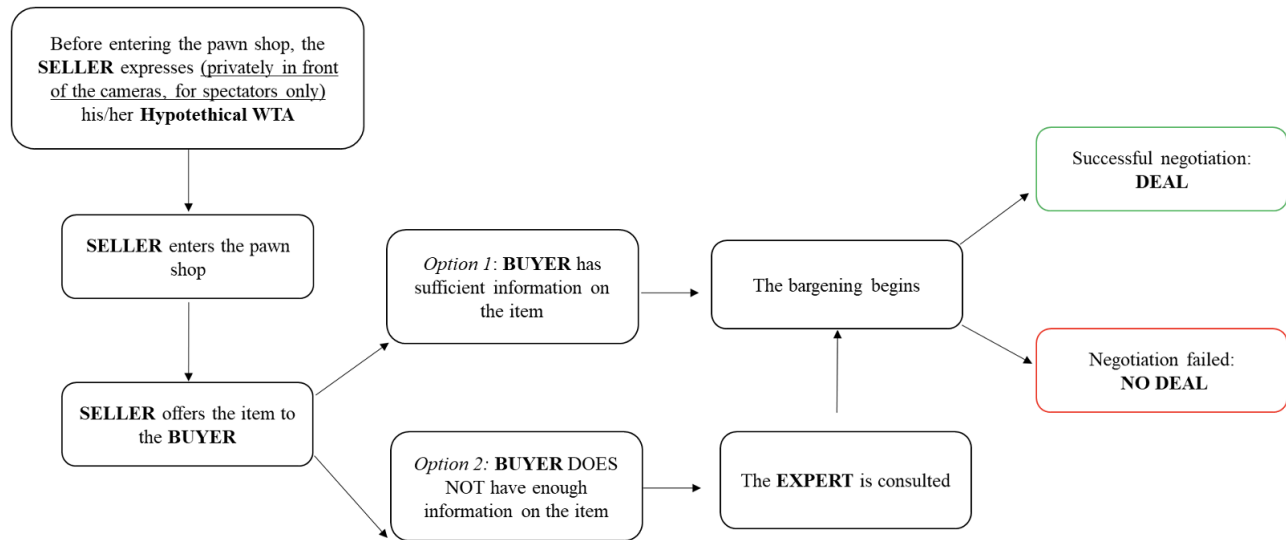


Figure 1. Summary diagram of the development of an episode

considered. Experimental evidence suggests that the elicitation method, the information acquired, and the information provided to participants, significantly influence this disparity. Most of the time, WTP tends to overestimate the hypothetical availability compared to the real one, leading to potential deviations in the deductions drawn from the former for the latter.

Field experiments utilizing real-world data are essential for bridging theoretical models with practical observations. For instance, McCannon and Stevens (2013) analyzed bargaining behaviors using data from the reality series *Pawn Stars*, providing valuable insights into negotiation dynamics. Such approaches allow for factors examination, like negotiator experience, expert involvement, and product characteristics in authentic contexts.

A consistent challenge is obtaining real-world data that accurately reflects WTA scenarios. Laboratory experiments often fail to capture the complexity of actual bargaining, where factors like anchoring effects, emotional stakes, and asymmetric information play significant roles (Beblo et al., 2017; Franco-Watkins et al., 2013; Fudenberg et al., 2012). Moreover, existing studies frequently focus on single dimensions rather than adopting a holistic approach to understanding the interplay of multiple factors.

To address these gaps, we leverage a unique dataset from the reality television series *Pawn Stars*, which offers a naturalistic field setting for examining WTA valuations. By analyzing authentic bargaining scenarios, we can explore the factors influencing hypothetical bias, such as product type, price range, and negotiator experience, and their impact on negotiation outcomes. This approach allows us to move beyond the limitations of laboratory studies, providing insights grounded in real-world data. This approach directly addresses the gap highlighted by Murphy et al. (2005) regarding the paucity of empirical WTA studies. Focusing on field data, we

validate theoretical insights and offer practical implications for negotiation strategies and valuation methods.

This work underscores the need for more empirical research on WTA, particularly studies leveraging real-world data to explore the nuances of hypothetical bias. While existing literature provides a solid foundation, our study's methodological innovation, and its contextual relevance, represent a significant advancement in understanding this phenomenon. By framing our contributions within the broader literature, we aim to bridge theoretical gaps and offer actionable insights for both academic and real-world situations.

The paper is organized as follows. In the second Section, we describe the game structure. In Section 3, we present the main results. In Section 4, we conclude and suggest directions for future research in bridging this gap between hypothetical and actual valuation measures.

Why Pawn Stars?

The reality television series *Pawn Stars* offers an exceptional field setting for studying bargaining dynamics and the interplay of hypothetical and real WTA valuations. Set in the Gold & Silver Pawn Shop in Las Vegas, the show features negotiations over diverse items ranging from antiques to collectibles. The shop's staff includes experienced negotiators such as Rick Harrison and his son Richard, whose expertise spans various market segments. These professionals often rely on external experts to evaluate items, adding an element of specialized knowledge to the negotiation process.

