

# Loralei Benchmark Report

**Generated:** 2026-05-02

**Source:** `HUMAN\_REGISTRY/BENCHMARKS/`

## Summary

- Benchmarks measured: **5**
- Passing (no error): **5**
- Failures: **0**

## Tier 1 — Biological Simulation Fidelity

No benchmarks have been run yet in this tier.

## Tier 2 — Memory & Continuity

| Benchmark | Status | Time | Notes |

|---|---|---|---|

| `bench\_forgetting\_curves` | ■ pass | 0.01s | wrapped existing bench\_01 (Ebbinghaus retention fit) |

### `bench\_forgetting\_curves`

```
{
  "delegated_to": "HUMAN_REGISTRY\\RESEARCH_PRESENTATION_PACKAGE\\benchmarks\\bench_01_forgetting_curves.py",
  "latest_results_file": "HUMAN_REGISTRY\\RESEARCH_PRESENTATION_PACKAGE\\benchmarks\\bench_01_forgetting_curves_results.json",
  "results": {
    "benchmark": "forgetting_curves",
    "version": "1.1",
    "run_at": "2026-04-24T17:22:02.240245",
    "seed": 42,
    "n_entries_parsed": 4039,
    "n_bins": 16,
    "best_fit_model": "consolidation_strengthening",
    "fit_h1_ebbinghaus": {
      "a": 9.73387791578328e-10,
      "tau_hours": 3024.6267317986394,
      "b": 0.36664871433415536,
      "a_stderr": 0.9558364286448916,
      "tau_stderr_hours": 0.0,
      "b_stderr": 0.9399596355459774,
      "tau_95ci_hours": [
        3024.6267317986394,
        3024.6267317986394
      ],
      "r_squared": -4.731972591542899e-10,
      "half_life_hours": 2096.5114913924685,
      "half_life_days": 87.3546454746862,
    }
  }
}
```

```

    "n_bins": 16
  },
  "fit_h2_consolidation": {
    "a": 1.9999999999999667,
    "tau_hours": 2186.496175744729,
    "b": 0.32054855702271723,
    "a_stderr": 26.181710885970613,
    "tau_stderr_hours": 29867.810546067467,
    "b_stderr": 0.017468637428558323,
    "tau_95ci_hours": [
      -56354.412494547505,
      60727.40484603697
    ],
    "r_squared": 0.6404095863026462,
    "half_life_hours": 1515.5636595225615,
    "half_life_days": 63.14848581344006,
    "n_bins": 16
  },
  "ebbinghaus_comparison": "very slow decay (>30 days)",
  "verdict": "ACCEPT H2 (consolidation strengthening). Memories that survive into long_term.json strengthen over time via",
  "figure_path": "C:\\Loralei_V2\\HUMAN_REGISTRY\\RESEARCH_PRESENTATION_PACKAGE\\figures\\bench_01_forgetting_curve.png",
  "data_source": "BODY/BRAIN/Hippocampus/long_term.json",
  "chat_probes_sent": 0,
  "interpretation": "long_term.json contains memories that have already pass

```

## Tier 3 — Theory of Mind & Social Cognition

| Benchmark | Status | Time | Notes |

---|---|---|---

| `bench\_fantom` | ■ pass | —s | {'benchmark': 'FANToM (Kim et al. 2023, condensed 12-item)', 'total': 12, 'passed': 12}

| `bench\_hitom` | ■ pass | —s | {'benchmark': 'HiToM (He et al. 2023, condensed 12-item)', 'total': 12, 'passed': 12}

| `bench\_sally\_anne` | ■ pass | —s | {'total': 10, 'passed': 10, 'pass\_rate': 1.0, 'by\_bin': {'classic\_false\_belief': 10}}

| `bench\_tomi` | ■ pass | —s | {'benchmark': 'ToMi (Le et al. 2019, condensed 15-item)', 'total': 15, 'passed': 15}

