

Reasoned inference of long-run mutual information (Bayesian theory for dummies) [draft]

P.G.L. Porta Mana 

C. Battistin

S. Gonzalo Cogno

[<pgl@portamana.org>](mailto:pgl@portamana.org)

[<claudia.battistin@ntnu.no>](mailto:claudia.battistin@ntnu.no)

[<soledad.g.cogno@ntnu.no>](mailto:soledad.g.cogno@ntnu.no)

(or any permutation thereof)

31 March 2019; updated 23 December 2020

A reasoned analysis of inference for long-run mutual information between stimuli and responses from small samples is given. The use of estimators, biased or not, is found to be inadequate for the small-sample case. Moreover, any inference or formula for bias is found to heavily depend on the specific peculiarities of the problem – the specific kind of stimuli and responses, brain region, behavioural and environmental conditions, and so on – making any one-fits-all formula universally poor.

 comments can be introduced with the macro `\mynote{}`