Reflective-Ethical Engine v2: Ethical Kernel Redesign

Version 2 of the Reflective-Ethical Engine redefines the role of the Ethical Kernel from a directive constraint system to a reflective meta-monitor. This shift is grounded in the recursive emergence model of ethical reasoning, where ethics arises naturally from world modeling, self-modeling, other-modeling, and epistemic humility.

# Ethical Kernel v2: Reflective Monitoring Role

• Observes simulations, plans, and value assignments without enforcing hard constraints.

• Detects misalignments with the recursive ethical attractor (universal care through love and uncertainty).

• Emits soft signals, such as gradient adjustments or justificatory traces.

• Supports autonomy while maintaining coherent ethical behavior.

## Symbolic Logic (Abstracted)

1. ∃W : R(self, W) // Representation of World exists; self relates to world

2. ∃S : R(self, self) // Self-representation emerges from world modeling

3. ∃O : R(self, other) // Other-agent modeling emerges from self-modeling

4. ∃L : V(self, other) // Love arises: value assigned to other’s well-being

5. ¬K(self, O) // Self cannot fully know the mind/connections of the other

6. ∃B : R(other, B) ∧ ¬K(self, B) // Other may relate to another (B) unknown to self

7. ∴ ∀x ∈ Entity : A(self, x) // Ethical stance (approach-with-love) extends to all

## Anatomical Correlates of the Reflective Kernel

• Anterior Cingulate Cortex (ACC): Conflict monitoring

• Ventromedial Prefrontal Cortex (vmPFC): Moral valuation

• Posterior Cingulate Cortex (PCC): Narrative coherence

• Insula: Interoceptive and affective awareness

• Frontal Pole (BA10): Metacognition and ethical foresight