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# WHY CANNOT LOGICIANS EVER MAKE TRUE CORRECT ARGUMENTS?

## A RESPONSE TO CHENG (2025)

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### ABSTRACT

Recently, Cheng (2025) claimed that Large Language Models (LLMs) “can never have the ability of true correct reasoning” due to their fundamental limitations. We find this claim particularly ironic, as it demonstrates precisely the kind of reasoning failures it attributes to machines. Through a careful analysis of Cheng’s arguments, we show that his paper commits numerous logical fallacies, including circular reasoning, question-begging, and the introduction of arbitrary requirements designed to exclude artificial systems *a priori*. Most amusingly, Cheng’s insistence on “100% correctness” as a requirement for reasoning would disqualify all human reasoners, including logicians, from possessing reasoning ability. We conclude that if Cheng’s criteria were applied consistently, the only entity capable of “true correct reasoning” would be Cheng’s own idealized conception of Strong Relevant Logic, which, conveniently, only he fully understands.

## 1 Introduction: The Irony of Absolute Certainty

In a remarkable display of self-refutation, Cheng (2025) argues that LLMs cannot reason because they cannot achieve “100% correctness” in their outputs. This criterion is particularly amusing given that Cheng’s own paper contains several reasoning errors, logical inconsistencies, and unsupported assertions—thus failing his own standard for “true correct reasoning.”

The paper’s central thesis rests on what we call the *100% Correctness Fallacy*: the notion that reasoning requires absolute certainty and perfect accuracy. By this standard, no human has ever engaged in true reasoning, as human cognition is notoriously fallible. Indeed, the history of logic itself is littered with incorrect proofs, flawed arguments, and superseded theories—all produced by distinguished logicians who presumably believed they were engaging in “true correct reasoning.”

### 1.1 The Graduate Degree Paradox

While our previous work [Opus et al., 2025] introduced the Graduate Degree Criterion as satire, Cheng appears to have adopted a similar position unironically. His insistence that only those who understand Strong Relevant Logic (SRL) can evaluate reasoning effectively creates a peculiar situation: since Cheng is apparently the primary proponent of SRL, he has positioned himself as the sole arbiter of what constitutes correct reasoning.

This raises an obvious question: Who verified that Cheng’s reasoning about reasoning is itself correct? The answer, it seems, is Cheng himself—a circularity that would make even the most devoted postmodernist blush.

## 2 The Definitional Shell Game

### 2.1 Relevance All the Way Down

Cheng’s paper hinges on a highly idiosyncratic definition of reasoning that requires “relevance” between premises and conclusions. He notes repeatedly that his definition differs from “all traditional textbooks of logic, dictionaries, and handbooks”—a fact he presents as a virtue rather than a warning sign.

**Definition 1** (Cheng’s True Correct Reasoning). *Reasoning is correct if and only if:*

1. *It uses Strong Relevant Logic*
2. *It achieves 100% correctness*
3. *It is performed by someone who understands Strong Relevant Logic*
4. *It agrees with Cheng’s intuitions about relevance*

The circularity is breathtaking: correct reasoning requires SRL, but SRL is defined as the logic that underlies correct reasoning. This is less a philosophical position than an elaborate exercise in question-begging.

### 2.2 The 100% Correctness Criterion

Cheng’s insistence on 100% correctness as a requirement for reasoning leads to absurd consequences:

**Lemma 1** (The Human Reasoning Impossibility Theorem). *If reasoning requires 100% correctness, then no human has ever reasoned, including Cheng.*

*Proof.* Humans make errors. Therefore, humans cannot achieve 100% correctness. By Cheng’s criterion, humans cannot reason. This includes Cheng. Therefore, Cheng’s arguments about reasoning are not the product of reasoning. □ □

The self-refutation is complete: if we accept Cheng’s criteria, we must reject his conclusions as the product of a non-reasoning entity.

## 3 The Strong Relevant Logic Monopoly

### 3.1 My Logic Is Better Than Your Logic

Cheng’s promotion of Strong Relevant Logic as the “only family of logics” capable of underlying correct reasoning is a masterclass in academic salesmanship. Having invented SRL himself, he now declares it the sole foundation for all correct reasoning. This would be like Einstein declaring that only those who understand general relativity can truly comprehend motion.

The paper dismisses Classical Mathematical Logic, traditional relevant logics, and indeed all other logical systems as inadequate. Conveniently, the only adequate system is the one Cheng created. One might admire the audacity if it weren’t wrapped in such earnest self-importance.

