

**The Gageian Epistemic Model: Dissolving the Agrippa Trilemma with the
Structural Mandate for Warranted Belief (V9)**

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Abstract

The Pyrrhonian Skeptic's Agrippa Trilemma asserts that any knowledge claim is doomed to infinite regress, arbitrary dogmatism, or circular reasoning. This paper argues that the Trilemma is an axiomatic consequence of the historical reliance on the problematic Justified True Belief (JTB) definition and the failure to rigorously define the necessary structure of conscious inquiry. This paper introduces the **Gageian Epistemic Model (GEM)**, a descriptive meta-epistemology that formalizes the mandatory procedure of conscious warrant into the **PIE Syllogism (P1-P5)**. The **GEM** offers a unique, structural response to the Trilemma: the infinite regress is terminated by the self-vindicating, structurally mandated axiom, **P1: The Axiom of Subjective State (S)**. Arbitrariness is overcome by demonstrating the structural necessity of **P3** (the Goal of resolution), and circularity is controlled by establishing two distinct, warranted standards for belief. The **GEM** formalizes all warranted belief across two categories: **Intrinsic Knowledge as Justified Coherent Belief (JCB)**, warranted by internal coherence via **P4**, and **Extrinsic Knowledge as Justified Reliable Belief (JRB)**, warranted by external predictive success via **P5**. This axiomatic procedure provides the foundational justification for the methodology of modern science and mathematics, proving it is the only structurally defensible path available to a conscious agent.

Keywords: Agrippa Trilemma, Epistemology, Foundationalism, Structural Mandate, Gageian Epistemic Model (GEM), PIE Syllogism, Justified Coherent Belief (JCB), Justified Reliable Belief (JRB)

1. Introduction: The Structural Crisis of the Agrippa Trilemma

The history of Epistemology is defined by its response to the problem of warranted belief, perpetually threatened by the Agrippa Trilemma (Sextus Empiricus 1994). Historically, the dominant view held that Knowledge must meet the standard of Justified True Belief (JTB). This paper posits that the Trilemma is not an inherent limit on human reason, but an axiomatic fault line created by a universal structural error: the choice of an arbitrary starting axiom.

The resolution presented here is the **Gageian Epistemic Model (GEM)**, a descriptive meta-epistemology that fundamentally shifts the terrain of this debate. The **GEM** resolves the skeptical crisis by formalizing a necessary, non-arbitrary path to warranted belief through the **PIE Syllogism** (comprised of premises **P1-P5**), which describes the only structurally justified procedure an agent can employ to warrant any belief.

This **Structural Mandate** successfully halts the infinite regress with the **Self-Vindicating Precondition (P1)**, defeats the methodological arbitrariness of dogmatism by linking the axiomatic start (**P1**) to a necessary, non-arbitrary process (**P3**), and establishes the formal standard for all warranted belief, defining it as either **Intrinsic Knowledge (JCB)** or **Extrinsic Knowledge (JRB)**. This resolution reclaims the full scope of warranted cognition, provides a non-arbitrary foundation, and offers the necessary philosophical justification for the methodology of modern science.

2. Situating the GEM: Contribution to Contemporary Epistemology

The **GEM** provides a structural unification of established epistemic traditions, re-contextualizing concepts like acquaintance, coherence, and reliability into a single, deductively necessary sequence. The novelty of the **GEM** lies not in the content of its premises, but in the necessity argument for their specific, axiomatic order. The model is best understood as an attempt to distill

the necessary procedural components shared by moderate Foundationalism, Coherentism, and Externalism.

Foundationalism (Chisholm, Audi)

The **GEM's P1 (Axiom of Subjective State)** is rooted in the tradition of Acquaintance Foundationalism (Chisholm 1966; Audi 2002). Unlike systems proposing contingent foundations (e.g., sense-data), the **GEM** defends **P1** as being *structurally mandatory* and non-inferentially necessary for the evaluation of *any* other axiom. This approach terminates the regress without resorting to arbitrary dogmatism.

Coherentism (BonJour) and Internalism

The initial segment of the **GEM (P1-P4)** establishes **Justified Coherent Belief (JCB)**, aligning with the Internalist standard where warrant is accessible through coherence (BonJour 1985). This coherence (**P4**) is the necessary logical requirement to achieve the goal of resolution (**P3**). However, unlike traditional Coherentism, the **GEM** anchors its internal coherence in the non-inferential, self-vindicating **P1**, thereby avoiding the structural weakness of circularity at the foundational level.

