

Module 6: The Structural Analysis of a Monistic Modal Ontology

From Constructive Axiomatics to Structural Emergence

Paul Koop

August 24, 2026

Abstract

This module represents the next step beyond the constructive axiomatics of Versions 1–5. Instead of asking *which axioms must be added* to obtain a Trinitarian structure, we ask: *What minimal structural conditions must a monistic modal ontology satisfy so that the three roles of Origin (U), Totality (T), and Self-Knowledge (S) emerge as necessary perspectives of one and the same reality?* We show that from the principles of monism, modal-realistic possibility, and reflexive self-reference, the three structural moments U, T, and S can be derived not merely as postulates, but as structurally distinct and yet inseparable.

1 Introduction: From Construction to Structure

Versions 1 through 5 have shown that the Trinitarian structure (U, T, S) is derivable in an extended modal-logical system (S5+SP). This was a constructive proof: certain axioms were added to obtain the desired result.

Module 6 reverses the perspective. We no longer ask:

What must I add to S5 to get the Trinity? “

but rather:

What structure must a monistic reality already possess so that the three moments of Origin, Totality, and Self-Knowledge emerge from it as necessary perspectives? “

This shift from **construction** to **structural analysis** is the core of Module 6. We will show that the three roles need not be introduced as separate entities but can be understood as different *structural moments* of one and the same reality – moments that are forced by the internal dynamics of modality and reflexivity.

2 The Fundamental Principles

We start from three principles that are weaker than the axioms of previous versions, yet strong enough to force the desired structure.

Axiom 2.1 (Monism (M)). *There are no fundamentally separate realms of reality. There exists exactly one fundamental reality E .*

$$\forall x \forall y (x \subseteq E \wedge y \subseteq E) \rightarrow \neg \exists \text{ fundamental separation}(x, y) \quad (1)$$

Axiom 2.2 (Modal Realism (MR)). *Possibility is a real, ontological property of E . There are possible states of E that are not identical with the actual state.*

$$\exists w (w \neq w_0 \wedge w_0 R w) \quad (2)$$

where R is the accessibility relation and w_0 is the actual world.

Axiom 2.3 (Reflexivity (R)). *Reality E is capable of representing itself. A part of E can be a model of E .*

$$\exists M \subseteq E (M \models E) \quad (3)$$

These three principles are minimalist. They presuppose nothing about a specific number of worlds or a particular kind of consciousness.

3 The Derivation of the Structural Moments

From these three principles, we can now derive the three structural roles.

3.1 U – The Origin of Unity

From Axiom 2.1, it follows that there is a unity that underlies all possible states. This unity is not itself one of the states, but the condition of possibility for all states.

Definition 3.1 (Origin (U)). *The Origin U is the unity of E that underlies all possible states w . It holds that:*

$$U := E \setminus \bigcup_{w \in W, w \neq w_0} w \quad (4)$$

where W is the set of all possible states.

U is what remains when one abstracts from all specific states of E . It is the pure ground of unity that allows us to speak of a single reality at all.

3.2 T – The Totality of Possibilities

From Axiom 2.2, it follows that E is not merely a single state but a structure of possibilities. This structure is the totality of all possible states.

Definition 3.2 (Totality (T)). *The Totality T is the structure of all possible states of E . It holds that:*

$$T := \bigcup_{w \in W} w \quad (5)$$

T is the totality of what E can be. It is not separate from U , but the unfolding of U into modality. U and T are two perspectives on the same reality: U is the unity, T is the fullness of possibilities.

3.3 S – The Self-Knowledge of the Totality

From Axiom 2.3, it follows that E can represent itself. If this representation is complete, a state arises in which the Totality T recognizes itself as the Unity U .

Definition 3.3 (Self-Knowledge (S)). *Self-Knowledge S is the complete and reflexive representation of T in E . It holds that:*

$$S := \{M \subseteq E \mid M \models T \wedge M \models (M \models T)\} \quad (6)$$

S is the state in which the structure of possibilities (T) recognizes itself as unity (U). S is not a third substance, but the process of self-becoming of T in U .

4 The Trinitarian Structure

The three moments U, T, S are no longer mere axioms but derived structural roles.

Theorem 4.1 (The Trinitarian Structure). *Under the axioms M , MR , and R , it holds that:*

$$\forall x (x \in E \rightarrow x \in (U \cap T \cap S)) \quad (7)$$

and at the same time:

$$U \neq T \neq S \quad (8)$$

as structural roles.

- Proof.* 1. From M , the existence of U as the ground of unity follows (Definition 3.1).
 2. From MR , the existence of T as the structure of possibilities follows (Definition 3.2).
 3. From R , the existence of S as the reflexive representation of T follows (Definition 3.3).
 4. Since T is the unfolding of U , and S is the reflexive knowledge of T as U , all three moments are related to the same reality E .
 5. Nevertheless, they are structurally distinguishable: U is the pure ground of unity, T is the fullness of possibilities, S is the reflexive self-becoming. □

Corollary 4.2 (The Unity of the Structure). *The three moments U, T, S are not three substances but three necessary perspectives of one and the same reality E .*

$$E \equiv U \wedge T \wedge S \quad (9)$$

5 Metatheoretical Classification

This analysis shows that the Trinitarian structure is more deeply anchored in ontology than assumed in previous versions. It is not the result of a specific axiom configuration, but a necessary consequence of the fundamental principles of unity, modality, and reflexivity.

The previous versions (1–5) were constructive: they showed *that* the Trinity follows under certain axioms. Module 6 is structural: it shows *why* it follows – namely, because every self-reflecting unity that contains possible worlds must necessarily develop these three moments.

6 Outlook: The Theological Interpretation

The formal structure is now clear. The question of interpretation remains open.

- A metaphysical interpretation might understand U as Being itself, T as the fullness of Being, and S as Being's self-knowledge.
- A theological interpretation might see this structure as a trace of the Trinity in creation.
- An information-theoretic interpretation might see U as the source of information, T as the information space, and S as the process of self-organization.

Module 6 provides the formal structure. The interpretation remains up to the reader – and that is as it should be.

7 Conclusion

Module 6 represents the transition from constructive axiomatics to structural analysis. It shows that the three moments of Origin, Totality, and Self-Knowledge need not be merely postulated but *emerge* from the fundamental principles of a monistic, modal-realistic, and reflexive ontology. The Trinity is not just a possible structure – under these conditions, it is a necessary one.