Loss Aversion and Anchoring Effect: A Review of Behavioral Economics

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Abstract. The anchoring effect and loss aversion are two key ideas in behavioural economics that are examined in this article. The psychological significance of losses in comparison to comparable gains is highlighted by loss aversion, which was first put forth by Kahneman and Tversky. Although preliminary calculations indicated that the λ ratio should be around 2.25, more recent studies show that it depends on both context and magnitude. The universality of the phenomena is contested by meta-analyses. Women and older people routinely exhibit more loss-averse behaviour, which further complicates this bias and frequently results in inefficient effects like preference misrepresentation and policy stagnation. On the other hand, anchoring refers to the ongoing impact of starting values on later assessments. Even among experts in high-stakes judgements, anchoring is robust across domains despite differences in processes, such as quantitative priming, selective accessibility, and inadequate correction. Though their extent, persistence, and results differ depending on the task, environment, and demography, these results collectively show that these biases substantially impede rational decision-making. The study identifies areas for future behavioural economics research and emphasises the significance of connecting lab-based data with field settings.

Keywords: Loss aversion, anchoring effect, behavioral economics

1. Introduction

Loss aversion is a key concept in behavioral economics introduced by Kahneman and Tversky, appears to posit that prospective losses tend to have a substantially greater subjective impact than equivalent gains. Initially research estimated the parameter λ (the ratio of loss to gain weight) of loss aversion to be approximately 2.25, indicating that losses are perceived to be more than twice as impactful as comparable gains. However, within this broader analytical framework, especially regarding whether it holds across different loss magnitudes and context, particularly concerning very small losses.

What seems to emerge from the literature is that meta-analyses present somewhat conflicting findings to eliminate order effects and control for presentation bias. In light of these methodological considerations, critical research by Zeif and Yechiam appears to challenge claims of loss aversion for small losses, attributing earlier results to what they suggest are potential methodological biases [1]. Their studies, using symmetric and randomly ordered stimuli, seemed to generally indicate no

loss aversion for small sums. What appears to warrant further interpretive consideration is that weak effects seemed to emerge only for losses around \$40 (λ=1.16), with what appears to be a stronger aversion for \$100 losses (λ=1.54). What this tends to indicate is that loss aversion may not be a universal phenomenon but rather one that seems to depend on magnitude, emerging more substantially only for larger prospective losses.

2. Anchoring effect

The anchoring effect, as originally identified by Tversky and Kahneman, describes how human judgments appear to be biased toward a previously encountered "anchor" value. What seems especially noteworthy is its robustness across a wide range of contexts, from seemingly trivial estimates to high-stakes decisions (e.g., legal sentencing, negotiations), ostensibly persisting even with arbitrary, extreme, or subliminal anchors(stimuli presented below conscious awareness).

Given the complexity of these theoretical relationships, several mechanisms have been proposed: (1) Insufficient adjustment, where people seemingly start from the anchor and adjust inadequately; (2) Conversational inferences, which might involve treating anchors as informative cues; (3) Numeric priming, where exposure to a number influences subsequent judgement unconscious ; (4) Selective accessibility, which tends to increase access to anchor-consistent information; and (5) Scale distortion, which seems to alter the perceived meaning of a response scale.

What also appears significant in this context is that expertise and motivation rarely eliminate the bias. For example, judges' sentences have been shown to be influenced by arbitrary anchors, and real estate experts' valuations appear biased by listing prices. Given the multifaceted nature of this evidence, this pervasiveness makes anchoring a critical focus for understanding the limitations of human judgment, with apparent implications for negotiations, consumer behavior, and various legal contexts.

3. The impact of loss aversion on individuals: a synthesis of empirical and theoretical research

3.1. Study characteristics: research objects

Existing studies on loss aversion appear to span diverse populations, with what seem to be notable variations in socioeconomic status (SES), gender, and other sample demographics. Schmidt and Traub, for instance, conducted laboratory experiments with 45 university students (approximately 20% female), predominantly economics majors, representing what might be characterized as a relatively homogeneous group in terms of educational level [2]. Within this analytical framework, their focus on students ostensibly allowed for the controlled measurement of monetary decision-making, though it also presumably limited the generalizability of the findings to broader SES groups.

Alesina and Passarelli subsequently extended this scope to what appears to be political behavior across populations, analyzing voters with varying SES and age cohorts [3]. What seems to emerge from these findings is an apparent intergenerational difference: younger individuals (who possess longer time horizons) tend to exhibit weaker loss aversion, whereas older cohorts seem to generally indicate a stronger status quo bias. In a different context, Meisner and von Wangenheim studied students within school-choice mechanisms, reporting what appeared to be no substantial SES-based differences in loss aversion [4].

What also appears significant in this context are apparent gender differences, which seem to represent a consistent finding. Schmidt and Traub reported that female participants tended to display

both more frequent loss-averse choices and larger relative loss premiums—a pattern that seems to lend support to what may represent a broader line of research linking women's risk aversion to loss sensitivity [2].

3.2. Methodologies and research design

3.2.1. Experimental approaches

In light of these methodological considerations, Schmidt and Traub utilized controlled laboratory experiments involving monetary lotteries to measure loss aversion. Participants allowing precise measurement of individual-level risk preferences [2]. they termed "absolute" and "relative loss premiums" calculated to quantify the bias. What appears particularly significant about these findings is that this design seemingly isolated loss aversion from potentially confounding factors, using certainty equivalents to derive individual-level indices.

