Notes on (Ortoleva, 2012)

Modeling the change of paradigm: Non-Bayesian reactions to unexpected news

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Abstract

If we attach zero probability to an event because we believe it cannot happen in any way, if there is an evidence that show it had happened, we cannot use Bayesian methods to updating our beliefs, so what should we use instead? Let's see how Ortoleva think about this issue Ortoleva (2012).

1 Bayes' rule

First, let us rethink about why we use the Bayesian methods?

It is induced by the definition of *conditional probability*, see Hogg et al. (2005) *section 1.4*.

But the *conditional probability* is defined on events which have positive probabilities, so we must realize that the response to the unexpected news *is not an actual theoretical issue*.

From this consideration, I doubt the logic foundations behind the assumptions of *uncommon support* (Galperti, 2015), and more aggressive, the foundations behind the assumptions of *heterogeneous priors* (Alonso and Câmara, 2016)[1].

It has two limitations (*maybe only on the case of subjective probability*[2]):

1. It contains no prescriptions on zero probability(*subjective*) events or information.

[1] There are some classical papers that have considered the origin of *heterogeneous priors* have been included in the literature review.

[2] ??

2. There are psychology and behavioral evidence show that the existence of non-Bayesian reactions to "unexpected" news (small but positive probability event).

2 An Example

2.1 subsection

3 section

4 conclusion

References

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Galperti, S. (2015). Hide or surprise: Persuasion without common-support priors. Technical report, mimeo.

Hogg, R. V., McKean, J., and Craig, A. T. (2005). *Introduction to mathematical statistics*. Pearson Education.

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