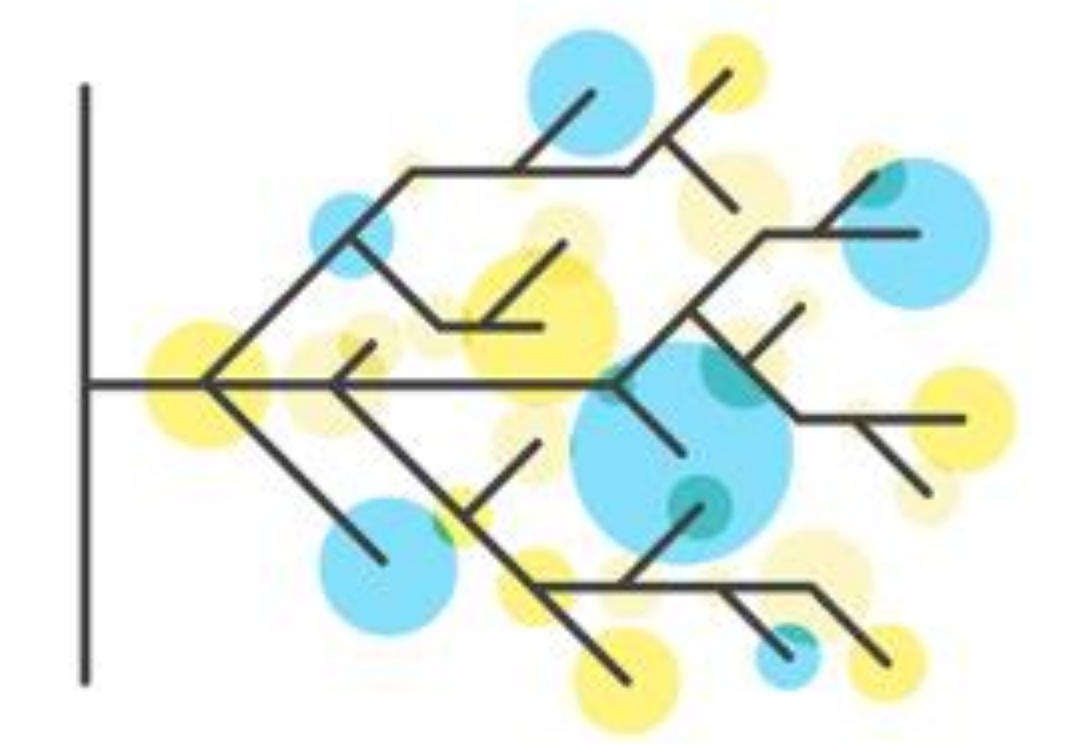


# Consequential Inconsistency in Dynamic Decision Making

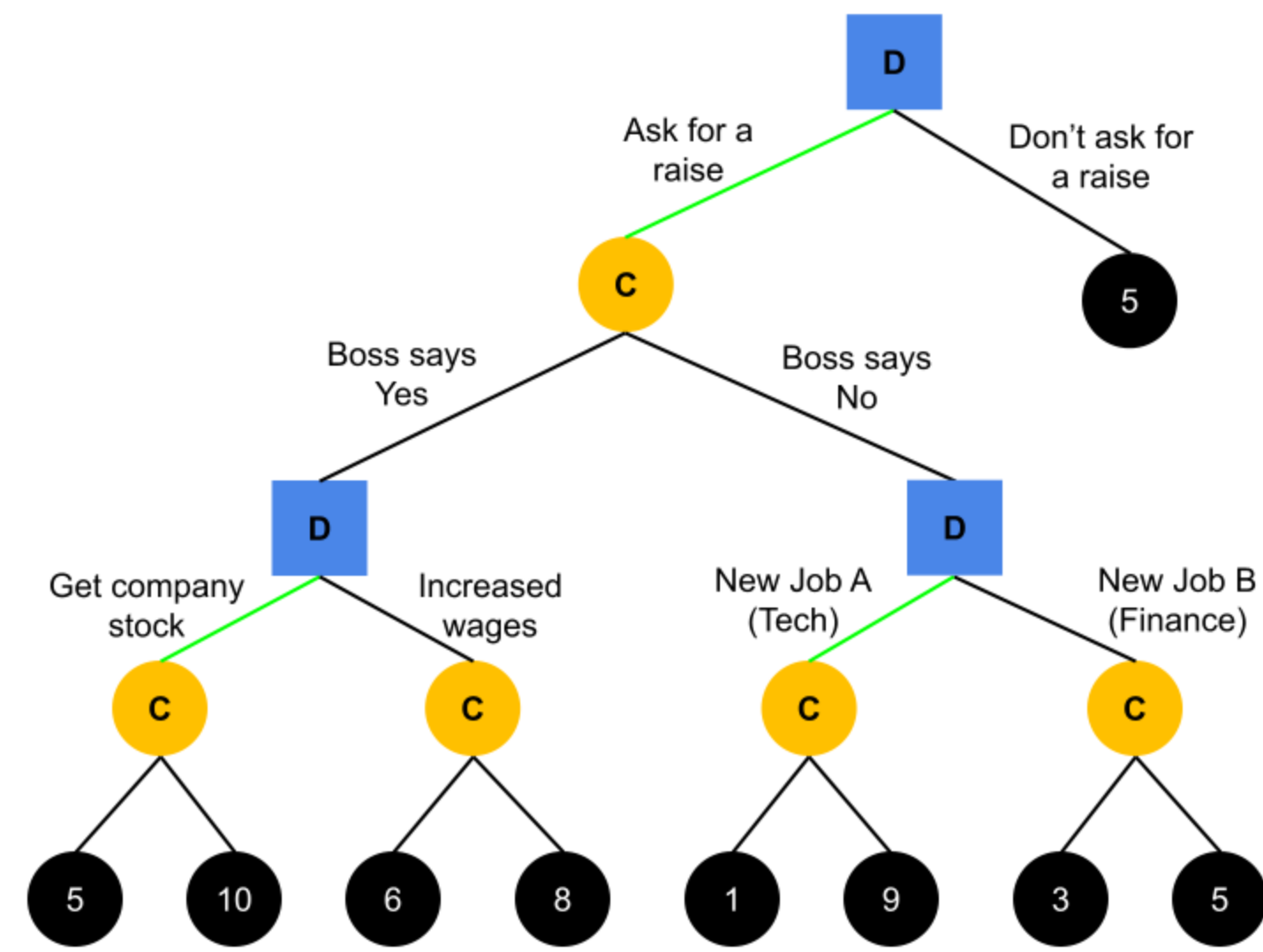


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## INTRODUCTION

Decision-making does not happen in a void. Real-world decisions – such as asking for a raise – are dynamic and context-dependent. They are preceded by, and follow, other decisions.



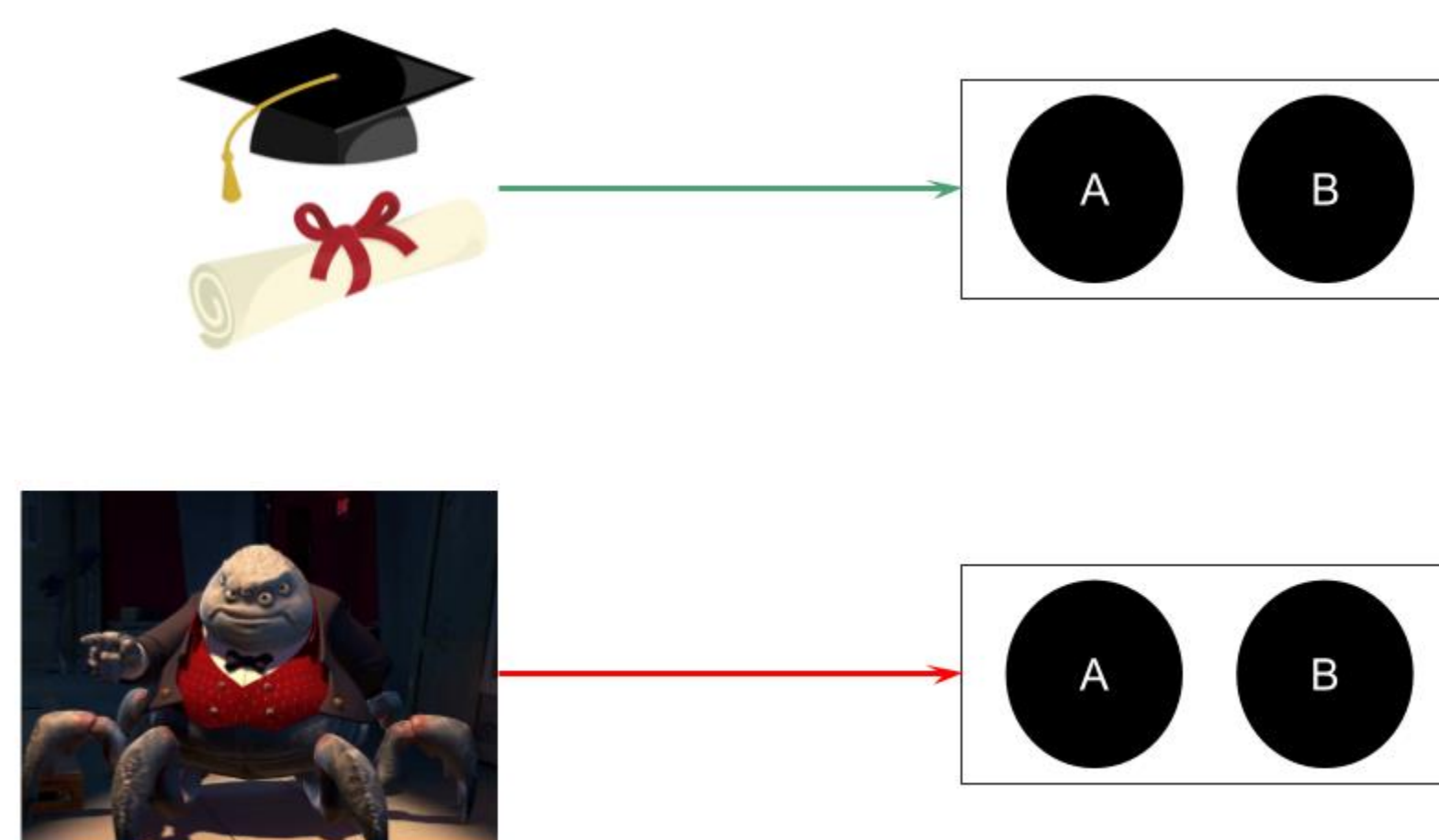
Backward induction is a normative model for optimally solving dynamic decision problems. However, backward induction requires that people adhere to a set of rational axioms, and past research has found mixed evidence for this. We focus on one axiom: Consequential Consistency.

**Consequential Consistency (Consequentialism)**  
A consequentially consistent individual makes decisions based only on relevant, future outcomes.

## Research Question

**Do people exhibit consequential consistency in multistage decision problems?**

Backward induction requires planning one's future decisions, but consequentially inconsistent individuals cannot commit to these plans. Instead, their preferences will be affected by previous (inconsequential) events.