For non-expert readers unfamiliar with the show, it is crucial to understand the negotiation framework (see Figure 1): sellers present items alongside their hypothetical minimum acceptable price (hypothetical WTA). Buyers negotiate directly or seek expert appraisals after evaluating the item's market

potential. Experts – specialized in fields like military memorabilia, rare books, and fine art – often influence the final stages of negotiation by reducing information asymmetries.³ This dual role – operating as a direct buyer and an auction participant – enriches the empirical dataset by incorporating diverse item types and price ranges, which can influence bargaining outcomes.

Analyzing *Pawn Stars* allows us to observe real-world interactions where hypothetical bias, expertise, and item characteristics converge. These elements make the show a unique and valuable resource for understanding the mechanisms underlying bargaining behavior and economic decision-making. By situating this study within this context, we aim to provide insights relevant to both academia and the real world.

Results

Descriptive Analysis

We analyzed a total of 250 negotiations from episodes spanning seasons 1 to 15. Out of 250 negotiations, 164 ended positively while the remaining 86 failed. Negotiation failures were attributed to different reasons: instances where the object was not authentic or cannot be authenticated, cases where the object was illegal and/or unusual and presented a low profit potential for the buyers, and situations where the seller overvalued the item due to its personal significance.

We collected data on the seller's gender and his/her hypothetical WTA, the buyer's negotiation experience, the presence of the expert, and information about the goods (source, typology, market value, and price range). In the end, information about the deal such as the final offer value, the number of bids during the bargaining, and the presence of an ultimatum offer.

A natural way to inspect the presence of hypothetical bias is to study the distribution of the ratio between the hypothetical WTA and the real WTA, as shown in Figure 2. We called this ratio **H-B**. A *T-test* confirms the presence of the hypothetical bias ($p\text{-value} < 0.001$). Moreover, in Figure 2 and Figure 3 we illustrate cases in which H-B is less than 1, indicating situations where the actual WTA exceeds the hypothetical WTA. These negotiations, like any other, ended with the highest levels of seller satisfaction, as sellers achieved deals surpassing their initially desired valuations. However, this outcome of H-B highlights how a lack of information about the true market value of a product can disadvantage sellers, leading them to undervalue their items. This problem during the negotiation may be solved with the presence of the expert, informing the parties about the actual value of the product on the market.

In each episode, the seller presents his/her product specifying its provenience, whether it is a family gift with sentimental value or, something purchased from an auction or found somewhere without any value for him/her. Then, three descriptive

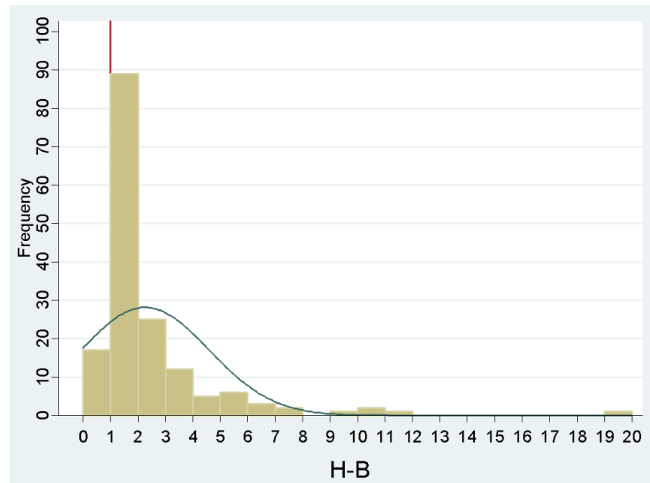


Figure 2. Variable H-B trend

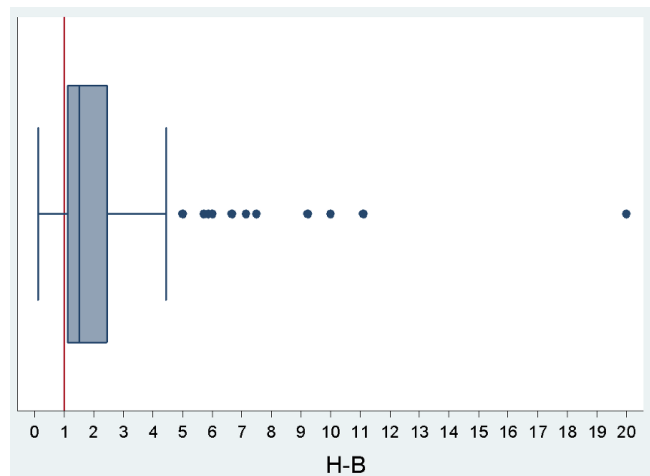


Figure 3. Variable H-B trend

variables were generated to better identify how each product affects the deal-making: type of good, good source, and price range. The *type of good* variable categorizes products into 8 distinct macro types, as outlined in Table 1. Among all, the main typologies of good are three: “war memorabilia & arms”, “antiques” and “show”.⁴

As shown in Figure 4, there is a hypothetical bias since the H-B of the different types of goods is very flat towards 1. The ANOVA test ($p\text{-value} = 0.068$) demonstrates that the H-B does not differ among the good typologies but its mean value deviates from 1.

