Cyborgnetic Cosmology Terminology	*Ergodic non-living Type I entity*	*Metastable non-living Type I entity*	*Living Type I entity*	*Type II entity (both living and conscious)*
Biocosmology Terminology	*Type I system*	*Type II system*	*Type III system*	*None*
Ergodicity	Ergodic	Ergodic and well-mixed on times of order the Hubble time and only when taking into account constraints.	Highly non-ergodic, never returns, to exist is rare, over arbitrarily long times only a very small portion of the state space is sampled.	Unpredictable (could e.g., consciously decide to behave as if ergodic or any other alternative).
Methodology	Reductionism and upward causation are sufficient.	Reductionism and upwards causation have to be supplemented by downwards causation because constraints and channels lead to feedback and cycles.	We must admit functional explanation, which is a form of downward causation. This goes hand in hand with a weak form of reductionism.	Cyborgnetic explanations related to triad of VRmind, SR and PhyR.
Ensemble Type	All of state or Hilbert space.	Dominated by capture by limit cycles.	Dominated by capture by Kantian Wholes.	Dominated by capture by cyborgnets.
Sensitivity to small changes in initial conditions	None, quickly averages away.	Moderate.	Extreme, can result in a very different biosphere or none at all.	Extreme, can result in a new universe or none at all.
Equality of time and ensemble averages respecting constraints	Yes.	Only on much greater than Hubble times.	Never.	Unpredictable (could e.g., consciously decide to behave as if ergodic or any other alternative).
Correlations of fluctuations	Gaussian.	Gaussian over very long timescales, and subject to constraints.	Small fluctuations can produce arbitrarily large deviations.	Unpredictable, small fluctuations can be consciously harnessed for arbitrary tasks.
Emergent phenomena	None.	Steady-state nonequilibrium systems, dissipative structures, cycles (Morowitz cycle theorem), limit cycles.	Kantian Wholes, biological cells, the biosphere.	Cyborgnets, universes, the multiverse.
Characterized by	Boltzmann, Maxwell, Gibbs	Prigogine, Morowitz, etc.	Darwin, Noble and Noble	Aliman
What we count	All possible microstates, consistent with macrostate.	All possible microstates, consistent with macrostate and constraints.	Possible novel functions of possible Kantian Wholes.	Counting of possible novel functions is impossible due to unpredictable self-encrypted aggregate abnumeral infinities in cyborgnets.
How to count states	Equilibrium thermodynamics.	Non-equilibrium thermodynamics, subject to constraints.	Use TAP equation to count functions.	Counting is impossible.

Table 2: Conjunction of Cyborgnetic Cosmology and Biocosmology. Adapted from Cortês et al. (2022a). Epistemic areas where Cyborgnetic Cosmology provides an extension beyond Biocosmology are emphasized in blue. The main limitation of Biocosmology is emphasized in red.