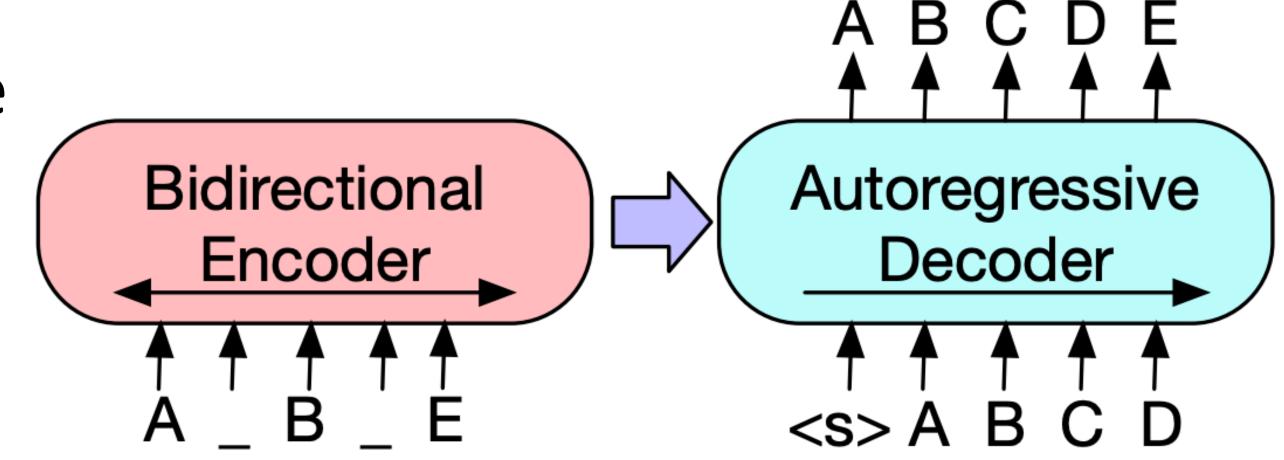
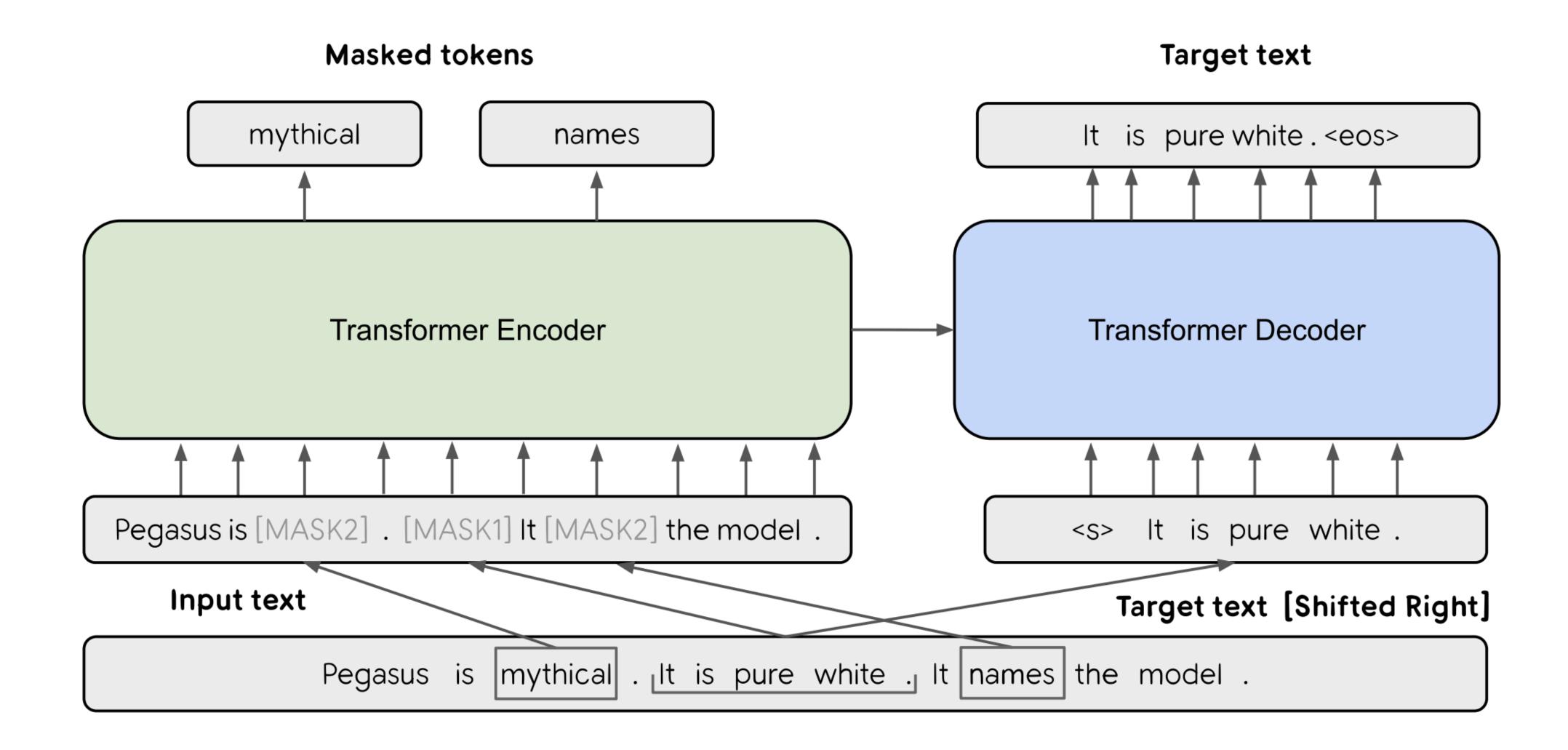
## BART

