

Loss Aversion, Ambiguity Aversion, and Equity Participation among Urban Indian Savers

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Abstract

Indian households hold very little in equities, whereas they are heavily exposed to physical assets such as gold and real estate. Structural factors cannot fully explain this puzzle, so the reason may be behavioural. A survey was conducted among urban savers residing in the Mumbai Metropolitan Region (plus Pune). Loss aversion and ambiguity aversion were measured using behavioural elicitation, by presenting hypothetical choice ladders for each. Risk tolerance was included as a control. Data were analysed using logistic regression. Loss aversion was independently associated with non-participation across all robustness checks. In contrast, ambiguity aversion was associated bivariately but carried no independent association in the regression once loss aversion and risk tolerance were controlled. The findings point to a behavioural dimension of the puzzle rather than structural explanations. Urban Indian savers tend to weigh losses more heavily than uncertain outcomes.

Introduction

Indian households hold almost nothing in equities but enormous amounts of physical assets such as property; 84% of wealth in real estate and other physical goods, 11% in gold and 5% in financial assets (Reserve Bank of India, 2017, p.2). The developed countries' households have significantly lower holdings in real estate: US (44%), Germany (37%), the UK (25%) and Australia (23%) (p.4). Indian households' participation in financial assets is well below what is observed in developed countries. This pattern persists even though households could earn ongoing income gains by reallocating their portfolio towards financial assets (p.31).

Only 65% of households headed by someone younger than 35 years hold financial assets. The number is 77% for mature households, which is far below developed-country levels (Reserve Bank of India, 2017, p.4). There, almost every household has a bank account and uses formal financial institutions for savings (p.4). Only 55% of poor households and 90% among the richest population group hold any financial asset (p.4). Despite vast differences in income, wealth and value of assets, the rich still have a very low portion invested in financial assets, just 3.7% (p.6). As households become richer, including the wealthiest Indians, they shift from gold to real estate, but still have lower allocation to financial assets (p.25). Therefore, age doesn't close the distance from developed countries. Also it does not make a meaningful difference whether one is rich or poor, when it comes to allocation of capital in financial assets. The classic explanations fall short, so the explanation may lie in something psychological, how people perceive financial assets and the risks associated with them.

Loss aversion refers to a behavioural bias in economics where losses hurt more than the pleasure experienced for the same amount of gains (Kahneman & Tversky, 1979). But this alone cannot be the reason for avoiding stocks because long-term investors would still invest. The problem occurs when loss aversion combines with narrow framing (Barberis, Huang & Thaler, 2006), which means to view a particular event, decision or risk in isolation rather than looking at the long-term picture. When Indian households look at the price of the stock market monthly (or a shorter period), it is bound to fluctuate due to its volatility; but when one looks at the bigger picture, equities provide a positive real rate of return in the long run.

Ambiguity aversion refers to the human tendency to favour known odds over unknown odds (Ellsberg, 1961). Ambiguity aversion is inversely related to participating in the stock markets (Dimmock et al., 2016, p.560). It differs from risk aversion because here the odds are unknown. By contrast, in risk aversion the person knows the

probability but the likelihood is unfavourable. There is ambiguity in stocks because the future returns are unknowable.

Loss aversion and ambiguity aversion have the same outcome: both are associated with lower holdings of financial assets. Although they are different from each other, they cannot be differentiated superficially because both have the same observable outcomes – specifically staying out of the markets. It is also not yet known which shows the stronger association with lower holdings of financial assets in India, so this research examines which shows the stronger association after accounting for risk tolerance.

Among Indian adults with savings residing in the Mumbai Metropolitan Region (plus Pune), are loss aversion and ambiguity aversion each associated with holding equities, and which shows the stronger association after controlling for general risk tolerance?

This research examines whether loss aversion and ambiguity aversion are associated with equity participation, and if they are, which one has a stronger association, after controlling for general risk tolerance. The paper studies only association and not whether the aversions cause non-participation.

