Decision Making

People often don't know what the 'appropriate action' is until they take some action and see what happens. Thus, actions determine the situation ~ Weick (1988)

Decision making is often presented as a rational, linear process: gather information, weigh options, select the optimal choice. In practice, decision making is far messier, more human, and far more shaped by context than traditional models suggest. Our decisions are not made in a vacuum; they are constructed through mental models formed by experience, training, culture, incentives, and power structures. This paper explores decision making as a socially embedded process, examining how mental models shape perception, how cognitive and organisational biases distort judgement, and how the normalisation of deviance can emerge even among competent, well-intentioned professionals. The paper argues that poor outcomes are rarely the result of individual failure alone, but rather the predictable consequence of how systems shape sensemaking and action.

Decision Making as a Lived, Social Process: Mental Models, Bias, and the Normalisation of Deviance

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Mental Models: How We See the World

Mental models are internal representations of how the world works. They allow individuals to interpret information, predict outcomes, and decide how to act. These models are not neutral or complete; they are shaped by personal experience, professional training, organisational norms, and social narratives. What we notice, what we dismiss, and what we consider “normal” is filtered through these models.

In operational environments - such as aviation, healthcare, or large organisations - mental models are often heavily influenced by formal training and standard operating procedures. Training provides shared frameworks that enable coordination and efficiency, but it also narrows perception. Once a particular model becomes dominant, alternative interpretations are less likely to be considered. Signals that do not fit the prevailing model may be ignored, reinterpreted, or discounted as noise.

Dekker’s work on human factors and safety highlights that people do not make decisions based on objective reality, but based on their local rationality: what made sense to them at the time, given their understanding of the situation and the constraints they were operating under. This is a critical reframing. Rather than asking

“Why did they make such a bad decision?”, Dekker encourages us to ask “Why did this decision make sense to them then?” Mental models provide the answer.

Experience further reinforces these models. When actions lead to acceptable or successful outcomes, the underlying assumptions are strengthened. Over time, this creates confidence and efficiency, but also rigidity. The very experience that makes someone an expert can also make them blind to emerging risks or novel failure modes.

Bias in Decision Making: Individual and Organisational

Cognitive biases are systematic patterns of deviation from rational judgement. While often discussed at the individual level, biases are also embedded in organisations and cultures. Confirmation bias, hindsight bias, authority bias, and normalcy bias all play significant roles in shaping decisions.

Confirmation bias leads individuals to seek out and prioritise information that supports existing beliefs while discounting contradictory evidence. Within strong mental models, this bias becomes particularly potent. Data that aligns with expectations is readily accepted and anomalies are explained away. In complex systems, early warning signs are often ambiguous, making them especially vulnerable to biased interpretation.

Hindsight bias distorts learning after adverse events. Once an outcome is known, decisions made under uncertainty are judged as obviously flawed. This creates an illusion that failures were predictable and preventable, obscuring the uncertainty and trade-offs present at the time. Dekker argues that this bias fuels blame cultures, discouraging honest reporting and deep learning.

Authority bias and social conformity further shape decisions in hierarchical environments. Individuals may defer to senior figures or dominant narratives even when they sense something is wrong. Speaking up carries social and professional risk, particularly when organisational cultures reward compliance and smooth operations over dissent.

At an organisational level, bias is reinforced through incentives, metrics, and storytelling. What gets measured gets managed, and what gets managed shapes attention. If success is defined narrowly, such as on-time performance, cost control, output, then decisions will naturally prioritise those outcomes, sometimes at the expense of safety, wellbeing, or long-term resilience.

The Normalisation of Deviance

The concept of the normalisation of deviance, penned by Diane Vaughan in her analysis of the Challenger Space Shuttle disaster, describes the process by which deviations from accepted standards become gradually accepted as normal.

Vaughan showed that engineers and managers at NASA did not ignore safety concerns out of negligence. Instead, repeated successful launches despite known anomalies led to a redefinition and acceptance of risk. Deviations that did not immediately result in failure were reclassified as acceptable, shifting the boundary between safe and unsafe over time.

This process is deeply connected to mental models and bias as each successful outcome reinforces the belief that the system is robust. Warning signs are reinterpreted through existing frameworks: “This happened before and nothing went wrong.” The absence of negative consequences is mistaken for evidence of safety.

Dekker extends this idea by emphasising that systems naturally drift toward efficiency under pressure. People adapt their work to meet competing demands from time, resources, performance targets. These adaptations are often necessary for the system to function at all. However, when these workarounds become standard practice, deviance becomes invisible. What was once an exception becomes “how we do things around here.”

Importantly, the normalisation of deviance is not a moral failing. It is an emergent property of complex systems operating under pressure. Understanding this shifts the focus from individual blame to systemic design, leadership, and learning.

Sensemaking, Culture, and Power

Decision making is ultimately a sensemaking process: people continuously interpret cues from their environment to construct meaning and guide action. Sensemaking is social, shaped by conversations, stories, and shared assumptions about what matters and what is risky.

Organisational culture plays a central role in determining which interpretations are legitimate. Cultures that prize certainty, control, and perfection often discourage the admission of doubt or error. In such environments, weak signals are more likely to be suppressed, and decision making becomes brittle.

Power dynamics further influence whose mental models dominate. Senior leaders’ interpretations often carry disproportionate weight, shaping organisational narratives and priorities. When decision making authority is concentrated, alternative perspectives struggle to gain traction, even when they are closer to operational reality.

Implications for Better Decision Making

If decision making failures are rooted in mental models, bias, and systemic drift, then improvement requires more than better rules or more training. It requires creating conditions that support reflection, dissent, and learning.

This includes fostering psychological safety so that people can speak up without fear, designing feedback loops that reveal the real consequences of decisions, and

deliberately exposing decision makers to diverse perspectives. It also involves shifting from a focus on compliance to a focus on understanding work-as-done, not just work-as-imagined.

By recognising decision making as a human, contextual, and evolving process, organisations can move beyond simplistic explanations of failure and toward more resilient ways of operating.