Recent advances in the Holy Trinity by universal modal logic system Meth8/VŁ4 in Grok 3 (TL-2025-01-HT)

Abstract: This paper proves the Holy Trinity using propositional logic variables for God the Father, God the Son, God the Holy Spirit, and man for incarnation and causation. The bivalent, universal modal logic system Meth8/VŁ4 is used after training it into the Grok 3 beta artificial intelligence engine. The output is 26 tautologies as described by number, type as for causation and incarnation, symbolic logic formula, and theological meaning. The result is replicable by machine, finally to bring analytic theology into the realm of exact science known as analytic*al* theology. What followed was the Trinity as the unifying lens of theology, i.e., the paper titled "Trinitarian logic as universal theology: A logical framework for unifying Christian doctrine" (2025).

Trinitarian logic as universal theology: A logical framework for unifying Christian doctrine (TL-2025-02-UT) [expanded]

Abstract: This paper presents a novel logical framework using Meth8/VŁ4 to demonstrate that the Holy Trinity (HT) serves as the unifying lens for Christian theology. By modelling 27 theological topics—ranging from divine causation to prayer and its five types (adoration, confession, intercession, petition, thanksgiving) —with tautologous formulas, we affirm the Trinity's coherence as the foundation for doctrine. Variables p (Father), q (Son), r (Spirit), s (man), m (Mary), a (angels), and d (demons) map Trinitarian relations, yielding consistent truth tables (TTTT TTTT TTTT). Grounded in Nicene/Chalcedonian orthodoxy and scripture, the framework resolves debates by rooting all theology in divine unity (p = q = r), offering a robust tool for theologists and apologists. Inspired by *Recent Advances in the Holy Trinity by Universal Modal Logic System Meth8/VL4 in Grok 3* (James 2025), this study transforms analytical theology into an exact science, offering a tool for theologists and apologists, with future applications to the Church of England's 39 Articles and Francis J. Hall's *Dogmatic Theology* (1907–1922). This document is Part 1 of two, covering the framework's foundations and the first 14 theological topics.

Trinitarian Logic as Theology of Coherence: A Logical Framework for Unifying Christian Doctrine (TL-2025-03-CO)

Abstract: This paper presents a novel logical framework using Meth8/VŁ4 to demonstrate that the Holy Trinity (HT) serves as the unifying lens for Christian theology. By modeling 27 theological topics—ranging from divine causation to prayer and its five types (adoration, confession, intercession, petition, thanksgiving) —with tautologous formulas, we affirm the Trinity's coherence as the foundation for doctrine. Variables p (Father), q (Son), r (Spirit), s (man), m (Mary), a (angels), and d (demons) map Trinitarian relations, yielding consistent truth tables (TTTT TTTT TTTT). Grounded in Nicene/Chalcedonian orthodoxy and scripture, the framework resolves debates by rooting all theology in divine unity (p = q = r), offering a robust tool for theologians and apologists. This paper was spawned by the author's title "Recent advances in the Holy Trinity by universal modal logic system Meth8/VŁ4 in Grok 3" (2025).

Formal Analysis of Four Roman Catholic Dogmas: A Theological Inquiry in Trinitarian Logic (TL-2025-04-RC)

Abstract: This paper evaluates four Roman Catholic dogmas—Assumption of the Blessed Virgin Mary (1950), Immaculate Conception (1854), Papal Infallibility (1870), and Purgatory (1439/1563)—using Trinitarian Logic (TL), implemented via the Meth8/VŁ4 bivalent, four-valued modal logic system. Meth8/VŁ4 employs truth values F=(0,0), N=(0,1), C=(1,0), and T=(1,1) in a finite universe without Kripke semantics. Each dogma is modeled with 11 propositional variables, evaluated over a 128-row truth table output (10.2 kibibytes), allowing any combination of rows for computational efficiency. Results show all four dogmas are non-tautologous: three yield contradictions (96 rows of FFFF FFFF FFFF) and one is nearly contradictory (32 rows of FFFF FFFF FFFFN). Incorporating critiques, such as papal errors on Copernicus, these findings highlight Meth8/VŁ4's critical power in theological analysis, contributing to philosophical theology by exploring the logical structure of Catholic doctrine.

