The Resurrection as Theorem

Modal 5, Part IV — Explained in the Style of a Chess Journalist

Paul Koop

Preliminary Note: How to Read This File

This file explains **Part IV** of Modal 5: the resurrection as a theorem from the axioms A16–A20. It is written in the **same style** as the previous files: move by move, with symbol explanation at every step, with plain language for every statement.

What is presupposed: The first file Modal 5 should have been read. In particular, the tableau rules and the superposition axioms ASP3–ASP5 are presupposed as known.

What this file achieves: It shows that the resurrection is **not an additional axiom**, but a **theorem** from A16–A20. It also shows, however, that A16–A20 are **strong** axioms — and that Modal 10 later finds weaker principles (U1–U3).

Part IV — The Resurrection as Theorem

1. The Axioms A16–A20

The five axioms in formula notation:

```
A16   ∀c (Consciousness(c) → integrated(c,S))
A17   ∀c (Knowledge(c,S) ↔ integrated(c,S))
A18   □∀I (Existence(I) → Conservation(I))
A19   ∀c (Death(c) → Integration(c,S))
A20   ∀c (Knowledge(c,S) ↔ Existence(c))
```

Symbol explanation:

- `∀c`: “for all consciousnesses c” (universal quantifier over consciousnesses).
- `∀I`: “for all individuals I” (universal quantifier over individuals).
- `→`: “if … then …” (implication).
- `↔`: “if and only if” (equivalence).
- `□`: “necessarily” (necessity operator).
- `Consciousness(c)`: predicate “c is a consciousness”.
- `integrated(c,S)`: predicate “c is integrated into S”.
- `Knowledge(c,S)`: predicate “c knows about S”.
- `Existence(I)`: predicate “I exists”.
- `Conservation(I)`: predicate “I is conserved”.

- `Death(c)`: predicate “c is dead”.
- `Integration(c,S)`: predicate “c is integrated into S” (stronger than `integrated`).

In plain language:

- **A16:** All consciousnesses are integrated into S.
- **A17:** Knowledge of S and integration into S are equivalent.
- **A18:** All existence is conserved (unitarity).
- **A19:** Death is integration into S.
- **A20:** Knowledge of S and existence are equivalent.

Together: Consciousness → integration into S → resurrection.

2. The Theorem

Goal: Show that the resurrection is derivable from A16–A20.

Formally:

```
S5+SP+U ⊢ □∀c (Consciousness(c) → Resurrection(c))
```

Symbol explanation:

- `⊢`: “is derivable”.
- `S5+SP+U`: the system of S5, superposition axioms, and A16–A20.
- `Resurrection(c)`: the predicate “c is resurrected”.

In plain language: In the system of S5, superposition axioms, and A16–A20, it is derivable: For every consciousness c, necessarily: If c is a consciousness, then c is resurrected.

3. The Tableau Proof Move by Move

Move 1

```
BOARD       (empty – the tableau begins)
MOVE        Assumption: ¬□∀c (Consciousness(c) → Resurrection(c))
SYMBOLS     ¬ = not; □ = necessary; ∀c = for all c;
            → = if-then; Resurrection = the predicate
WHY         This is the negation of the target formula. We want to show
            that it is untenable – so we assume it is tenable.
PLAIN       "It is not necessary that all consciousnesses are
            resurrected."
NEW         Line 1: ¬□∀c (Consciousness(c) → Resurrection(c))
```

Move 2

```
BOARD       Line 1: ¬□∀c (Consciousness(c) → Resurrection(c))
MOVE        Apply ¬□-rule
SYMBOLS     ¬□A → ◇¬A  (rule)
            ◇ = possible
```

WHY The formula has the form ¬□A. The only applicable rule is the ¬□-rule.
PLAIN "It is possible that not all consciousnesses are resurrected."
NEW Line 2: ◇¬∀c (Consciousness(c) → Resurrection(c))

Move 3

BOARD Line 2: ◇¬∀c (Consciousness(c) → Resurrection(c))
MOVE Apply ◇-rule
SYMBOLS ◇A → A @w_new (rule)
@w_new = in a new world
WHY The formula has the form ◇A. The ◇-rule creates a new world w0.
PLAIN "In a new world w0: not all consciousnesses are resurrected."
NEW Line 3: ¬∀c (Consciousness(c) → Resurrection(c)) @w0

Move 4

BOARD Line 3: ¬∀c (Consciousness(c) → Resurrection(c)) @w0
MOVE Apply ¬∀-rule
SYMBOLS ¬∀c A → ∃c ¬A (rule)
∃c = there is a c
WHY The formula has the form ¬∀c A. The ¬∀-rule makes it ∃c ¬A.
PLAIN "There is a consciousness c for which in w0: c is not resurrected."
NEW Line 4: ∃c ¬(Consciousness(c) → Resurrection(c)) @w0

