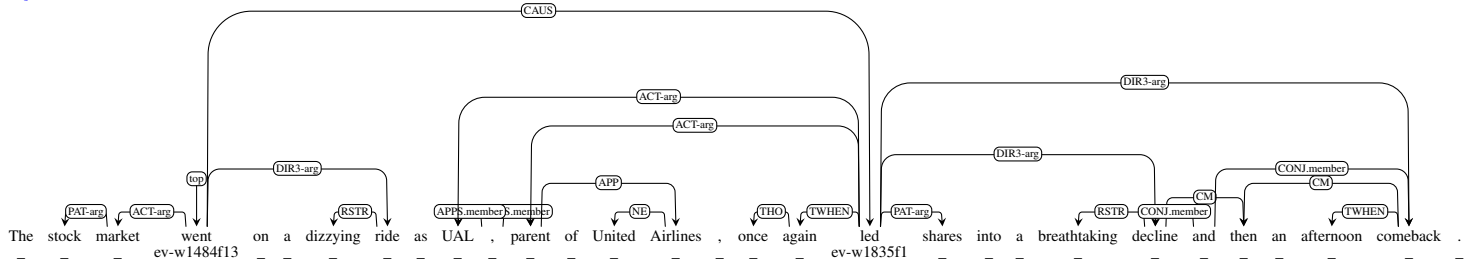
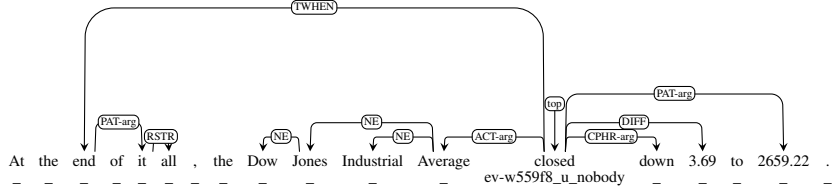


