

Updated Headline Generation: Creating Updated Summaries for Evolving News Stories

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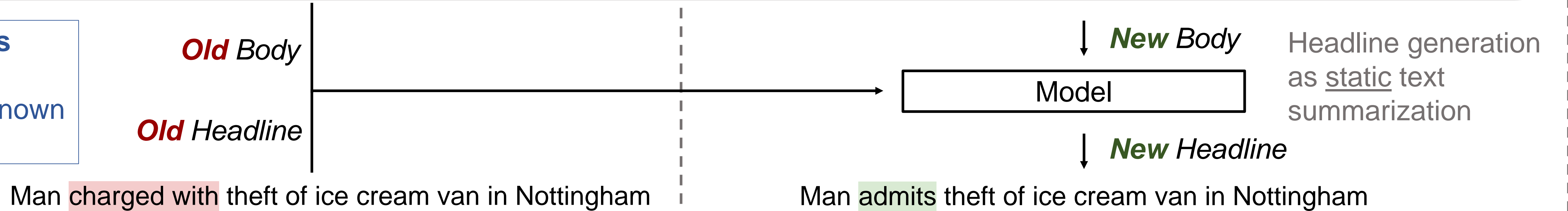
Task

A 22-year-old man has been charged after an ice cream van was stolen in Nottingham. The vehicle was reported stolen from Bobbers Mill Road and was spotted by officers on the A52 at about 01:20 BST on Thursday. Gavin Fouracres, of Briar Court, Long Eaton, has been charged with theft of a motor vehicle. Mr Fouracres is due to appear at Nottingham Magistrates' Court later. He has also been charged with driving without due care and attention, driving without insurance, driving otherwise than in accordance with a licence, and failing to stop for police.

A 22-year-old man has admitted stealing an ice cream van in Nottingham. The vehicle was reported stolen from Bobbers Mill Road and was spotted on the A52 at about 01:20 BST on Thursday. Gavin Fouracres, of Briar Court, Long Eaton, admitted taking a vehicle without authority, driving without insurance and driving otherwise than in accordance with a licence. At Nottingham Magistrates' Court he was sentenced to a community order with an unpaid work requirement of 60 hours. Fouracres was also disqualified from driving for 18 months, given a curfew with electronic monitoring, and ordered to pay a victim surcharge of £95 and fine of £85.

Updated headline generation as dynamic text summarization:

