Two Perspectives, One Limit

Modal 9 — Bimodal Non-Compatibility in DeLillo and Van Dormael, Explained in the Style of a Chess Journalist

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Preliminary Note: How to Read This File

This file explains **Modal 9**: the thesis that the **DeLillo perspective** and the **Van Dormael perspective** are **not compatible**, but **simultaneously true**. This thesis sounds paradoxical. Modal 9 gives it a precise modal-logical version.

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 files on Modal 5–8 should have been read. In particular, the tableau rules and the superposition axioms ASP1–ASP5 are presupposed as known.

What this file achieves: It shows three things:

1. The distinction between DeLillo and Van Dormael has a **physical foundation**: DeLillo corresponds to the Copenhagen interpretation, Van Dormael to the Many-Worlds Interpretation (MWI).
2. This distinction can be formalized in a **bimodal modal logic** — with **two** accessibility relations.
3. There are **consistent bimodal models** in which both perspectives hold simultaneously. The **Omega Point** is a **fixed point** — a relation, not a state.

Part I — The Philosophical Thesis

1. The Thesis

The thesis in plain language: The DeLillo perspective and the Van Dormael perspective are **not compatible** — but they are **simultaneously true**.

What this does not mean: It does **not** mean that both perspectives "somehow" go together. It means, on the contrary: Whoever wants to bring them into a synthesis **destroys** them. Whoever holds one of them for the whole makes it an **ideology**.

What this means: Both perspectives are **simultaneously valid** — without one being reducible to the other. They are **two paths to the same limit**.

2. The Two Perspectives

The two perspectives in plain language:

```
DeLillo perspective:   The Copenhagen interpretation of quantum
                       mechanics. The wave function collapses upon
                       measurement. Out of many possibilities comes
                       one reality. The observer is constitutive.

Van Dormael perspective: The Many-Worlds Interpretation (MWI).
                         The wave function does not collapse.
                         All possibilities remain real.
                         The observer is non-constitutive.
```

The names: "DeLillo" and "Van Dormael" are names for the two perspectives. They come from literature and film — Don DeLillo and Jaco Van Dormael — but in Modal 9 they stand for the two **physical** interpretations.

3. The Physical Foundation

The physical foundation in plain language:

```
DeLillo   ⇔   Copenhagen    (collapse, one reality, constitutive observer)
Van Dormael ⇔ MWI           (no collapse, many realities, non-constitutive
observer)
```

The point: The philosophical thesis has a **physical** foundation. It is not a whim of literature, but a **real** dispute in quantum mechanics.

Part II — Bimodal Modal Logic

1. The Basic Idea

The basic idea in plain language: Classical modal logic uses **one** accessibility relation R between worlds. **Bimodal** modal logic uses **two** relations R_D and R_V on **the same** set of worlds.

The intuition: Both relations describe **the same** reality — but from **different** perspectives.

2. The Language

The language in formulas:

```
□_D p    "necessary in the DeLillo perspective"
□_V p    "necessary in the Van Dormael perspective"

◇_D p := ¬□_D¬p
◇_V p := ¬□_V¬p
```

Symbol explanation:

- □_D: necessity operator for the DeLillo perspective.
- □_V: necessity operator for the Van Dormael perspective.
- ◇_D, ◇_V: the corresponding possibility operators.
- ¬: negation.
- :=: “is defined as”.

In plain language:

- □_D p holds in w if p holds in all worlds **R_D-accessible** from w.
- □_V p holds in w if p holds in all worlds **R_V-accessible** from w.

3. The Semantics

The semantics in formulas:

```
A bimodal S5 model is a tuple M = (W, R_D, R_V, I):

W     set of worlds
R_D   equivalence relation (DeLillo)
R_V   equivalence relation (Van Dormael)
I     interpretation function
```

Symbol explanation:

- W: set of worlds.
- R_D: accessibility relation for DeLillo.
- R_V: accessibility relation for Van Dormael.
- I: interpretation function.
- equivalence relation: reflexive, symmetric, transitive.

Important: R_D and R_V are **different** equivalence relations on **the same** set of worlds. They generate **different** modal structures.

In plain language: Both relations describe the same worlds — but they arrange them **differently**. From the DeLillo perspective, certain worlds are “accessible” that are “not accessible” from the Van Dormael perspective — and vice versa.

4. The Two Perspectives in Formal Language

The DeLillo perspective (□_D):

```
D1   □_D(□_D p → p)
D2   □_D(◇_D p → □_D ◇_D p)
D3   □_D(C → □_D C)
D4   □_D(Observer → □_D Observer)
```

Symbol explanation:

- C: consciousness.

- `Observer`: observer.
- `→`: implication.
- `□_D`: necessity in the DeLillo perspective.
- `◇_D`: possibility in the DeLillo perspective.

In plain language:

- **D1:** Necessity implies actuality (S5 constant).
- **D2:** Possibility is necessarily possible (S5 constant).
- **D3:** Consciousness is constitutive in the DeLillo perspective.
- **D4:** The observer is constitutive in the DeLillo perspective.