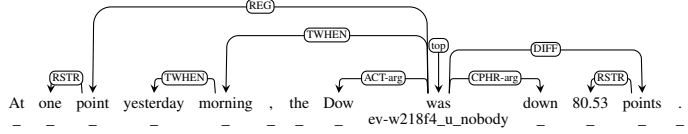
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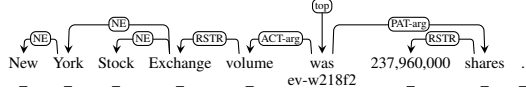
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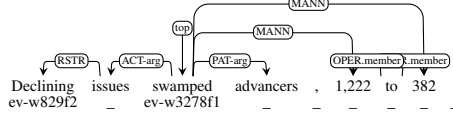
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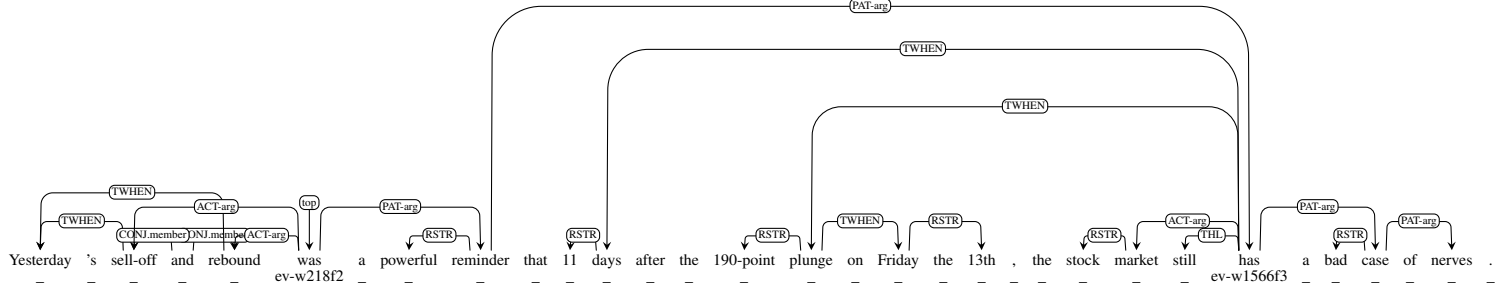
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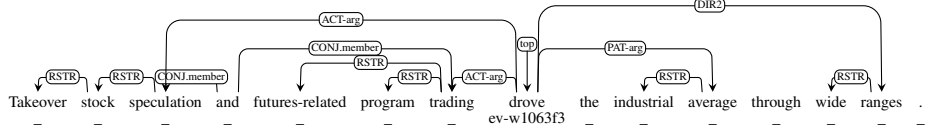
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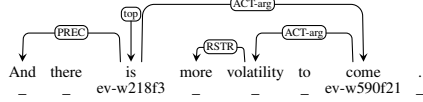
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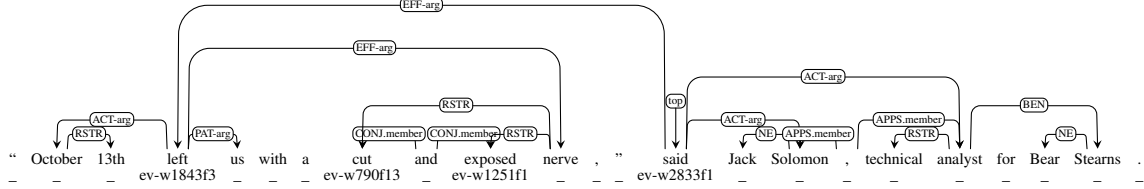
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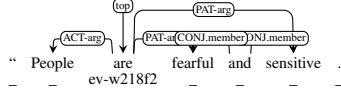
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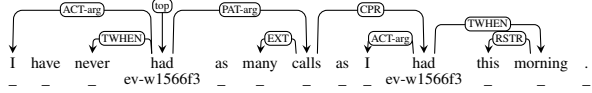
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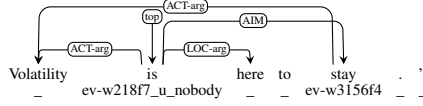
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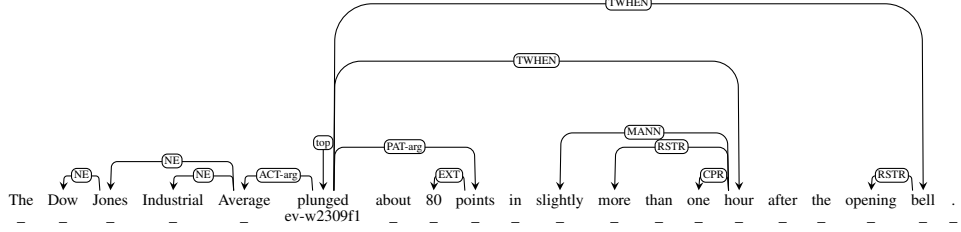
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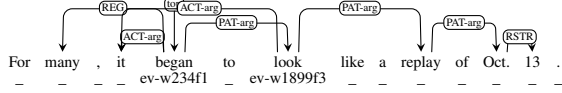
[21208013]



[21208014]



[21208015]



[21208016]

As stocks and stock-index futures fell , a trading limit was hit in the S&P 500 stock futures pit .

[21208018]

That caused a brief period of panic selling of stocks on the Big Board .

[21208019]

But at a critical moment , stock-index arbitrage traders showed their power and control .

[21208020]

They scooped up hundreds of S&P futures when the market needed it most .

[21208021]

At about 10:40 a.m. EDT , several big buy orders hit the S&P pit simultaneously , lifting the futures up out of the trading limit and eventually into ranges that caused computer-driven program buying of stocks .

[21208022]

" It is very clear that those buy orders came from people who wanted their franchise protected , " said one Chicago-based futures trader .

[21208023]

" These guys wanted to do something to show how powerful they are . "

[21208024]

Traders said Goldman Sachs , Shearson Lehman Hutton and Salomon Brothers were the main force behind the futures buying at the pivotal moment .

[21208025]

Shearson Lehman Hutton declined to comment .

[21208026]

Officials at Goldman Sachs and Salomon Brothers were unavailable for comment .

[21208027]

As in the Oct. 13 massacre , yesterday morning 's drop was triggered by bad news for speculators in UAL .