- Capitalize on what is already known
- Highlight important changes

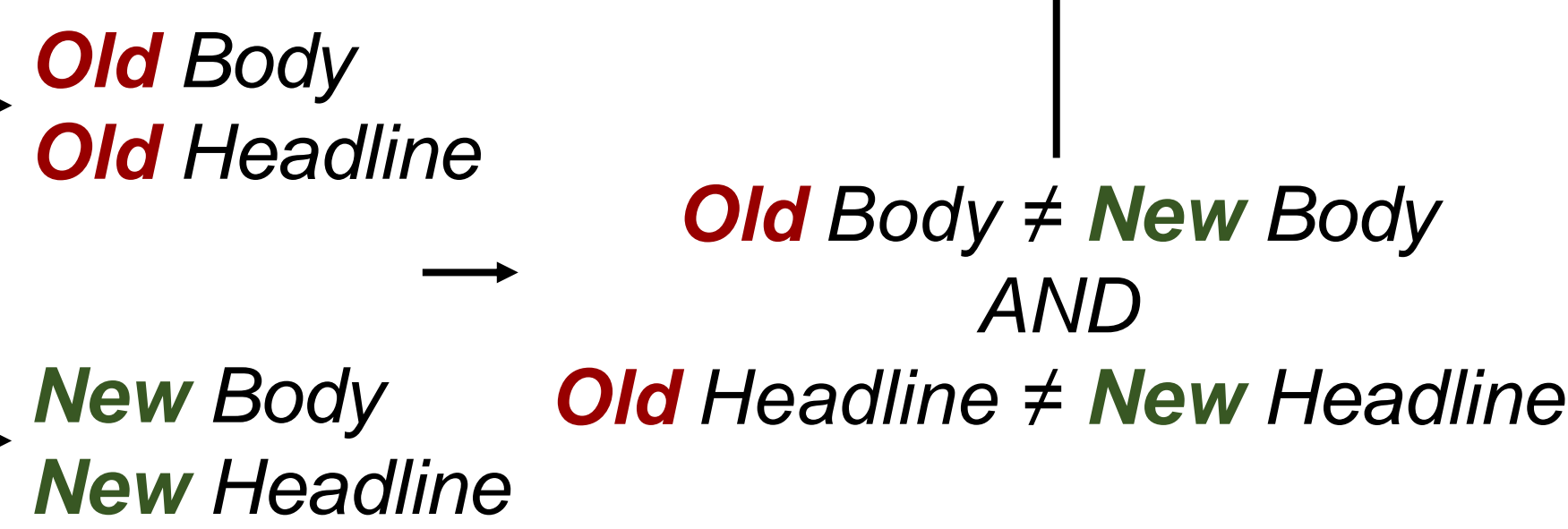


Data



Version 1
Version 2
...
Version N-1
Version N
...

Filtering (heuristics, learned classifier) to focus on substantive headline changes



Headline Revision for Evolving News (HREN)