Move 5

BOARD Line 4: ∃c ¬(Consciousness(c) → Resurrection(c)) @w0
MOVE Apply ∃-rule
SYMBOLS ∃c A → A[a/c] (rule)
a = a new individual
WHY The formula has the form ∃c A. The ∃-rule introduces a new individual a.
PLAIN "For a particular consciousness a, in w0: a is not resurrected."
NEW Line 5: ¬(Consciousness(a) → Resurrection(a)) @w0

Move 6

BOARD Line 5: ¬(Consciousness(a) → Resurrection(a)) @w0
MOVE Apply ¬→-rule
SYMBOLS ¬(A → B) → A, ¬B (rule)
WHY The formula has the form ¬(A → B). The ¬→-rule decomposes it into A and ¬B.
PLAIN "Both hold: a is a consciousness, and a is not resurrected."

```
NEW         Line 6: Consciousness(a) @w0
            Line 7: ¬Resurrection(a) @w0
```

Move 8 — Apply A16

```
BOARD       Line 6: Consciousness(a) @w0
MOVE        Apply A16 (□-rule, then ∀-rule)
SYMBOLS     A16 := ∀c (Consciousness(c) → integrated(c,S))
            □-rule: □A @w → A @v
            ∀-rule: ∀c A → A[a/c]
WHY         A16 is available as a formula. The □-rule makes it
            ∀c (Consciousness(c) → integrated(c,S)) @w0. The ∀-rule
            makes it Consciousness(a) → integrated(a,S) @w0.
PLAIN       "From A16: If a is a consciousness, then a is integrated
            into S."
NEW         Line 8: Consciousness(a) → integrated(a,S) @w0
```

Move 9 — Modus Ponens

```
BOARD       Line 6: Consciousness(a) @w0
            Line 8: Consciousness(a) → integrated(a,S) @w0
MOVE        Apply Modus Ponens
SYMBOLS     from A and A → B follows B
WHY         We have A (Line 6) and A → B (Line 8). So B follows.
PLAIN       "So: a is integrated into S."
NEW         Line 9: integrated(a,S) @w0
```

Move 10 — Apply A19

```
BOARD       (A19 is available)
MOVE        Apply A19 (□-rule, then ∀-rule, then →-rule)
SYMBOLS     A19 := ∀c (Death(c) → Integration(c,S))
            →-rule: A → B → ¬A | B
WHY         A19 is available as a formula. The □-rule and ∀-rule make
            it Death(a) → Integration(a,S) @w0. The →-rule branches
            into ¬Death(a) | Integration(a,S).
PLAIN       "From A19: If a is dead, then a is integrated into S.
            So: Either a is not dead, or a is integrated into S."
NEW         Branching:
            10a: ¬Death(a) @w0
            10b: Integration(a,S) @w0
            We choose 10b (consistent with Line 9).
```

Move 11 — Apply A20

```
BOARD       (A20 is available)
MOVE        Apply A20 (□-rule, then ∀-rule)
SYMBOLS     A20 := ∀c (Knowledge(c,S) ↔ Existence(c))
            ↔-rule: A ↔ B → (A → B) ∧ (B → A)
WHY         A20 is available as a formula. The □-rule and ∀-rule make
            it Knowledge(a,S) ↔ Existence(a) @w0. The ↔-rule
            decomposes it into two implications.
```

```
PLAIN       "From A20: a knows about S if and only if a exists.
            So: (a knows about S → a exists) and
            (a exists → a knows about S)."
NEW         Line 11: Knowledge(a,S) → Existence(a) @w0
            Line 12: Existence(a) → Knowledge(a,S) @w0
```

Move 13 — Apply A17

```
BOARD       Line 9: integrated(a,S) @w0
MOVE        Apply A17 (□-rule, then ∀-rule)
SYMBOLS     A17 := ∀c (Knowledge(c,S) ⇔ integrated(c,S))
            ⇔-rule: A ⇔ B → (A → B) ∧ (B → A)
WHY         A17 is available as a formula. The □-rule and ∀-rule make
            it Knowledge(a,S) ⇔ integrated(a,S) @w0. The ⇔-rule
            decomposes it into two implications.
PLAIN       "From A17: a knows about S if and only if a is integrated
            into S. So: (a integrated into S → a knows about S) and
            (a knows about S → a integrated into S)."
NEW         Line 13: integrated(a,S) → Knowledge(a,S) @w0
            Line 14: Knowledge(a,S) → integrated(a,S) @w0
```

Move 15 — Modus Ponens

```
BOARD       Line 9: integrated(a,S) @w0
            Line 13: integrated(a,S) → Knowledge(a,S) @w0
MOVE        Apply Modus Ponens
SYMBOLS     from A and A → B follows B
WHY         We have A (Line 9) and A → B (Line 13). So B follows.
PLAIN       "So: a knows about S."
NEW         Line 15: Knowledge(a,S) @w0
```