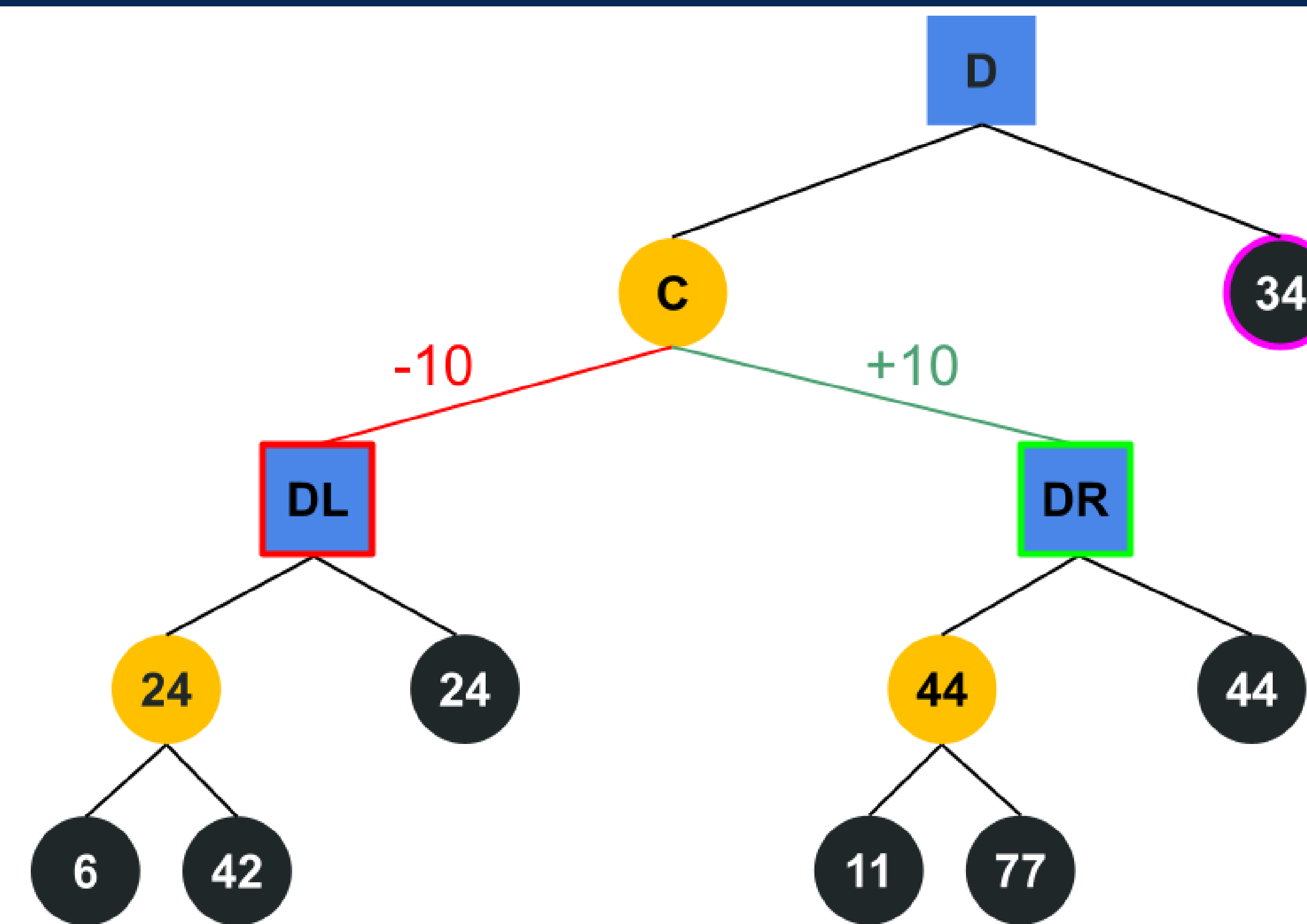
## STIMULI

**D** = Decision Node

**C** = Chance Node