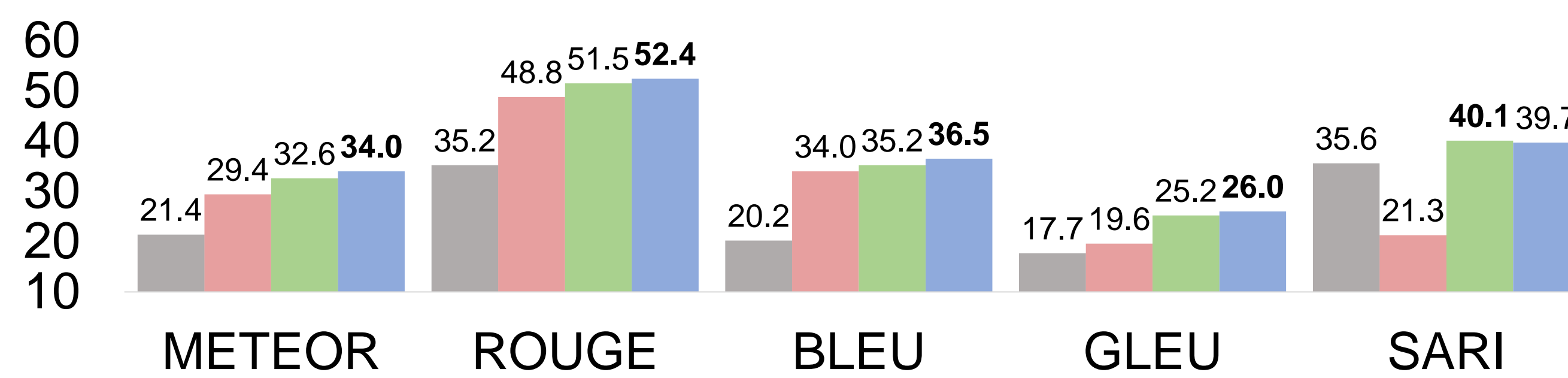
Train	Valid	Test
57,285	5,769	6,189

Curated dataset for updated headline generation

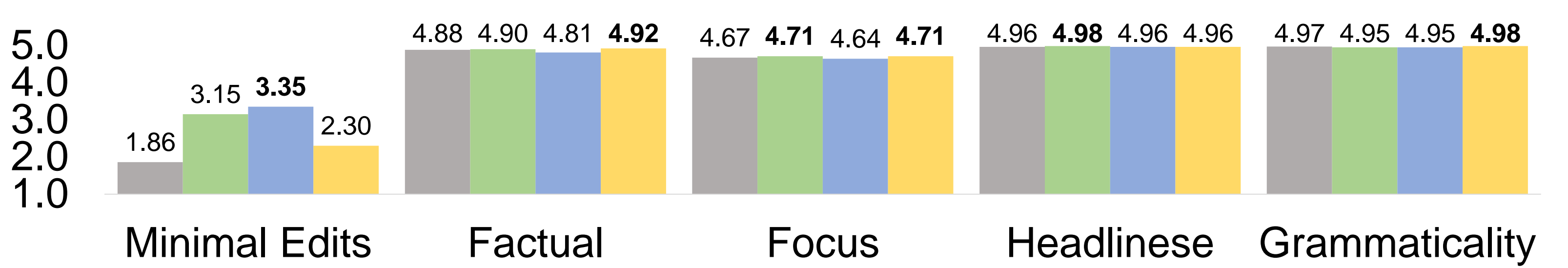
Experiments & Results

- New Body [Headline Generation]
- Old Headline
- Old Headline + New Body
- Old Headline + Edits in Body

Evaluating various input context representations with BART



Human Evaluation (3 annotators, including reference)



- Including Old Headline, Edits in Body improve performance across automated metrics
- With Old Headline + Edits in Body, a model makes fewer unnecessary edits while maintaining factuality, focus, headlines, and grammaticality

Analysis

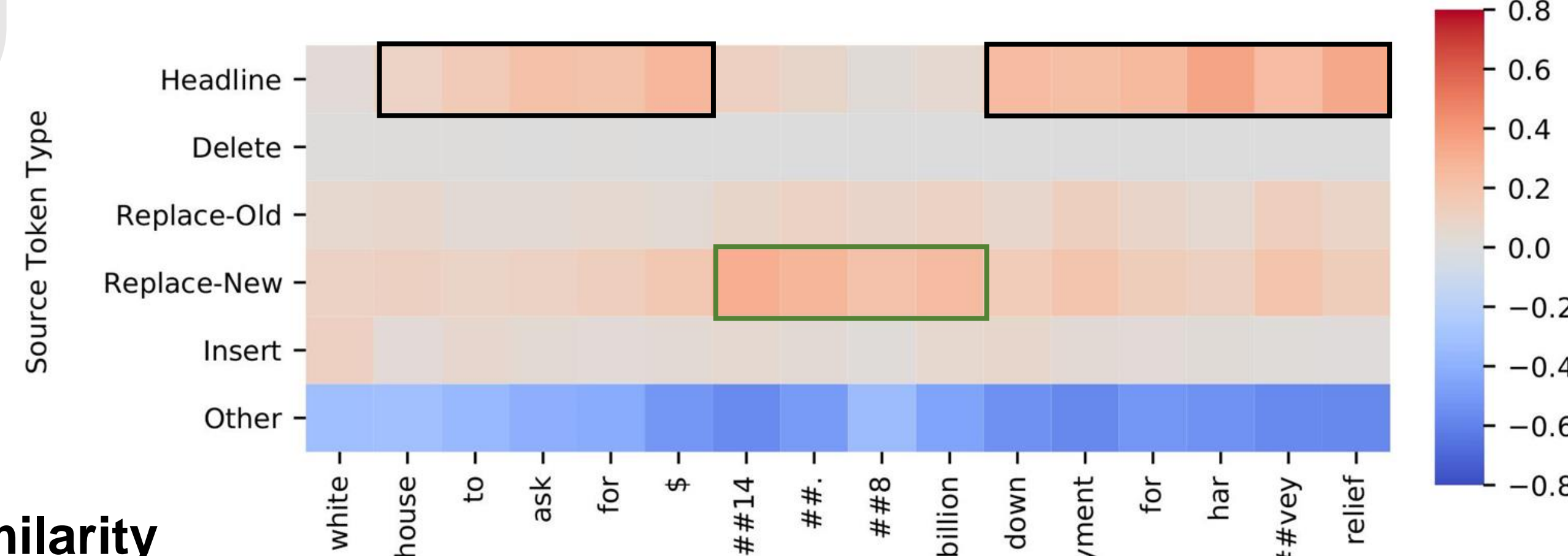
The White House is asking Congress for nearly \$12 billion more than \$14 billion as a down payment on Hurricane Harvey recovery efforts, sending Republican leaders a request late Friday for \$5.9 7.8 billion in immediate aid...