- Sequence-to-sequence BERT variant: permute/make/delete tokens, then predict full sequence autoregressively
- For downstream tasks: feed document into both encoder + decoder, use decoder hidden state as output



Treat summarization as a sequence-to-sequence task with this model

## PEGASUS



- Mask out "gap sentences" and generate them from the context
- Strong results, a bit better than BART

## BART Summaries

### Source Document (abbreviated)

# The researchers examined three types of coral in reefs off the coast of Fiji ... The researchers found when fish were plentiful, they would eat algae and seaweed off the corals, which appeared to leave them more resistant to the bacterium Vibrio corallilyticus, a bacterium associated with bleaching. The researchers suggested the algae, like warming temperatures, might render the corals' chemical defenses less effective, and the fish were protecting the coral by removing the algae.

### **BART Summary**

Fisheries off the coast of Fiji are protecting coral reefs from the effects of global warming, according to a study in the journal Science.

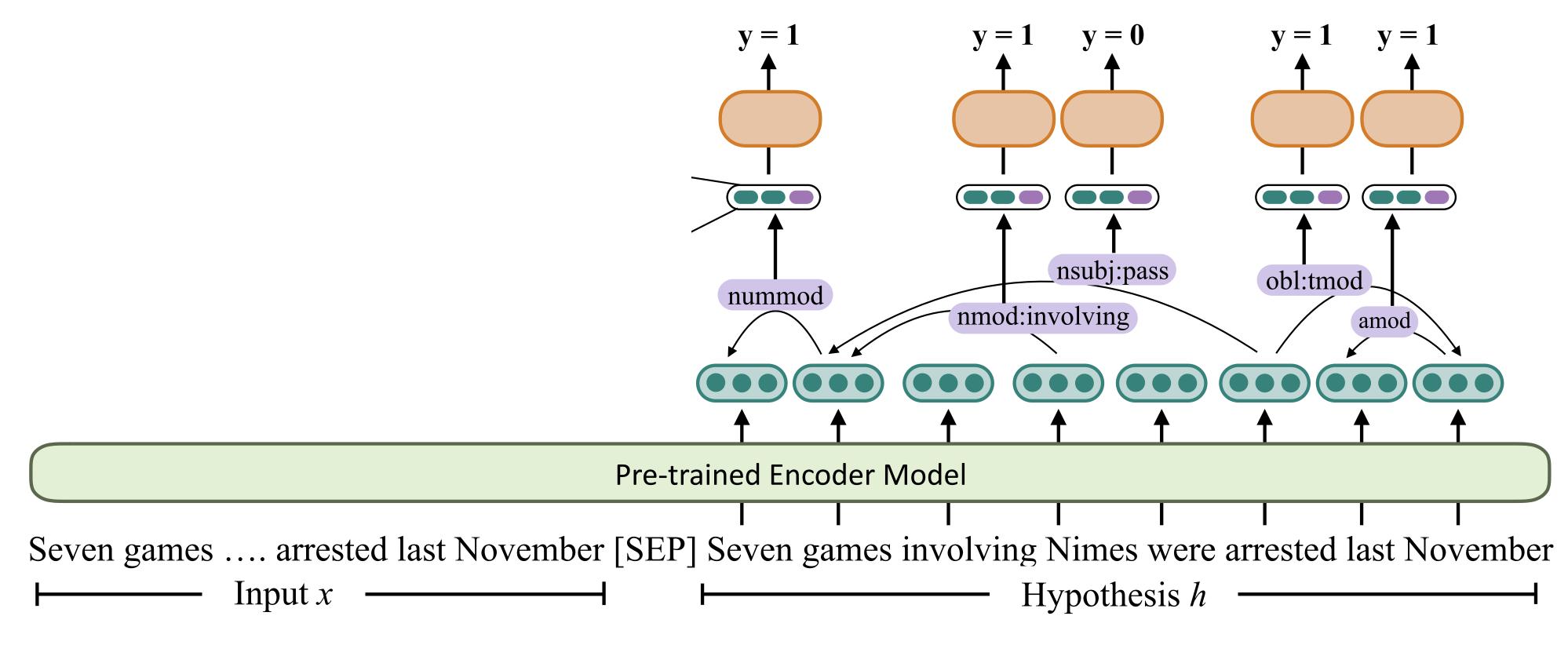
Sacoolas, who has immunity as a diplomat's wife, was involved in a traffic collision ... Prime Minister Johnson was questioned about the case while speaking to the press at a hospital in Watford. He said, "I hope that Anne Sacoolas will come back ... if we can't resolve it then of course I will be raising it myself personally with the White House."

Boris Johnson has said he will raise the issue of US diplomat Anne Sacoolas' diplomatic immunity with the White House.

▶ These look great! But they're not always factual

# Factuality via Entailment

 Attempt to classify individual dependency arcs in generated output as entailed/ not entailed by the input



"Seven games involving Nimes were **investigated** after Conrad was arrested last November"

# Factuality via QA

#### Source

Leeds showed they are in good shape to Summary cope with **Kevin Sinfield**'s retirement as they claimed a 26 - 12 derby victory over Kevin Sinfield scored his first try of the **Summarization** Castleford in front of a sell-out crowd at season against Castleford. Leeds Rhino the Mend-a-Hose Jungle. [...] Ryan Hall scored unbeaten run against Tigers to was sent to the sin-bin for the first time in six matches. Ryan Hall was sent to his career [...] **Joel Moon** scored his first Leeds Rhino for first time in his career. try of the season [...] Leeds extended their unbeaten run against the Tigers to six matches Generated Source Summary **Questions Answers Answers** Who scored their first try Kevin Sinfield Joel Moon of the season? Who was sent to Leeds Ryan Hall <unanswerable> Rhino for the first time? How many matches did Six matches Six matches they win?