Literature review

According to the expected utility theory, rational individuals weigh each outcome based on its expected utility (EU), which is probability multiplied by the value. Generally, a person would choose ₹1,00,000 with an 80% ($EU=80,000$) chance of winning rather than choosing ₹10,00,000 with 2% chance ($EU=20,000$). According to this theory, anyone with money to invest and a long time horizon, should invest in financial markets like stocks, mutual funds, SIPs etc. because the expected returns in stock markets are high, which justifies their variance. Hence, the non-participation is puzzling as to why people are averse to the market. Prospect theory (Kahneman & Tversky, 1979) states that people evaluate the deviation from a reference point instead of solely a pure final value. They tend to resent losses more than they get pleasure from the equal amount of gains. Hence, the prospect theory curve is much steeper on the loss aspect than the gains, showing asymmetry. The curve is concave for the gains and convex for the losses, which means it gets flatter with every gain or loss, in either direction. The whole problem arises when loss aversion combines with narrow framing (Barberis, Huang & Thaler, 2006). Narrow framing is a cognitive bias which occurs when people think about only the short term in isolation instead of the broader and long-term effect. For example, tracking a company's stock price instead of analysing the portfolio as a whole. It may be that this company helps in the diversification of stocks, and in isolation it may be a loss but in a broader portfolio it is a safety net.

Ambiguity aversion (Ellsberg, 1961) is a cognitive bias, which implies that people tend to lean towards known probabilities rather than unknown probabilities even if the unknown could be more probable than the former. It does not just show caution but a systematic violation, and differs from loss aversion because here the main variable is the odds of an outcome occurring, whereas in loss aversion the main variable is the monetary value (gains and losses) and the psychological impact it has on human beings. Expected utility assumes that people behave rationally and assign probabilities consistently to outcomes even when the odds are unknown. Ellsberg breaks this notion by his urn experiment and introduces ambiguity aversion. He observed that when urn A with 100 balls (50 red and 50 black) and another urn B with unknown number of balls were presented, people chose urn A for red and black ball. It is not rational because preferring urn A for red means that there are less than 50 red balls in urn B. Hence, they chose it. So, when they are asked to choose again but this time for black ball they should have chosen urn B as according to them red balls are lesser than 50 in urn B so black balls should naturally be greater than 50 (because there are 100 balls in total), but they still chose urn A which is an anomaly.

If money is invested for long time horizons in the stock market, there is a very high chance of getting higher returns on it. Many people avoid them though the chance of losing money is lower in the long run. Economists had tried explaining this phenomenon by rationalising that it would be due to high transaction costs or due to the illiquid nature of stocks and it would be difficult to liquidate when cash is urgently needed, but it still did not explain why wealthy people with enough liquid assets did not hold stocks (Barberis, Huang & Thaler, 2006). Narrow framing states that an agent analyses a gamble in isolation and does not take into consideration the other risks and factors they face. It is not a bias which we measure, but an explanation as to why and how loss aversion is connected to non-participation. Barberis, Huang & Thaler's paper showed that loss aversion combined with narrow framing can explain why loss-averse people do not invest, while neither causes non-participation on its own (Barberis, Huang & Thaler, 2006). A loss-averse person makes decisions in isolation, and loss aversion is strong enough to avoid stocks, even if the loss is small, due to the kink in prospect theory. This study tests whether loss aversion is associated with non-participation and interprets any association as consistent with narrow framing.

According to Dimmock et al., theoretical models using the standard utility functions suggest that all Americans should be investing in the markets and allocate higher percentages of money to equities compared to other assets, but they do not and the majority of Americans are ambiguity averse. Ambiguity-averse individuals avoid stocks due to the unknown odds (Ellsberg, 1961). Dimmock et al. examined the relationship between ambiguity aversion and several household portfolio choice puzzles, including non-participation in equities. They found that ambiguity aversion is inversely related to stock market participation among US households (Dimmock et al., 2016). They measured ambiguity aversion using Ellsberg urns and calculated ambiguity aversion by subtracting the matching probabilities found from 50%. This study has also followed the same approach for framing questions, while the calculation of ambiguity aversion is identical.

The majority of the research conducted was based on US households' sample. India's context differs from the western developed countries and therefore it warrants a separate study. Indian households hold almost nothing in equities but enormous amounts of physical assets such as property; 84% of wealth in real estate and other physical goods, 11% in gold and 5% in financial assets (Reserve Bank of India, 2017, p.2). Research in the field of behavioural finance has been conducted in India but is limited (Zahera & Bansal, 2018). A study was conducted by Pavithra C and Padmavathi M, in which they circulated a questionnaire amongst the investors in the Indian stock exchange, with a sample size of 100. It examined which behavioural biases active

investors exhibit. They found that millennials were the most active group in investing, and the most common bias was the disposition effect (Pavithra & Padmavathi, 2026).

