Section 15. Discussion: Comparison with Other Frameworks (Maintaining CUWF Core)

This section positions QIA relative to major interpretations and theoretical frameworks in quantum foundations and quantum information. The purpose is not to dismiss alternative views, but to clarify what CUWF adds: a concrete mechanism that replaces interpretive postulates with routing dynamics in a lossless entropic network. In each comparison below, we keep the CUWF core intact: information as wave-pattern encoding, the universe as a lossless entropic network, and collapse as information re-routing.

15.1 Copenhagen: replacing the collapse postulate with routing dynamics

Copenhagen interpretations treat collapse as an irreducible postulate that updates the wavefunction upon measurement. QIA retains the practical measurement language but replaces the collapse postulate with an explicit mechanism: routing dynamics. Instead of an axiomatic discontinuity, collapse becomes a rapid network re-routing transition induced by constraint injection. Thus, QIA preserves Copenhagen's operational success while supplying a deeper explanatory substrate.

15.2 Many-Worlds: branches as routing-space structures, but CUWF selects attractors by cost

Many-Worlds interpretations eliminate collapse by asserting that the universal wavefunction always evolves unitarily, producing branches corresponding to different outcomes. QIA agrees that the underlying network remains lossless and globally coherent, but introduces an additional structural element: routing attractors governed by entropic cost and compatibility. In this view, branches can be

reinterpreted as potential routing-space structures; however, the experienced outcome corresponds to stabilization into a particular attractor rather than the ontological existence of all branches as equally realized worlds. CUWF therefore allows a branching-like mathematical structure without requiring "many worlds" as literal parallel realities.

15.3 Objective collapse theories: collapse as re-routing, not spontaneous destruction

Objective collapse models propose that the wavefunction undergoes spontaneous physical collapse due to new dynamical terms, often interpreted as genuine destruction of superpositions. QIA differs fundamentally: collapse is not spontaneous destruction but constraint-driven re-routing within a conserved informational network. What looks like objective collapse can arise when entropic instability thresholds are exceeded, but the underlying mechanism remains lossless re-encoding and redistribution. Therefore, QIA explains collapse-like phenomena without requiring information-destroying stochastic terms.

15.4 QBism and information-theoretic approaches: CUWF makes information physically real

QBism and many information-theoretic interpretations emphasize information as an agent-centered or epistemic concept. QIA adopts the informational emphasis but rejects the purely subjective reading. In CUWF, information is physically real: it is wave-pattern encoding in an actual substrate. The codeword is not merely a bookkeeping tool for beliefs; it is a real structure of phase, amplitude, and correlation that exists in the network independent of observers. Observers influence outcomes only by injecting constraints, not by defining reality through belief.

15.5 Relativity: locality of signaling is preserved

A central consistency requirement is compatibility with relativity. QIA explicitly maintains locality in the signaling sense: no controllable classical information can be transmitted faster than light. Nonlocal quantum correlations are reinterpreted as routing-consistency constraints of shared code, not as superluminal causal influence. Thus, CUWF keeps relativistic locality at the level of observable communication while allowing global routing coherence at the level of informational architecture.