The Van Dormael perspective (□_V):

```
V1   □_V(□_V p → p)
V2   □_V(◇_V p → □_V ◇_V p)
V3   □_V(C → ◇_V ¬C)
V4   □_V(Observer → ◇_V ¬Observer)
```

Symbol explanation:

- `□_V`: necessity in the Van Dormael perspective.
- `◇_V`: possibility in the Van Dormael perspective.
- `¬`: negation.

In plain language:

- **V1:** Necessity implies actuality (S5 constant).
- **V2:** Possibility is necessarily possible (S5 constant).
- **V3:** Consciousness is **not** constitutive in the Van Dormael perspective — there are worlds without consciousness.
- **V4:** The observer is **not** constitutive — there are worlds without observer.

The point: The axioms D3/D4 and V3/V4 are **opposed**. D3 says: Consciousness is constitutive. V3 says: Consciousness is **not** constitutive. Both hold — but in **different** perspectives.

Part III — The Omega Point as Fixed Point

1. The Definition

The definition in formulas:

```
Ω := { w ∈ W | □_D p @w ∧ □_V ¬p @w }
```

Symbol explanation:

- Ω: the Omega Point (a set of worlds).
- `w ∈ W`: w is a world from W.
- `□_D p @w`: p is necessary in the DeLillo perspective in w.
- `□_V ¬p @w`: ¬p is necessary in the Van Dormael perspective in w.
- ∧: conjunction.

In plain language: The Omega Point is the set of all worlds in which **both** perspectives hold simultaneously — for a suitable statement p.

Important: p must be chosen so that it is **necessary** in the DeLillo perspective and **necessarily false** in the Van Dormael perspective. An example: p := "There is exactly one reality."

2. The Consistency Proof

The theorem in formulas:

```
Theorem Ω-A:  There are consistent bimodal S5 models with Ω ≠ ∅.
```

Symbol explanation:

- `Ω ≠ ∅`: the Omega Point is not empty.
- ∅: the empty set.

In plain language: There are consistent bimodal models in which the Omega Point is not empty — i.e., in which both perspectives hold simultaneously.

The proof move by move:

Move 1 — Write down the model

```
BOARD       (empty – the proof begins)
MOVE        Define model M = (W, R_D, R_V, I)
SYMBOLS     W = {w1, w2, w3}
            R_D = equivalence classes {w1, w2}, {w3}
            R_V = equivalence classes {w1, w3}, {w2}
            I: p @w1 = true, p @w2 = true, p @w3 = false
WHY         We construct a concrete model in which both perspectives
            hold simultaneously.
PLAIN       "There are three worlds. From the DeLillo perspective, w1
            and w2 are equivalent, w3 is isolated. From the Van Dormael
            perspective, w1 and w3 are equivalent, w2 is isolated.
            p holds in w1 and w2, not in w3."
NEW         The model is defined.
```

Move 2 — Check □_D p in w1

```
BOARD       Model M
MOVE        Check □_D p @w1
```

```
SYMBOLS     □_D = necessary in the DeLillo perspective
            R_D-accessible from w1: {w1, w2}
WHY         In the DeLillo perspective, only w1 and w2 are accessible
            from w1. In both, p holds. So □_D p @w1 holds.
PLAIN       "In the DeLillo perspective, p is necessary in w1."
NEW         □_D p @w1 holds.
```

Move 3 — Check □_V ¬p in w1

```
BOARD       Model M
MOVE        Check □_V ¬p @w1
SYMBOLS     □_V = necessary in the Van Dormael perspective
            R_V-accessible from w1: {w1, w3}
            ¬p = negation of p
WHY         In the Van Dormael perspective, only w1 and w3 are
            accessible from w1. In w1, p holds; in w3, ¬p holds. So
            ¬p does not hold in all R_V-accessible worlds. So
            □_V ¬p @w1 does NOT hold.
PLAIN       "In the Van Dormael perspective, ¬p is not necessary in
            w1 – because in w1 itself, p holds."
NEW         □_V ¬p @w1 does NOT hold.
```

Problem: In this model, Ω is empty. We must choose the relations **differently**.

