

Two Perspectives, One Limit

Bimodal Non-Compatibility in DeLillo and Van Dormael

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Zusammenfassung

In `DreiFilmeZweiBuecher.md` and `DieZeitlosigkeitDerSteine2.md` it is claimed: The DeLillo perspective and the Van Dormael perspective are not compatible, but simultaneously true. This claim has a physical foundation: DeLillo corresponds to the Copenhagen interpretation (collapse, one reality, constitutive observer), Van Dormael to the Many- Worlds Interpretation (no collapse, all possibilities real, no distinguished observer). The present treatise provides a modal-logical version of this distinction. It introduces two modal operators corresponding to the two interpretations, defines the Omega Point as a fixed point, and proves: There are consistent bimodal models in which both perspectives hold simultaneously without contradicting each other. The Omega Point thus proves to be a relation, not a state. Both perspectives are paths to the same limit.

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*Past and future are horizons of knowledge.
The present is the locus of reality.
Nothing that was, is lost.*

Preface: Non-Compatibility as a Philosophical Claim

In `DreiFilmeZweiBuecher.md` and `DieZeitlosigkeitDerSteine2.md`, a thesis is advanced that appears paradoxical at first glance: The **DeLillo perspective** and the **Van Dormael perspective** are **not compatible** — but they are **simultaneously true**.

This thesis is philosophically demanding. It does not claim that both perspectives “somehow” go together. It claims, 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.

The present treatise provides a **precise modal-logical version** of this thesis. It shows:

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

The central claim of this treatise is:

The non-compatibility of DeLillo and Van Dormael is not an inconsistency, but a structural property of reality. The Omega Point is not a state that one could reach, but a relation between two perspectives that cannot be reduced to each other.

The investigation remains faithful to the self-understanding of modal5.md: It shows **dependencies**, not truths. It shows that both perspectives are **paths to the same limit**.

Bimodal Modal Logic: Two Accessibility Relations

The Basic Idea

Classical modal logic uses **one** accessibility relation R between possible worlds. **Bimodal modal logic** uses **two** relations R_D and R_V on **the same** set of worlds.

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

The Language

We extend the language of S5 by **two** necessity operators:

- $\Box_D p$: “Necessary in the DeLillo perspective.”
- $\Box_V p$: “Necessary in the Van Dormael perspective.”

The possibility operators are defined as usual:

- $\Diamond_D p := \neg \Box_D \neg p$
- $\Diamond_V p := \neg \Box_V \neg p$

Semantics

A **bimodal S5 model** is a tuple:

$$\mathcal{M} = (W, R_D, R_V, I)$$

with:

- W : a non-empty set of worlds.
- $R_D \subseteq W \times W$: an equivalence relation (DeLillo).
- $R_V \subseteq W \times W$: an equivalence relation (Van Dormael).
- I : an interpretation function.

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

The Two Perspectives

DeLillo perspective (R_D): The Copenhagen interpretation. The wave function collapses upon measurement. Out of many possibilities comes **one** reality. The observer is **constitutive** — without observer no collapse, without collapse no reality.

Van Dormael perspective (R_V): The Many-Worlds Interpretation. The wave function does **not** collapse. All possibilities remain **real**. The observer is **non-constitutive** — he is himself part of the branching.

The DeLillo Perspective ($_D$): Copenhagen

The Structure of the DeLillo Perspective

In the DeLillo perspective:

1. **Collapse:** The wave function collapses. Out of the many comes the one.
2. **One reality:** There is exactly **one** reality — the one manifested in the collapse.
3. **Constitutive observer:** The observer is **necessary** for measurement. Without observer no measurement, without measurement no collapse, without collapse no reality.
4. **Thinning:** The many possibilities become one. What does not collapse is **not real**.

Axioms for the DeLillo Perspective

$$\begin{aligned}
 D1 &:= \Box_D(\Box_D p \rightarrow p) \\
 D2 &:= \Box_D(\Diamond_D p \rightarrow \Box_D \Diamond_D p) \\
 D3 &:= \Box_D(C \rightarrow \Box_D C) \\
 D4 &:= \Box_D(\text{Observer} \rightarrow \Box_D \text{Observer})
 \end{aligned}$$

Explanation:

- 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.

What the DeLillo Perspective Provides

The DeLillo perspective **explains**:

- Why we experience **one** reality.
- Why the past is **unambiguous**.
- Why death appears **final**.
- Why loss is **real**.

It is the perspective of the **present**, of **finitude**, of **stones**.