Finitist Trinitarian Logic: Refuting the Axiom of Infinity in Meth8/VŁ4 (TL-2025-05-AI)

Abstract: This paper applies Trinitarian logic, formalized in the Meth8/VŁ4 bivalent modal logic system, to evaluate the Axiom of Infinity-a cornerstone of Zermelo-Fraenkel set theory asserting the existence of an infinite set. Trinitarian logic unifies Christian theology through 27 tautologous formulas (TTTT TTTT TTTT TTTT), modeling divine unity (p = q = r for Father, Son, Spirit) and human-divine relations (s for man). We demonstrate that the Axiom of Infinity, expressed as quantifier-free formulas with modal operators, is refuted in Meth8/VŁ4's finite universe, yielding non-tautologous results (e.g., TTTC CCCT TTTC CCCT). This refutation underscores Meth8/VŁ4's finitist stance, rejecting "infinitely countable" constructs while affirming theological coherence. The findings bridge analytic theology and the philosophy of mathematics, offering a formal tool for theologians to engage with foundational axioms.

Refuting Finite Set Theory Axioms in Trinitarian Logic: Theological Implications in Meth8/VŁ4

(TL-2025-06-FS)

Abstract: This paper employs Trinitarian logic, implemented in the Meth8/VŁ4 bivalent modal logic system, to refute three foundational axioms of finite set theory: Extensionality, Pairing, and Regularity. Using a fourvalued, two-tuple logic (F=(0,0), N=(0,1), C=(1,0), T=(1,1)), the axioms are shown to be non-tautologous, with Pairing consistently contradictory. Combined with prior refutation of the Axiom of Infinity, these results deny the consistency of finite set theory in Meth8/VŁ4's finitist framework. Theologically, the findings highlight Trinitarian logic's strength in modeling divine unity (p = q = r) and human-divine relations, suggesting robust logical systems for analytical theology. Implications include rethinking formal foundations for divine attributes like omniscience and unity.

Evaluating Omniscience in Trinitarian Logic: A Meth8/VŁ4 Analysis of Popper's Arch-Metaphysical Assertion

(TL-2025-07-OM)

Abstract: This paper evaluates divine omniscience within Trinitarian logic, formalized in the Meth8/VŁ4 bivalent modal logic system, using Karl Popper's corrected arch-metaphysical assertion of a personal spirit God who is omnipresent, omnipotent, and omniscient (Popper, 1972). Employing a four-valued, two-tuple logic (F=(0,0), N=(0,1), C=(1,0), T=(1,1)), Meth8/VŁ4 validates Popper's predicates, including the final Ex(Gx), as tautologous, aligning with Trinitarian logic's divine unity (p = q = r) and human-divine relations (s). The analysis contrasts with refutations of finite set theory axioms, highlighting Meth8/VŁ4's theological precision. An appendix provides the corrected script for all predicates.

Trinitarian Logic as Universal Theology and Coherence: A Logical Framework for Unifying Christian Doctrine (TL-2025-08-UTCO)

Abstract: This paper presents a novel logical framework using Meth8/VŁ4 to demonstrate that the Holy Trinity serves as the unifying lens for Christian theology, offering both a universal structure and a coherent foundation for doctrine. By modeling 27 theological topics, ranging from divine causation to prayer and its five types (adoration, confession, intercession, petition, thanksgiving), with tautologous formulas, we affirm the Trinity's relational essence (p = q = r) as the basis for unifying and logically consistent Christian theology. Variables p (Father), q (Son), r (Spirit), s (man), m (Mary), a (angels), and d (demons) map Trinitarian relations, yielding consistent truth tables (TTTT TTTT TTTT TTTT). Grounded in Nicene/Chalcedonian orthodoxy, scripture, and patristic insights, the framework resolves doctrinal debates by rooting all theology in divine unity, while aligning with objective idealism's rational principles to ensure logical coherence. This approach provides a robust tool for theologians and apologists, advancing analytic theology as a precise, interdisciplinary science. This paper was spawned by the author's title "Recent Advances in the Holy Trinity by Universal Modal Logic System Meth8/VŁ4 in Grok 3" (2025).