[21208030]

UAL finally opened for trading at 10:08 a.m. at 150 , down \$ 28 .

[21208031]

Floor traders said there was a huge crowd around the Big Board specialist 's post where UAL trades .

[21208032]

" There was a seething mass of people , " said one floor trader .

Figure 1 illustrates a syntactic tree for the sentence "Then there was a big liquidation of stock across the board, he added, ev-w218f3". The tree shows the hierarchical structure of the sentence, including the main clause and the parenthetical clause "he added, ev-w45f3". The main clause is derived from a structure where "WHEN" is a complementizer, "there" is the subject, "was" is the auxiliary, and "a big liquidation of stock" is the main verb phrase. The parenthetical clause is derived from a structure where "he" is the subject, "added" is the main verb, and "ev-w45f3" is the complement. The tree is annotated with various syntactic features and labels.

The diagram illustrates a complex semantic network with the following components:

- Entities and Concepts:** Takeover speculators, who have already taken a record loss estimated at more than \$700 million on UAL - started selling other stocks as well as S&P futures in an attempt to hedge against a further UAL blood bath.
- Verbs and Actions:** ESTD, EFF-arg, CPB, ESTD, GP, PAF-arg, CONJ member, CONJ member.
- Relationships:**
 - 'Takeover speculators' is linked to 'who have already taken a record loss' via the verb 'ESTD'.
 - 'who have already taken a record loss' is linked to 'estimated at more than \$700 million on UAL -' via the verb 'EFF-arg'.
 - 'estimated at more than \$700 million on UAL -' is linked to 'started selling other stocks as well as S&P futures in an attempt to hedge against a further UAL blood bath.' via the verb 'CPB'.
 - 'started selling other stocks as well as S&P futures in an attempt to hedge against a further UAL blood bath.' is linked to 'in an attempt to hedge against a further UAL blood bath.' via the verb 'GP'.
 - 'in an attempt to hedge against a further UAL blood bath.' is linked to 'against a further UAL blood bath.' via the verb 'PAF-arg'.
 - 'against a further UAL blood bath.' is linked to 'against a further UAL blood bath.' via the verb 'CONJ member'.

Figure 1 is a flowchart illustrating the timeline of program trading and algorithmic trading. The timeline starts with 'Shortly after the UAL opening' and branches into two main paths: one for program trading and one for algorithmic trading. The program trading path involves TWBHS, ACT-arr, ESTB, and PWS-arr, leading to 'program traders started ev-w3148f1' and 'selling stocks ev-w288f2'. The algorithmic trading path involves CRUI, ACT, and CUN member, leading to 'in the Major Market Index and S&P 500 index'.

The diagram illustrates the relationships between the 20-stock MMI mimics and the Dow Jones Industrial Average. The 20-stock MMI mimics are connected to the Dow Jones Industrial Average via a 'top' node. The Dow Jones Industrial Average is connected to the 20-stock MMI mimics via a 'bottom' node. The Dow Jones Industrial Average is also connected to the 20-stock MMI mimics via a 'NE' node. The Dow Jones Industrial Average is also connected to the 20-stock MMI mimics via a 'RSTR' node.

By 10:30 a.m. the Dow was ev-218f4_u nobody down 62.70 .

Figure 1 illustrates a dependency parse tree for the sentence: "All 20-stocks in the MMI except Exon, General Motors and Sears were cv-w2184_u_nobody were down S 1 to S 2." The tree structure shows the hierarchical organization of the sentence, with nodes representing grammatical functions and arrows indicating the flow of dependencies between words. Key nodes include S (Sentence), NP (Noun Phrase), VP (Verb Phrase), and various functional labels like E1ST, E2ST, LOC, CONJ, member, NP, and VP. The diagram highlights the complex relationships between the words, such as the dependency between "All" and "20-stocks", and the various dependencies within the verb phrase "were down S 1 to S 2".

At 10:53, when the S&P 500 December futures contract crunched to a 12-point loss under the force of sell programs, S&P futures trading was halted and program trades on the Big Board were routed into a special computer that scans for order imbalances.

