

Addendum 295: Pre-Publication Closure

The P17 verdict, a second exclusion for the selection rule,
and the registry at zero unreviewed

TOE Corpus

2026-06-11

Skill: gap-closure v1.1 — **Outcome:** Case B (one refutation completed; one exclusion added; registry classification complete) — **Verifier:** `verify_P295.py` — all PASS

Abstract

Three closures before the package ships. *(i) P17, repaired and refuted.* A293 diagnosed the printed radial Dirac system as ill-posed (no regular branch). The natural repair is performed here: the standard-form system $f' = ((\kappa - \frac{3}{2})/r)f - Mg$, $g' = -((\kappa + \frac{3}{2})/r)g + Mf$ with $M(r) = m + \alpha\rho(r)$ restores a regular branch at the origin. Shooting on $[0, 1]$ across both channels ($\kappa = 3/2, 5/2$) and both admissible boundary conditions yields evenly spaced spectra (level spacing $\approx \pi$): (2.27, 5.90, 9.12), (4.00, 7.40, 10.62), (3.40, 7.20, 10.52), (5.10, 8.67). No reading produces the printed (0.891, 6.923, 7.763); no reading produces a factor-of-7 gap (ratios 1.8–2.6). **P017.3.c is upgraded from diagnosed to refuted-as-stated** (the spectrum is unreproducible under the printed and the corrected system), and **P017.2 (the factor of 7) is refuted** with it. The corrected spectra are filed as the repaired operator’s actual output, available to any future successor of P17’s program. *(ii) Selection rule, second exclusion.* A292 excluded universal first-order perturbations. Here the oscillation-dressing class is excluded: averaging over the breath’s κ -oscillation produces corrections at order κ^2 (as in the α -comma), while the lepton correction $X = \kappa\Omega/\lambda_1$ is first order in κ . The two mechanism classes are disjoint and both are now closed; OI-287-1’s derivation must come from elsewhere (the level-selective coupling form remains the only open route). *(iii) Registry: zero unreviewed.* Every remaining item is classified. New statuses: P018.2 retired (its normalization conflict is the μ_0 -factor documented in A279/A282); P017.2 refuted (this addendum); the seventeen honesty remarks of the Millennium application papers (P21–P26) classified *scope* (the papers are outside the load-bearing spine per the package design; their recorded defects stand without scheduled repair); the remainder classified confirmed-load-bearing with notes (formalization gaps: P000.3, P003.2, P008.1/2.c, P009.3.c, P010.3, P015.2, P030.3.c, P031.2.c/3.c, P033.3.c, P034.2.c; technical/scope: P008.3.c, P029.2.c/3.c, P030.1; testable: P030.2) and two quantified diagnoses (P002.1: the ratio $\Delta E/E_{\text{self}} = 0.0464$ vs $22\kappa = 0.0469$ agrees at 1.2%, the conflation flagged is real but numerically benign; P033.2: the formula $\text{Vol}(S^{d-1}) = \pi^d$ is confirmed false at every d , correct values supplied). **The registry now contains no unreviewed items:** 62 gaps, every one carrying a status, a note, and where applicable a closing or refuting document.

1 The P17 Verdict

Proposition 1.1 (The corrected system and its spectra). *The repair replaces the printed off-diagonal κ/r placement (complex indicial exponents, A293) with the standard radial Dirac form, restoring a regular branch ($f \sim \text{const}$, $g \sim M(0^+)fr/(\kappa + 5/2)$ at the origin). Numerical shooting (RK4, $N = 4000$ – 20000 , convergence checked) gives, for (channel, boundary condition): $(3/2, f(1)=0)$:*

2.27, 5.90, 9.12; $(3/2, g(1)=0)$: 4.00, 7.40, 10.62; $(5/2, f)$: 3.40, 7.20, 10.52; $(5/2, g)$: 5.10, 8.67. *The spectra are box-like with spacing near π , qualitatively unlike the printed claim, whose small ground state and close upper pair appear in no reading. The printed eigenvalues, already underivable from the printed equations, are not recovered by the natural repair: refuted as stated. Any successor program inherits the corrected spectra as its starting point.*

2 The Second Exclusion

Proposition 2.1 (Dressing mechanisms cannot produce the lepton law). *Averages of observables over the breath oscillation produce corrections beginning at order κ^2 (the α -comma's $\kappa^2/2 \approx 2.3 \times 10^{-6}$ is the prototype; symmetric averaging cancels first order). The lepton correction strength is $X = \kappa \Omega / \lambda_1 = 0.0177$, first order in κ and four orders larger than any dressing. Together with A292's exclusion of universal first-order perturbations, both generic mechanism classes are closed; OI-287-1 stands, with its search space reduced to mechanisms that couple each level to its own layer at first order in κ .*

3 Registry: Zero Unreviewed

Remark 3.1 (Classification, complete). *Statuses assigned per the abstract; `tbs_registry_gen.py` carries the full map and the build fails on any unclassified item. Final counts: 15 retired, 1 superseded, 19 scope, 3 refuted, 24 confirmed-load-bearing (each with a quantified or structural note), 0 unreviewed. The canon's debt is now fully itemized: nothing in the corpus is both open and unexamined.*

Verifier. `verify_P295.py`: the corrected-system spectra (re-shot at verification time, all four readings); the absence of the printed eigenvalues and of any factor-7 ratio; the order-counting for the dressing exclusion; the P002_1 and P033_2 numerics; registry regeneration with zero-unreviewed assertion. All PASS.