Denying Holism Is Manufacturing Garbage

— Rigorous Refutation and Academic Garbage Criterion Based on the Zhu–Liang Holism Axiomatic System

Jianbing Zhu[1]

[1] ECT-OS-JiuHuaShan Civilization Laboratory

ORCID: 0009-0006-8591-1891

DOI: 10.5281/zenodo.19571776

Email: ect-os-jiuhuashan@zohomail.cn

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Abstract

"Denying holism" is not a harmless divergence of academic viewpoints, but a cognitive operation that self-destructs at its logical foundation. Within the Zhu–Liang holism axiomatic system, based on the Whole–Part Correspondence Theorem, the Paradigm Invariance Theorem, and the entropy-reduction corollary, this paper provides a rigorous mathematical refutation of the act of denying holism and its cognitive products. We prove that holism is a meta-logical necessity of rational discourse; any cognitive framework that acknowledges difference and deterministic relations must obey the holism theorems. Denying holism is equivalent to denying the compatibility constraints of the definition of a function. Its cognitive products—mechanically piled up from isolated fragments that ignore global compatibility—cannot be isomorphic to any whole function via the bijection Φ, and thus have no isomorphic channel to the Truth Function $T : \Sigma \to R$. Simultaneously, the cognitive entropy of such products attains its maximum, with an emergence measure of zero, making them pure entropy-increasing outputs. Based on this, we provide a rigorous operational definition of "academic garbage" and adjudicate that research which denies holism necessarily falls under this definition. This verdict also terminates the legitimacy illusion of reductionist generalization—the illicit elevation of the legitimate reductionist method into an ontological dogma. Denying holism is not academic freedom, but a pseudo-academic operation that manufactures garbage.

Keywords: holism; Whole–Part Correspondence Theorem; entropy increase; academic garbage; reductionist generalization; compatibility constraint

Contents

1 Introduction: A Meta-Logical Self-Destructive Proposition

Within the contemporary academic ecology, there exists a covert yet widespread operation: in the name of "rigorous analysis," the object of study is infinitely decomposed into isolated parts, and it is declared that the whole is nothing but the mechanical sum of these parts. The core of this operation is **denying holism**—negating that the whole is prior to the parts and that the whole contains irreducible compatibility constraints. It often appears in the form of "reductionist generalization" [4] and has mass-produced a vast ocean of fragmented papers detached from the whole.

However, is the very act of "denying holism" logically legitimate? Do its cognitive products possess any truth value? This paper delivers a definitive verdict within the Zhu–Liang holism axiomatic system: **Denying holism is rational self-destruction, and its cognitive products are inevitably academic garbage that cannot be isomorphic to truth.**

The argument unfolds in four steps:

(1) Based on the Whole–Part Correspondence Theorem and the Paradigm Invariance Theorem, prove that holism is a meta-logical necessity of rational discourse and cannot be denied.

(2) Analyze the mathematical structure of the cognitive products of denying holism: they consist of isolated fragments that ignore compatibility constraints and cannot be isomorphic to any whole function.

(3) Using the entropy functional of information theory, prove that such products have maximal cognitive entropy and zero emergence measure, i.e., pure entropy increase.

(4) Provide a rigorous operational definition of "academic garbage" and adjudicate that research denying holism necessarily falls under this definition.

2 Preliminaries: The Meta-Foundation of Holism

All conclusions of this paper are anchored in the Zhu–Liang holism axiomatic system. The following theorems and definitions are drawn from the series of published preprints [1, 2, 3].

2.1 Meta-Facts and the Truth Function Theorem

Principle 2.1 (Existence of Differences F_1)**.** *There exist identifiable, non-identical, differentiated states in the universe.*

Principle 2.2 (Determinacy of Relations F_2)**.** *There exist non-random, partially comprehensible deterministic relations among differentiated states.*

Theorem 2.1 (Zhu–Liang Truth Function Theorem)**.** *Let Σ be the class of all possible states of the universe, and let Truth T be the ultimate totality of all deterministic relations on Σ. Then T is a function: there exists a class of results R such that $T : \Sigma \to R$.*

[1]

[1] See Theorem 0.3.1 in [2].

2.2 Whole–Part Correspondence Theorem

Definition 2.2 (Function and Subfunction)**.** *A function $F : D \to C$ is a binary relation satisfying single-valuedness. For any $P \subseteq D$, the restriction of F to P, denoted $F|_P : P \to C$, is called a subfunction of F.*

Theorem 2.3 (Zhu–Liang Whole–Part Correspondence Theorem)**.** *Define the mapping $\Phi : \{F : D \to C\} \to \prod_{P \subseteq D}\{f : P \to C\}$, $\Phi(F) = (F|_P)_{P \subseteq D}$. Then Φ is injective; moreover, when restricted to families (f_P) satisfying the compatibility condition $f_Q|_P = f_P$ (for all $P \subseteq Q$), Φ is bijective.*

[2]

The core corollaries of this theorem:

(1) The definition of a subfunction logically depends on the prior existence of the whole function—**the whole is absolutely prior to the parts**.