The graph illustrates the following dependencies:

- WHEN**: Connects the time 'At 10:53' to the event 'S&P futures trading was halted'.
- ESTD**: Connects 'when the S&P 500 December futures contract' to 'crunched to a 12-point loss'.
- WHEN**: Connects 'crunched to a 12-point loss' to 'under the force of sell programs'.
- CAUS**: Connects 'under the force of sell programs' to 'S&P futures trading was halted'.
- APP**: Connects 'S&P futures trading was halted' to 'and program trades on the Big Board were routed'.
- CONJ**: Connects 'and program trades on the Big Board were routed' to 'into a special computer that scans for order imbalances'.
- CONJ**: Connects 'into a special computer that scans for order imbalances' to 'that scans for order imbalances'.
- CONJ**: Connects 'that scans for order imbalances' to 'scans for order imbalances'.
- CONJ**: Connects 'scans for order imbalances' to 'for order imbalances'.
- CONJ**: Connects 'for order imbalances' to 'order imbalances'.

[illegible]

But as the fright began to spread through the S&P pit , the big brokerage firms came in and bought futures aggressively .

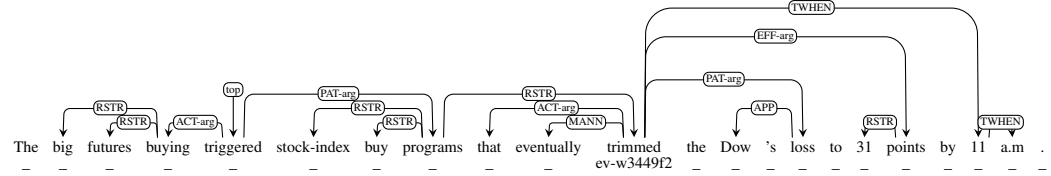
ev-w234f1 ev-w3107f3 ev-w596f2_u_nobody ev-w410f1

Diagram illustrating the syntactic structure of the sentence "But as the fright began to spread through the S&P pit , the big brokerage firms came in and bought futures aggressively .". The diagram shows the hierarchical structure of the sentence, with nodes labeled with syntactic categories (e.g., PREP, REL, WHEN, DIR, ACT-arg, SUBJ, OBJ, C-obj, C-adv, PASS, MANS) and their corresponding word sequences (e.g., But, as, the, fright, began, to, spread, through, the, S&P, pit, , the, big, brokerage, firms, came, in, and, bought, futures, aggressively, .).

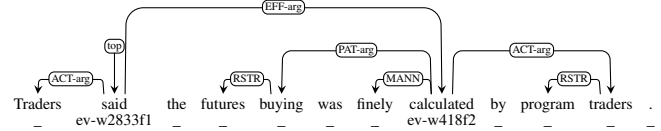
“ It was whooosh ! ” said one futures trader .
 _ ev-w218f2 _ _ _ ev-w2833f1 _ _ _

In five minutes , the Dow industrials climbed ev-w549f3 almost 30 points .