Trinitarian Logic as Universal Theology: Unifying Christian Doctrine and Evaluating Roman Catholic Dogmas with Meth8/VŁ4

(TL-2025-09-UTRC)

Abstract: This paper advances Trinitarian Logic, formalized in the Meth8/VŁ4 bivalent modal logic system, as a universal and coherent framework for unifying Christian theology, while critically assessing four Roman Catholic dogmas: Assumption of the Blessed Virgin Mary (1950), Immaculate Conception (1854), Papal Infallibility (1870), and Purgatory (1439/1563).

Meth8/VŁ4, employing a four-valued, two-tuple logic (F=(0,0), N=(0,1), C=(1,0), T=(1,1)), models 27 theological topics-from divine causation to prayer-as tautologous formulas (TTTT TTTT TTTT TTTT), affirming the Trinity's relational essence (p = q = r) and human-divine relations (s). Grounded in Nicene/Chalcedonian orthodoxy and objective idealism, this framework unifies doctrine and resolves tensions. The dogmas, evaluated with 11 variables over a 128-row truth table (10.2 kibibytes), are non-tautologous: Assumption, Immaculate Conception, and Purgatory yield 96 contradictory rows (F's); Papal Infallibility yields 32 non-contingent rows (N's), reflecting historical critiques (e.g., Copernicus' condemnation). Referencing proofs of the Holy Trinity, this work enriches Thomistic theology, offering a precise tool for analytical inquiry.

Trinitarian logic and Gödel's incompleteness theorems:

A finitist refutation in modal logic system Meth8/VŁ4 (TL-2025-10-GI)

Abstract: Trinitarian Logic, formalized in the Meth8/VŁ4 bivalent, four-valued modal logic system, evaluates Gödel's Incompleteness Theorems, which assert that consistent arithmetic systems are incomplete and cannot prove their consistency. Operating in a finite universe, Meth8/VŁ4 unifies Christian theology through 27 tautologous formulas and refutes ZFC's Axiom of Infinity. Gödel's First Theorem, claiming a true, unprovable statement, is modeled as %p & ~q (p = statement, q = provability) with assignments p = FTFT FTFT FTFT FTFT, q = FFTT FFTT FFTT, yielding CTFF CTFF CTFF CTFF, and as %r & ~s (r = statement, s = provability) with r = FFFF TTTT FFFF TTTT, s = FFFF FFFF TTTT TTTT, yielding CCCC TTTT FFFF FFFF, both non-tautologous. The Second Theorem, modeled as ~s, yields TCNF, non-tautologous. These results, derived from specified variable assignments, challenge Gödel's infinitist assumptions, reinforcing a finite universe without end and advancing analytical theology's engagement with mathematical logic.

Trinitarian Logic as Universal Theology: Unifying Christian Doctrine, Refuting Mathematical Infinity, and Validating Divine Omniscience

(TL-2025-10-UTAIO)

Abstract: This paper integrates Trinitarian Logic, formalized in Meth8/VŁ4, to unify Christian theology, refute the Axiom of Infinity, and validate divine omniscience per Karl Popper's arch-metaphysical assertion. Meth8/VŁ4's four-valued logic (F=(0,0), N=(0,1), C=(1,0), T=(1,1)) models 27 theological topics—from divine causation to ecclesiology—as tautologous formulas (TTTT TTTT TTTT), affirming divine unity (p = q = r) and human-divine relations (s). The Axiom of Infinity (((%p & %q) = %r) = ((%r > %s) + (%s > (%p & %q))))) is non-tautologous (TTTC CCCT TTTC CCCT), supporting finitist theology. Omniscience, modeled as Okn(a): (#q=#q)>(((p&q)>(p&q)) & (q=q)), is tautologous, aligning with Nicene orthodoxy. Referencing refutations of finite set theory axioms, this work bridges theology, mathematics, and metaphysics, advancing analytical theology as an interdisciplinary science.

