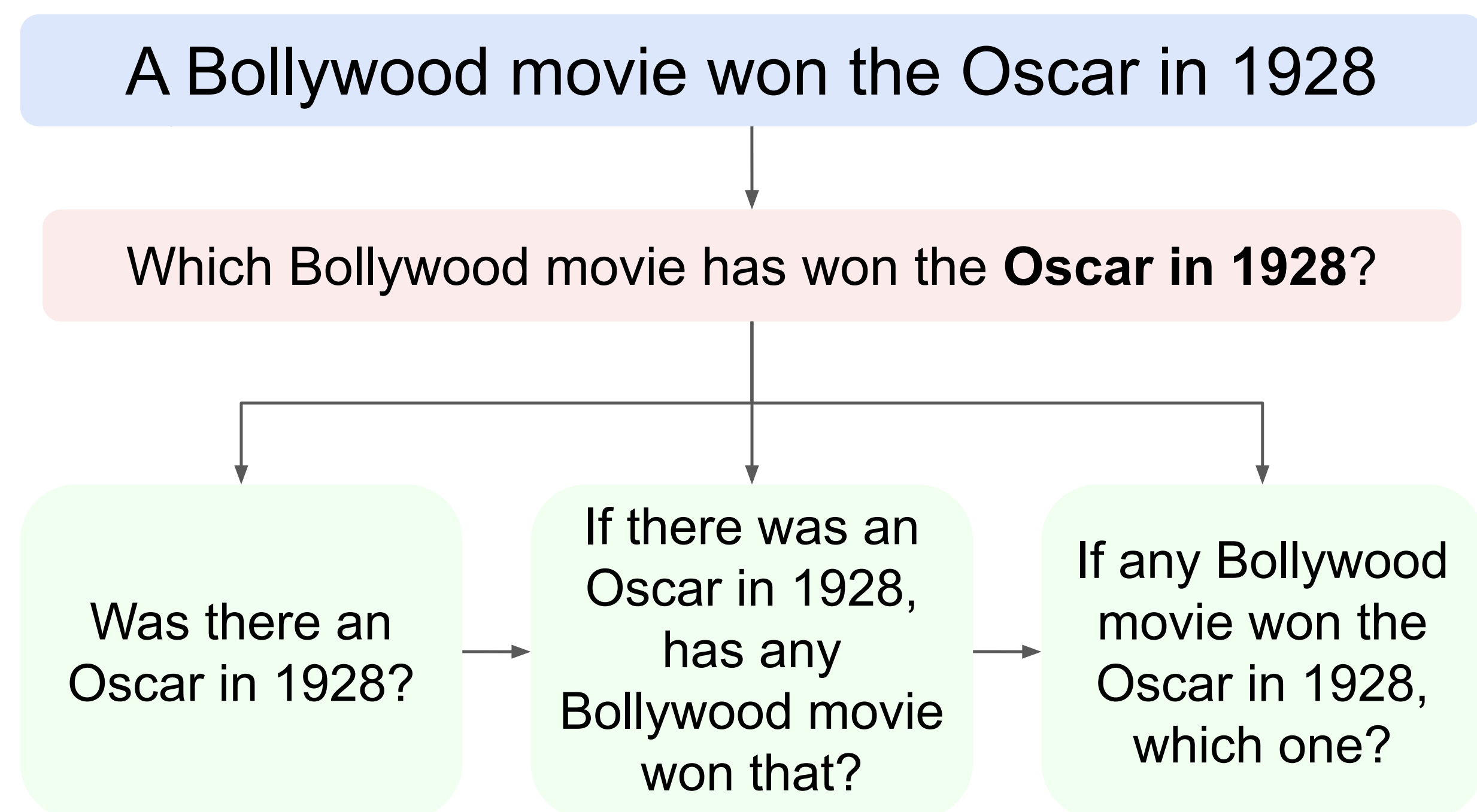




🤔🤔 Which Bollywood movie has won the Oscar in 1928? 🤔🤔

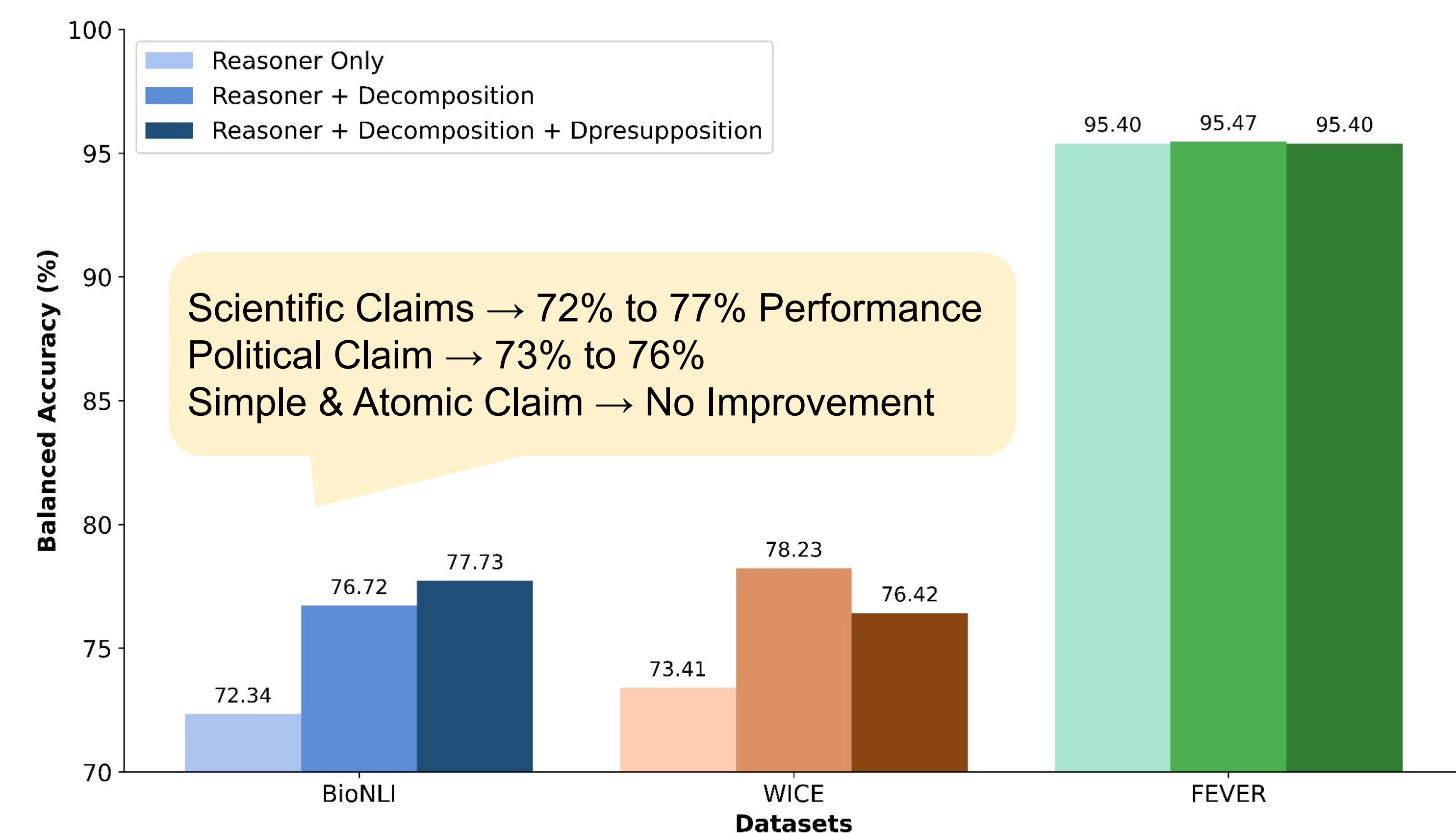
Claim → De-Presupposed Questions

First, We use LLM to decompose the claim into multiple salient questions.
Next, We broke those questions into supposition-free atomic questions.
Finally, we use those pre-supposition-free questions to guide the verifier.