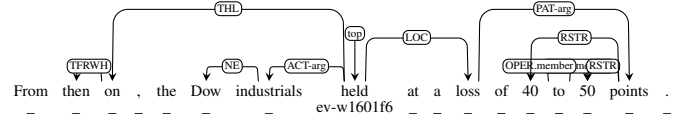
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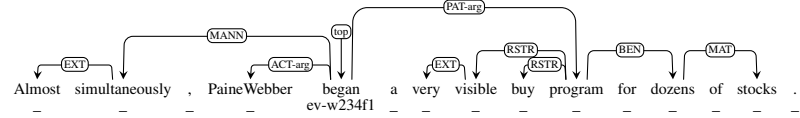
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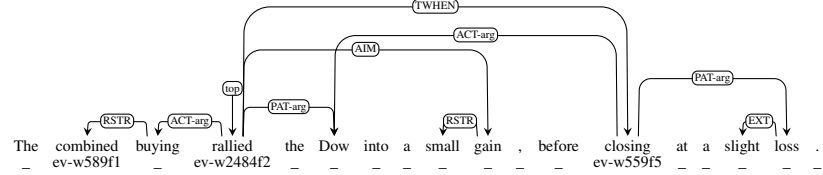
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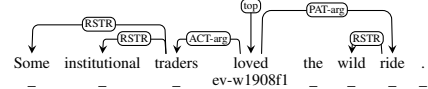
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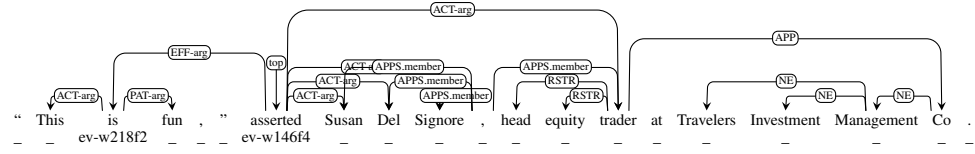
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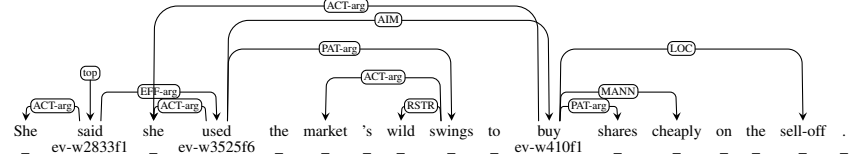
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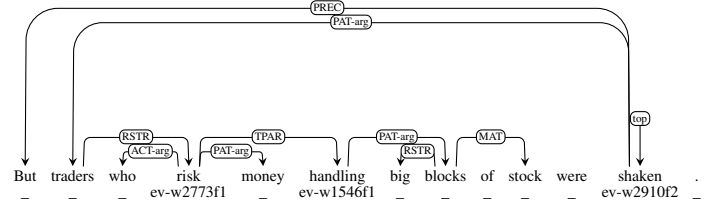
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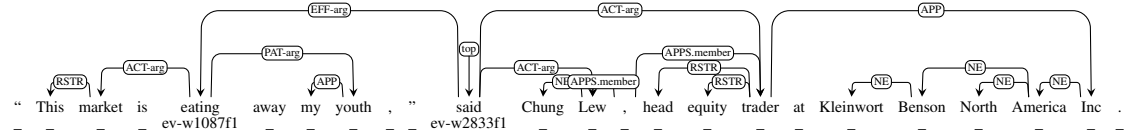
