Decision Processes Colloquia

Monday, April 9, 2012
Where: JMHH 245
When: 12:00 noon to 1:20 PM

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"Biased Beliefs about Random Samples: Evidence from an Integrated Experiment" with Daniel Benjamin (Cornell) and Don Moore (Berkeley).

Abstract: This paper describes results of an incentivized experiment designed to investigate in an integrated way a set of ex ante questions related to potential biases in sample beliefs about (simulated) random coin flips. Using the same elicitation categories as they do, we replicate quite closely Kahneman and Tversky's (1972) un-incentivized findings that people's beliefs about proportions are too dispersed even for sample sizes of 10. Using alternative categories, however, the elicited beliefs change dramatically, in the direction predicted by Tversky and Koehler's (1994) "support theory."

We argue that the most natural interpretation of our data is that subjects' intrinsic beliefs about sample sizes of 10 are approximately accurate, but strongly confirm earlier findings on non-belief in the law of large numbers: in sample sizes of 1,000, none of our 103 subjects appreciated that it is a near certainty that there will be between 450 and 550 heads, no matter how we elicited those beliefs.

Although smaller than previous estimates, we also find clear evidence of a significant gambler's fallacy in one elicitation technique and less clear evidence of a small gambler's fallacy in an alternative elicitation. Because we elicit beliefs that the subjects have beliefs about different aspects of the same data that accord to the hypothesized biases that are mutually inconsistent, we are able to rule out confounds such as subjects not attending to or believing in the random process we told them was generating the data, and to show that non-belief in the law of large numbers is a basic under appreciation of the properties of large sample sizes rather than any alternative notion of the underlying stochastic process.