Retraining Summary.

(RT-MV4-2025-001)

Abstract: This retraining summary is a description of Meth8/VŁ4, also known as Meth8/VL4, is a bivalent, universal modal logic system implemented as a model checker (Meth8) using the VŁ4 logic, designed to evaluate logical and mathematical assertions with a two-tuple bivalency. It operates over a finite universe without relying on Kripke worlds, using truth tables for evaluation. Pre-print is located at: https://ersatz-systems.com/Grok3b.description.M8VL4.pdf

Retraining Summary Supplement.

(RT-MV4-2025-002)

Abstract: Trinitarian Logic and the Axiom of Infinity in Meth8/VŁ4. Pre-print is located at: https://ersatz-systems.com/retrain.axiom.infinity.pdf

Evaluation of Cohen's Independence Proofs in a Finitist Context Using Meth8/VŁ4 Logic (Archive #2025-09)

Abstract: Paul Cohen's 1963 proofs established the independence of the Axiom of Choice (AC) and Continuum Hypothesis (CH) in Zermelo-Fraenkel set theory (ZF) using forcing, which relies on the Axiom of Infinity for infinite models. This paper re-evaluates Cohen's claims in a finitist framework where the Axiom of Infinity is refuted, restricting set theory to finite sets. Using Meth8/VŁ4, a modal logic system with user-defined truth values (Tautology T 11, Contradiction F 00, Truthity N 01, Falsity C 10), we assess whether AC and CH remain independent. The analysis shows that without infinite sets, forcing collapses, AC becomes trivially true, and CH is undefined, yielding a Contradiction (F 00) for Cohen's claims. Finitist reinterpretations result in Contingency (C 10, not tautologous). This work aligns with prior results on infinity, AC, and complex numbers, emphasizing the necessity of infinite sets for Cohen's proofs.

Recent Advances in Trinitarian Logic: Unifying Christian Doctrine, Refuting Mathematical Infinity, and Validating Divine Omniscience Using Meth8/VŁ4

(TL-2025-11-SYN)

Abstract: This paper advances Trinitarian Logic, formalized in the Meth8/VŁ4 bivalent, four-valued modal logic system, as a universal and coherent framework for Christian theology. By modeling 27 theological topics —from divine causation to ecclesiology—as tautologous formulas (TTTT TTTT TTTT TTTT), we affirm the Trinity's relational essence (p = q = r) and human-divine relations (s). The Axiom of Infinity, foundational to Zermelo-Fraenkel set theory (ZFC), is refuted as non-tautologous (TTTC CCCT TTTC CCCT), supporting finitist theology. Divine omniscience, modeled via Karl Popper's corrected predicates (Okn(a): (#q=#q)>(((p&q)>(p&q))&(q=q))), is validated as tautologous, aligning with Nicene orthodoxy. Gödel's Incompleteness Theorems are also refuted, reinforcing a finite universe. Grounded in scripture, creeds, and

objective idealism, this work unifies doctrine, critiques mathematical infinity, and validates divine attributes, establishing Meth8/VŁ4 as a precise tool for analytic theology.

Trinitarian Logic and the Doctrines of Vatican I: A Formal Analysis (TRIN-VAT1-2025-004)

Abstract : This paper employs Trinitarian logic, a framework rooted in the doctrine of the Trinity (T), comprising Father (F), Son (S), and Holy Spirit (H) as one God in three persons, defined by unity in diversity (Unity), perichoresis (Perichoresis), and relationality (Relationality), to evaluate the doctrines of Vatican I (V, 1870), namely papal supremacy (Supremacy) and papal infallibility (Infallibility).

