On the Commodification of Information:
An Exploratory Pre-Bayesian Formulation[*]

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Abstract

Motivated, by Arrow's information (disclosure) paradox AIP (ADP), we formalize the commodification of information based on *extension* through introspective extrapolation of the known to all that is unknown, as opposed to one based on a Bayesian *updating* of prior known information about *all* that constitutes the unknown. The essential idea involves a lottery of information-batches that consolidates a buyer's presumptions of what is already known: this shrinking operation conceived as a correspondence from the space of sub-σ-algebras to the collection of all compact convex subsets of probability measures extended to the entire σ-algebra, and then averaged out as an application of the Debreu integral. A buyer's utility function for information, when formalized as Hurwicz expected utility, is *monotone, continuous* and *linear* in information, in strong counterpoint to the celebrated Radner-Stiglitz non-concavity theorem, but that these properties that no longer hold when Gul-Pesendorfer axiomatics are substituted by those of the smooth ambiguity or variational preference models. The paper concludes by indicating the relevance of the formulation to antecedent literature, both in and outside economics.

Key words and phrases: Arrow's information (disclosure) paradox, pre-Bayesian, Knightian uncertainty, private information, private beliefs, value of information, Debreu integral. Hurwicz expected utility, variational preferences, smooth ambiguity model

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