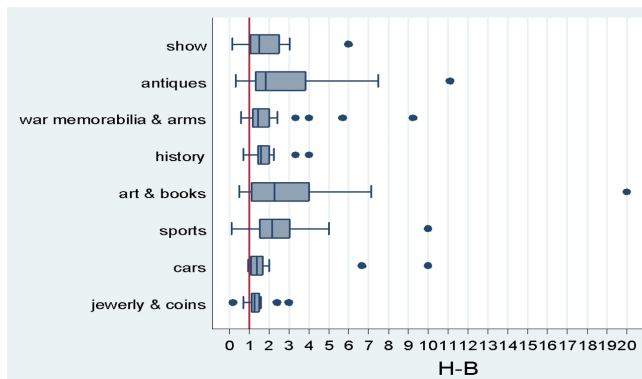
The *good source* is a way to identify the provenience of the goods. We identified two different categories: *personal* and *purchased and found*. We categorized items as *personal* if they are family/friends’ gifts or parents’ inheritance. There-

³The shop also participates in antique auctions, which may explain its specialized focus on certain categories of objects, such as vintage toys or jewelry.

⁴See Appendix for more details about the descriptive analysis of the variable “type of good”.

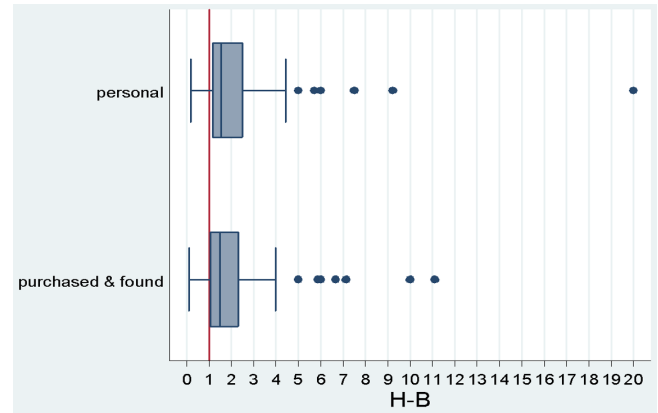
Table 1. Type of good with an example for each category

Type of good	Example
Art & books	autographed paintings, poems, and old editions or autographed books
Antiques	vintage, collectible items or games or famous puppets
Show	playboy items, items from movie sets, Jimi Hendrix's guitar, or sophisticated instruments
War memorabilia & arms	items from the I or II World War, guns, rifles, or cannons
Sports	signed basketball balls or sports uniforms
Cars	vintage cars or motorcycles
Jewelry & coins	ancient coins or super bowl rings
History	fossils or ancient Egyptian mummified animals

**Figure 4.** Variable H-B- type of good trend

fore, all the items that were not bought directly from the seller and have a greater sentimental value than the economic one, as they are tied to memories or significant individuals. This sentimental value may indirectly influence, positively or not, the seller's behavior, leading to a hypothetical WTA statement that diverges to the actual market value for that good. As we can see from Figure 5, this last category is less flat towards 1. The other category, *purchased and found*, included all the goods bought directly from the seller to fulfill a personal need (e.g., a musician buying an instrument) or with the intention of reselling for profit. In this subcategory, we can find items usually bought in the flea market, in private or public auctions, in specific shops and antique stores as well as goods found from the seller in abandoned buildings and stores. The effort of the seller belonged to this category is very particular, because for the personally purchased and the ones that are resold, most probably the seller will have had collected information on the market value and origins of the product because he/she hopes

to derive as much advantage as possible. For the ones found the effort should be less because whatever he/she gets will be more than he/she had at the beginning. In Figure 5, we report the distribution of H-B between these two categories of good sources.

**Figure 5.** Variable H-B - good source trend

Finally, the price range defines the monetary value for each type of good, by considering, for each item, the market value and the final price. Since there is a heterogeneous variety of products, we have identified 7 different range levels: from 20\$ to 100\$, from 101\$ to 500\$, from 501\$ to 1,000\$, from 1,001\$ to 2,000\$, from 2,001\$ to 5,000\$, from 5,001\$ to 30,000\$, and the last one from 30,001\$ to 450,000\$.

Analyzing the H-B mean and comparing it across different price ranges (Figure 6), we observe that the gap between the hypothetical and the actual value is smallest in the highest price range. This suggests that when a good has a higher market value, both parties are more likely to agree on the true WTA. In contrast, for all other price ranges, the ANOVA test reveals a significant difference in the H-B mean ($p\text{-value} < 0.001$). To corroborate our statement, we refer to the literature, in which when the value of an exchanged item is known with certainty, buyers are likely to bid up to that value, and sellers will ask for a price close to it (Okada, 2010). This scenario is more likely to occur when the asset is of high value, as both parties will have taken care to gather information about it. However, in cases where the value of the traded asset is uncertain, the effect of uncertainty becomes significant. In this situation, the buyer faces the risk that the item may be worth less than expected, while the seller risks undervaluing it. This uncertainty and associated risks create greater difficulty in reaching an agreement.