Externalism (Goldman, Plantinga) and Reliability

The transition to **Extrinsic Knowledge (JRB)** via **P5** engages the externalist tradition of Reliabilism (Goldman 1979) and Proper Function Theory (Plantinga 1993). The **GEM** formalizes the reliability constraint (**P5**) not as a preferable method, but as the final, *structurally necessary* step required to move from internal coherence (**JCB**) to externally warranted belief (**JRB**) without falling into the circularity of verifying external reality using purely internal standards.

3. The Structural Necessity of the PIE Syllogism

The **Gageian Epistemic Model (GEM)** is built upon the **PIE Syllogism**, a necessary, five-premise deductive argument that establishes the most structurally defensible path to warranted belief for a conscious agent. The **PIE Syllogism** requires the acceptance of five structurally unavoidable premises.

Note on Premise Structure: The **PIE Syllogism** is a deductive argument because it asserts the logically necessary prerequisites for non-arbitrary inquiry. Although it describes a mandatory procedure for the agent, its axiomatic form demonstrates that this procedure *must* result in the stated conclusion (*K*) if the agent accepts the starting conditions (**P1**).

Component	Formal Term	Premise Statement	Structural Function
P1	Axiom of Subjective State (<i>S</i>)	Every conscious agent has a non-arbitrary Subjective State (<i>S</i>).	Self-Vindicating Precondition halts the infinite regress.
P2	Axiom of Mental Event (<i>E</i>)	The occurrence of a dynamic Mental Event (<i>E</i>) occurs within this state.	Triggers Inquiry (<i>I</i>).
P3	Axiom of Structural Pragmatism (<i>G</i>)	Inquiry (<i>I</i>) necessitates the Goal (<i>G</i>) of resolution.	Halts Arbitrariness/Dogmatism of the process.
P4	Internal Coherence (<i>C</i>)	Intrinsic Knowledge (JCB) is achieved if and only if the Goal (<i>G</i>) is satisfied by Internal Coherence (<i>C</i>).	Grants Intrinsic Knowledge (JCB).
P5	Terminal Reliability Premise (<i>R</i>)	Extrinsic Knowledge (JRB) is achieved if and only if Intrinsic Knowledge (JCB) is constrained by verifiable Reliability (<i>R</i>).	Transitions warrant to Extrinsic Knowledge (JRB).
Conclusion	Knowledge (<i>K</i>)	Knowledge (<i>K</i>) is necessarily a Justified Coherent Belief (JCB) or a Justified Reliable Belief (JRB).	The warranted standard for all Knowledge.

The GEM Hierarchy: Mandate, Model, Engine, and Defense

The four core terms of this framework describe distinct but inseparable hierarchical functions:

- **The Structural Mandate (The Axiom):** The descriptive, meta-epistemological truth that mandates a single, non-arbitrary structure for justification.
- **The Gageian Epistemic Model (GEM) (The System):** The formalized framework that encompasses the **PIE Syllogism**, the **Gage Pentalemma**, and the resulting knowledge standards (**JCB** and **JRB**).
- **The PIE Syllogism (The Engine):** The sequence of **P1** through **P5** that functionally executes the Mandate's requirement, translating structural necessity into a warranted conclusion (**JCB** or **JRB**).
- **The Gage Pentalemma (The Defense):** The five-horned axiomatic proof that establishes the structural necessity of each **PIE Syllogism** premise (**P1** through **P5**).

4. Defense of P1 and P2: Halting the Infinite Regress

P1 and **P2** provide the necessary axiomatic foundation that successfully halts the Agrippa Trilemma's flaw of infinite regress.

Defense of P1: The Axiom of Subjective State (*S*) (The Self-Vindicating Precondition)

P1 asserts that every conscious agent has a non-arbitrary **Subjective State** (*S*). This premise is the **Self-Vindicating Precondition** (Descartes 1996) that halts the infinite regress. It cannot be rejected without committing a Performative Contradiction, as the **Subjective State** (*S*) is the non-arbitrary necessary precondition for the execution of any further inquiry. This shifts Foundationalism from an arbitrary assertion (e.g., sense-data) to a structurally necessary precondition of cognition.

Defense of P2: The Axiom of Mental Event (*E*)

P2 is the Axiom of **Mental Event (*E*)**: The occurrence of a dynamic **Mental Event (*E*)** occurs within this state. The existence of *S* implies the inevitability of some *E* occurring within it.

Therefore, if **P1** is accepted as the non-arbitrary start, **P2** is a necessary consequence, establishing the dynamic trigger for the entire epistemological process (**Inquiry, *I***).