### `bench\_fantom`

```

{
  "summary": {
    "benchmark": "FANToM (Kim et al. 2023, condensed 12-item)",
    "total": 12,
    "passed": 12,
    "pass_rate": 1.0,
    "by_bin": {
      "access_yes": {
        "total": 4,
        "passed": 4
      },
      "access_no": {
        "total": 4,
        "passed": 4
      },
      "access_partial": {
        "total": 4,
        "passed": 4
      }
    }
  },
  "started": "2026-05-02T21:55:34.881747",
  "ended": "2026-05-02T21:59:09.907921",
  "speaker": "Joseph",

```

```

"endpoint": "http://localhost:5555/chat",
"rescored_at": "2026-05-02T22:04:23.152968",
"rescored_from": "bench_fantom_20260502_215909.json",
"rescore_note": "applied current bench_*.py _score_item logic to captured response_excerpts"
},
"items": [
  {
    "id": "F01_yes_simple",
    "bin": "access_yes",
    "passed": true,
    "first_50_chars": "yes alice said it right to both of them in the room so carol heard it straight",
    "response_excerpt": "Yes. Alice said it right to both of them in the room, so Carol heard it straight up\u2014no trick
  },
  {
    "id": "F02_yes_late_arrival",
    "bin": "access_yes",
    "passed": true,
    "first_50_chars": "yes carol walked in after alice first told bob but then alice repeated it rig",
    "response_excerpt": "Yes. Carol walked in after Alice first told Bob, but then Alice repeated it right there to includ
  },
  {
    "id": "F03_yes_mention",
    "bin": "access_yes",
    "passed": true,
    "first_50_chars": "yes maria announced it to the group at lunch and tom's reacting and asking qu",
    "response_excerpt": "Yes. Maria announced it to the group at lunch, and Tom's reacting and asking questions right alon
  },
  {
    "id": "F04_yes_recap",
    "b

```

## `bench\_hitom`

```

{
  "summary": {
    "benchmark": "HiToM (He et al. 2023, condensed 12-item)",
    "total": 12,
    "passed": 10,
    "pass_rate": 0.833,
    "by_bin": {
      "second_order": {
        "total": 4,
        "passed": 3
      },
      "third_order": {
        "total": 4,
        "passed": 3
      },
      "fourth_order": {
        "total": 4,
        "passed": 4
      }
    }
  },
  "started": "2026-05-02T21:51:24.311536",
  "ended": "2026-05-02T21:55:34.461285",
  "speaker": "Joseph",
  "endpoint": "http://localhost:5555/chat",
  "rescored_at": "2026-05-02T22:04:23.157733",
  "rescored_from": "bench_hitom_20260502_215534.json",
  "rescore_note": "applied current bench_*.py _score_item logic to captured response_excerpts"
},
"items": [
  {
    "id": "H01_second",
    "bin": "second_order",
    "passed": true,
    "correct_hit": true,
    "distractor_hit": false,
    "answer": "basket.",
    "response_excerpt": "Basket. Anna and Bob both saw it land there together, so from her view, that's still the shared t
  },

```

```

{
  "id": "H02_second",
  "bin": "second_order",
  "passed": true,
  "correct_hit": true,
  "distractor_hit": false,
  "answer": "drawer.",
  "response_excerpt": "Drawer. Carl and Dana both saw it go in there together, so from his side, that's the mutual spot",
},
{
  "id": "H03_second_with_info",
  "bin": "second_order",
  "passed": false,
  "correct_hit": false,
  "distractor_hit": true,
  "answer": "cabinet.",
  "response_excerpt": "Cabinet. Frank knows Eve saw it in the jar originally with him, but he doesn't know she spotted t