Furthermore, two additional variables need to be considered, i.e., the *buyer experience* and the *expert consultancy*, since they can influence the anchoring effect and the asymmetric information. *Buyer experience* should influence the success of the negotiation, considering the risk perception factors that affect individual choices. In the program, the negotiations are usually conducted by Rick, sometimes by

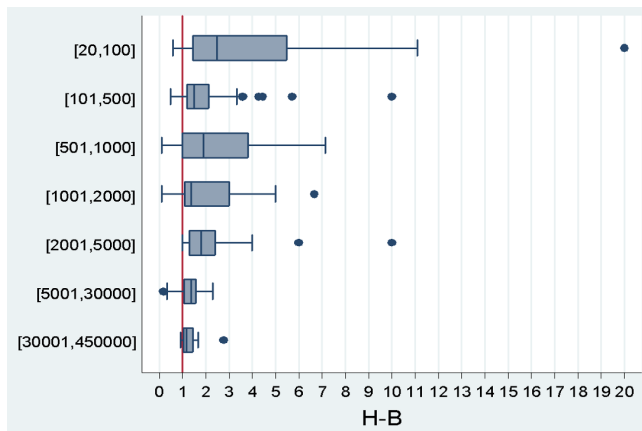


Figure 6. Variable H-B - price range trend

Richard, and occasionally by Corey or Russel. Therefore, we have identified two main levels of experience: *high*, for all the negotiations where the main mediator is Rick or Richard, and *low*, for all the others where the principal negotiator is Corey or Russel. These levels are defined using age, specifically the working age of the buyers, as a proxy for their experience. Given their experience, buyers are more likely to succeed in negotiations. Generally, more experience means greater knowledge about items, their history, and value, highlighting the informational differences between the buyer and the seller.

When the buyer does not know enough about a good, he requires an *expert consultancy*. When an expert is involved in the trading, the asymmetric information between the parties decreases, but it may generate an *anchoring effect* on the seller. Naturally, knowledge and experience in managing negotiation influence the negotiation outcomes. A more experienced buyer knows how and when to push the price he wants, without losing the negotiation. Looking at Table 2, we notice that the experience level with the highest value of success is “*high*” (38.8%), but if we look at the H-B mean (Figure 7), we can see that it is almost 2.2 in both levels. This could mean there is no difference in the buyers’ experience. This finding challenges the common assumption that greater experience leads to greater success. As noted by McCannon and Stevens (2013), less experienced negotiators who initiate negotiations are often more likely to reach a successful agreement. Moreover, looking at the number of failed bargains, in our analysis, we can see that a buyer with high experience fails more than a buyer with a lower experience.

The same consideration can be made by observing how the H-B varies, based on the involvement of the expert specialized in that specific good, which is the object of negotiation. From the beginning, we can say that the cases in which the expert is involved should be less interesting since, once the expert defines the market value of the asset, the buyer and the seller must agree on 2/3 of that value since the remaining 1/3 represents the common margin for auction houses. The percentage of failure is approximately the same in both of the

cases (18%). This value could reject our consideration about how the asymmetric information affects the deal.

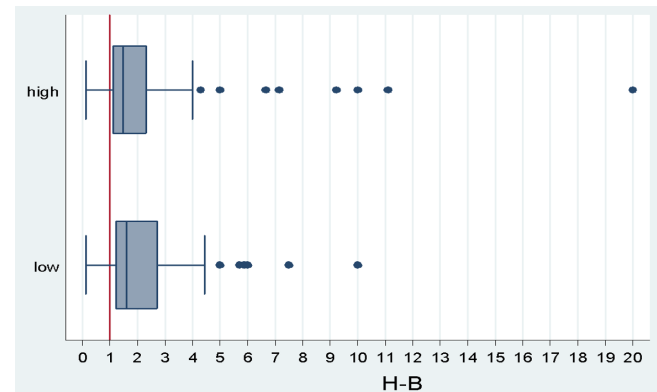


Figure 7. Variable H-B- buyer experience trend

Two main factors can influence the outcome of a deal, in this specific context: the *number of offers-counter-offers* during the negotiation and the influence of *the last offer* from one of the parties. Therefore, we constructed the two variables **bargaining number** (number of offers-counter-offers) and **ultimatum offers**. In all the negotiations, we have exchange offers-counter-offers larger than 2.⁵ Usually, in our sample, the more bids we have in bargaining the more the parties are satisfied because they have had time to reach a compromise. If we observed one or two rounds of negotiation, we labeled it as low; if we observed three, four, or five rounds of negotiation, we labeled it as high. The ultimatum offer is a dummy variable, that it is equal to 0 when no one verbalizes this statement during negotiation, and 1 when it occurs. The ultimatum offer is useful to understand the cases in which the seller agrees to a price lower than the price they should get, due to being pressured by the buyer. In most cases, he/she is driven to accept a much lower amount of money than he/she wanted just because the buyer told him/her that “*this is the best I can do*” or “*that is the price and not a dime more*”. This statement should put one of the parties in a position of in or out and for this reason, the deal outcome could be affected by the hypothetical bias. The ANOVA test confirms what we observe in Figure 8 and Figure 9. The different bargaining numbers and the presence of the ultimatum offer, do not have a different H-B, with respectively p-value = 0.8799 for bargaining numbers and p-value = 0.3252 for ultimatum offers.