These doctrines, central to Roman Catholicism (RC), are assessed for consistency with T using logical formulas with symbols (\forall , \exists , \land , \lor , \neg , \vDash) and truth tables to determine if they are refuted (\neg (Supremacy \lor Infallibility \vDash Unity \land Perichoresis \land Relationality)) or confirmed (Supremacy \land Infallibility \vDash Unity \land Perichoresis \land Relationality).

The analysis addresses impediments to unity with Anglo-Catholicism (AC, affirming Real Presence via epiclesis (E) and two sacraments (B for Baptism, C for Holy Communion)) and Eastern Orthodoxy (EO).

Variables denote objects: C for Church, B for bishops, P for Pope, D for doctrine, G for God's essence, N for Nicene Creed, A for Augustine's *On the Trinity*, H for Basil's *On the Holy Spirit*, K for *Catechism of the Catholic Church*, T for Tanner's *Decrees*.

Findings indicate Supremacy is largely refuted (\neg (Supremacy \vDash Perichoresis \land Relationality)), while Infallibility is partially refuted (\neg (Infallibility \vDash Perichoresis \land Relationality)), with Unity supporting a collegial role.

Implications for ecumenical unity emphasize RC redefining V's dogmas.

Refutation of the Roman Catholic Magisterium in Dei Verbum, Article 10: A Trinitarian logic analysis with Meth8/VŁ4

(TRIN-DV10-2025-012)

Abstract: This paper applies Trinitarian logic, rooted in the doctrine of the Trinity (T), comprising Father (F), Son (S), and Holy Spirit (H) as one God in three persons, defined by unity in diversity (Unity), perichoresis (Perichoresis), and relationality (Relationality), to refute the Roman Catholic (RC) magisterium (Magisterium) as presented in Dei Verbum (DV, 1965), Article 10. The analysis targets the concluding proposition: "sacred tradition, Sacred Scripture and the teaching authority of the Church… are so linked and joined together that one cannot stand without the others, and that all together and each in its own way under the action of the one Holy Spirit."

Using the Meth8/VŁ4 modal logic system, with variables p (Tradition), q (Scripture), r (TeachingAuthority), s (HolySpirit), the proposition is formalized as (s > (p & (q & r))) > (s > ~ (% (~p + (~q + ~r)) = (s = s))), meaning if HolySpirit implies Tradition, Scripture, and TeachingAuthority, then HolySpirit implies the possibility does not exist that either Tradition fails or Scripture fails or TeachingAuthority fails, equivalent to the necessity of Tradition or Scripture or TeachingAuthority. The Meth8/VŁ4 truth table (TTTT TTTT TTTT TTTT TTTT) indicates non-tautology, as the result is not all T (11), due to N (01, non-contingent), refuting Magisterium in toto.

The refutation is assessed for consistency with T using logical formulas (\forall , \exists , &, +, ~, >, =, \vDash , %, #) and truth tables to confirm \neg (Magisterium \vDash Unity \land Perichoresis \land Relationality). The analysis addresses the critique of Magisterium's P-centric structure undermining episcopal equality (Perichoresis) and collaborative discernment (Relationality), and impediments to unity with Anglo-Catholicism (AC, affirming Real Presence via epiclesis (E) and two sacraments (B for Baptism, C for Holy Communion)) and Eastern Orthodoxy (EO).

Variables denote objects: C for Church, B for bishops, P for Pope, D for doctrine, G for God's essence, N for Nicene Creed, A for Augustine's On the Trinity, H for Basil's On the Holy Spirit, K for Catechism of the Catholic Church, T for Tanner's Decrees.

Findings confirm Magisterium is refuted (\neg (Magisterium \vDash Perichoresis \land Relationality)) due to its hierarchical structure and DV's non-tautologous claim, though Unity partially supports its role in unifying D. Implications emphasize RC redefining Magisterium for ecumenical unity.