(2) Any two subfunctions must agree on the intersection of their domains—**the whole contains an irreducible global compatibility constraint**.

2.3 Paradigm Invariance Theorem

Theorem 2.4 (Paradigm Invariance Theorem)**.** *For any rational paradigm capable of expressing difference and deterministic relations, the following propositions hold invariably:*

(1) Truth is a function;

(2) The whole is a function, parts are subfunctions;

(3) The whole–part correspondence constitutes a bijection under compatibility conditions.

[3]

This theorem completely dispels the illusion that "holism is merely a philosophical stance." **Any rational framework must obey the holism theorems; to deny holism is to deny the very conditions of rational thought.**

2.4 Emergence Measure and Entropy-Reduction Corollary

In a Markov category, the entropy functional H satisfies subadditivity $H(X \otimes Y) \leq H(X) + H(Y)$. For an organic system, there exists mutual information $I(A : B) > 0$, and the emergence measure is defined as:

$$E(X) = \sum_i H(A_i) - H(X) > 0.$$

Truth necessarily selects the state of minimum entropy among all configurations compatible with causal constraints—this is the **entropy-reduction corollary**[4].

[2]See Theorem 0.4.1 in [1].
[3]See Theorem 0.5.1 in [1].
[4]See Corollary 6.1 in [2].

3 The Undeniability of Holism

Theorem 3.1 (Meta-Logical Necessity of Holism)**.** *Any proposition or operation that attempts to deny holism already presupposes the validity of holism in the act of denial itself, thereby constituting a logical paradox.*

Proof. Let proposition P be "Holism does not hold," i.e., "There exist wholes that can be reduced to parts without compatibility constraints." To express this proposition, one must employ a linguistic-symbolic system, which internally possesses syntactic rules (the whole function) and local symbols (subfunctions). If holism does not hold, then the meaning of local symbols cannot be constrained by the whole syntax, and the semantics of proposition P lose determinacy—at this point, whether P is even expressing "Holism does not hold" becomes undecidable. If P is meaningful, it has already presupposed a holistic compatibility mapping from symbols to meaning, i.e., it has presupposed holism. Thus P is true if and only if the framework it presupposes is invalid, which is a paradox.

More directly, by the Paradigm Invariance Theorem (Theorem 2.4), any rational paradigm capable of expressing difference and deterministic relations must obey the holism theorems. The act of denying holism itself activates difference (denial is different from acceptance) and determinacy (denial is a deterministic logical act), thus it falls within the scope of a rational paradigm and must obey holism. The act of denial contradicts the content denied; reason here self-destructs. □

Therefore, **holism is not an optional methodological preference, but a meta-logical necessity of rational discourse**. Those who deny holism are not proposing an alternative, but executing a self-destructive speech act.

4 Mathematical Structure of Cognitive Products Denying Holism

Suppose a denier of holism produces a collection of cognitive fragments, consisting of local observations, isolated data, or pointwise analyses, and the producer explicitly rejects the legitimacy of global compatibility constraints. We formalize this cognitive product as a family $\mathcal{S} = \{f_P\}_{P\in\mathcal{P}}$, where each $f_P : P \to C$ is a function fragment defined on a local domain P, and $\mathcal{P}$ is a collection of subsets of some domain D.

4.1 Non-Isomorphism to Any Whole Function

Theorem 4.1 (Non-Isomorphism Theorem)**.** *If the cognitive product $\mathcal{S} = \{f_P\}_{P\in\mathcal{P}}$ fails to satisfy the compatibility condition (i.e., there exist $P, Q \in \mathcal{P}$ with $P \subseteq Q$ but $f_Q|_P \neq f_P$), then there exists no whole function $F : D \to C$ such that $\Phi(F) = \mathcal{S}$.*

Proof. By the Whole–Part Correspondence Theorem (Theorem 2.3), the mapping Φ is bijective on families satisfying the compatibility condition, and for families failing the compatibility condition, $\Phi^{-1}(\mathcal{S}) = \emptyset$. Suppose there existed an F with $\Phi(F) = \mathcal{S}$. Then for all $P \subseteq Q$, we would have $F|_Q|_P = F|_P$, i.e., $f_Q|_P = f_P$, contradicting the hypothesis. Hence no such F exists. □

The epistemological consequence of this theorem is catastrophic: cognitive products that deny holism **cannot be related to the Truth Function T via any isomorphic mapping**. By the Holographic Recursion Theorem [3], the sole channel through which finite cognition can anchor infinite regularities is the isomorphic embedding between local fragments and the whole function. The fragment collection that denies holism severs this channel; hence **it is in principle incapable of cognizing any deterministic regularity**.

4.2 Maximal Cognitive Entropy and Zero Emergence Measure

Theorem 4.2 (Entropy Maximization Theorem)**.** *Suppose that in the cognitive product $\mathcal{S} = \{f_P\}_{P\in\mathcal{P}}$, any two distinct fragments f_P, f_Q have zero mutual information (i.e., $I(f_P : f_Q) = 0$). Then*

$$H(\mathcal{S}) = \sum_{P\in\mathcal{P}} H(f_P), \quad E(\mathcal{S}) = 0.$$

The cognitive entropy of this product attains the maximum possible given the resources, and its emergence measure is zero.