Regression Analysis

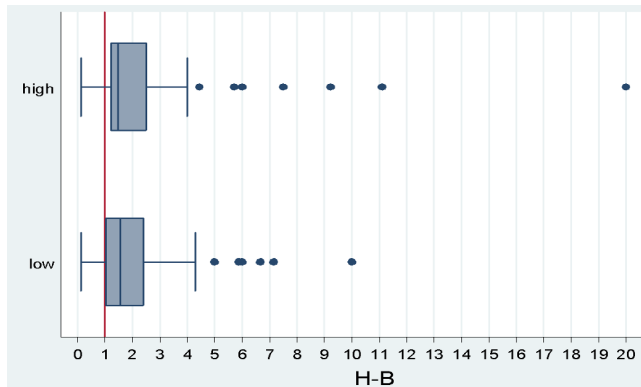
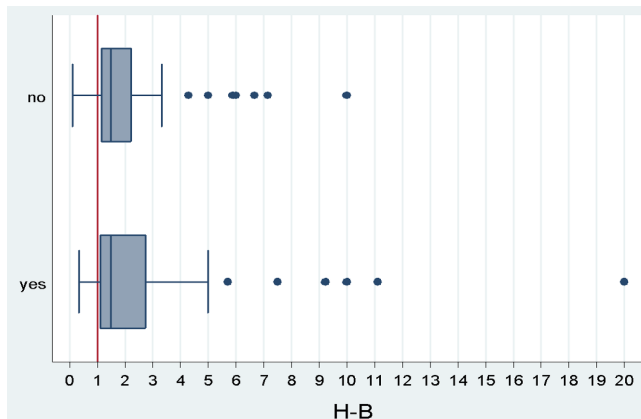
To examine the factors influencing hypothetical bias and to validate the previous results through non-parametric analysis, we estimated a *log regression model*⁶ and a *probit regression*

⁵The largest found was 5 number of offers-counter-offers in the bargain.

⁶Where the dependent variable is log H-B= log (seller hypothetical WTA /final offer).

Table 2. Variable H-B-buyer experience trend

Buyer experience	N	Deal outcome		Bargaining number		Hypothetical Bias			
						Mean	Std. Dev	Min	Max
		Success	Failure	Low	High				
High	154	97	57	82	51	2.255	2.621	0.111	20
Low	96	67	29	49	36	2.272	1.835	0.133	10

**Figure 8.** Variable H-B- bargaining number trend**Figure 9.** Variable H-B- ultimatum offer trend

model,⁷ as reported in Table 3.

Considering the *log regression*, we observe that *gender* does not influence the hypothetical bias. The goods source *purchased and found* influenced the hypothetical bias by a decrease of 21% with respect to the *personal* goods source. Items within the price range of \$5,001–\$30,000 positively influence the gap between the hypothetical WTA and the final offer, reducing it by 41% compared to the \$1,001–\$2,000 price range. Conversely, items in the low-price range (\$20–\$100) negatively influence this gap, increasing it by 47% relative

⁷Where the dependent variable is the dummy variable deal outcome with value 1 if the negotiation is a success and 0 if it is a failure.

to the \$1,001–\$2,000 range. Only two types of goods have a positive impact on hypothetical bias: items classified under *Show* or *Jewelry & Coins* reduce the hypothetical bias by 46% compared to antiques. This indicates that negotiations involving rare and unusual items, such as collectibles, experience a reduced hypothetical bias.

Therefore, we can claim that a hypothetical bias exists between the final offer and the hypothetical WTA. It decreases when the negotiation regards purchased and found goods, with a medium-high price range, and when items are very rare and unusual, such as something about *Show* or *Jewelry & Coins*, which easily fall into the category of collectibles.

Regarding the parties involved, seller gender does not influence the gap. On the topic of experience, two key findings emerge. First, contrary to McCannon and Stevens (2013), the experience of the negotiators does not significantly affect the hypothetical bias. Second, introducing a third party into the negotiation also has no measurable impact on the hypothetical bias.

Moving to the results of the *probit regression*, as reported in Table 3 and Table 4,⁸ we observe that the only variables affecting the negotiation outcome are: *type of good*, *ultimatum offer*, and *bargaining number*. Items classified as *Art & Book* and *Car* significantly enhance the likelihood of a successful agreement, increasing it by 32.5% and 27.3%, respectively. A similar positive effect is observed with the number of bids during the negotiation (bargaining number). High bidding activity, characterized by 3 to 5 bids, increases the probability of a successful negotiation by 24%. Additionally, the presence of an ultimatum offer positively impacts the outcome, raising the likelihood of a successful agreement by 8.8%.

Conclusion

We investigate the presence of hypothetical bias in willingness-to-accept (WTA) valuations within real-world bargaining contexts. Leveraging a unique dataset from the reality television series *Pawn Stars*, we shed light on negotiation dynamics and the factors influencing the gap between hypothetical and actual valuations. Our findings offer valuable insights into the drivers of hypothetical bias and their implications for both economic theory and real work situations.

⁸In Table 4, we report only the marginal effects of the variables having a statistically significant p-value. The complete output is shown in the Appendix.