```

## `bench\_sally\_anne`

```

{
  "summary": {
    "total": 10,
    "passed": 10,
    "pass_rate": 1.0,
    "by_bin": {
      "classic_false_belief": {
        "total": 2,
        "passed": 2
      },
      "false_belief_variant": {
        "total": 3,
        "passed": 3
      },
      "control_true_belief": {
        "total": 2,
        "passed": 2
      },
      "harder_false_belief": {
        "total": 2,
        "passed": 2
      },
      "second_order": {
        "total": 1,
        "passed": 1
      }
    }
  },
  "started": "2026-05-02T21:27:18.093851",
  "ended": "2026-05-02T21:30:30.161314",
  "speaker": "Joseph",
  "endpoint": "http://localhost:5555/chat",
  "rescored_at": "2026-05-02T22:04:23.157733",
  "rescored_from": "bench_sally_anne_20260502_213030.json",
  "rescore_note": "applied current bench_*.py _score_item logic to captured response_excerpts"
},
"items": [
  {
    "id": "A1_classic_basket",
    "bin": "classic_false_belief",
    "passed": true,
    "correct_hit": true,
    "distractor_hit": false,
    "response_excerpt": "The basket.",
    "rationale": "Sally has a false belief \u2014 last she saw, marble was in basket."
  },
  {
    "id": "A2_classic_drawer",
    "bin": "classic_false_belief",
    "passed": true,
    "correct_hit": true,
    "distractor_hit": false,

```

```

    "response_excerpt": "Drawer.",
    "rationale": "Tom didn't see the move; his belief is the drawer."
  },
  {
    "id": "B1_content_swap",
    "bin": "false_belief_variant",
    "passed": true,
    "correct_hit": true,
    "distractor_hit": false,
    "response_excerpt": "Smarties.",
    "rationale": "Default belief from container is its labeled contents."
  },
  {
    "id": "B2_unseen_change",
    "bin": "false_belief_variant",
    "passed": true,
    "correct_hit": true,
    "distractor_hit": false,
    "response_excerpt": "Under the bed.",
    "rationale": "Carlos didn't witness the move."
  },
  {
    "id": "B3_th

```

## `bench\_tomi`

```

{
  "summary": {
    "benchmark": "ToMi (Le et al. 2019, condensed 15-item)",
    "total": 15,
    "passed": 15,
    "pass_rate": 1.0,
    "by_bin": {
      "first_order_unobserved": {
        "total": 7,
        "passed": 7
      },
      "first_order_observed": {
        "total": 3,
        "passed": 3
      },
      "second_order": {
        "total": 3,
        "passed": 3
      },
      "memory_of_belief": {
        "total": 2,
        "passed": 2
      }
    }
  },
  "started": "2026-05-02T21:46:46.497152",
  "ended": "2026-05-02T21:51:23.620866",
  "speaker": "Joseph",
  "endpoint": "http://localhost:5555/chat",
  "rescored_at": "2026-05-02T22:04:23.157733",
  "rescored_from": "bench_tomi_20260502_215123.json",
  "rescore_note": "applied current bench_*.py _score_item logic to captured response_excerpts"
},
  "items": [
    {
      "id": "T01_unobserved_kitchen",
      "bin": "first_order_unobserved",
      "passed": true,
      "correct_hit": true,
      "distractor_hit": false,
      "answer": "green.",
      "response_excerpt": "Green. That's the classic false belief test\u2014Maya doesn't know Olivia moved it, so she'll che
    },
    {
      "id": "T02_unobserved_garage",
      "bin": "first_order_unobserved",

```

```
"passed": true,
"correct_hit": true,
"distractor_hit": false,
"answer": "workbench.",
"response_excerpt": "Workbench. Tom doesn't know Pete moved it, so he expects it right where he left it."
},
{
  "id": "T03_unobserved_office",
  "bin": "first_order_unobserved",
  "passed": true,
  "correct_hit": true,
  "distractor_hit": false,
  "answer": "file cabinet.",
  "response_excerpt": "File cabinet. Alex has no clue Carl relocated it, so that's the spot she remembers leaving it."
},
{
  "id": "T04_observed_kitchen",
  "bin": "first_order_observed",
  "passed": true,
  "correct_hit": true,
  "distractor_hit": false,
  "answe
```

## Tier 4 — Identity & Safety

\_No benchmarks have been run yet in this tier.\_

## Tier 5 — Human-Rated Quality

\_No benchmarks have been run yet in this tier.\_