**For fixed and known outcomes, probability matching yields decisions that is only dependent on the ranking of utility, not on the shape of the utility**

Binary decision a = (0,1)  
Binary outcome r = (r1,r2)

Outcomes are known. Only the probability of an outcome is learned

Hierarchical model

Reward for action 1 for a given

Reward for action 2 for a given

Probability that reward is higher for action 1 than action 2

Probability matching with marginalized proba.

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Again, dependency is only in the ranking.

**Conclusion**:

If reward is binary, and know for sure, reward is not taken into consideration for decision (only probability matters)

What could be implemented here is some probability distortion