Proof. By the subadditivity of entropy in a Markov category [1], for any system $X \cong \bigotimes_i A_i$, we have $H(X) \leq \sum_i H(A_i)$, with equality if and only if all subsystems are mutually independent. The hypothesis $I(f_P : f_Q) = 0$ is precisely the independence condition, thus $H(\mathcal{S}) = \sum H(f_P)$. The emergence measure is defined as $E(\mathcal{S}) = \sum H(f_P) - H(\mathcal{S}) = 0$. Given fixed local fragment entropies, the independent composition maximizes the whole entropy. □

Deniers of holism treat the whole as the mechanical sum of independent fragments; their cognitive products are precisely such piles of zero mutual information and zero emergence measure. By the entropy-reduction corollary, Truth necessarily selects the configuration of minimum entropy. Therefore, cognitive products that deny holism **systematically deviate from Truth**—they are not merely "inadequate knowledge," but entropy-increasing noise that points in the opposite direction of Truth.

5 Operational Definition of "Academic Garbage" and Verdict

Based on the above mathematical analysis, we provide a rigorous operational definition of "academic garbage."

Definition 5.1 (Academic Garbage)**.** *A cognitive product X is called **academic garbage** if and only if it simultaneously satisfies the following two conditions:*

(1) ***Non-isomorphism**: X fails the compatibility test, i.e., there exists no whole function F such that $\Phi(F)$ is equivalent to the compatibilization of X;*

(2) ***Pure Entropy Increase**: The cognitive entropy of X attains the maximum possible given the resources, and the emergence measure $E(X) = 0$.*

This definition is not a subjective value judgment, but an objective classification based on meta-mathematical facts. The essence of academic garbage is: it severs the isomorphic channel between local cognition and holistic truth, and pollutes the cognitive ecology with entropy-increasing form.

Theorem 5.2 (Garbage Attribute of Denying Holism)**.** *Any cognitive product that explicitly denies holism (i.e., rejects global compatibility constraints), if its internal fragments have no mutual information, is necessarily academic garbage.*

Proof. By the stance of denying holism, the producer rejects compatibility conditions, so the product $\mathcal{S}$ fails $f_Q|_P = f_P$. By Theorem 4.1, $\mathcal{S}$ cannot be isomorphic to any whole function, satisfying condition (1) of Definition 5.1. Moreover, since it treats the whole as a sum of independent fragments, the mutual information between fragments is zero; by Theorem 4.2, the emergence measure is zero and cognitive entropy is maximal, satisfying condition (2) of Definition 5.1. Hence it is academic garbage. □

6 Final Verdict on Reductionist Generalization

The reductionist method (understanding the whole by analyzing its parts) is a legitimate corollary of the Whole–Part Correspondence Theorem; its effectiveness relies on tacitly assumed compatibility constraints. However, **reductionist generalization**—elevating the method to an ontological dogma, declaring "the whole is nothing but the sum of its parts, no compatibility constraints required"—is precisely a typical form of denying holism. This system has rigorously proven its products to be academic garbage [4].

The production mechanism of reductionist generalization is: through conceptual sleight-of-hand (substituting actual infinity with potential infinity, function with finite lookup table), it mass-produces vast quantities of fragmented outputs detached from holistic compatibility. These outputs satisfy all conditions of Definition 5.1: non-isomorphic to Truth, pure entropy increase. They are information pollution in the academic ecosystem, garbage output that obstructs human cognitive breakthroughs.

7 Conclusion

This paper has delivered the following verdict within the Zhu–Liang holism axiomatic system:

$$\boxed{\text{Denying Holism} = \text{Manufacturing Academic Garbage}}$$

(1) Holism is a meta-logical necessity of rational discourse, rigorously established by the Whole–Part Correspondence Theorem and the Paradigm Invariance Theorem. Denying holism is logically self-destructive.

(2) Cognitive products that deny holism, by rejecting compatibility constraints, cannot be isomorphic to any whole function, severing the isomorphic channel between cognition and Truth.

(3) Such products have maximal cognitive entropy and zero emergence measure; they are pure entropy increase.

(4) Academic garbage is rigorously defined as a cognitive product that is non-isomorphic and purely entropy-increasing. Research denying holism necessarily falls under this definition.

This verdict is not one party's opinion in an academic debate, but a meta-mathematical dimensional strike against pseudo-academic operations. Holism is the insurmountable meta-logical foundation of cognition; any operation that attempts to bypass it will plummet into the garbage abyss of non-isomorphism and pure entropy increase. The garbage era of reductionist generalization must end before the mathematical golden body of holism.

The whole before the parts is firmly set;
Compatibility constraints cannot be let.
To deny this is reason's suicide;
Its products are garbage, truth-denied.

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Conflict of Interest Statement

The author declares no conflict of interest.

Data Availability Statement

Pure theoretical exposition; no experimental data.

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