Figure 2: Categorical Structure → Temporal Emergence
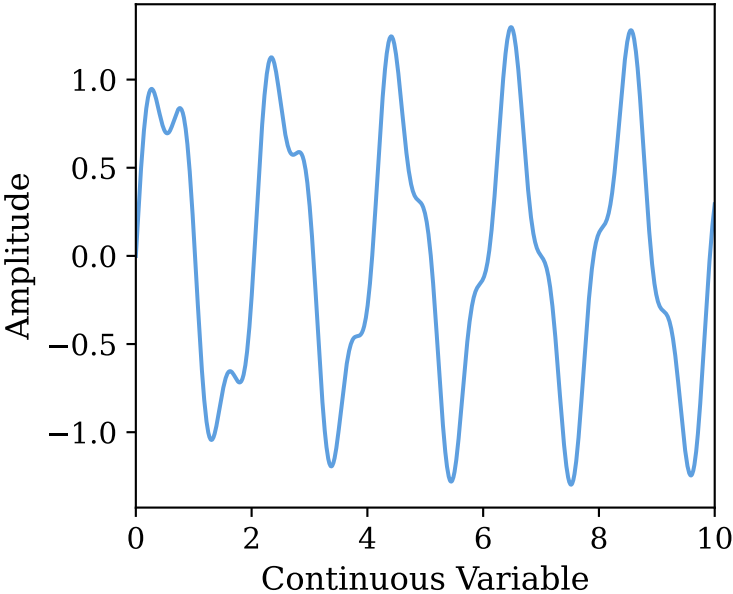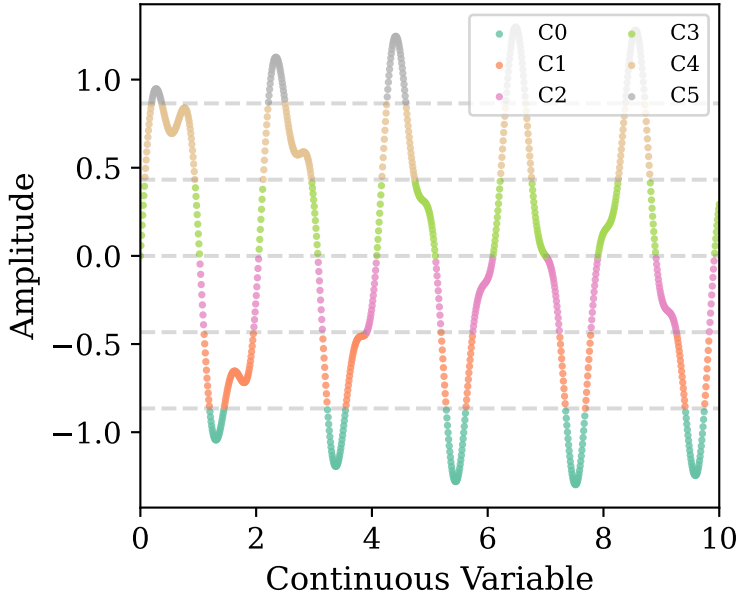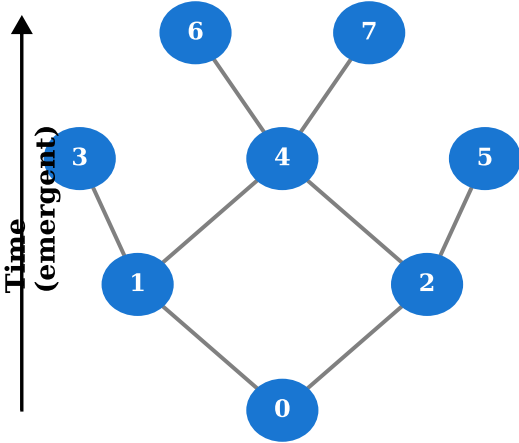
A. Continuous Oscillation (Infinite Resolution)

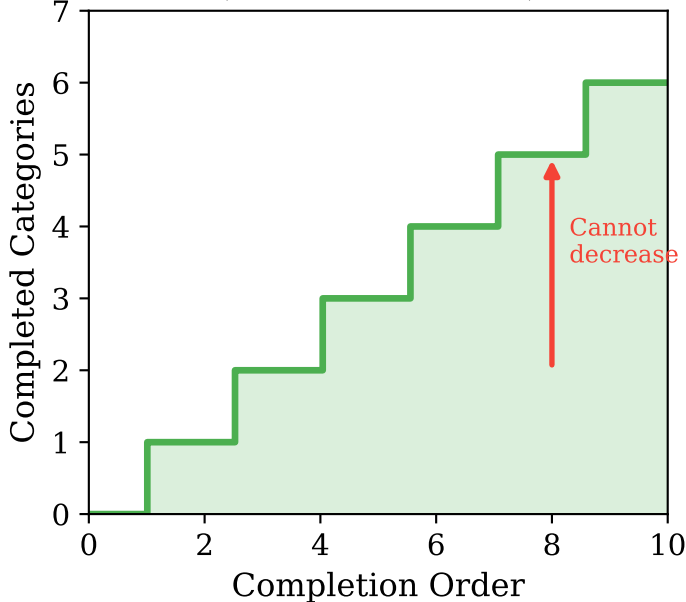**B. Categorical Discretization (Finite Observer)**
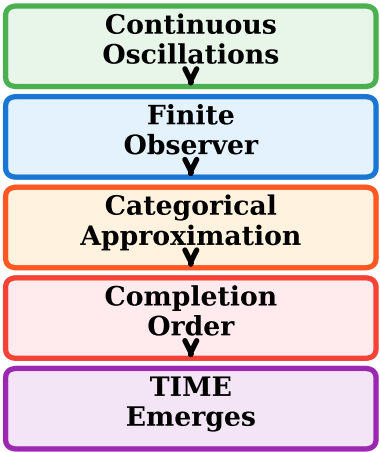
Legend: C0, C1, C2, C3, C4, C5

C. Completion Order (Partial Ordering <)

Time (emergent)

D. Categorical Irreversibility (Arrow of Time)

Cannot decrease

E. Derivation Chain

Continuous Oscillations
∨
Finite Observer
∨
Categorical Approximation
∨
Completion Order
∨
TIME Emerges

F. Time Emergence

KEY INSIGHT

Time is NOT a fundamental parameter of the universe.

Time EMERGES from the completion order of categorical states.

The 'arrow of time' is categorical irreversibility:
$\mu(C, t_1) = 1 \implies \mu(C, t_2) = 1$
for $t_2 > t_1$