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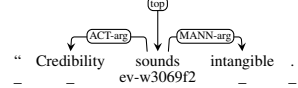
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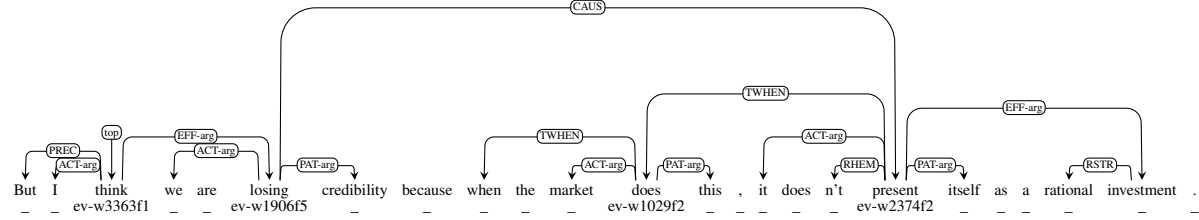
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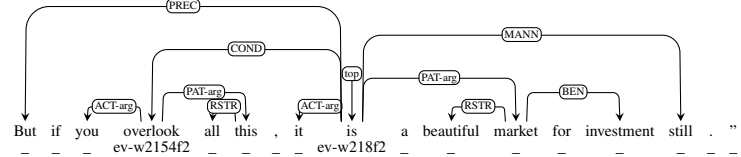
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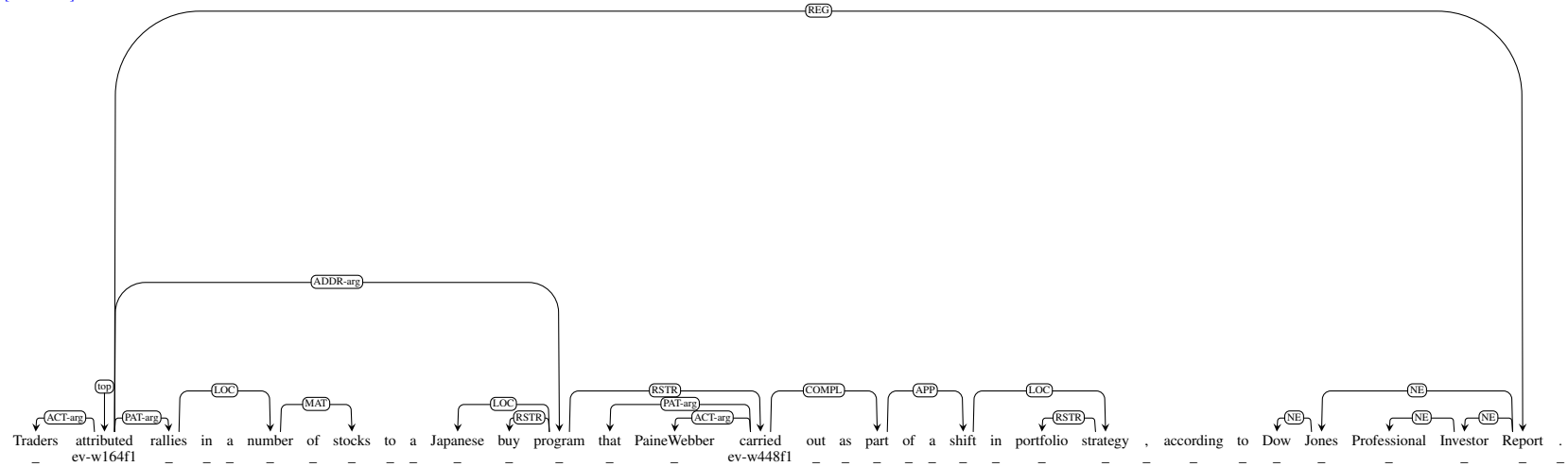
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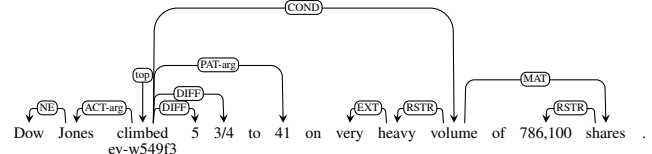
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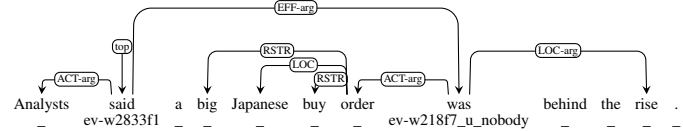
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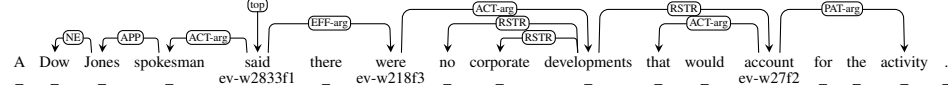