Zahera and Bansal identified 17 biases across the literature, including overconfidence, herding effect, disposition effect, loss aversion, but not ambiguity aversion (Zahera & Bansal, 2018). Pavithra and Padmavathi studied only existing investors and not the general population (Pavithra & Padmavathi, 2026). Existing Indian studies are largely based on self-report, whereas this study uses behavioural elicitation. Therefore, the question, whether loss aversion and ambiguity aversion are associated with stock market participation, and which shows the stronger association among the general saving population of India, after controlling for general risk tolerance, has not yet been examined. This research paper studies the general saving population, which includes the non-participants, and also examines ambiguity aversion.

Methods

An anonymous form with hypothetical scenarios was circulated. It is a convenience sample. The form was cross-sectional and the responses reflected the prevailing attitudes of the respondents. The study is observational, not experimental, and hence the paper makes claims only about association between behavioural biases and participation in equities and not causation. The respondents were reached through social media platforms (Whatsapp, Instagram) and personal networks. The target sample was Indian adults with savings residing in the Mumbai Metropolitan Region (plus Pune). The form was live for a couple of weeks and 238 people responded.

Some respondents were screened before the analysis because they did not meet the criteria. The minors ($n=21$) were excluded because they were ineligible for the sample. Circulation was domestic, and the form was not able to detect residence abroad. Hence, the rule did not apply. Respondents residing just outside Mumbai (Kalyan, Badlapur etc.) were reclassified as residents of Mumbai Metropolitan Region. There was a robustness check, which gave the results both with and without the low/no saving group in the sample, to verify whether the conclusion held regardless. There were some respondents ($n=33$ in which 4 were minors and adults were 29, 15 avoiders and 14 holders) who were inconsistent and chose to take an unfavourable option, but avoided the favourable options. These respondents were flagged as incoherent and excluded. So the included number of responses were 188 ($238 - 21 - 29$).

Loss aversion was measured with the help of a coin flip gamble ladder. A hypothetical question was presented to the respondents, “Imagine a coin flip. **Heads = you WIN** the amount mentioned in the option. **Tails = you LOSE ₹1,000**. Each row is a **SEPARATE, ONE-TIME FLIP**. For each, would you take it?” It consisted of rows, which started from, “If HEADS: Win ₹800 (If TAILS: lose ₹1,000),” and with each row the winning amount was raised (₹800, ₹1000, ₹1500, ₹2000, ₹3000), but the losing amount remained constant throughout. Then the respondents were asked whether they would take the flip or skip it. The value at which the respondents changed their choice from “Skip it” to “Take the flip” was taken into consideration while calculating the loss aversion (λ). $\lambda = \text{Win amount mentioned in the option} \div \text{losing amount (₹1000)}$ (Kahneman & Tversky, 1979). For example if the respondent switched at the option which mentions ₹2000 as winning amount then $\lambda = 2.0$. The larger the value of λ , the higher the aversion. The λ could be between the lower winning amount and upper one (for example 1.5–2.0 for ₹2000), but the upper bound was considered. This logic overstates the loss aversion calculated for everyone, but the gap largely offsets as it is done for both the groups, that is the avoiders and the holders. If a respondent accepts

the first row immediately (₹800), then $\lambda \leq 0.8$, but it was considered as 0.8 during the analysis ($n=3$ for avoiders, $n=22$ for holders). However, if a respondent skips even the last option, ₹3000, $\lambda > 3.0$, and considered as 3.5 ($n=8$ for avoiders, $n=5$ for holders). This ladder was censored and had a ceiling and a floor, hence the number 3.5 was considered as a convention, as 3.5, for some respondents, understates their aversion. The model was re-run with and without the censored cases where these extremes were included and excluded.