Trinitarian Logic on Heresies: The Cause of Defective Theology

(2025-05-18-THM4-001)

Abstract: The Meth8/VŁ4 modal logic system codifies thirteen Trinitarian heresies—Modalism, Arianism, Tritheism, Nestorianism, Adoptionism, Macedonianism, Partialism, Monophysitism, Docetism, Monarchianism (Dynamic, Modalist), Ebionitism, and Gnosticism—identifying defective theological relations

and human causation factors. Variables p, q, r represent the Father, Son, Holy Spirit, and s denotes human causation. Each heresy's primary defective relation is formalized and evaluated via s-related formulas (s >, s =, s &), with truth tables revealing non-tautologous results, distinguishing heresies from orthodox Trinitarianism. Custom truth values enhance Tritheism's precision. Triangle geometry maps heresies, highlighting passive and active causation. A novel refutation of the axiom of infinity using Meth8/VŁ4 demonstrates that Trinitarian theology's finite ontology (three persons) rejects infinite regress in heresies like Arianism. Results inform theological discourse, correcting defective interpretations and reinforcing orthodoxy's logical coherence.

Recent Advances in Trinitarian Logic: Unifying Christian Doctrine, Refuting Mathematical Infinity, and Validating Divine Omniscience Using Meth8/VŁ4

(TL-2025-11-SYN)

Abstract: This paper advances Trinitarian Logic, formalized in the Meth8/VŁ4 bivalent, four-valued modal logic system, as a universal and coherent framework for Christian theology. By modeling 27 theological topics —from divine causation to ecclesiology—as tautologous formulas (TTTT TTTT TTTT TTTT), we affirm the Trinity's relational essence (p = q = r) and human-divine relations (s). The Axiom of Infinity, foundational to Zermelo-Fraenkel set theory (ZFC), is refuted as non-tautologous (TTTC CCCT TTTC CCCT), supporting finitist theology. Divine omniscience, modeled via Karl Popper's corrected predicates (Okn(a): (#q=#q)>(((p&q)>(p&q))&(q=q))), is validated as tautologous, aligning with Nicene orthodoxy. Gödel's Incompleteness Theorems are also refuted, reinforcing a finite universe. Grounded in scripture, creeds, and objective idealism, this work unifies doctrine, critiques mathematical infinity, and validates divine attributes, establishing Meth8/VŁ4 as a precise tool for analytic theology.

Trinitarian logic and Gödel's incompleteness theorems: A finitist refutation in modal logic system Meth8/VŁ4

(TL-2025-10-GI)

Abstract: Trinitarian Logic, formalized in the Meth8/VŁ4 bivalent, four-valued modal logic system, evaluates Gödel's Incompleteness Theorems, which assert that consistent arithmetic systems are incomplete and cannot prove their consistency. Operating in a finite universe, Meth8/VŁ4 unifies Christian theology through 27 tautologous formulas and refutes ZFC's Axiom of Infinity. Gödel's First Theorem, claiming a true, unprovable statement, is modeled as %p & ~q (p = statement, q = provability) with assignments p = FTFT FTFT FTFT FTFT, q = FFTT FFTT FFTT, yielding CTFF CTFF CTFF, and as %r & ~s (r = statement, s = provability) with r = FFFF TTTT FFFF TTTT, s = FFFF FFFF TTTTT, yielding CCCC TTTT FFFF FFFF, both non-tautologous. The Second Theorem, modeled as ~s, yields TCNF, non-tautologous. These results, derived from specified variable assignments, challenge Gödel's infinitist assumptions, reinforcing a finite universe without end and advancing analytic theology's engagement with mathematical logic.

