Optimal Sequential Decision with Limited Attention – Konrad Mierendorff

Abstract: We consider a sequential decision problem in which a decision maker (DM) may acquire information about an unknown state of the world before taking an action (whose payoff depends on the state). Unlike the classical treatment of this problem by Wald (1947) and its subsequent incarnations, the DM in our model may direct her limited attention to diverse sources of evidence that support alternative states at varying degrees of accuracy. The optimal policy combines three distinct strategies: (i) immediate action (ii) contradictory strategy seeking to "rule out the likely state," and (iii) a confirmatory strategy seeking to "confirm the likely state." A generalized model assumes a cost of signal that nests as a special case the entropy-based formulation used in the rational inattention literature (Sims (2003); Matejka et al. (2015)), and provides a dynamic foundation for its prediction, attaining it in the limit as the DM's discount rate goes to zero.