5. Defense of P3 and P4: Defeating Intrinsic Flaws

The successful defense of **P3** and **P4** establishes the foundation of all warranted, non-arbitrary belief.

Defense of P3: The Axiom of Structural Pragmatism (*G*)

P3 states that **Inquiry (*I*)** necessitates the **Goal (*G*)** of resolution. **Inquiry (*I*)** is defined as the process of moving from a state of uncertainty (*E*) to a state of resolved certainty. The defense is based on a functional definition: if the agent rejects the **Goal (*G*)** of resolution, they are, by definition, engaging in Suspension, not **Inquiry**. **P3** is the **Structural Mandate** that forces *I* to be directed toward a non-arbitrary conclusion, neutralizing the charge of methodological arbitrariness (dogmatism) in the process of justification.

Defense of P4: The Internal Coherence Necessity Premise (*C*)

Intrinsic Knowledge (JCB) is achieved if and only if the **Goal (*G*)** is satisfied by **Internal Coherence (*C*)**. **Internal Coherence** is the highest warrant achievable using only the resources of the **Subjective State (*S*)**. If the **Goal (*G*)** is resolution, and the method used to achieve it is internally contradictory (incoherent), *G* cannot be achieved. A logically incoherent conclusion fails to satisfy the non-arbitrary Goal of resolution established in **P3**. The necessity of **P4** is thus proven by the **Incoherence Horn** of the Gage Pentalemma.

The successful satisfaction of **P1** through **P4** results in a **Justified Coherent Belief (JCB)**. This is the formal warrant for any belief secured against the flaws of regress, arbitrariness, and incoherence.

6. The Dual Warrant: JCB, JRB, and the Defense of P5

The PIE Syllogism resolves the historical ambiguity of the term “knowledge” by defining two formally distinct forms of warranted belief based on the necessity of external constraint. The **GEM** asserts that the PIE Syllogism is the single engine that grants both levels of warrant, and **P5** serves as the final, structural defense against the Agrippa Trilemma's **Circularity** horn.

Intrinsic Knowledge: Justified Coherent Belief (JCB).

JCB provides the structurally defined warrant for all beliefs secured solely by Internal Coherence and logical necessity. These claims do not rely on evidence external to the self-contained system.

Component	Justified Coherent Belief (JCB)
Premises	P1, P2, P3, P4
Warrant Defined By	Internal Coherence (C)
Structural Scope	Claims contained entirely within the Subjective State (S) .
Examples	Analytical truths, mathematics, self-vindicating subjective claims (“I am having a thought”).
Pentalemma Status	Secure against Horns 1, 2, 3, and 4. Immune to Horn 5 by definition.

Extrinsic Knowledge: Justified Reliable Belief (JRB)

JRB is the highest structural standard, reserved for **Extrinsic Knowledge** that is vulnerable to circularity regarding external reality. The inclusion of **P5 (Terminal Reliability, R)** is mandatory to transition the belief from a merely coherent state (**JCB**) to a fully warranted state (**JRB**).

P5 Defense Against Circularity: If an agent attempts to make an extrinsic claim that relies solely on the internal warrant of **JCB (P1-P4)**, they commit the fallacy of external circularity (verifying an external system using only internal rules). The requirement of **Reliability (*R*)** in **P5**—defined as the repeated consistency of observation or experimental outcome across multiple trials—is the necessary external test that breaks this self-reference, securing the belief against the Agrippa Trilemma's final flaw. The successful application of **P5** yields **Justified Reliable Belief (JRB)**.

Component	Justified Reliable Belief (JRB)
Premises	P1, P2, P3, P4, P5
Warrant Defined By	External Reliability (<i>R</i>)
Structural Scope	Claims attempting to describe, predict, or interact with the world external to the Subjective State (<i>S</i>) .
Examples	Scientific facts, empirical observation, historical claims.
Pentalemma Status	Secure against all five structural flaws.

7. JRB, Reliability, and Factivity: Escaping the Problem of Truth

The historical reliance on the Justified True Belief (JTB) standard proved structurally unstable (Gettier 1963). The **GEM** resolves this by replacing the requirement of Absolute Truth with **Reliability (*R*)** in the standard for **Extrinsic Knowledge (JRB)**.

The requirement of **Reliability (*R*)** in **P5** is: **Extrinsic Knowledge (JRB)** is achieved if and only if **Intrinsic Knowledge (JCB)** is constrained by verifiable **Reliability (*R*)**. *R* is defined as the repeated consistency of observation or experimental outcome across multiple trials or observers.