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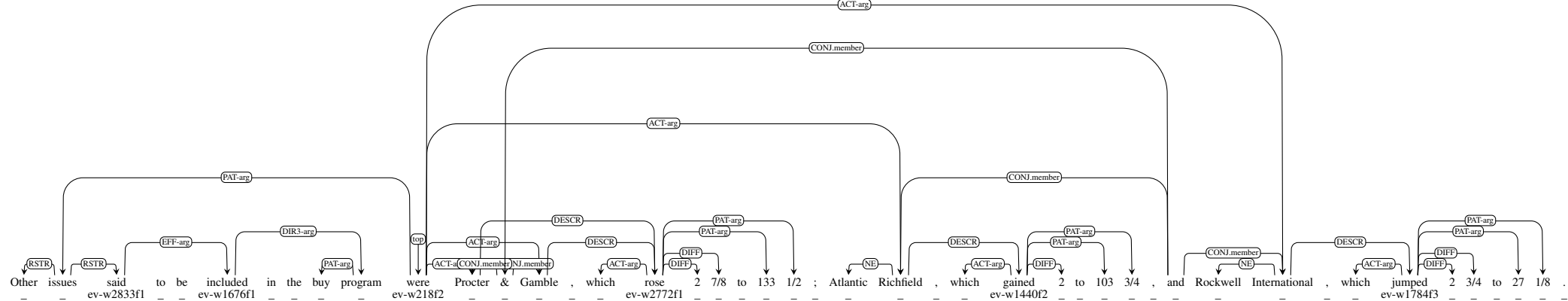
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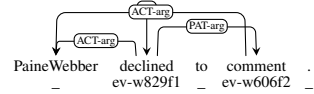
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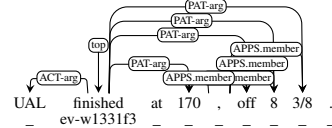
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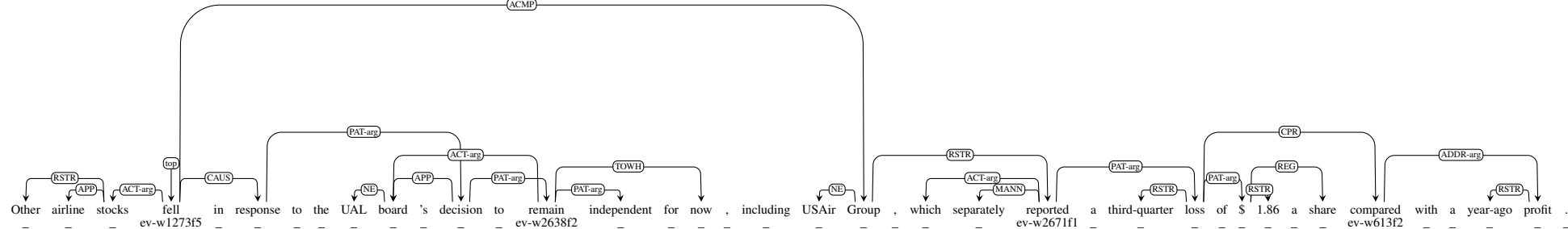
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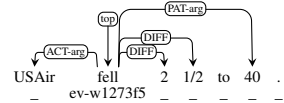
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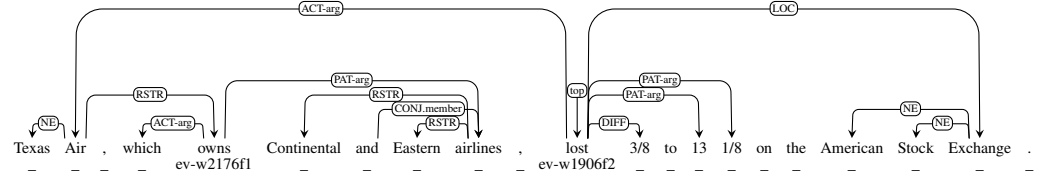
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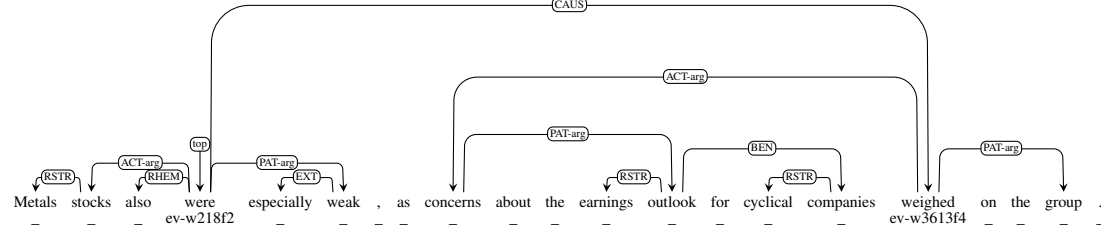