Ambiguity aversion was measured with the help of an Ellsberg two-box ladder. A hypothetical question was presented to the respondents, “Two boxes each contain 100 balls that are either red or black. You draw ONE ball from ONE box. A **red ball wins ₹10,000**; a **black ball wins nothing**. **Box B always has an UNKNOWN mix** — you are never told how many red or black balls are inside. Below are 5 separate choices. Each one offers you a different Box A. For each, pick the box you'd rather draw from.” It consisted of rungs with two options to select from, Box A or Box B, which started from “Box A — 50 red, 50 black, Box B — unknown number of balls”. And with each row the number of red balls decreased by 5 and black ones increased by 5 (50–50, 45–55, 40–60, 35–65, 30–70), while the balls in Box B were always unknown (Ellsberg, 1961). The value of red balls in the proportion at which the respondents changed their mind from choosing Box A (known probability) to Box B (unknown probability) was considered as the Matching Probability (m). Ambiguity Aversion / Ambiguity Premium (AP) = $50 - m$ (Dimmock et al., 2016). For example if the respondent changed their selection at Box A – 35 red and 65 black balls, then $m=35$ and $AP=15$. $AP=0$ means that the respondent is ambiguity neutral, and the larger the AP , the higher the ambiguity aversion. AP could be between lesser red balls and larger red balls (AP could be above 10 up to 15 for Box A – 35 red and 65 black balls), but the upper bound was considered. Just like in loss aversion, here also the logic overstates the ambiguity aversion calculated for those who switched from A to B in between rungs, and the same convention is applied to both the groups, avoiders and holders, so the gap largely offsets. If a respondent accepts Box B in the first rung immediately (when Box A has 50 red balls), then $AP \leq 0$ and is either ambiguity neutral or ambiguity seeking, but it was considered 0 during the analysis ($n=3$ for avoiders, $n=9$ for holders). Conversely, if the respondent doesn't choose the box with unknown balls (Box B) till the very last option, 30 red balls and 70 black balls, $m < 30$ therefore $AP > 20$, and considered as 25 ($n=10$ for avoiders, $n=10$ for holders). This ladder was also censored and had a ceiling and a floor, hence the number 25 was considered as a convention, as 25, in some cases, understates the true aversion. Likewise, 0 could overstate the true aversion in some cases. The model was re-run with and without the censored cases where these extremes were included and excluded.

Risk tolerance was also included in the form. A question was presented to the respondents stating, “In financial matters, how willing are you to take risks?”; and a linear scale was presented numbered 0 to 10, 0 being not at all willing and 10 being very willing (Dohmen et al., 2011). It was measured as a control and was entered into the logistic regression along with λ and AP. The λ and AP results are what is left after accounting for risk tolerance. Unlike loss aversion and ambiguity aversion, this was a self-reported question and was not calculated based on the respondents’ choices.

The next question recorded the dependent variable, which was whether the respondents held equity or not. It stated, “Which best describes your current savings and investments?”. The options given were, “I own individual stocks/shares directly (may also hold equity mutual funds or SIPs)”, “I invest only in equity mutual funds or SIPs, but don’t own individual stocks”, “I have savings or investments, but none in equities (e.g. fixed deposits, gold, PPF, debt funds)” and “I have little or no savings or investments”. If either individual stocks or only mutual funds had been selected then it was considered as “Yes” under “HasEquity”. Mutual funds and SIPs were counted as participation though they cannot be taken into consideration as direct participation in the market, they show equity exposure. Conversely, if savings in assets such as gold and fixed deposits, or little or no savings option had been selected then “No” was considered. “Yes” means that the particular respondent participates in equity, while “No” means no participation. The options were collapsed into binary and do not tell how much one holds in equity. The option, “I have little or no savings or investments”, helped to categorise the low/no savings group.

Other data were also gathered. Age was collected for exclusion of under-18. Location was collected to define the regional scope of the research, which was Mumbai Metropolitan Region (plus Pune), and also to reclassify Kalyan side respondents. Income bands (Under ₹5 lakh, ₹5–15 lakh, ₹15–25 lakh, ₹25–35 lakh, ₹35–45 lakh, Above ₹45 lakh and Prefer not to say) were a control and during analysis they were numbered from 1 to 6. “Prefer not to say” had no income number, so the analysis model was run with and without them. “The money saved or invested, in any form (bank, gold, FDs, funds, stocks)” with the options, “Yes, regularly; Yes, occasionally or a little; No, not really”, was also collected.

The situations presented to the respondents were hypothetical and non-monetary. There were no real stakes or money involved. This was due to feasibility as there was no budget for 238 respondents and also due to the anonymity of the survey. The drawback was that these choices may not fully represent how the respondents behave when actual money is at stake.

