Review of: "Subjective Probability Theory for Decision Making"

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This paper introduces the concept of subjective probability and discusses a new interpretation of subjective probability and its applications in decision making under uncertainty. In particular, it addresses the St. Petersburg paradox and discusses the reasons for the paradox. Comments are as follows.

1. The reinterpretation of the St. Petersburg paradox by giving an interpretation of subjective probability is commendable, but there seems to be a leap in the theoretical development. The use of subjective probability and the de Finetti price function to reconcile the apparent contradiction in expected utility theory is also a theoretical leap. The author first introduces the concept of probability theory, but I think it is necessary to specify the assumptions underlying the discussion of subjective probability, as in Savage's work on the axiomatic approach. In addition, there are other systems of subjective probability other than expected utility theory, and there are various studies on them as well, and I think it is necessary to develop the discussion by taking their developments into account to some extent. I would be grateful if you could refer to some of the classical studies listed below.

Savage,L.J.(1954). The Foundations of Statistics. Wiley, New York.

Nakamura,Y.(1990). Subjective expected utility with non-additive probabilities on finite state spaces. Journal of Economic Theory, Volume 51, Issue 2, pp. 346-366

Nakamura,Y.(1993). Subjective Utility with Upper and Lower Probabilities on Finite States

Journal of Risk and Uncertainty, Vol. 6, No. 1, pp. 33-48.

Walley, P. (1991). Statistical Reasoning with Imprecise Probabilities.

Chapman and Hall, London.

Walley, P. (2000). Towards a unified theory of imprecise probability.

International Journal of Approximate Reasoning, 24, pp. 125-148.

2. As for the discussion of the St. Petersburg paradox, there are leaps in places in the text. The St. Petersburg paradox is indeed based on the unrealistic assumption of IID, but I think the discussion would be clearer if you included some predictions for a hypothetical case in which the conditions are relaxed. I think it would be possible to show mathematically whether deviating even slightly from the IID conditions would make the argument untenable. Also, I would appreciate it if you could consider the above points by giving more concrete figures, just as a thought experiment.