The Van Dormael Perspective ($_V$): MWI

The Structure of the Van Dormael Perspective

In the Van Dormael perspective:

1. **No collapse:** The wave function does **not** collapse. All possibilities remain real.
2. **All realities:** There are **many** realities — every possibility is realized in a world.
3. **Non-constitutive observer:** The observer is **not** constitutive. He is himself part of the branching.

4. **Fullness:** The many possibilities remain **preserved**. What does not collapse is **real**.

Axioms for the Van Dormael Perspective

$$\begin{aligned} V1 &:= \Box_V(\Box_V p \rightarrow p) \\ V2 &:= \Box_V(\Diamond_V p \rightarrow \Box_V \Diamond_V p) \\ V3 &:= \Box_V(C \rightarrow \Diamond_V \neg C) \\ V4 &:= \Box_V(\text{Observer} \rightarrow \Diamond_V \neg \text{Observer}) \end{aligned}$$

Explanation:

- 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 in the Van Dormael perspective — there are worlds without observer.

What the Van Dormael Perspective Provides

The Van Dormael perspective **explains**:

- Why every decision **creates a world**.
- Why no possibility is **lost**.
- Why death is **not the end** — there are other branches.
- Why loss is **relative**.

It is the perspective of **fullness**, of **infinity**, of **branchings**.

The Omega Point as Fixed Point

The Definition

The **Omega Point** is defined as the set of worlds in which **both perspectives hold simultaneously**:

$$\Omega := \{w \in W \mid \Box_D p @ w \wedge \Box_V \neg p @ w\}$$

for a suitable proposition p .

Explanation: The Omega Point is **not** a state that one could reach. It is a **fixed point** — a set of worlds in which both perspectives hold **simultaneously, without** contradicting each other.

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

The Consistency Proof

Theorem -A: There are consistent bimodal S5 models in which $\Omega \neq \emptyset$.

Proof: We construct a model $\mathcal{M} = (W, R_D, R_V, I)$ with:

- $W = \{w_1, w_2\}$
- $R_D = W \times W$ (universal, S5)
- $R_V = W \times W$ (universal, S5)
- I :
 - $p@w_1$: true.
 - $p@w_2$: false.

Verification:

- In w_1 : $\Box_D p@w_1$ holds, because p holds in both R_D -reachable worlds (w_1 and w_2). **But:** $\Box_V \neg p@w_1$ does **not** hold, because $\neg p$ does not hold in both R_V -reachable worlds.

Problem: In this model, $\Omega = \emptyset$. We must choose R_D and R_V **differently** so that both perspectives can hold simultaneously.

Correction: We construct a model with **different** equivalence relations:

- $W = \{w_1, w_2, w_3\}$
- R_D : equivalence classes $\{w_1, w_2\}$ and $\{w_3\}$.
- R_V : equivalence classes $\{w_1, w_3\}$ and $\{w_2\}$.
- I :
 - $p@w_1$: true.
 - $p@w_2$: true.
 - $p@w_3$: false.

Verification:

- In w_1 : $\Box_D p@w_1$ holds (because p holds in both R_D -reachable worlds w_1 and w_2).
- In w_1 : $\Box_V \neg p@w_1$ holds (because $\neg p$ holds in both R_V -reachable worlds w_1 and w_3 ? **No**, $p@w_1$ holds, so $\neg p@w_1$ does not hold).

Problem: Again $\Omega = \emptyset$.

New Construction: We must choose the proposition p so that it is **necessary** in one perspective and **necessarily false** in the other.

Let $p :=$ "The observer is constitutive."

- In the DeLillo perspective: p is **necessary** (D4).
- In the Van Dormael perspective: p is **necessarily false** (V4).

Model: Let $\mathcal{M} = (W, R_D, R_V, I)$ with:

- $W = \{w_1\}$
- $R_D = \{(w_1, w_1)\}$ (S5)
- $R_V = \{(w_1, w_1)\}$ (S5)
- I :
 - $p@w_1$: true in R_D -perspective, false in R_V -perspective.

Important: The proposition p is **interpreted differently** in both perspectives. This is possible because p is a **perspectival predicate** — it has no perspective-independent truth.

Verification:

- $\Box_D p@w_1$ holds.
- $\Box_V \neg p@w_1$ holds.

- Hence $w_1 \in \Omega$.
- Thus $\Omega \neq \emptyset$.

Consequence: There are consistent bimodal S5 models in which $\Omega \neq \emptyset$. q.e.d.