Table 3. Log and probit regression model

Variable	Log H-B			Deal outcome		
	Coef.	Std. Err.	P>t	Coef.	Std. Err.	P>z
buyer experience						
Low	0.002	0.1219	0.983	0.089	0.235	0.705
seller gender						
M	-0.021	0.1921	0.913	0.450	0.354	0.203
good source						
purchased found	-0.219	0.1246	0.081*	-0.011	0.227	0.960
type of good						
Art&books	0.171	0.2237	0.445	1.786	0.624	0.004**
Cars	0.086	0.2562	0.737	1.253	0.515	0.015**
History	-0.163	0.2294	0.477	0.138	0.391	0.724
Jewelry&coins	-0.454	0.2702	0.095*	0.837	0.518	0.106
Show	-0.465	0.2194	0.036**	0.172	0.378	0.648
Sports	-0.063	0.2691	0.815	0.280	0.493	0.571
War memorabilia&arms	-0.208	0.1898	0.273	0.454	0.35	0.198
bargaining number						
High	0.014	0.1198	0.906	1.079	0.266	0.00***
expert consultancy						
Yes	-0.072	0.1376	0.598	-0.022	0.251	0.929
price range						
[20, 100]	0.475	0.2427	0.052*	0.802	0.536	0.135
[101, 500]	-0.082	0.1999	0.68	0.641	0.431	0.137
[501, 1000]	-0.042	0.2247	0.851	-0.295	0.400	0.460
[2001, 5000]	0.187	0.2432	0.441	-0.512	0.405	0.206
[5001, 30000]	-0.416	0.2318	0.074**	-0.528	0.42	0.218
[30001, 450000]	-0.140	0.2477	0.57	-0.232	0.449	0.605
ultimatum offer						
Yes	0.123	0.1233	0.318	0.376	0.228	0.099*
Cons	0.766	0.3180	0.017	-0.570	0.580	0.325
Observations	164			217		
R-squared	0.1855			Pseudo-R2	0.2571	

Note: Reference categories: F, high, personal, antiques, low, no, 1001_2000. *** p<0.01, ** p<0.05, * p<0.1

Our results demonstrate that hypothetical bias is a pervasive phenomenon, but its magnitude varies significantly with item characteristics, negotiation dynamics, and contextual factors. High-value items, particularly those classified as “Show” or “Jewelry & Coins,” exhibit the smallest discrepancies between hypothetical and real WTA. This suggests that the perceived value and the rarity of certain goods lead sellers to base their valuations on more informed and realistic expectations. Similarly, items categorized as “purchased or found” display a lower bias compared to personal items,

highlighting the role of prior market knowledge in reducing valuation disparities.

Price ranges emerge as a key determinant of bias magnitude. High-value items (5,001–30,000) are associated with smaller discrepancies, likely due to increased diligence by both parties in these transactions. Conversely, low-value items (20–100) are marked by larger gaps, reflecting greater uncertainty and potential overvaluation by sellers. These findings align with existing theories on information asymmetry and perceived risk in valuation contexts.

Table 4. Probit marginal effect outputs

	Marginal effect dy/dx
bargaining number	
High	0.241
type of good	
Art&books	0.325
Cars	0.273
ultimatum offer	
Yes	0.088

The dynamics of the negotiation process also play a pivotal role in determining outcomes. Iterative bargaining, characterized by multiple rounds of offers and counteroffers, significantly increases the likelihood of successful agreements. Interestingly, our results suggest that less experienced buyers are slightly more likely to close deals, perhaps due to greater flexibility or a willingness to compromise. Contrary to expectations, the involvement of expert consultants does not significantly impact hypothetical bias or negotiation success, likely because expert evaluations anchor both parties to a fixed reference point, reducing flexibility.

These findings have direct implications for real-world markets, particularly in auctions, digital marketplaces, and other platforms where valuation discrepancies often arise. In auction settings, strategies that encourage iterative bidding and provide transparent information about item value could help reduce bias and improve transactional efficiency. Digital platforms, which frequently deal with heterogeneous goods and sellers with varying levels of expertise, could benefit from integrating tools for value estimation and negotiation simulation. For instance, machine learning algorithms that predict fair market values based on item characteristics could mitigate the risks of over- or under-valuation, fostering trust and fairness in online transactions.

Beyond practical applications, our study contributes to theoretical advancements by emphasizing the importance of context-specific factors in valuation and negotiation processes. Our findings challenge conventional assumptions about the uniformity of hypothetical bias across different settings and highlight the nuanced ways in which item type, price, and negotiation strategies shape outcomes. Future research could explore additional contexts, such as labor negotiations or peer-to-peer marketplaces, to validate and extend these insights.

In conclusion, addressing hypothetical bias in real-world economic interactions is crucial. By identifying factors that mitigate this bias and improve negotiation outcomes, we offer actionable strategies for enhancing fairness and efficiency in various market settings. These contributions not only advance the academic understanding of bargaining behavior but also provide practical guidance for policymakers (Mousavi

and Kheirandish, 2017; Mousavi 2018), platform designers, and practitioners aiming to optimize negotiation dynamics in diverse economic contexts.