Predicted Headline:
white house to ask for \$14.8 billion down payment for harvey relief

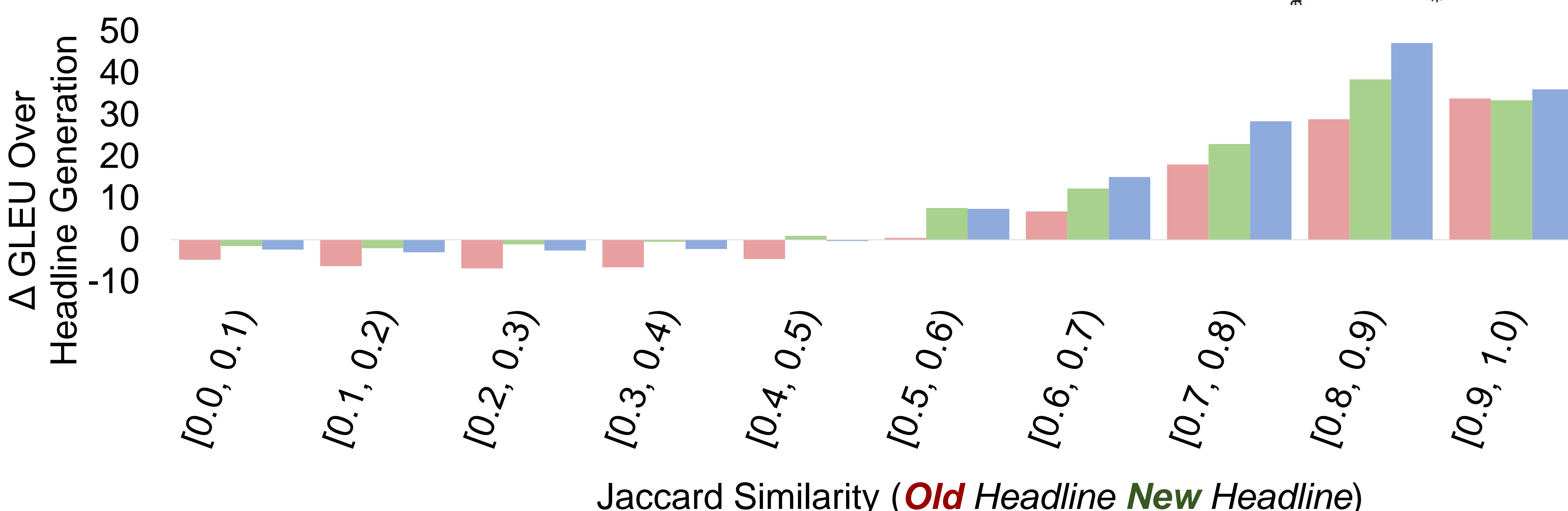
Analyzing BART Attention

- Attending to Old Headline when retaining content
- Attending to Edits in Body when generating new content

Old Headline:
white house to ask for \$12 billion down payment for harvey relief



ΔGLEU for Varying Jaccard Similarity



Case Study

Input Context Representation	Prediction
Original	man charged with theft of ice cream van in nottingham
New Body	gavin fouracres admits stealing ice cream van in nottingham
Old Headline	man remanded over theft of ice cream van in nottingham
Old Headline + New Body	man, 22, admits theft of ice cream van in nottingham
Old Headline + Edits in Body	man admits theft of ice cream van in nottingham
Reference	man admits theft of ice cream van in nottingham

Analyzing Best Model for Varying Levels of Edits

- Large # of edits: New Body is sufficient
- Medium # of edits: Old Headline + New Body
- Small # of edits: Old Headline + Edits in Body