

# Shin-Dialectics 2.0: A Dialectical Prompting Architecture for AI-Human Co-Thinking

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**Abstract**  
Shin-Dialectics 2.0 is a thinking architecture that replaces the linear “thesis→antithesis→synthesis” pattern with **Simultaneous Multiple Negation ( $E_2(n)$ )** and a  **$\lambda$ -thresholded three-layer pipeline** that co-controls divergence and convergence. It operationalizes **question dialectics**, **internal vs. external negation**, and **creative tension** to produce qualitative shifts in understanding. We provide a minimal, reproducible demo and SHA-256 hashes that fix priority at tag `v2025.08.11`.

**Keywords:** dialectics, prompting,  $E_2(n)$ ,  $\lambda$ -thresholds, divergence, convergence, co-thinking, reproducibility

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**1. Motivation**  
Linear prompt patterns optimize a single axis (e.g., depth or breadth) and saturate quickly. Modern tasks require **parallel criticism** and **structured integration**. Shin-Dialectics 2.0 offers a compact OS-like procedure that scales across domains.

**2. Contributions**

- **$E_2(n)$ :** concurrent generation of many antitheses/criticisms under multiple logics.
- **$\lambda$ -thresholded pipeline:** three layers that co-control **diverge → converge → integrate**.
- **Question dialectics:** formal handling of meta-questions and premise shifts.
- **Reproducibility:** public timestamped release + SHA-256 hashes.
- **Minimal demo:** tasks and rubrics to compare against mainstream baselines (CoT/ToT/etc.).

**3. Method**

**3.1 Simultaneous Multiple Negation ( $E_2(n)$ )**  
Given an initial thesis  $T$ , generate  $\{A_1 \cdots A_n\}$  across heterogeneous lenses (logic, domain, value systems). Encourage **independent failure modes** rather than paraphrases.

**3.2  $\lambda$ -Thresholds**  
Let  $\lambda_p, \lambda_a, \lambda_s, \lambda_i$  be thresholds for the **quantity / diversity / synthesis quality / information sufficiency**. The process only proceeds when each  $\lambda$  is met-preventing premature convergence.

**3.3 Three-Layer Pipeline (SIP)**

- 1) **Diverge:** produce  $E_2(n)$  with constraints (orthogonality, novelty).
- 2) **Converge:** cluster/score antitheses; eliminate redundancy; keep highest-tension items.
- 3) **Integrate:** synthesize candidates; test against counter-examples; select with rubric.

**Pseudocode (sketch):**

```
inputs: T, lenses L, thresholds  $\lambda$ 
A = generate_antitheses(T, L)           #  $E_2(n)$ 
A' = select_by_novelty_tension(A,  $\lambda_a$ ) # converge
S = integrate_candidates(T, A',  $\lambda_s$ )  # synthesize
return S, audit_trail
```

**4. Demo & Reproducibility**  
We include three minimal tasks (idea generation → integration, research planning, value-conflict mediation). Each is run with (a) **SIP (ours)** and (b) **baseline** (CoT/ToT). Rubrics and prompts are provided.

- **Repo:** <<https://github.com/hand-shinya/shin-dialectics-priority-2025-08-09>>
- **Canonical release:** <<https://github.com/hand-shinya/shin-dialectics-priority-2025-08-09/releases/tag/v2025.08.11>>
- **Hashes:** `docs/HASHES.txt` (verify locally; must match)

**5. Results (summary)**  
Across the demo tasks, SIP shows (i) higher diversity under equal token budgets, (ii) fewer mode-collapse failures, (iii) clearer audit trails. Full tables and rubrics are in `demo/`.

**6. Related Work**  
Chain-of-Thought (Wei et al., 2022), Tree-of-Thought (Yao et al., 2023), Graph-of-Thought, Self-Ask, Debate/Multi-Critic frameworks, Reflexion. Our focus is **parallel criticism ( $E_2(n)$ )** with **explicit  $\lambda$ -gates** that govern phase transitions, lifting “multi-critic prompting” to an OS-level procedure.

**7. Limitations & Future Work**  
Token cost increases with  $n$  and lens diversity; naive parallelism can degrade model faithfulness. Future work: adaptive lens selection, automated  $\lambda$ -tuning, and human-in-the-loop evaluation at scale.

**8. Ethics Statement**  
The method can surface sensitive criticisms. We recommend red-team filters and domain-expert review in high-stakes contexts.

**9. Availability & Citation**  
- Repo / Release: links above

Medium overview: <<https://medium.com/@handa.shinya/shin-dialectics-2-0-from-linear-dialectics-to-simultaneous-multiple-negation-069703a637d4>>  
- DOI (to be assigned via Zenodo): \*\*TBD\*\*

## ## Acknowledgments

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