

## Bayesian Epistemology of Testimony and the Analysis of Disinformation

The paper attempts to understand disinformation in Bayesian terms. It attempts to understand processes of inference from testimonies that lead to distorted posterior probabilities of beliefs.

First, the paper outlines valid Bayesian inferences from testimonies (considering the contributions of Bovens & Hartmann, Coady, & Olsson). It distinguishes inferences from single testimonies from inferences from multiple testimonies. Single testimonies *transfer* information. The posterior probabilities of the resulting beliefs of the receivers of testimonies cannot be higher than the reliabilities of the testimonies themselves.

Rational agents acquire over time theoretical and practical cognitive tools for the evaluation of the reliabilities of testimonies. They further learn to distinguish prior assessments of what the testimonies transmit from their reliability. They also learn over time to distinguish their prior assessments of the information testimonies transmit from what they wish the truth to be, from wishful thinking.

Multiple testimonies, by contrast, can *generate* knowledge and beliefs of higher posterior probabilities than the reliabilities of each of the testimonies or their aggregation, if the testimonies are independent (in the sense that they did not transmit information to each other) and the prior probability of the information they transmit is sufficiently low. Coherent and independent testimonies to beliefs that had low prior probability can infer the negligible posterior probability of the hypothesis that the testimonies had no common origin. Rational doxastic agents then trace back the information transmitted by multiple independent testimonies to a common origin and infer its properties. For example, when two independent testimonies agree on somebody's phone number, it is unlikely that they had no common source. But that common source may be the actual phone number of that person, or the phone number of another common acquaintance, or a phone number promoted by frequent television commercial.

Disinformation is a diffused attempt to derange the evaluation of testimonial reliabilities by discrediting all testimonies as unreliable and indistinguishable. People then rationally fall back on their prior beliefs and ignore new testimonies. If the priors are also subjected to effective universal skepticism, people start cataloguing as reality whatever reflects their emotions, wishful thinking.

Disinformation based on inferences from multiple testimonies always has low prior probability, for example by telling elaborate stories about conspiracies, the legacies of dictators, Nigerian fortunes, or lonely American officers in Afghanistan. *Independent* testimonies for beliefs that had low prior probability can generate knowledge even when unreliable or when the testimonies' reliability cannot be evaluated. Spreading rumors is designed to bombard people with the same disinformation from all directions so as to appear *independent*, though the testimonies copy each other and are not independent. Before social media, this could only be achieved by implanting gossips in select groups orally and in person so as to make it difficult for anybody to trace the rumors back; they would hear the rumors from many people and repeat them themselves,

so the rumors appear to come at once from everywhere yet from nowhere. Today, this is done by sharing on social media.

Intelligence analysts, respectable journalists, and historians are experts in the evaluation of the independence of testimonies by tracing them back to their origins. It is no coincidence then that disinformation attacks the professional reliabilities of these experts to generate distrust and eliminate a major epistemic institutional barrier to disinformation.