3.2.2. Observational and theoretical models

From a particular interpretive perspective, Alesina and Passarelli combined theoretical models (such as median voter and partisan models) with real-world case studies (e.g., U.S. healthcare reforms, the Scottish independence referendum) to analyze how loss aversion shape political preferences [3]. What this tends to indicate is that they modeled status quo bias and policy cycles, linking loss aversion to a generalized resistance to reform.

3.2.3. Choice-acclimating Personal Equilibrium (CPE) models

Meisner and von Wangenheim, working within these evolving conceptual parameters, employed choice-acclimating personal equilibrium (CPE) frameworks to study strategic behavior in school-choice mechanisms [4]. Their design focused on how loss-averse students might misreport preferences to avoid potential disappointment, using game theory to model equilibrium outcomes. The result reveal that a view of loss aversion as a key factor in strategic decision-making.

3.3. Data analysis methods

Within this broader analytical framework, statistical techniques ostensibly vary by study design:
 Experimental Studies: Schmidt and Traub employed binomial tests to assess the frequency of loss-averse choices, alongside t-tests to compare relative loss premiums across groups. In light of these methodological considerations, they filtered their data to exclude apparent violations of theoretical predictions (approximately 23% of observations), a step taken to bolster the study's internal validity [2].
 Theoretical Models: Alesina and Passarelli used equilibrium analysis within game-theoretic models, from which they derived predictions that seem to concern policy persistence and intergenerational conflict [3].

3.4. Key findings

Prevalence and Magnitude: The findings suggest that Schmidt and Traub found that a majority of choices (51%) were seemingly loss-averse, with a positive average relative loss premium (0.43), which point toward what appears to be a strong bias among affected individuals [2].

Demographic Patterns: What the evidence appears to reveal is that women exhibited somewhat higher loss aversion in the work of Schmidt & Traub [2]. Furthermore, what also appears significant in this context is that older individuals and aging societies showed a seemingly stronger status quo bias [3].

Behavioral Outcomes: What appears to emerge from this evidence is that loss aversion apparently led to suboptimal decisions, including what seems to be a misreporting of preferences in school-choice mechanisms and resistance to policy reforms [3,4].

4. Conclusions and cross-study comparisons

4.1. Consistencies

What appears particularly significant about these findings is that all studies seem to lend support to what may represent loss aversion as a robust behavioral bias. What this tends to indicate is that losses exert a greater psychological impact than equivalent gains, shaping decisions from various aspect [5-8]. Other studies Demographic differences related to gender and age appear largely consistent, with women and older individuals typically showing stronger loss aversion such as future research should verify i=the influence of other potential confounding variables like personality and so on.

4.2. Divergences

Context Specificity Laboratory studies like Schmidt & Traub's tend to report higher λ values than many real-world analyses, possibly due to what might be characterized as the lower stakes in experimental settings like future research needs to verify the relevant conclusions in real-world environments..

5. Discussion

Empirical studies show that loss aversion strongly distorts individual decision making, but its effect is context- and demographic-dependent, with large behavioral implications.

While losses generally far outweigh corresponding gains, its effect is not universal. Importantly, loss magnitude critically modulates its strength: small losses (e.g. \$40) exhibit near-neutral λ values (1.16) and increase for larger sums (\$100: $\lambda=1.54$) challenging the concept of loss aversion as a universal bias [1]. Additionally, methodological context matters: controlled lab studies often report higher λ values than real-world analyses, perhaps due to environmental stakes and task framing affecting its salience.

Older individuals display stronger loss aversion and status quo bias, likely due to shorter time horizons and greater asset holdings [3]. This explains societal rejection of reform (e.g. healthcare, independence referendums). Older individuals display stronger loss aversion, while younger individuals, with a longer opportunity period, display weaker loss aversion. Gender: Women have consistently been found to display higher loss aversion, measured as choice frequency and loss premiums [2]. Stronger differences have been found for higher SES [4].

Detrimental behavioral outcomes Individual loss aversion leads to systematically suboptimal choices. Economic inefficiency: More than 51% of experimental choices were loss avoiding at the expense of a rational gain maximizing choice [2]. Strategic misrepresentation: Subjects misrepresent their preferences (e.g. in school-choice mechanisms) to avoid a disappointment they know will occur - a form of perceived loss [4]. Societal inertia: Aggregated individual loss aversion gives rise

to powerful resistance against beneficial policy changes, perpetuating intergenerational conflict and policy inaction [3]. The experiments conducted in the lab (e.g., monetary lotteries) isolate utility effects but might miss richer cognitive processes (e.g., selective accessibility as a form of anchoring) at play in complex field decisions. Future work should: 1. Address the lab-field gap, i.e., test validity in high-stakes settings; 2. Investigate cognitive mechanisms beyond utility models; 3. Carefully control for the role of confounders (e.g., personality types) in differences across demographics.

6. Conclusion

Loss aversion is a powerful, yet context-sensitive force that shapes individual behavior. Its influence--moderated by loss size, age, and gender--ranges from economically-irrational choices to broader societal resistance to progress. This work suggests that when studying loss aversion, it is important to walk the tightrope between psychological integrity and societal sensitivity.

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