Responses were split into two categories, holders and avoiders, to compare the two categories. Furthermore, there were two predictors of interest and one control related to the outcome, namely Loss Aversion (λ), Ambiguity Aversion (AP) and Risk Tolerance respectively, where the values of each were compared across the groups. Due to a difference in scale of values, λ was between 0.8 and 3.5, AP between 0 and 25 and Risk Tolerance between 0 and 10, Cohen's d was used to compare these values. The higher the Cohen's d, the greater is the two groups' separation for that particular indicator. The comparison was done for all the three measures in isolation, but because the three variables are correlated with each other a regression was needed. Logistic regression was applied in jamovi to see how much a predictor is associated with the output when all three are run simultaneously. It makes sure that the influence of the other two is taken into account so that the overlap between loss aversion and ambiguity aversion is not credited to one, because there are chances that a loss-averse person could also be ambiguity-averse and vice-versa. For sensitivity checks, the model was re-run where a low/no savings group was included and excluded to check whether the values are similar or not. Otherwise without the check, savings could also account for avoidance. Another one was where all the responses were included, including the incoherent ones but not the age restricted ones. T-test and Mann-Whitney tests were also run in jamovi to verify whether the differences between groups are statistically significant or due to randomness. Both were used as the former assumes normally distributed data, whereas the latter ignores the shape of distribution.

Results

238 responses were collected through the form, but the analysis was run on only 188 responses ($n=78$ for avoiders, $n=110$ for holders). Some respondents, who were excluded, were either under 18 or incoherent or both. There were 21 minors and 29 incoherent adults ($n=15$ for avoiders, $n=14$ for holders). Four of the 33 incoherent respondents were minors and were excluded under minors' exclusion to avoid double counting. As a result, 50 respondents were excluded and the analysed sample was 188. 23 respondents, who filled the "Other" option, were reclassified as Mumbai Metropolitan Region (plus Pune). 20 low/no savings respondents were retained; all were avoiders. Values outside the boundary of the ladder, which could not be observed, were assigned a figure by convention. The censored values included 3 avoiders and 22 holders for $\lambda=0.8$, 8 avoiders and 5 holders for $\lambda=3.5$, 3 avoiders and 9 holders for $AP=0$ and 10 avoiders and 10 holders for $AP=25$. 14 respondents were censored on both ladders, hence the total of all the four groups adds up to 70. A total of 56 respondents were censored ($n=22$ for avoiders, $n=34$ for holders).

Table 1 splits the three measures, loss aversion, ambiguity premium and risk tolerance, by group, avoiders and holders.

Table 1. Descriptive statistics of measures by group

Measure	Group	n	M	Mdn	SD
Loss aversion (λ)	Avoiders	78	2.11	2.00	0.83
	Holders	110	1.35	1.00	0.70
Ambiguity premium (AP)	Avoiders	78	15.06	15.00	6.00
	Holders	110	11.27	10.00	6.65
Risk tolerance	Avoiders	78	4.58	4.00	1.94
	Holders	110	6.61	7.00	1.95

Table 2 compares the groups using the three measures.

Table 2. Bivariate tests

Measure	Welch's t	df	Welch's p	Cohen's d	Mann-Whitney U	Mann-Whitney p
Loss aversion (λ)	6.55	147	< .001	0.98	1924	< .001
Ambiguity premium (AP)	4.08	175	< .001	0.60	2774	< .001
Risk tolerance	-7.05	166	< .001	-1.04	1838	< .001

Welch's t reveals that avoiders are more loss-averse and ambiguity-averse than the holders. Holders are more risk tolerant than avoiders. Holders are subtracted from the avoiders, hence the negative sign in risk tolerance. Cohen's d is large for λ (0.98), medium for AP (0.60) and large for risk tolerance (1.04). Both tests returned $p < .001$ for all measures, which indicates that the differences are statistically significant. Welch's test was used instead of Student's because the two groups had unequal spread confirmed by Levene's test (λ $p = .008$ and AP $p = .042$). Mann-Whitney was used too because it does not depend on assigned censored values such as 0.8, 3.5, 0 and 25. It also agreed that the results are not dependent on the censoring conventions used.

Table 3 compares all the measures simultaneously across five models.

