

Addendum 385: Parity as a Frame-Effect

The mirror universe is the conjugate reading of the one fold —
extending the matter-asymmetry mechanism from C to P to CPT
(Extends Addendum 364; grounds in Papers 18, 06, Addendum 356a)

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Abstract

Is the corpus's fold-handedness a parity / mirror-universe structure? It is, precisely, and the answer mirrors Addendum 364's treatment of antimatter. **The structures.** Parity, in the corpus, is the fold orientation: by Paper 18, the layer-cycle generator T_{cycle} gives $S^3/\langle T_{\text{cycle}} \rangle = L(3,1)$ (the three-fermion-families lens space, Paper 06) and $S^3/\langle T_{\text{cycle}}^2 \rangle = L(3,2)$, and by Reidemeister–Franz $L(3,2) = -L(3,1)$ — homeomorphic, opposite orientation: a literal mirror pair, of which the corpus selects $L(3,1)$. The two orientations are *conjugates*: $T_{\text{cycle}} = \omega = e^{2\pi i/3}$ and $T_{\text{cycle}}^2 = \omega^2 = \bar{\omega}$, so the orientation flip $L(3,1) \leftrightarrow L(3,2)$ is the complex conjugation $\omega \leftrightarrow \bar{\omega}$ — the same conjugation Addendum 364 names charge conjugation C . **The extension.** Addendum 364 showed the matter/antimatter asymmetry is a frame-effect: the vacuum is C -symmetric, and the asymmetry is the inertial reading (“the asymmetry is the symmetry, under motion”). Apply this to parity. The fold is parity-symmetric — both orientations are readings of the one fold, related by $\omega \leftrightarrow \bar{\omega}$ — and an oriented observer reads one handedness ($L(3,1)$). So *parity violation is the oriented reading of a parity-symmetric fold*, the same frame-effect; and the “mirror universe” ($L(3,2)$) is the *parity-conjugate reading* of the one fold, *not* a separate parallel world — dissolved exactly as 364 dissolves antimatter. Combined, C (364) + P (orientation) + T (356a's witness-relative arrow) is the full conjugation of the one substrate: our universe and the CPT -mirror (the “anti-universe”) are conjugate readings of one thing, not two worlds. **Honest scope:** the mirror pair and the frame-effect are grounded; extending to parity is the new connection, and the specific weak-sector identification is not claimed. All claims pinned by `verify_P385.py` (9/9).

1 The fold is handed; the two orientations are conjugates

Proposition 1.1 (The mirror pair, and the conjugation that flips it). *By Paper 18, T_{cycle} is the layer-cycle ($\mathbb{Z}_3$) generator with $S^3/\langle T_{\text{cycle}} \rangle = L(3,1)$ and $S^3/\langle T_{\text{cycle}}^2 \rangle = L(3,2)$; by the Reidemeister–Franz lens-space classification $L(3,2) = -L(3,1)$ (homeomorphic, opposite orientation), a literal mirror pair. Paper 06 requires $L(3,1)$ for the three fermion families, so the corpus fold is handed. The two orientations are conjugates: with $\omega = e^{2\pi i/3}$, $T_{\text{cycle}} = \omega$ and $T_{\text{cycle}}^2 = \omega^2 = \bar{\omega}$ (since $|\omega| = 1$, $\omega^3 = 1$, so $\omega^2 = \omega^{-1} = \bar{\omega}$). Hence the orientation flip $L(3,1) \leftrightarrow L(3,2)$ is the complex conjugation $\omega \leftrightarrow \bar{\omega}$ — the same conjugation Addendum 364 identifies as charge conjugation C (the $\mathbb{R} \rightarrow \mathbb{C}$ conjugation, particle $\leftrightarrow$ antiparticle).*

2 The mirror is the conjugate reading

Theorem 2.1 (Parity violation is a frame-effect; the mirror universe is the conjugate reading). *Addendum 364 established that the matter/antimatter asymmetry is a frame-effect: the inertial vacuum is C -symmetric (matter = antimatter), and the asymmetry is the inertial reading. The same holds for parity. The fold is parity-symmetric — both orientations $L(3, 1)$ and $L(3, 2)$ are readings of the one fold, related by $\omega \leftrightarrow \bar{\omega}$ (Proposition 1.1) — and an oriented (inertial) observer reads one handedness, $L(3, 1)$. Therefore parity violation is the oriented reading of a parity-symmetric fold, not a broken symmetry of the fold itself. The “mirror universe,” $L(3, 2)$, is the parity-conjugate reading of the one fold, not a separate parallel world — dissolved exactly as Addendum 364 dissolves antimatter (one vacuum, two readings). Combining the three conjugations, C (Addendum 364) + P (the orientation flip) + T (Addendum 356a’s witness-relative arrow) is the full CPT conjugation of the one substrate: our universe and the CPT -mirror (the “anti-universe”) are conjugate readings of one thing, not two worlds.*

Remark 2.2 (Suggestive: C and P share the conjugation). On the $\mathbb{Z}_3$ family sector the orientation flip and the charge conjugation are the *same* operation, $\omega \leftrightarrow \bar{\omega}$ (Proposition 1.1). That C and P share one conjugation there is a hint of a CP structure. It is recorded as suggestive only; it is *not* claimed as a derivation of the Standard Model’s CP , and nothing here turns on it.

Status

The corpus’s fold-handedness is a parity / mirror structure, and the mirror universe is dissolved the way antimatter was. The fold’s two orientations $L(3, 1)$ and $L(3, 2) = -L(3, 1)$ are a literal mirror pair (Paper 18, Reidemeister–Franz), the flip being the conjugation $\omega \leftrightarrow \bar{\omega}$ that Addendum 364 calls C (Proposition 1.1). Extending 364’s frame-effect from C to P (Theorem 2.1): the fold is parity-symmetric, the observed handedness is the oriented reading, and the “mirror universe” ($L(3, 2)$) is the parity-conjugate reading of the one fold — not a separate world, dissolved as antimatter is. With T (356a) this gives CPT as the full conjugation of one substrate; our universe and the anti-universe are conjugate readings, not parallel worlds. A suggestive C/P conjugation-sharing is noted, not claimed (Remark 2.2). **Honest scope:** the mirror pair and the frame-effect are grounded; extending to parity is the new connection; the specific weak-sector parity-violation $\rightarrow L(3, 1)$ identification is further work and is not claimed — this addendum establishes the *structure* and the frame-effect reading, not a derivation of the Standard Model’s weak parity violation. No published number changes. Verifier: `verify_P385.py`, 9/9 pass.