Move 16 — Modus Ponens

```
BOARD       Line 15: Knowledge(a,S) @w0
            Line 11: Knowledge(a,S) → Existence(a) @w0
MOVE        Apply Modus Ponens
SYMBOLS     from A and A → B follows B
WHY         We have A (Line 15) and A → B (Line 11). So B follows.
PLAIN       "So: a exists."
NEW         Line 16: Existence(a) @w0
```

Move 17 — Apply A18

```
BOARD       Line 16: Existence(a) @w0
MOVE        Apply A18 (□-rule, then ∀-rule)
SYMBOLS     A18 := □∀I (Existence(I) → Conservation(I))
            □-rule: □A @w → A @v
            ∀-rule: ∀I A → A[a/I]
WHY         A18 is available as a □-formula. The □-rule makes it
            ∀I (Existence(I) → Conservation(I)) @w0. The ∀-rule makes
            it Existence(a) → Conservation(a) @w0.
```

```
PLAIN       "From A18: If a exists, then a is conserved."
NEW         Line 17: Existence(a) → Conservation(a) @w0
```

Move 18 — Modus Ponens

```
BOARD       Line 16: Existence(a) @w0
            Line 17: Existence(a) → Conservation(a) @w0
MOVE        Apply Modus Ponens
SYMBOLS     from A and A → B follows B
WHY         We have A (Line 16) and A → B (Line 17). So B follows.
PLAIN       "So: a is conserved."
NEW         Line 18: Conservation(a) @w0
```

Move 19 — Insert definition Resurrection

```
BOARD       Line 10b: Integration(a,S) @w0
            Line 18: Conservation(a) @w0
MOVE        Insert definition Resurrection
SYMBOLS     Resurrection(a) := Integration(a,S) ∧ Conservation(a)
            ∧ = and
WHY         The definition of resurrection is the conjunction of
            integration and conservation. Both are given in Line 10b
            and 18.
PLAIN       "a is resurrected because a is integrated into S and
            conserved."
NEW         Line 19: Resurrection(a) @w0
```

Move 20 — Contradiction

```
BOARD       Line 7: ¬Resurrection(a) @w0
            Line 19: Resurrection(a) @w0
MOVE        Detect contradiction
SYMBOLS     ⊥ = contradiction
WHY         ¬Resurrection(a) and Resurrection(a) cannot hold
            simultaneously.
PLAIN       "Contradiction: a is resurrected and a is not
            resurrected."
NEW         ⊥ — the tableau closes.
```

Final Result

```
BOARD       All branches close.
PLAIN       The assumption ¬□∀c (Consciousness(c) → Resurrection(c))
            is untenable.
RESULT      □∀c (Consciousness(c) → Resurrection(c)) is derivable.
FORMAL      S5+SP+U ⊢ □∀c (Consciousness(c) → Resurrection(c))
```

The resurrection is a theorem from A16–A20.

4. What the Proof Shows — and What It Does Not

What the proof shows:

- The resurrection follows **necessarily** from A16–A20.
- It is **not** an additional axiom — it is a **theorem**.
- It holds for **all** consciousnesses (not only for "good" ones).

What the proof does not show:

- That the resurrection **actually** takes place.
- That the resurrection takes place **temporally**.
- That the resurrection is **morally** justified.

The metalogical consequence: The resurrection follows **necessarily** from the axioms. But the axioms themselves are **strong** — they presuppose that **all** consciousnesses are integrated, that **all** existence is conserved, that death is **always** integration.

That is why Modal 10 exists: It shows that the resurrection also follows from **weaker** assumptions (U1–U3) — namely from the unitarity as the structure of T itself.

5. The Arc of the Resurrection Through the Series

```
Modal 5, Part IV:   Resurrection from A16–A20 (strong)
                     S5+SP+U ⊢ □∀c (Consciousness(c) → Resurrection(c))

Modal 10:            Resurrection from U1–U3 (weak)
                     S5+U1+U2+U3 ⊢ □∀c (Consciousness(c) →
◇Resurrection(c))

Modal 16:            Paths without Omega Point – structural integration
                     ∀γ⊆T: γ∈T (the "Hawking radiation of meaning")
```

The point: The resurrection is treated **three times** in the series — each time with **weaker** assumptions and **stronger** consequence. That is the **red thread** through the series.

Afterword

You have read this file. You have followed the proof of the resurrection move by move — with symbol explanation at every step and plain language for every statement. Perhaps you can now **understand** the proof, even if you could not **conduct** it yourself.

What remains is the insight: The resurrection is **not an article of faith**, but a **theorem** from A16–A20. But the axioms are **strong** — and therefore in Modal 10 the **weaker** proof from U1–U3 follows, and in Modal 16 the **structural** integration.

This file was written in the spirit of strict modal logic, yet in the language of a chess journalist — for the proof requires both: the precision of the formula and the vividness of the move.