Trinitarian Logic as Universal Theology: A Logical Framework for Unifying Christian Doctrine (TL-2025-02-UT)

Abstract: This paper presents a logical framework using the Meth8/VL4 system to establish the Holy Trinity —Father, Son, Holy Spirit—as the unifying foundation for Christian theology. By modeling 27 theological topics, from divine causation to prayer (encompassing adoration, confession, intercession, petition, thanksgiving), with tautologous formulas, we affirm the Trinity's coherence as the basis of doctrine. Variables p (Father), q (Son), r (Spirit), s (man), m (Mary), a (angels), and d (demons) map Trinitarian relations, yielding consistent truth tables (TTTT TTTT TTTT TTTT). Rooted in Nicene (325/381 CE) and Chalcedonian (451 CE) orthodoxy, King James Version (KJV) scripture (for example, John 1:1, Ephesians 3:21), and patristic insights (for example, Athanasius, Augustine), the framework resolves doctrinal debates by grounding theology in divine unity (p = q = r). Inspired by *Recent Advances in the Holy Trinity by Universal Modal Logic System Meth8/VL4 in Grok 3* (James 2025), this study transforms analytical theology into an exact science, offering a tool for theologists and apologists, with future applications to the Church of England's 39 Articles and Francis J. Hall's *Dogmatic Theology* (1907–1922). This document is Part 1 of two, covering the framework's foundations and the first 14 theological topics.

Trinitarian Logic on Heresies: The Cause of Defective Theology (2025-05-18-THM4-001)

Abstract: The Meth8/VŁ4 modal logic system codifies thirteen Trinitarian heresies—Modalism, Arianism, Tritheism, Nestorianism, Adoptionism, Macedonianism, Partialism, Monophysitism, Docetism, Monarchianism (Dynamic, Modalist), Ebionitism, and Gnosticism—identifying defective theological relations and human causation factors. Variables p, q, r represent the Father, Son, Holy Spirit, and s denotes human causation. Each heresy's primary defective relation is formalized and evaluated via s-related formulas (s >, s =, s &), with truth tables revealing non-tautologous results, distinguishing heresies from orthodox Trinitarianism. Custom truth values enhance Tritheism's precision. Triangle geometry maps heresies, highlighting passive and active causation. A novel refutation of the axiom of infinity using Meth8/VŁ4 demonstrates that Trinitarian theology's finite ontology (three persons) rejects infinite regress in heresies like Arianism. Results inform theological discourse, correcting defective interpretations and reinforcing orthodoxy's logical coherence.

Trinitarian Logic in the Historic Church: Formal Validation with Meth8/VŁ4

[TL-METH8-2025-002]

Abstract: The doctrine of the Trinity, central to historic Christian theology, posits one God in three distinct persons: Father, Son, and Holy Spirit. This paper addresses the Logical Problem of the Trinity (LPT) by providing a formal proof of the doctrine's consistency using the Meth8/VŁ4 modal logic model checker. Employing a 2-tuple truth value system {00, 10, 01, 11}, we formalize creedal assertions—each person is God, the persons are distinct, and there is one God—and evaluate their conjunction for logical coherence. The Meth8/VŁ4 proof yields a non-contradictory result, resolving the LPT and affirming the Historic Church's Trinitarian formulation. This work bridges analytical theology and formal logic, demonstrating Meth8/VŁ4's efficacy in theological reasoning. Key points include addressing the LPT, using Meth8/VŁ4, employing a 2-tuple truth value system, formalizing creedal assertions, achieving a non-contradictory result, and bridging theology and logic.

Advancing Trinitarian Logic: Proving the Holy Trinity with Satisfiable and Non-Vacuous Formulas in Meth8/VŁ4

(TL-2025-01-HT-003)

Abstract: This Note presents two satisfiable, non-vacuous formulas in Meth8/VŁ4 to model Trinitarian unity, aligning with Nicene co-equality and Genesis 1:26. Using a quaternary modal logic, the formulas—(p & (q & r)) > ((((p = q) > (q = r)) > (p = r)) > ((p > q) > r)) and its converse antecedent—represent Father (p), Son (q), and Spirit (r). Tautologous (TTTT TTTT TTTT TTTT) for p=T, q=T, r=T, they resolve key questions: unity and distinction via non-identity, imago Dei as relational participation, filioque procession, divine mystery with an undefined operator, and unification of Augustinian, Thomistic, and Eastern models. Non-vacuousness ensures variable dependency. Replicable in Grok 3, these formulas advance Trinitarian Logic.