Belief Updating, Narratives, and the Dynamics of Resource Use *

Marie-Catherine Riekhof
Institute for Agricultural Economics
Center for Ocean and Society
Christian-Albrechts-University Kiel
Olshausenstraße 40
24118 Kiel, Germany
mcriekhof@ae.uni-kiel.de

Annegret Kuhn
Center for Ocean and Society
Christian-Albrechts-University Kiel
Olshausenstraße 40
24118 Kiel, Germany

Ulrike Kornek
Institute of Economics
Christian-Albrechts-University Kiel
Olshausenstraße 40
24118 Kiel, Germany

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Abstract

Beliefs about the world are shaped by narratives, which in turn influence economic decisions and market outcomes. When narratives fail to align with observed reality - for example of a shock changing underlying dynamics related to the state of the world - agents may persist in suboptimal strategies until discrepancies become untenable. This paper develops a formal model of belief updating and narrative switching where agents follow either an agency narrative (believing their actions affect the state of the world) or a no-agency narrative (believing the world develops exogenously) to examine intertemporal feedback between the state of the world and narrative types. We provide empirical evidence for both types of narratives related to climate change and ocean use. Using empirical evidence on fishery management, we show that agents historically adjust their behavior only when re-estimated (observed) resource stocks deviate from initial estimates (beliefs) by 25%.

Our model demonstrates that prevailing narratives fundamentally alter equilibrium outcomes. For climate change, an agency narrative leads to lower emissions

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and carbon concentrations compared to a no-agency narrative. In fisheries, however, the effects are more nuanced: while fish stocks are larger under agency, harvest levels and profits depend on the interaction between narrative prevalence and belief rigidity. Surprisingly, agents under a no-agency narrative systematically overestimate profits, which may explain its persistence despite worse environmental outcomes.

These findings contribute to the literature on bounded rationality, dynamic decision-making, and belief distortions. They also yield novel policy insights: reducing the threshold for belief updating and encouraging narrative flexibility can improve both economic and environmental outcomes.

Keywords: narratives, beliefs, natural resources, intertemporal development, climate change, fishery, bounded rationality,

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