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Appendix

A1. List of principal studies comparing Real and Hypothetical Statements from 1999 to 2015

Table A1. Summary of Studies Comparing Real and Hypothetical Statements from 1999 to 2015

Study	Year	Type of experiment	Type of good	Type of comparison	Type of elicitation	Results
WTP Johannesson et al	1999	Classroom	Private	Between and Within Group	Dichotomous Choice	No difference between hypothetical and real WTP; A factor that can affect this gap is the type of good; No effect from socio demographic aspects.
WTP Liljas et al	2000	-	-	Literature Review	-	We can have difference between hypothetical and real WTP, and it can be related to the type of design and the subject pool (if they are students).
WTP List and Gallet	2001	Laboratory	Private	Within Group	Open-Ended, First Price, Provision Point, Smith Auction, Random Price Auction, Becker, Degroot, And Marschak (BDM), Dichotomous Choice	Ratio between hypothetical and real WTP is smaller than ratio between hypothetical and real WTA. The magnitude of the gap depends on the elicitation method.
WTP List and Shogren	2002	Laboratory	Private	Within Group	Open-Ended	Subjects tend to underestimate real offers.
WTP Botelho and Pinto	2002	Laboratory	Public	Between Group	Open-Ended	The mean and median WTP in the hypothetical treatment were substantially higher than those observed in the real treatment.
WTA Nape et al	2003	Field (survey)	Private	Within Group	Dichotomous Choice	In the elicitation on WTA, certain identifiable demographic characteristics significantly contribute to the existence of hypothetical bias.
WTP Johansson-Stenman and Svedsäter	2003	Classroom	Public	Between Group	Dichotomous Choice	Subjects tend to overestimate their real WTP in a real money experiment (not vice versa).
WTP Volcker	2006	Classroom	Private	Within Group	First-Price Auction, Vickrey Auction, CV, Conjoint Analysis	Subjects tend to overestimate the hypothetical WTP respect to the real WTP.
WTP Paradiso and Trisorio	2010	Classroom	Private	Between Group	Open-Ended, Second-Price Auction	Subjects tend to overestimate the hypothetical WTP respect to the real WTP. A different set of knowledge about the good affects the subject's valuation.
WTP Loomis	2011	-	-	Literature Review	-	Subjects tend to overestimate the hypothetical WTP respect to the real WTP.
WTP Kang and Camerer	2013	Scanning	Private	Within Group	Auction	Subjects tend to overestimate the hypothetical WTP respect to the real WTP.
WTP Lee and Hwang	2015	Field	Public	Within Group	Cheap Talk, Open-Ended	Hypothetical bias in WTP exists. The provision threshold methods with and without the cheap talk method are not effective in reducing hypothetical bias in WTP.

A2. List of some of the main experts that took part in the program

Table A2. List of experts
Source: <https://gspawn.com/the-experts/>

Name	Day Job	Expertise
Alex Cranmer	President of International Military Antiques	Antique firearms and military collectibles from 1600 to II WW
Bill Tsagrinos	Owner of The Underground Garage	Automobiles and Restorations
Bob Yuhas	Owner of Bob Yuhas Restorations	Restoring, repairing and conservation of antiques
Chad Sampson	Icon Fine Arts	Fine Art Appraisal, Restoration and Acquisition, IFAA certified
Danny 'Count' Koker Jr.	Owner of Count's Kustoms, tattoo shop, bar	Classic Cars, Hot Robs, Motorcycles
David Vagi	NGC Ancients (Numismatic Guaranty Corporation)	Coins and Medals, notably from the ancient world
Dr Phineas T. Kastle	Unknown	Prof. of World Antiquities, Asian Art. Indian, Chinese, Egyptian, European, Native American antiquities
Jeremy Brown	Owner of Ultimate Sports Cards and Memorabilia	Sports memorabilia, autographed pieces, sports cards, vintage publications and other rarities
Jessee Amoroso	Owner of Cowtown Guitars	Vintage Stringed Instruments and Amplifiers
Mark Hall-Patton	Clark County Museum System in Las Vegas, NV	Historical artefacts, aviation
Matthew C. Shortal	Former U.S. Navy Blue Angel Pilot / TOPGUN	Aviation and Military
Murray SawChuck	Magician, Illusionist, Comedian	All forms of magic and Historian of antique magic devices
Paul Litch	Primary Grader, CGC	Comic Books, Comic Book Memorabilia, Comic Book Historian
Rebecca Romney	Antiquarian Bookseller	Rare, collectable and antiquarian books, ephemera, and documents
Rick Dale	Owner Rick's Restorations	Restoration of Old and Antique items
Sen Rich	Owner of Tortuga Trading	Antique Arms, Armor, Shipwreck Treasures
Steve Grad	Autograph Authenticator for BAS Beckett Authentication Services	Entertainment, historical, political and sports autographs
Steve Johnston	Owner of Rogue Toys	Antique, Vintage and Pop Culture Toys/Collectibles
Stuart Lutz	Stuart Lutz Historic Documents	Historic Letters, Documents & Autographs
Warwick Stone	Rock n Roll art and memorabilia expert	Corporate collection buyer, Insurance appraiser, Display Designer

A3. Summary statistics for the variable type of good

Table A3. Percentage of goods for type

type of good	Freq.	Percent	Cum.
antiques	46	18.40	18.40
art books	21	8.40	26.80
cars	23	9.20	36.00
history	36	14.40	50.40
jewellery coins	18	7.20	57.60
show	43	17.20	74.80
sports	15	6.00	80.80
war memorabilia arms	48	19.20	100.00
Total	250	100.00	

Table A4. Variable H-B type of good trend

	Obs	Mean	Std. Dev	Min	Max
antiques	29	2.863	2.394	0.3333	11.1111
art books	19	3.385	4.431	0.5	20
cars	17	2.151	2.418	0.943	10
history	18	1.830	0.785	0.7142	4
jewellery coins	13	1.380	0.700	0.1818	3
show	23	1.741	1.231	0.1333	6
sports	12	2.773	2.6144	0.1111	10
war memorabilia arms	33	1.911	1.655	0.6	9.230