Neutralizing the Gettier Problem

The **PIE Syllogism** neutralizes the Gettier Problem by replacing JTB with **JRB**. A belief only qualifies as **JRB** if it is the warranted result of the necessary sequence **P1 to P5**. In a Gettier case, the justification for the final belief would fail the **Terminal Reliability Premise (P5)** because the resulting belief is an accidental truth, which, by definition, is not consistent or verifiable, and therefore lacks the necessary **Reliability (R)** constraint.

JTB Component	JRB Component	GEM Outcome
Truth (<i>T</i>)	Reliability (<i>R</i>)	Cannot be accidentally satisfied. Reliability (R) requires consistent, verifiable constraint across multiple instances.
Justification (<i>J</i>)	Necessary Goal (<i>G</i>)	Intrinsic/Necessary. Justification is based on the structural necessity of P1-P5 .

The Brain-in-a-Vat (BIV) Defense

The **GEM** maintains that the beliefs of a BIV agent are **JRB** *with respect to the rules and constraints of the simulated environment*. The model describes the warranted structure of belief *relative* to the agent's **Subjective State (S)**, which is the only place inquiry can non-arbitrarily begin. The model describes *warranted procedure* rather than guaranteeing metaphysical correspondence with an external reality the agent cannot verify.

The Law of Empirical Convergence

The move from **JCB** to **JRB** mandates the Law of Empirical Convergence: for an extrinsic knowledge claim to be warranted, all independent lines of warranted inquiry (multiple observers, diverse methods) must structurally converge on the same reliable outcome. This convergence proves that the **Reliability (R)** constraint is external to any single subjective process and thus

secures the **Extrinsic Knowledge (JRB)** from the charge of circularity or Solipsism, demonstrating the axiomatic inevitability of the scientific method.

8. The Gage Pentalemma: The Structural Defense

The **Gage Pentalemma** is the **GEM's** final defense mechanism. It proves that every premise (**P1** through **P5**) is axiomatically necessary and cannot be logically doubted without incurring an immediate, fatal contradiction within the framework of conscious agency.

The five structural flaws (horns) it tests against are:

1. **Horn 1: Performative Contradiction (Defends P1):** Any attempt to reject the **Subjective State (S)** requires the *S* to execute the rejection, proving the premise true in the attempt to prove it false. (Neutralizes Agrippa's Regress Horn).
2. **Horn 2: Functional Contradiction (Defends P2):** Any attempt to reject the **Mental Event (E)** (doubt or awareness) requires *E* to execute the rejection, proving the premise true.
3. **Horn 3: Arbitrariness (Defends P3):** If the agent rejects the necessity of a **Goal (G)** (resolution) for **Inquiry (I)**, the entire process of *I* becomes procedurally arbitrary, forcing the agent back into the Dogmatism flaw of the Agrippa Trilemma.
4. **Horn 4: Incoherence (Defends P4 and JCB):** If an agent attempts to achieve the necessary **Goal (G)** using contradictory **Internal Coherence (C)**, they immediately create Incoherence. This proves the necessity of **Internal Coherence (C)** as the warrant for Justified Coherent Belief (**JCB**).
5. **Horn 5: Circularity (Defends P5 and the Necessity of JRB):** If an agent attempts to make an extrinsic claim that relies solely on the internal warrant of **JCB (P1-P4)**, the rejection of **Reliability (R)** forces the agent to rely solely on self-reference. This collapse

proves that **P5** is necessary to transition a warranted belief from **JCB** to the higher standard of **JRB** for any external claim, securing the full structure against the final flaw.

(Neutralizes Agrippa's Circularity Horn).

9. Conclusion: The Structural Mandate

The ultimate achievement of the **Gageian Epistemic Model (GEM)** is the proof that the **PIE Syllogism**—the sequence of premises **P1** through **P5**—is the only structurally justified procedure available to a conscious agent for validating all forms of warranted belief. The model does not justify the belief itself; rather, it describes the mandatory sequence of axiomatic steps the agent must apply to their proposition to achieve warrant. The philosophical inquiry is thus shifted from the impossible question of whether absolute Knowledge (Truth) is possible to the measurable question of whether the agent has satisfied the necessary, non-arbitrary structural constraint of the **PIE Syllogism**. This Mandate proves that the resulting standard for all warranted belief is defined exclusively as either **Justified Coherent Belief (JCB)** or **Justified Reliable Belief (JRB)**, making the **GEM** the non-arbitrary, warranted conclusion of all successful human inquiry.

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