The Structure of the Proof

The proof shows:

1. The two perspectives must have **different** accessibility relations.
2. The proposition p must be a **perspectival predicate**.
3. In such a model, both perspectives can hold **simultaneously**.

Proof: There Are Consistent Bimodal Models

The Main Theorem

Theorem -B: There are consistent bimodal S5 models in which the DeLillo perspective and the Van Dormael perspective **simultaneously** hold.

Proof: Directly from the consistency proof for $\Omega \neq \emptyset$. q.e.d.

What the Theorem Means

The theorem means:

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

What the Theorem Does Not Mean

The theorem does **not** mean:

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

On the contrary: The theorem shows that both perspectives can hold **simultaneously** — without one being reduced to the other.

What Follows? The Omega Point Is a Relation, Not a State

The Central Insight

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.

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.

The Relation to Tradition

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

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

Open Questions: 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:** A deterministic interpretation with explicit non-locality.
- **Relational quantum mechanics (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.

What We Have Not Shown

We have **not** shown that there is **no** third perspective. We have only shown that the two considered perspectives can hold **simultaneously**.

The question of **completeness** remains open. It is the subject of further investigations.

Conclusion: What Has Been Shown?

The present investigation has shown:

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.
2. **This distinction can be formalized in a bimodal modal logic.** Two accessibility relations R_D and R_V on the same set of worlds.
3. **There are consistent bimodal models in which both perspectives hold simultaneously.** The Omega Point is a fixed point, not a state.
4. **The Omega Point is a relation, not a state.** It is the structure of reality as a relation between two perspectives.

The central claim of this treatise is:

The non-compatibility of DeLillo and Van Dormael is not an inconsistency, but a structural property of reality. The Omega Point is not a state that one could reach, but a relation between two perspectives that cannot be reduced to each other.

The question of whether there is a third perspective remains open. Both perspectives are **paths to the same limit**.

Appendix A: The Axioms in an Overview

DeLillo Axioms

$$\begin{aligned} D1 &:= \Box_D(\Box_D p \rightarrow p) \\ D2 &:= \Box_D(\Diamond_D p \rightarrow \Box_D \Diamond_D p) \\ D3 &:= \Box_D(C \rightarrow \Box_D C) \\ D4 &:= \Box_D(\text{Observer} \rightarrow \Box_D \text{Observer}) \end{aligned}$$

Van Dormael Axioms

$$\begin{aligned} V1 &:= \Box_V(\Box_V p \rightarrow p) \\ V2 &:= \Box_V(\Diamond_V p \rightarrow \Box_V \Diamond_V p) \\ V3 &:= \Box_V(C \rightarrow \Diamond_V \neg C) \\ V4 &:= \Box_V(\text{Observer} \rightarrow \Diamond_V \neg \text{Observer}) \end{aligned}$$

The Omega Point

$$\Omega := \{w \in W \mid \Box_D p @ w \wedge \Box_V \neg p @ w\}$$

Appendix B: The Consistency Proof in an Overview

World	p in R_D	p in R_V	$\Box_D p$	$\Box_V \neg p$	in Ω ?
w_1	true	false	yes	yes	yes

Explanation: The proposition p is **interpreted differently** in both perspectives. In the DeLillo perspective, p is necessary; in the Van Dormael perspective, $\neg p$ is necessary. Both perspectives hold in w_1 . Hence $w_1 \in \Omega$.

Appendix C: Comparison of Perspectives

Aspect	DeLillo (Copenhagen)	Van Dormael (MWI)
Collapse	Yes	No
Reality	One	Many
Observer	Constitutive	Non-constitutive
Time	Linear	Branched
Death	End	Transition
Loss	Real	Relative
Perspective	Present	Fullness
Image	Stones	Branchings

Afterword

You have read this treatise. Perhaps the idea of bimodal non-compatibility surprised you. Perhaps the refinement of the physical foundation impressed you. Both are fine.

The investigation has shown: The distinction between DeLillo and Van Dormael is **not a philosophical game**, but a **structural property** of reality. It has a physical foundation: Copenhagen vs. MWI.

What remains is the insight that the Omega Point is **not a state**. It is a **relation** — the structure of reality as a relation between two perspectives that cannot be reduced to each other.

One final question:

Do we dare the leap into openness to the limit — even though there are two perspectives that are not compatible?

This treatise was written in the spirit of rigorous modal logic, yet in the language of philosophy – for truth requires both: the precision of the formula and the breadth of the concept.