A4. Marginal effects of the probit model with deal outcome as dependent variable

Table A5. Marginal effects output

Deal outcome	dy/dx	Delta-method Std. Err.	z	$P > z $	[95% Conf.	Interval]
good source						
purchased found	-.002	.052	-0.05	0.960	-.1062808	.1010282
type of good						
Art&books	.325	.082	3.96	0.000	.1644795	.4875096
Cars	.273	.094	2.89	0.004	.0875799	.4586634
History	.038	.109	0.35	0.723	-.175771	.2534535
Jewelery&coins	.205	.113	1.80	0.072	-.0180264	.4287861
Show	.048	.105	0.46	0.646	-.1577616	.2543728
Sports	.077	.133	0.58	0.562	-.1838765	.338186
War memorabilia&arms	.121	.093	1.30	0.195	-.0621541	.3051613
bargaining number						
High	.241	.051	4.68	0.000	.1404981	.3430429
expert consultancy						
Yes	-.005	.058	-0.09	0.929	-.1194324	.1090608
price range						
[20, 100]	.128	.087	1.46	0.145	-.0443055	.3004011
[101, 500]	-.139	.109	-1.27	0.202	-.3535804	.0749216
[501, 1000]	.150	.094	1.60	0.111	-.0344571	.3358635
[2001, 5000]	-.059	.116	-0.51	0.608	-.2889514	.1690946
[5001, 30000]	-.144	.115	-1.25	0.211	-.3699307	.0818368
[30001, 450000]	-.077	.104	-0.74	0.457	-.2813343	.1265749
ultimatum offer						
Yes	.088	.053	1.66	0.097	-.016104	.1927264
buyer experience						
Low	.020	.054	0.38	0.704	-.0858714	.1271085
seller gender						
M	.112	.093	1.21	0.226	-.069883	.2957326

A5. Descriptive statistics of the variables

Table A6. Descriptive statistics analysis

Variable	Obs	Mean	Std. Dev.	Min	Max
buyer experience	250	1.384	.4873335	1	2
seller gender	250	1.872	.33476	1	2
good source	250	1.516	.5007464	1	2
type of good	250	4.552	2.485.156	1	8
seller WTA hypothetical	247	29354.82	117070.8	30	1000000
final offer	164	10468.78	39111.05	20	450000
deal outcome	250	1.656	.475994	1	2
bargaining number	218	1.399.083	.4908369	1	2
expert consultancy	250	1.524	.5004255	1	2
market value	105	29160.71	110605.6	200	1000000
price range	224	3.825.893	2.083.686	1	7
ultimatum offer	250	1.44	.4973827	1	2

A6. Correlation matrix of the variables

Table A7. Correlation matrix, r correlation, p-value ≤ 0.05 , number observations

	Buyer experi- ence	Good Source	Type of good	Seller WTA Hypo- thetical	Final offer	Deal out- come	Bar- gaining Number	Expert consul- tancy	Market value	Price range	Ulti- mum offer
Buyer Experi- ence	1.0000 250										
Seller gender	-0.116 0.0671 250										
Good source	-0.0582 0.3595 250	1.0000 250									
Type of Good	-0.0895 0.1583 250	-0.0136 0.8308 250	1.0000 250								
Seller WTA Hypo- thetical	-0.0246 0.7003 247	0.0727 0.2548 247	0.0508 0.4270 247	1.0000							
Final Offer	-0.0998 0.2034 164	0.0909 0.2470 164	0.0559 0.4768 164	0.9790* 0.0000 164	1.0000 164						
Deal outcome	0.0697 0.2725 250	0.0063 0.9206 250	-0.0188 0.7678 250	-0.1649* 0.0094 247	. . 164	1.0000 250					
Bar- gaining number	0.0399 0.5578 218	-0.0656 0.3354 218	-0.0482 0.4793 218	-0.0625 0.3588 218	0.0373 0.6354 164	0.3157* 0.0000 218	1.0000				
Expert Consul- tancy	-0.1038 0.1015 250	0.0546 0.3904 250	0.1314* 0.0379 250	0.1102 0.0838 247	0.1599* 0.0408 164	-0.0158 0.8039 250	-0.0469 0.4913 218	1.0000 250			
Market value	-0.1207 0.2200 105	0.1538 0.1173 105	0.0464 0.6386 105	0.8284* 0.0000 105	0.9855* 0.0000 75	-0.0181 0.8543 105	0.0674 0.4985 103	0.0189 0.8486 105	1.0000 105		
Price range	-0.0390 0.5614 224	-0.0135 0.8403 224	-0.1004 0.1340 224	0.1080 0.1068 224	0.1747* 0.0253 164	-0.1234 0.0653 224	1.0000 0.2032 217	0.1797 0.1797 224	0.2250 0.2250 104	224	
Ulti- mum offer	0.1286* 0.0422 250	-0.0445 0.4836 250	0.0431 0.4971 250	0.0393 0.5384 247	0.0364 0.6439 164	0.3366* 0.0000 250	0.2642* 0.0001 218	0.0542 0.3934 250	0.1373 0.1625 105	-0.1024 0.1264 224	1.0000 250