Revising Beliefs in Light of the Unforeseen

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Abstract: Bayesian updating is the dominant theory of learning. However, the theory is silent about how individuals react to events that were previously unforeseen. We study how decision makers update their beliefs if unforeseen events materialize, and under which conditions they revise their views about previously observed relationships. We base our analysis on the framework of reverse Bayesianism', under which the relative likelihoods of prior beliefs remain unchanged after an unforeseen event materializes. We find that participants do not systematically deviate from reverse Bayesianism when the unforeseen changes result in a new world that contains elements of the old world. In contrast, if a regime change is possible, decision makers eventually overhaul their model of the old the world in favor of a completely different view of uncertainty.