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The effects of monetary incentives on how conjunctive probabilities are assessed

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Abstract: This paper explores how people compute conjunctive probabilities when monetary incentives are present. In E1, participants encounter urns filled with 100 balls among which n are colored. Participants learn about the n of colored balls by observing balls being sampled. At test, people encounter questions like two balls will be drawn, one from the black urn and one from the blue urn, what is the probability that one is black and one is blue?. Payment is based on a proper scoring-rule rewarding participants that estimate probabilities that correspond with the underlying true probabilities. By modeling how people combine single event probabilities (one ball is black) into conjunctive event probabilities (one ball is black and one is blue) we show that people estimate conjunctive probabilities by taking a weighted average between single event probabilities. E2 show similar results when the test task is to choose between options in a gamble.