A note on the foundations of Grether's α-β rule*

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January, 2026

Abstract

We provide an optimization-based foundation for Grether's α–β rule. Our main result shows that this rule is equivalent to a solution of a certain minimization problem. More precisely, if a belief updating follows the α–β rule, its posterior belief coincides with the unique solution that minimizes a weighted sum of the KL divergences to the prior, the Bayesian posterior, and the signal. We also characterize special cases of this minimization problem in terms of regularities of belief updating.

Keywords: belief updating, non-Bayesian updating, α-β rule, KL divergence
JEL classification: D80; D91

*I would like to thank Yutaro Akita for his helpful comments and discussion. This work is supported by JSPS KAKENHI Grant Number 23KJ0979.

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