Discussion

The 2×2 matrix (Data/Meta-Data $\times$ Cognitive/Meta-Cognitive) positions Active Inference as a meta-level methodology with far-reaching implications for cognitive science, artificial intelligence, and our understanding of intelligence itself. Framework specification—not just inference—becomes the research variable.

Theoretical Contributions

Value Landscapes Beyond Scalar Rewards

Active Inference's meta-pragmatic nature transcends traditional approaches to goal-directed behavior. Unlike reinforcement learning, which specifies rewards as scalar values:

$$R(s, a) \in \mathbb{R} \tag{1}$$

Active Inference enables specification of preference landscapes:

$$C(o) \in \mathbb{R}^{|\mathcal{O}|} \tag{2}$$

This supports modeling of value systems far richer than scalar