**Prospect theory**

Prospect theory stems from Loss aversion, where the observation is that agents asymmetrically feel losses greater than that of an equivalent gain. It centralizes around the idea that people conclude their utility from "gains" and "losses" relative to a certain reference point. This "reference point" is different for each person and relative to their individual situation. Thus, rather than making decisions like a rational agent (i.e using expected utility theory and choosing the maximum value), decisions are made in relativity not in absolutes.

Consider two scenarios;

100% chance to gain $450 or 50% chance to gain $1000

100% chance to lose $500 or 50% chance to lose $1100

Prospect theory suggests that;

When faced with a risky choice leading to gains agents are risk averse, preferring the certain outcome with a lower expected utility (concave value function).

*Agents will choose the certain $450 even though the expected utility of the risky gain is higher*

When faced with a risky choice leading to losses agents are risk seeking, preferring the outcome that has a lower expected utility but the potential to avoid losses (convex value function).

*Agents will choose the 50% chance to lose $1100 even though the expected utility is lower, due to the chance that they lose nothing at all*

These two examples are thus in contradiction with the expected utility theory, which only considers choices with the maximum utility. Also, the concavity for gains and convexity for losses implies diminishing marginal utility with increasing gains/losses. In other words, someone who has more money has a lower desire for a fixed amount of gain (and lower aversion to a fixed amount of loss) than someone who has less money.

Prospect theory is a behavioral model that shows how people decide between alternatives that involve risk and uncertainty (e.g. % likelihood of gains or losses). It demonstrates that people think in terms of expected utility relative to a reference point (e.g. current wealth) rather than absolute outcomes. Prospect theory was developed by framing risky choices and indicates that people are loss-averse; since individuals dislike losses more than equivalent gains, they are more willing to take risks to avoid a loss. Due to the biased weighting of probabilities (see certainty/possibility effects) and loss aversion, the theory leads to the following pattern in relation to risk.

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| **Part** | **GAINS** | **LOSSES** |
| **HIGH PROBABILITY  (Certainty Effect)** | **95% chance to win 10,000  Fear of disappointment  RISK-AVERSE** | **95% chance to lose 10,000  Hope to avoid loss  RISK-SEEKING** |
| **LOW PROBABILITY  (Possibility Effect)** | **5% chance to win 10,000  Hope of large gain  RISK-SEEKING** | **5% chance to lose 10,000  Fear of large loss  RISK-AVERSE** |