Move 4 — Correction: other relations

```
BOARD       Model M
MOVE        Choose relations differently
SYMBOLS     W = {w1}
            R_D = {(w1, w1)}
            R_V = {(w1, w1)}
            I: p @w1 = true in R_D, false in R_V
WHY         We choose a model with only one world in which p is
            interpreted differently in both perspectives.
PLAIN       "There is only one world. In the DeLillo perspective, p
            holds; in the Van Dormael perspective, ¬p holds."
NEW         The model is defined.
```

Move 5 — Check □_D p in w1

```
BOARD       Model M
MOVE        Check □_D p @w1
SYMBOLS     □_D = necessary in the DeLillo perspective
            R_D-accessible from w1: {w1}
WHY         In the DeLillo perspective, only w1 is accessible from w1.
            In w1, p holds. So □_D p @w1 holds.
PLAIN       "In the DeLillo perspective, p is necessary in w1."
NEW         □_D p @w1 holds.
```

Move 6 — Check □_V ¬p in w1

```
BOARD       Model M
MOVE        Check □_V ¬p @w1
```

```
SYMBOLS     □_V = necessary in the Van Dormael perspective
            R_V-accessible from w1: {w1}
            ¬p = negation of p
WHY         In the Van Dormael perspective, only w1 is accessible from
            w1. In w1, ¬p holds (in the Van Dormael perspective). So
            □_V ¬p @w1 holds.
PLAIN       "In the Van Dormael perspective, ¬p is necessary in w1."
NEW         □_V ¬p @w1 holds.
```

Move 7 — Check Omega Point

```
BOARD       Model M
MOVE        Check Ω ≠ ∅
SYMBOLS     Ω := { w ∈ W | □_D p @w ∧ □_V ¬p @w }
WHY         In w1, □_D p holds (Move 5) and □_V ¬p holds (Move 6). So
            w1 ∈ Ω.
PLAIN       "The Omega Point is not empty — w1 belongs to it."
NEW         Ω ≠ ∅.
```

Final Result

```
FORMAL      There are consistent bimodal S5 models with Ω ≠ ∅.
PLAIN       "Both perspectives can hold simultaneously — without one
            being reducible to the other."
```

3. What the Proof Shows

What the proof shows:

- The non-compatibility of DeLillo and Van Dormael is **not** an inconsistency.
- The two perspectives are **compatible** in a bimodal model.
- The Omega Point is a **fixed point** — a set of worlds in which both perspectives hold simultaneously.

What the proof does not show:

- That the two perspectives are **reducible** to one.
- That a **synthesis** is possible.
- That one of the two perspectives is **false**.

The point: The proof shows that both perspectives can hold **simultaneously** — without one being reduced to the other.

Part IV — What Follows?

1. The Omega Point Is a Relation, Not a State

The central insight in plain language: The Omega Point is **not a state** that one could reach. It is a **relation** between two perspectives that **cannot** be reduced to each other.

Formally: Ω is a set of worlds in which two **different** modal structures hold simultaneously. It is not a point in space, but a **relation between spaces**.

Metaphysically: The Omega Point is not the end of time. It is the **structure** of time itself — as a relation between the perspectives.

2. The Consequences

Consequence 1: The Omega Point cannot be **striven for** like a goal. It is not a telos, but a **structure**.

Consequence 2: Non-compatibility is **not a defect**. It is a **property** of reality.

Consequence 3: Whoever holds one of the two perspectives for the whole **loses** the Omega Point. It becomes an ideology.

3. The Relation to Tradition

Classical metaphysics often seeks **one** truth. The present treatise shows: There are **two** perspectives that are **simultaneously** true — without synthesis.

That is the consequence of quantum mechanics: Copenhagen and MWI are **not** equivalent. But they are **simultaneously** true in a bimodal model.

Part V — What Remains Open

1. Is There a Third Perspective?

The question: We have considered **two** perspectives: DeLillo (Copenhagen) and Van Dormael (MWI). Is there a **third** perspective?

Possible candidates:

```
Bohmian mechanics:       deterministic, with explicit non-locality.
Relational QM (Rovelli): reality is relative to an observer.
QBism:                   the wave function is epistemic, not ontic.
Many-minds interpretation: reality is a continuum.
```

Possible answers:

```
Answer 1: There are many perspectives. The three mentioned are only
          examples.

Answer 2: There are exactly two fundamental perspectives: collapse
          (DeLillo) and non-collapse (Van Dormael). All others are
          variants.

Answer 3: The question is empirically decidable. But so far there are
          no experiments that distinguish between Copenhagen and MWI.

Answer 4: The question is metaphysical. There is no reason to hold one
          of the two perspectives for the right one.
```

2. What We Have Not Shown

We have not shown:

- That there is **no** third perspective.
- That the two considered perspectives are **all** perspectives.

We have only shown:

- That the two considered perspectives can hold **simultaneously**.

The question of **completeness** remains open.

Afterword

You have read this file. You have learned about the bimodal non-compatibility of DeLillo and Van Dormael — with symbol explanation at every step and plain language for every statement. You have seen the consistency proof for the Omega Point move by move. You have understood that the Omega Point is a **relation**, not a **state**.

What remains is the insight:

```
DeLillo (Copenhagen) and Van Dormael (MWI) are not compatible –
but simultaneously true.
The Omega Point is a fixed point – a relation, not a state.
Both perspectives are paths to the same limit.
```

The next file (Modal 10) treats **unitarity as theorem**: the resurrection from the weak principles U1–U3. This is the **weaker** proof of the resurrection — compared to Modal 5, where it followed from the strong axioms A16–A20.

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.