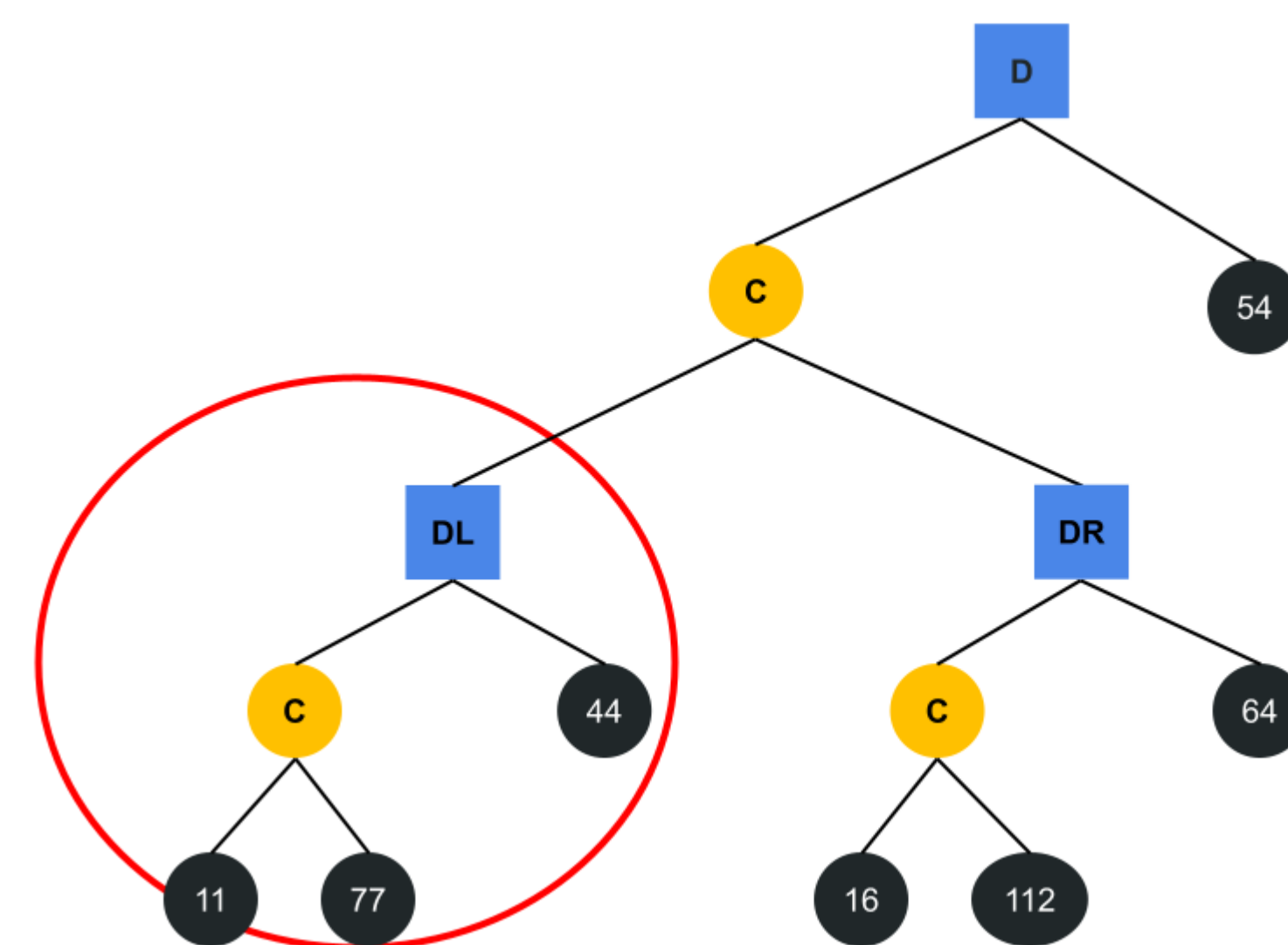
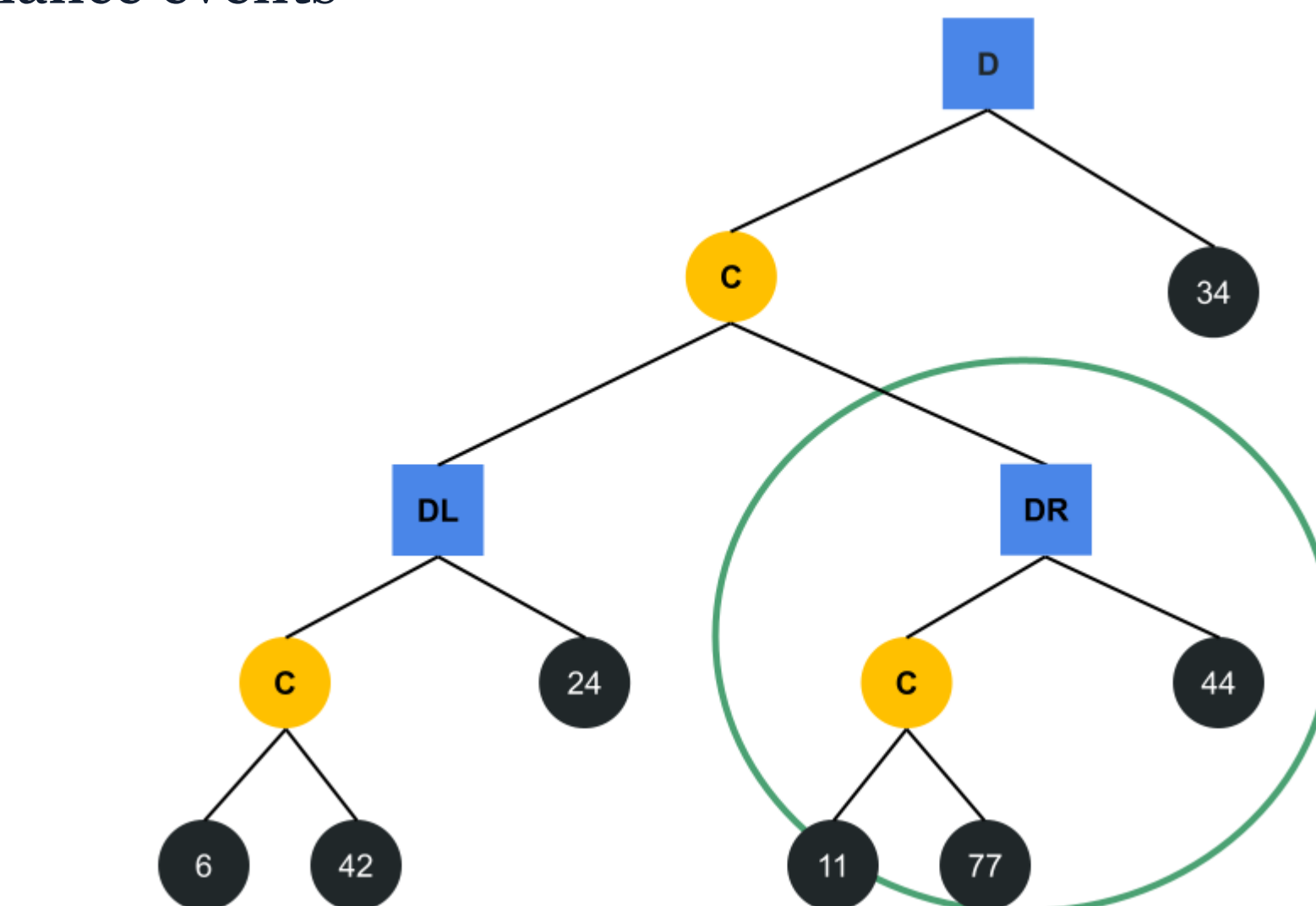
**X** = Final Outcome Value