Table 3. Logistic regression across models

Measures	M1	M2	M3	M4	M5
	Main, income not included	Main + income included	No low-savings	No censored	Incoherent included
N	188	166	149	118	189
λ (OR)	0.48**	0.35**	0.37**	0.25**	0.46**
AP (OR)	0.98	0.96	0.98	0.87*	0.96
Risk tolerance (OR)	1.44***	1.56***	1.57***	1.34*	1.52***
Income (OR)	-	1.55**	1.32	1.45*	1.54***
McFadden R ²	.217	.347	.291	.318	.291

* $p < .05$, ** $p < .01$, *** $p < .001$

OR below one means that for every increase in the predictor the odds of participation in equities are multiplied down, above one indicates that the odds rise per increase in the predictor. OR of λ is significant (0.35), which indicates that loss aversion is inversely related to equity participation and cuts the odds by 65%. OR of AP is insignificant once the other predictors are considered and has no independent association. OR of risk tolerance (1.56) is also significant and suggests that it is directly related to equity participation and raises the odds by 56%. Lastly, income is also significant (1.55) and reveals that the richer the person the higher are the odds of them participating in equities. McFadden R² (.347) shows a strong result. In Table 2, AP was significant and looked like a strong predictor, but the regression test showed that, when seen simultaneously, it drops out. By contrast, λ survives the control. λ and risk tolerance survive all controls, whereas AP flips to being significant in M4 where all the censored cases are dropped. This implies that the result for AP depends on how the censored cases are treated.

Discussion + Limitations

Loss aversion was associated with non-participation in equities, and this is the most robust result of this study. It survived all the tests: income, which suggests that it is not related to wealth; risk tolerance, which indicates that it is not explained by general caution; low/no savings, censored cases and incoherent cases. It was consistent across five specifications. Narrow framing might explain the association between loss aversion and non-participation (Barberis, Huang & Thaler, 2006). This suggests that loss-averse people tend to evaluate losses sharply, weigh returns over short time horizons and/or find market volatility unbearable.

Unlike loss aversion, ambiguity aversion was significantly associated with non-participation when viewed in isolation (Table 2). However, in the regression it carried no independent association. It was associated with non-participation but did not add any explanatory power to the model when λ and risk tolerance were held constant. Ambiguity aversion is correlated with loss aversion and risk tolerance. This may reflect an overlap between these measures. The result is not robust to how censoring is handled: when M2 and all other specifications, except M4, are considered (Table 3), AP is insignificant; but when the censored cases are excluded, AP is statistically significant along with λ .

Hence, loss aversion's association with non-participation among urban Indian savers can be linked to the low participation of Indian households noted in the introduction. Non-participation is not only correlated with structural factors such as income and access but also with the behavioural bias, loss aversion. The sample is a narrower slice of the RBI's sample, therefore it is a suggestive contribution and not the answer.

Loss aversion findings are consistent with the conclusion of Barberis, Huang & Thaler (2006). Indian survey evidence adds to the research drawn from Western samples. Ambiguity aversion was associated bivariately but null independently, unlike what Dimmock et al. (2016) found. Most of the studies, as stated earlier, are Likert-based surveys on existing investors. By contrast, this study used behavioural elicitation, and drew on general urban Indian savers.

The study used a convenience sample and the respondents were reached through personal networks and social media rather than random circulation across Mumbai Metropolitan Region (plus Pune). Rural and other cities' savers were not represented. The coin flip and the Ellsberg box ladders did not involve real stakes.

People may have chosen differently if real money were involved. Hence, the elicitation may not fully match their real behaviour. The censored cases were assigned values by convention, and the values were arbitrary. Hence, the ambiguity null was dependent on whether these cases were included or not. The DV was binary and only showed whether an individual held equities or not rather than how much they held. The sample was small (188) and the robustness checks reduced it further, to 118 in one model. Small samples limit statistical power and precision. The study cannot claim representativeness because the sample limits how far the findings generalise.

Conclusion

Loss aversion was robustly associated with non-participation in equities among urban savers. Ambiguity aversion showed no independent association. This indicates that urban Indian savers' low equity participation is consistent with how people weigh losses rather than how they avoid unknown odds. This study contributed evidence toward understanding the low participation puzzle among Indians using behavioural elicitation instead of self-reports. Future studies should use real stakes and a wider sample. The ambiguity question in M4 is still open to examination.

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