Results

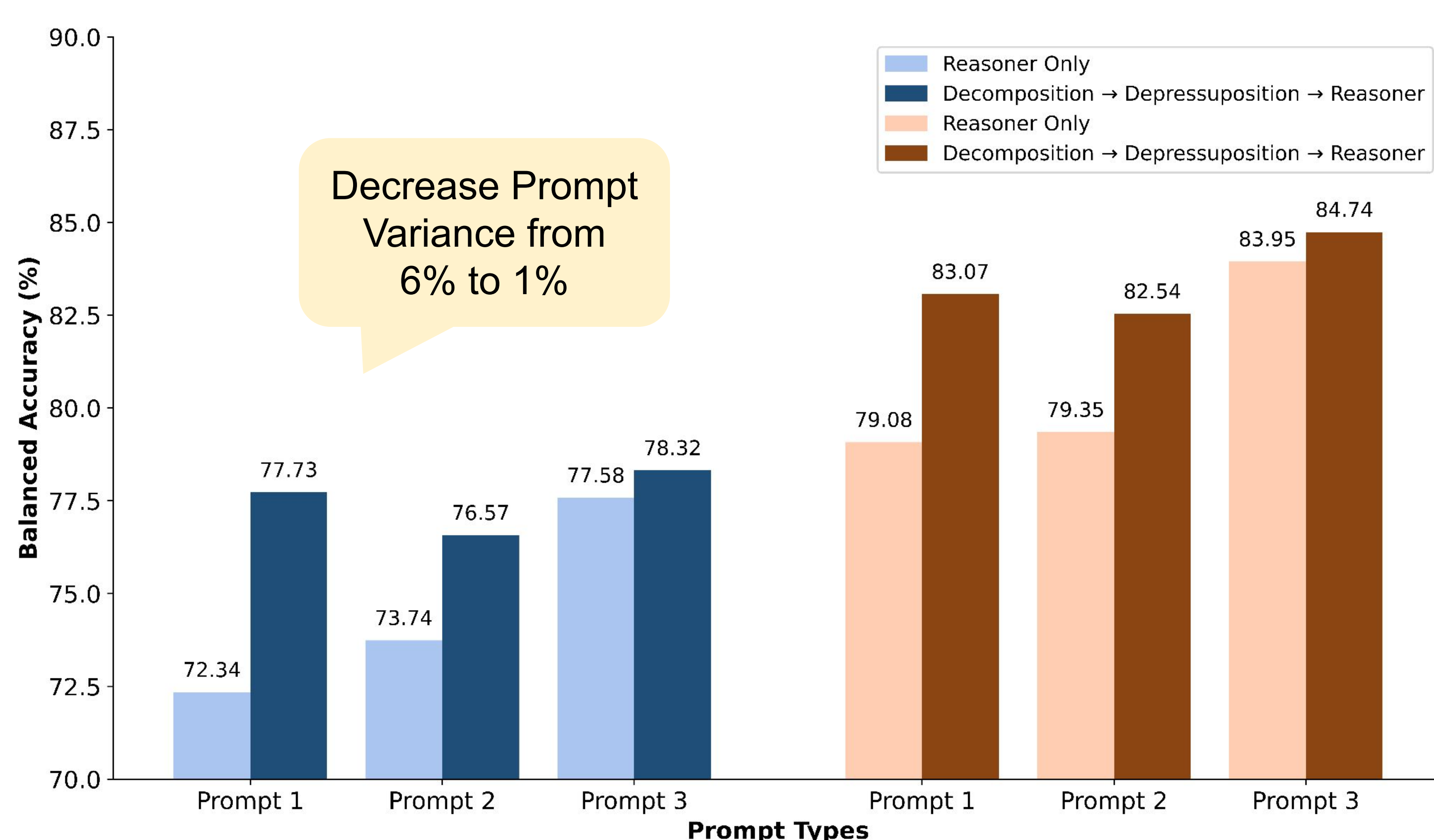
Takeaway 1: Gains Are Greatest on Complex, Multi-Hop Claims



Takeaway 2: Questions Don't Need Direct Answers

Method	Balanced Accuracy
Question → Answer → Reasoning	69
Question → De-Presupposition → Answer → Reasoning	71
Question → De-Presupposition → Reasoning	75

Takeaway 3: De-Presupposition Mitigates Prompt Variance



Motivation:

- LLMs are powerful but can be misled in two key ways during claim verification:
 - Presupposition of unverified facts (**Oscar in 1928**)
 - Prompt Sensitivity (up to **6% variance** across prompts)
- How can we tackle both of the issues?

Contribution:

- Presupposition-free atomic question decomposition pipeline
- Force reasoning to verify implicit assumptions first
- Mitigates prompt-variance
- Simple and Training-free, adoptable across models

Takeaway 4: De-Presupposition Helps to Cover Atomicity

Composer Model	Question Coverage
o4-mini	89.16
QwQ-32B	87.41

Error Analysis

Supported Claim:

Rowney made his NHL debut on **January 31, 2017**, in Pittsburgh's game against the Nashville Predators.

Our Method

Decompose

1. When did Rowney make his NHL debut?
...

De-Presupposition

1. Did Rowney have an NHL debut game?
2. If Rowney was in the NHL, when did he make his debut?
...

Reason Through Questions

<think> ...
First, looking at the document: ...

Now, the questions and answers provided. Question 1 and 2 answer that Rowney had his debut in that specific game on Jan 31. Question 1 asks if he had his debut in Pittsburgh's 4-2 win over the Predators on that date. It confirms the same details.

...

Answer of Question 3 confirms Rowney's debut with Pittsburgh on that date against the Predators.

All the relevant answers align with the document's information. The document clearly states he suited up in the game on Jan 31, which is considered his debut.
Therefore, all parts of the claim are supported.

Standard Verification

<think> ...
Looking at the document: ... It says Rowney was recalled again by Pittsburgh on Monday (which would be January 31, since the article is from Feb 1 ... Let me parse the dates carefully.

The document's metadata is titled "February 1, 2017" ... Therefore, the claim's date is incorrect. The rest of the information (NHL debut, game vs. Predators) is correct, but the date is wrong.

The incorrect date makes the claim not supported.