5 (base node) x 4 (variation)  
= 20 different trees

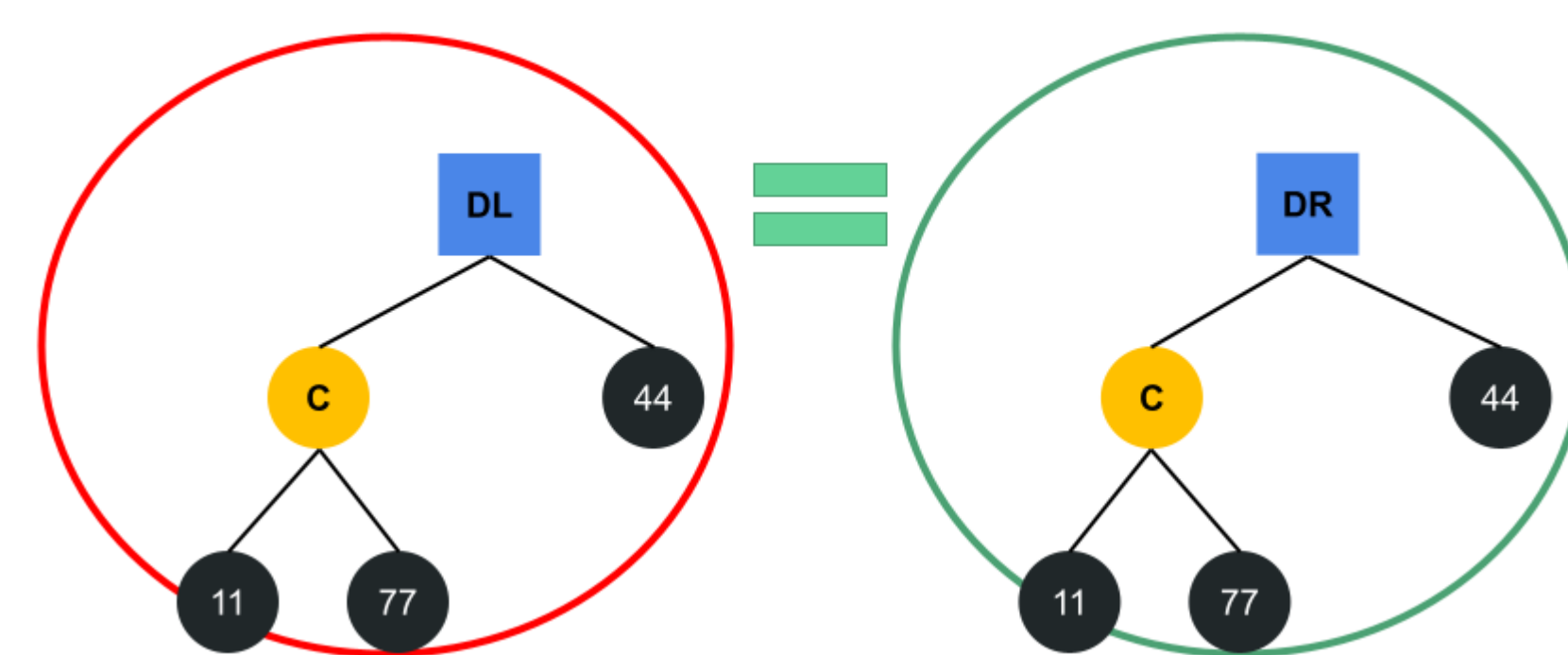


## METHOD

Equivalent sub-decisions appear after good and bad chance events

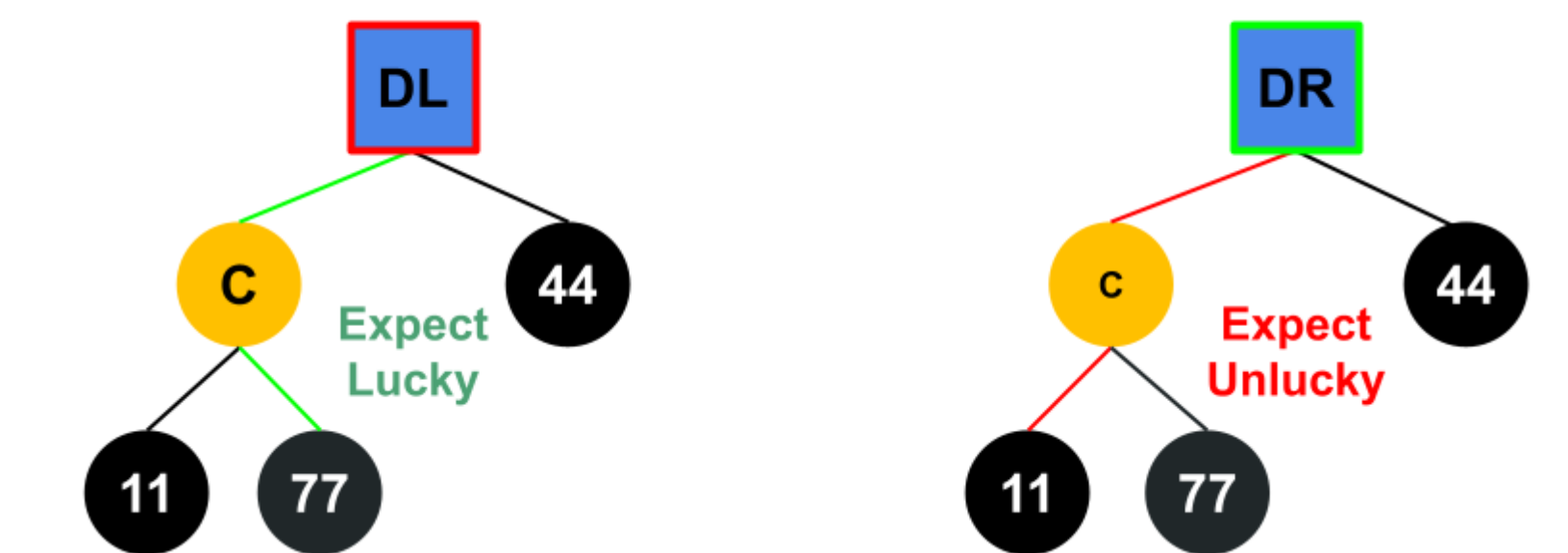


**Consequentialism: Equal preference for risk in both scenarios**

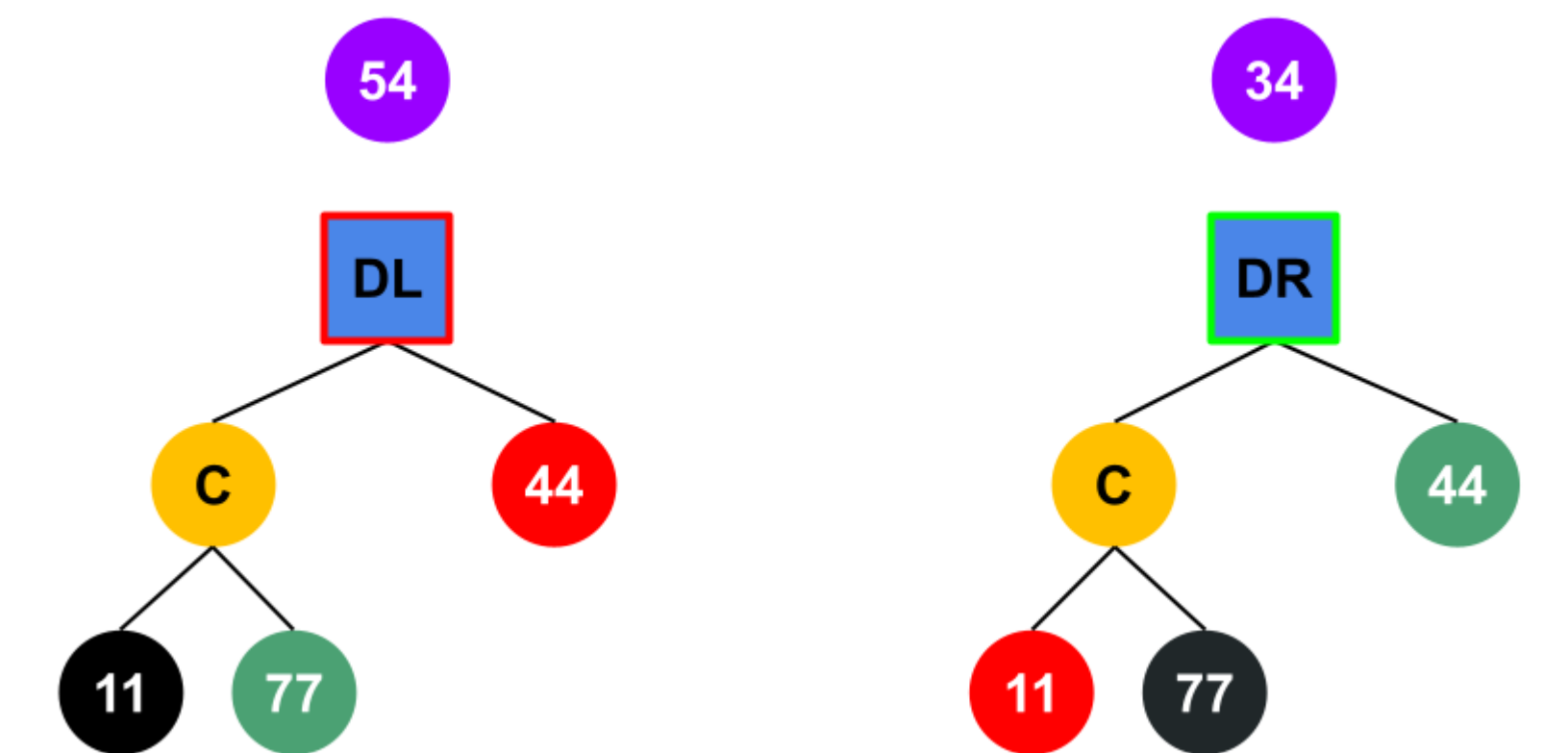


