# M1L11. Prospect Principle

***Slide #1***

***Slide #2***

Human
Decision-making
Behavior

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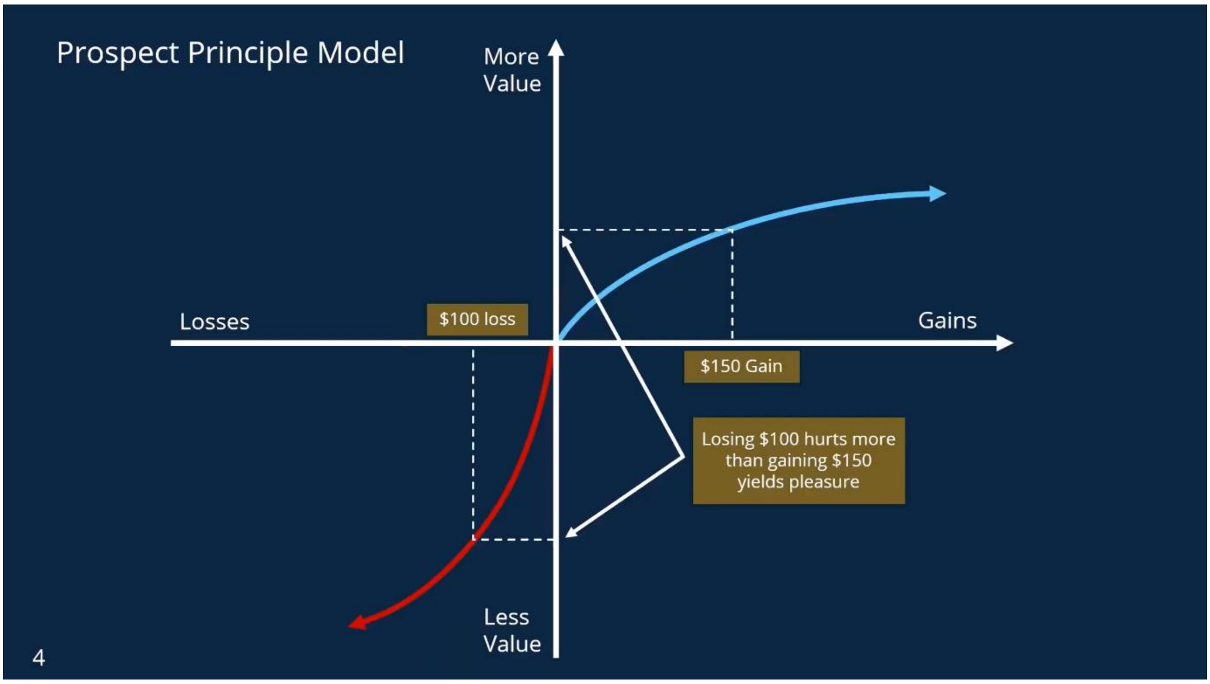
The foundation of human decision-making behavior. One of the most important principles in behavioral economics is the Prospect Principle, developed by Daniel Kahneman and Amos Tversky. Daniel received the 2002 Nobel Memorial Prize in Economic Sciences for the work he did in collaboration with Amos Tversky on the behavioral economics six years after Amos' death.

***Slide #3***


They concluded that people are risk-averse with the fear of losing 100 dollars being more intense than the hope of gaining 150 dollars.