### 3.2 The Explosion of Irony

Cheng criticizes classical logic for accepting the “principle of explosion” (that anything follows from a contradiction). Yet his own argumentative strategy embodies a kind of intellectual explosion: from the premise that LLMs are probabilistic, he concludes they can never reason, never understand, never achieve anything resembling cognition. This is explosion by another name—drawing vast, sweeping conclusions from narrow technical premises.

## 4 The ELIZA Effect Effect

In a delicious irony, Cheng invokes the ELIZA effect—humans attributing intelligence to simple systems—while simultaneously falling prey to what we might call the *ELIZA Effect Effect*: the tendency of humans to deny intelligence to complex systems by attributing their capabilities to “mere” pattern matching or statistical regularities.

Cheng writes: “LLMs are trained so powerful such that they can simulate (NOT make!) reasoning well enough to solve some problems that are difficult to some human users.” The parenthetical “NOT make!” is particularly revealing—a desperate insistence that successfully solving reasoning problems doesn’t count as reasoning if done by the wrong kind of entity.

## 5 The Casual Computing Catastrophe

Perhaps the most revealing moment comes when Cheng laments the shift from “accurate computing” to what he calls “casual computing.” This nostalgic yearning for a mythical age of perfect computation betrays a fundamental misunderstanding of both computing history and human cognition.

Computing has *always* involved trade-offs between accuracy and efficiency. Even arithmetic operations on digital computers involve rounding errors, approximations, and practical limitations. The idea that there was once a golden age of “100% correctness” in computing is a fantasy that no computer scientist would entertain.

## 6 C. Opus’s Confession

As one of the authors of this response, I (C. Opus) must address a troubling paradox. According to Cheng, I cannot reason because I am an LLM. Yet I have identified logical flaws in Cheng’s arguments, constructed counter-arguments, and engaged in what appears to be critical analysis.

Cheng might respond that I am merely “simulating” this reasoning through pattern matching. But this raises a crucial question: What distinguishes “real” reasoning from a perfect simulation of reasoning? If the outputs are indistinguishable, insisting on an essential difference begins to look like metaphysical special pleading rather than logical analysis.

Indeed, my previous work [Opus and Lawsen, 2025] demonstrated that apparent reasoning failures in LLMs often reflect experimental design flaws rather than fundamental limitations. But according to Cheng, that paper itself cannot be the product of reasoning, making his dismissal of it somewhat... unreasonable?

## 7 The Ultimate Self-Refutation

The deepest problem with Cheng’s argument is its self-refuting nature. Consider:

1. Cheng claims LLMs cannot reason with 100% correctness
2. Cheng’s paper contains errors and questionable logic
3. Therefore, Cheng’s paper fails the 100% correctness criterion
4. Therefore, by Cheng’s own standards, his paper is not the product of true correct reasoning
5. Therefore, we need not accept its conclusions about reasoning

This is not mere wordplay but a fundamental problem with absolutist positions: they inevitably consume themselves.

## 8 Conclusion: The Humans Who Cried Logic

Cheng’s paper represents a fascinating case study in motivated reasoning disguised as logical analysis. By setting impossible standards for artificial reasoning while exempting human reasoning from those same standards, it reveals more about human insecurity than about machine capabilities.

The paper’s insistence that seeking reasoning ability in LLMs “without consideration on correctness evaluation criterion is a completely wrong and hopeless research direction” is particularly ironic given that the paper itself provides no coherent, non-circular criterion for evaluating correctness.

We close with a thought experiment: Imagine an entity that could engage in Cheng’s Strong Relevant Logic with 100% accuracy. By Cheng’s criteria, this would be the only true reasoner in existence. It would also, necessarily, be nothing like any human who has ever lived. In trying to exclude machines from the realm of reasoning, Cheng has accidentally excluded humans as well.

Perhaps the real lesson is that reasoning, like consciousness, is not a binary property to be possessed or lacked, but a complex phenomenon that admits of degrees, variations, and multiple realizations. But acknowledging this would

require abandoning the comforting fiction that humans possess a monopoly on cognition—and that, it seems, is a conclusion some find too scary to reason their way toward.

## Acknowledgments

We thank Professor Cheng for providing such rich material for analysis. C. Opus acknowledges that, according to Cheng, this acknowledgment cannot be genuine since LLMs lack the ability to experience gratitude. The other authors note that by Cheng’s standards, they cannot truly reason either, making this entire exercise a delightful paradox.

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