## CANDIDATE EXPLANATIONS

**Gambler's Fallacy**

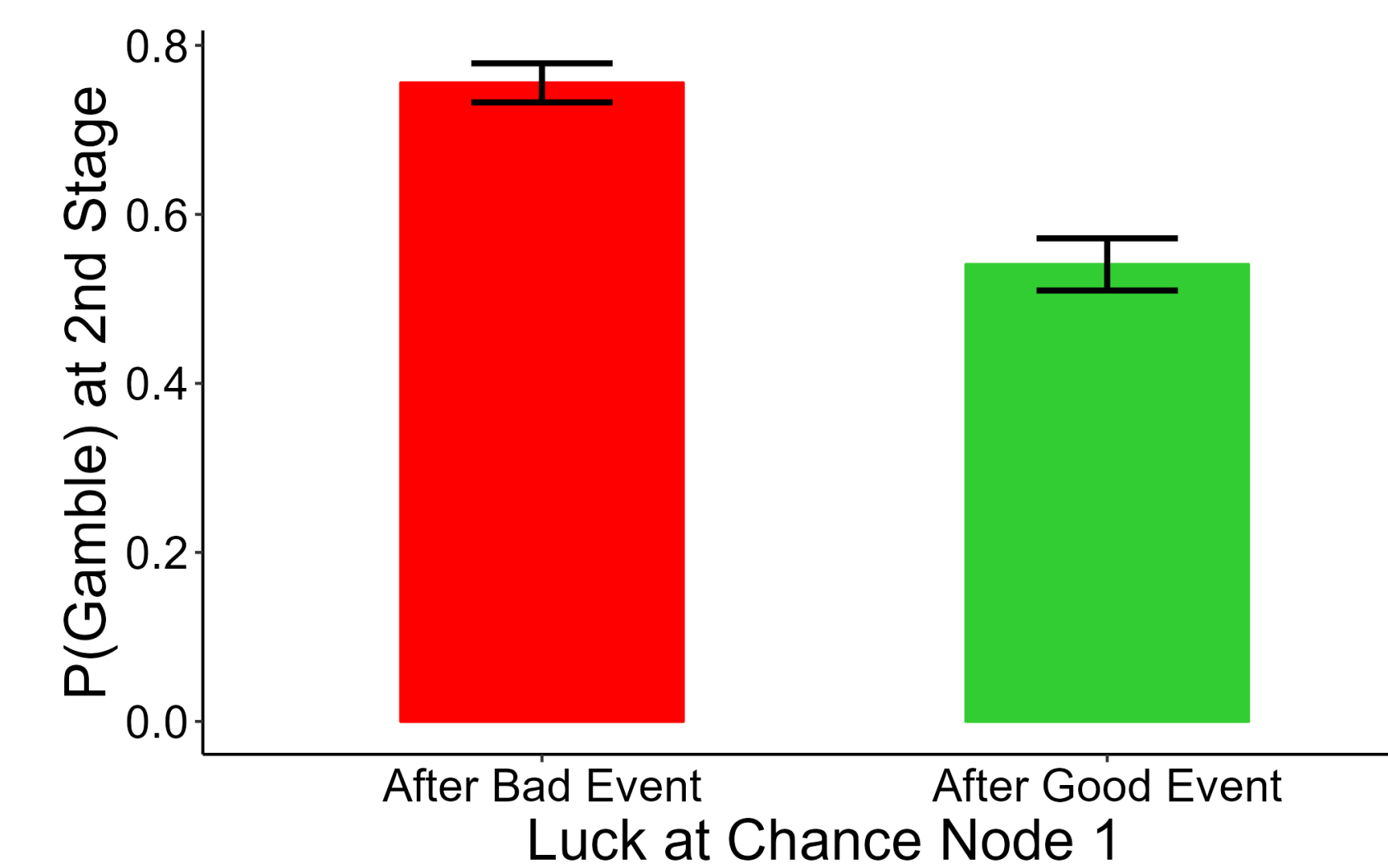


**Aspiration / Gambling For Redemption**

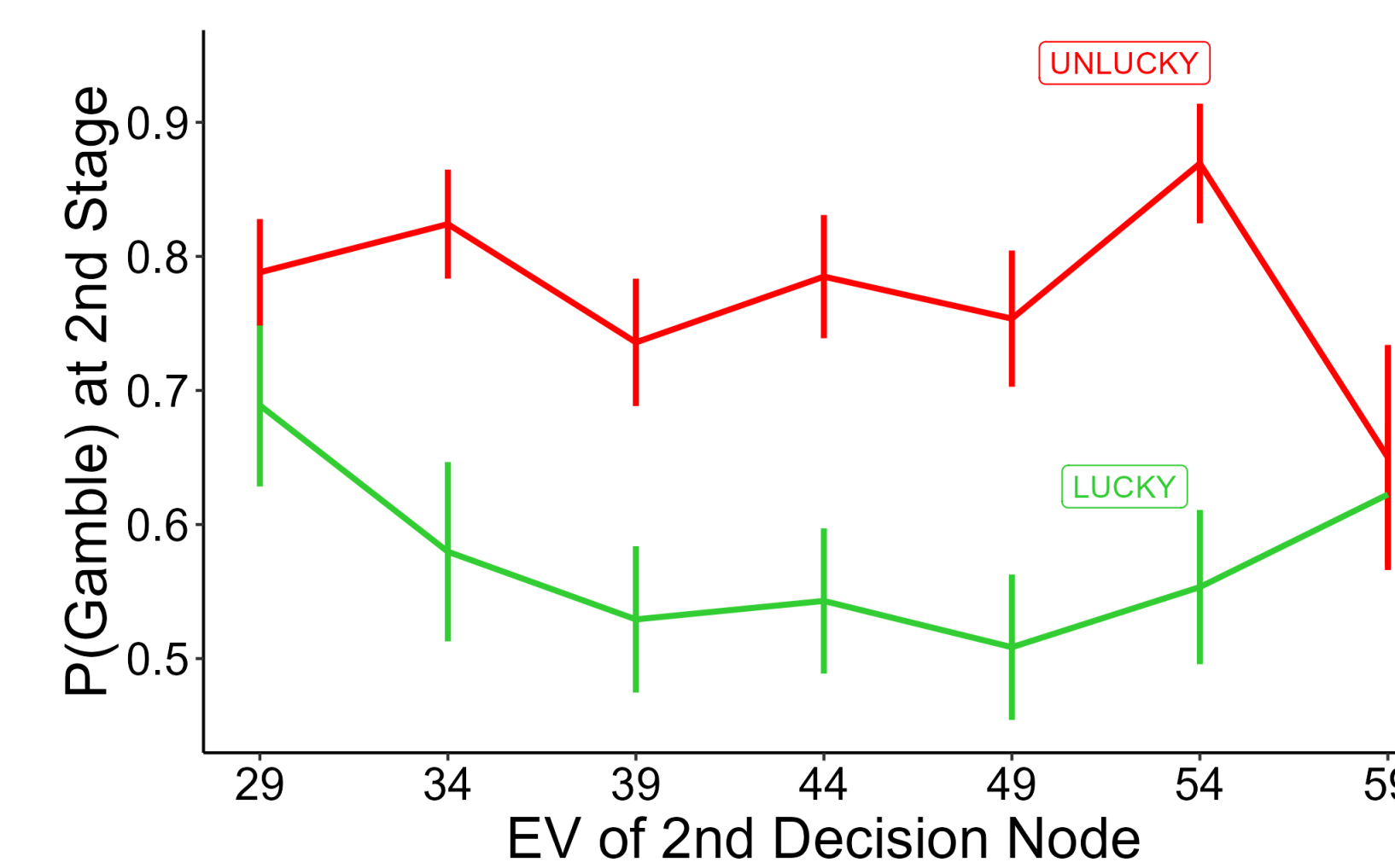
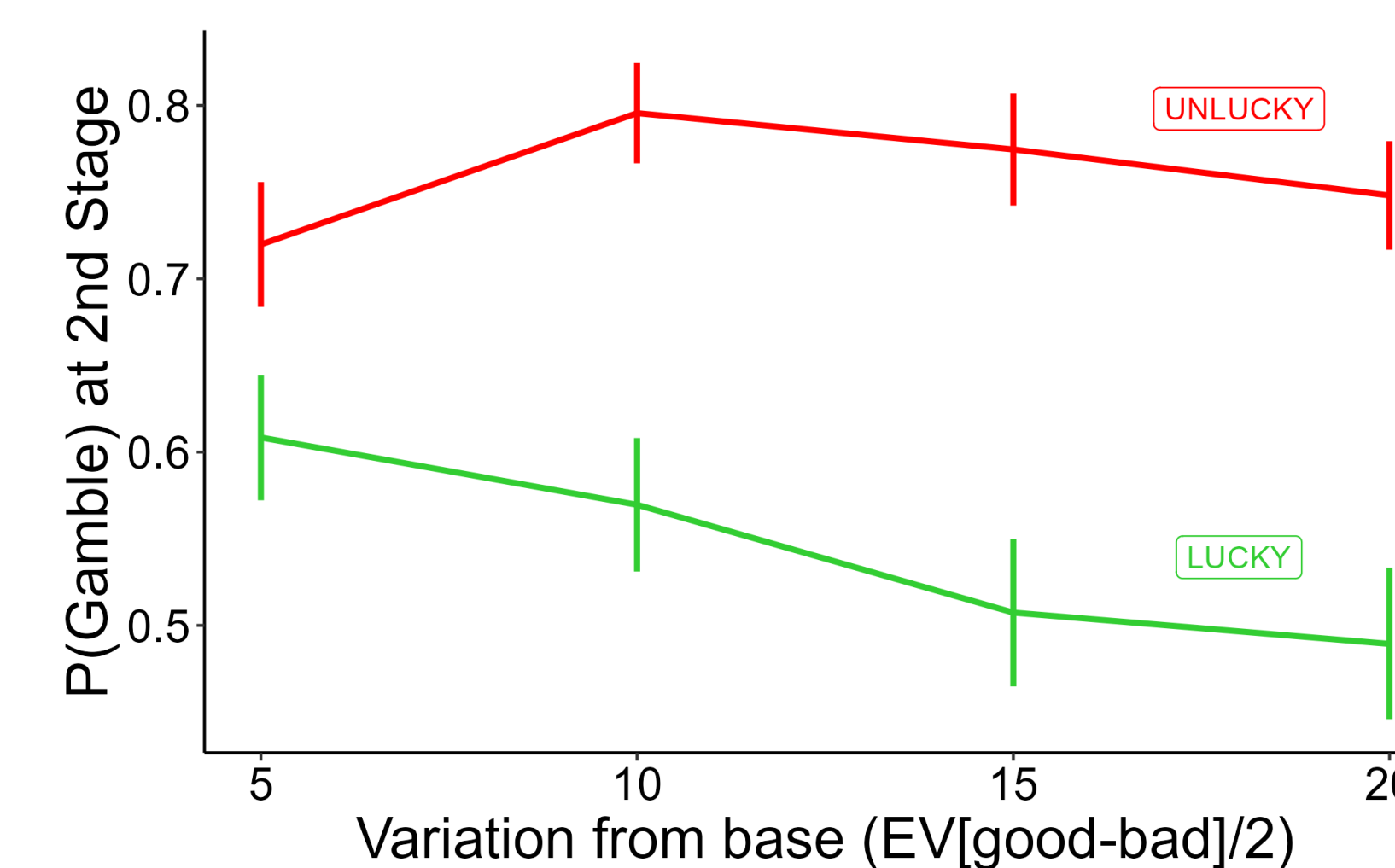


## RESULTS

Risk-taking preferences at the 2<sup>nd</sup> decision node were influenced by outcome of the 1<sup>st</sup> chance node (n = 64).



This effect is robust across levels of expected value and expected value variation



## CONCLUSIONS

People are consequentially inconsistent.

In general, risk-taking preference is greater immediately after experiencing a bad ("unlucky") outcome.

Not consequentialist  $\Rightarrow$  key axiom of backward induction is violated.

Thus, people must be solving multistage decisions in another manner. We are testing models of alternative strategies, including gambler's fallacy and aspiration.

## FUTURE DIRECTIONS