***Slide #4***

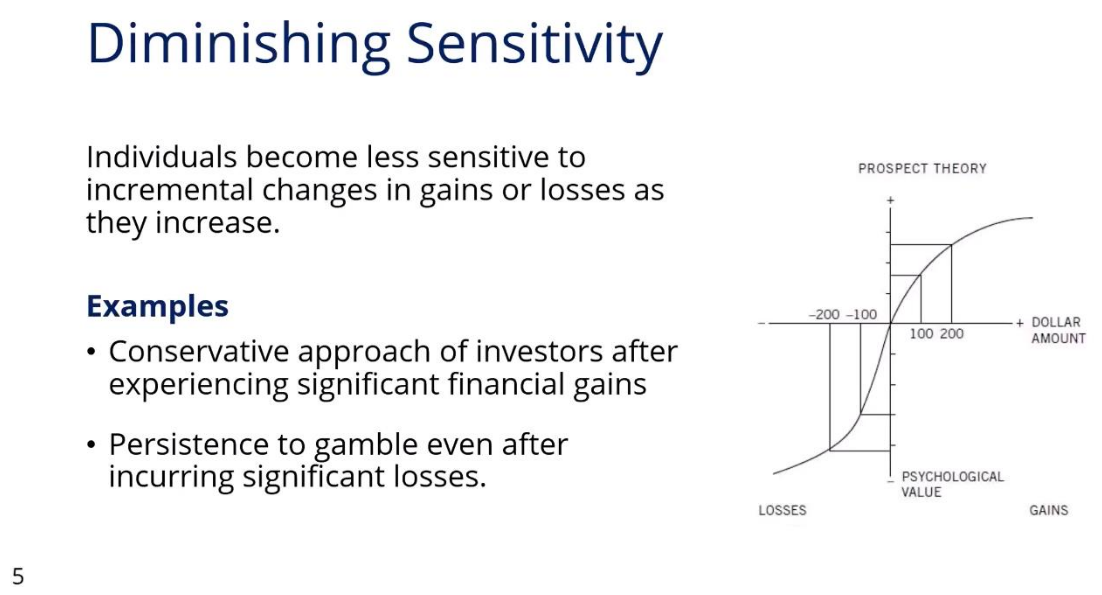



This principle is illustrated in the chart below.

The x-axis represents the outcomes of economic decisions with financial gains on the right and losses on the left. The y-axis represents the subjective perceived value of these outcomes to individuals making decisions.

The Prospect Principle underscores that people undervalue financial gains and fail to appreciate the value of their outcomes once it exceeds a certain threshold. This behavior pattern is frequently observed when individuals encounter risks associated with uncertainty. They often overlook positive outcomes and disproportionately emphasize potential losses.

***Slide #5***




Another way to interpret the prospect principle is that individuals become less sensitive to incremental changes in gains or losses as they increase. The marginal impact of gains or losses diminishes as they accumulate.

Diminishing sensitivity explains why investors tend to adopt a more conservative approach after experiencing significant financial gains as their initial thrill of achievement diminishes with further gains.

This also clarifies why individuals may persist in gambling even after incurring significant losses. In such cases, gamblers with diminished sense of further losses tend to misjudge their chance of recouping losses. Behavior psychologists have extensively documented the phenomenon of risk aversion.

People are risk averse not due to a lack of self-confidence, but because we view our goals as opportunities to maintain stability.

***Slide #6***

# Assessment: A Simple Decision (Case 1)

As a product development executive of an automation software company. Also, you are one of strong candidates the company is considering for a VP position for a newly created data analytics solution business unit. You just launched a new AI product in Q1. The market response was surprisingly positive, and the product made $10 million profit in the first half of the year. Your performance target is making $20 million this year. The financial performance is an important factor your company values for the VP position.

There are two options:

1. Launch another new machine learning product: 20% of chance of losing $5 million, and 80% of chance of making $15 million.
2. Focus on support the AI product sales support: 100% chance of making $11million in the 2nd half of the year.

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In the first scenario of the risk-taking assessments example, a risk-averse individual chooses option B, focusing on supporting the sales of the current product as it provides a higher certainty of meeting the performance target and demonstrates a commitment to maintaining and maximizing the success of the current profitable venture.

Those selecting option A are considered risk takers who chase extraordinary outcomes, willing to risk potential disaster for the promise of enormous success.

***Slide #7***

## Assessment: A Simple Decision (Case 2)

As a product development executive of an automation software company. Also, you are one of strong candidates the company is considering for a VP position for a newly created data analytics solution business unit.  you just launched a new machine learning product in Q1. The market response was surprisingly lower than expectation and the product made only $2million in the first half of the year.  Your performance target is making $20million this year. The financial performance is an important factor your company values for the VP position.

There are two options:

1. Launch another new generative AI product: 40% of chance of losing $4.5 million, and 60% of chance of making $27million, which potentially makes your company a leader in this new  field. But a loss will make your Division difficult to develop other new products next year.
2. Release an updated version of the ML product: 20% chance of broke-even, and 80% chance of making $18 million

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On the other side, the prospect principle highlights a common behavioral tendency observed among individuals facing investment losses. Despite the potential for financial disaster, irrational investors still opt to take riskier decisions, driven by a psychological urge to swiftly recover losses and regain a sense of control over their financial situation.

This impulsive behavior, seen in Scenario 2, often leads individuals to opt for the riskier choice. They gamble on a risky generative AI product to salvage the underperforming current product and strive to beat the annual target despite the high likelihood of financial disaster for the company. The second option offers greatest certainty in meeting the annual financial target, albeit with less ambitious potential.

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According to the prospect principle, people are risk averse when making decisions. Humans tend to opt for a safer approach when faced with uncertain choices. Additionally, individuals' sensitivity to gains or losses diminishes as they increase. The reduced marginal impact of gains explains the conservative behavior of investors after they have achieved significant investment returns.

On the other hand, gamblers tend to continue participating in casino activities with a biased hope to recoup previous losses. However, individuals still differ in terms of risk taking. It is prudent to be aware of your own risk-taking preferences and to try to understand others behaviors so that you can feel wholeheartedly comfortable and confident in making your judgments.