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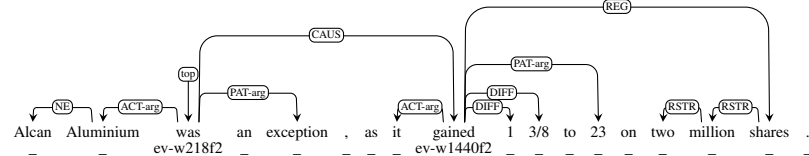
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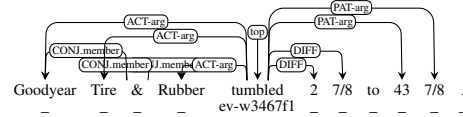
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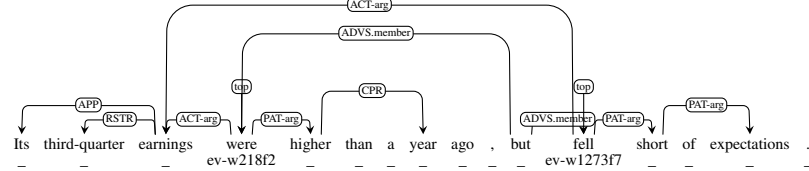
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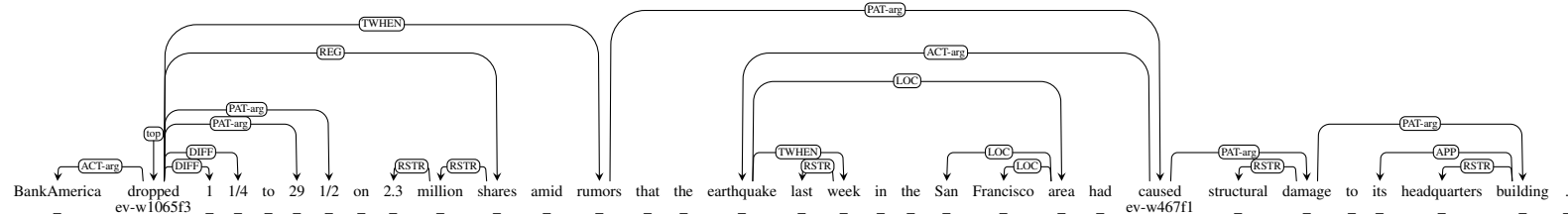
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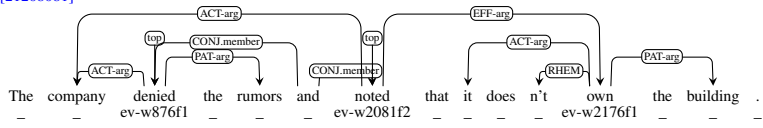
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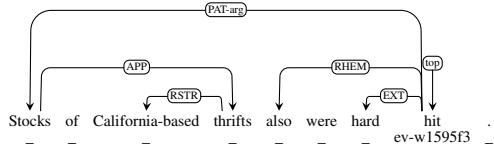
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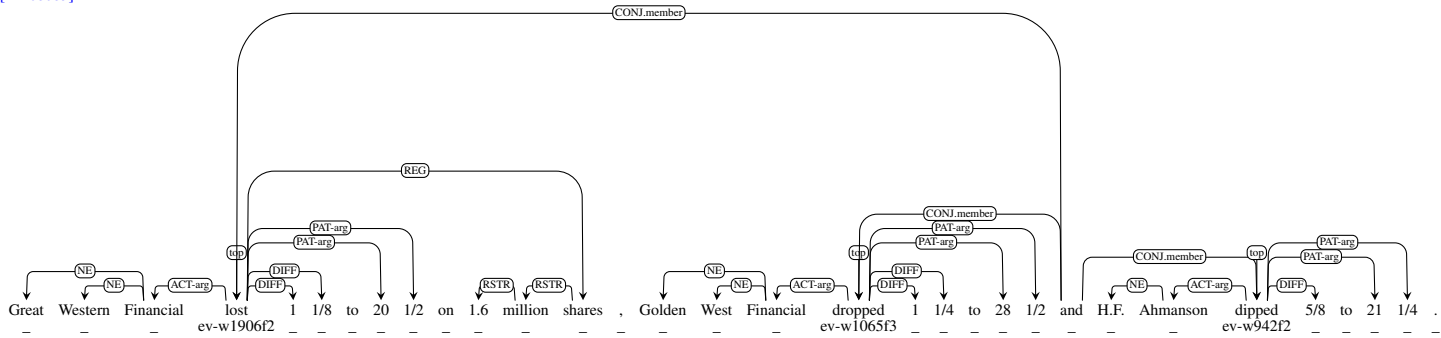
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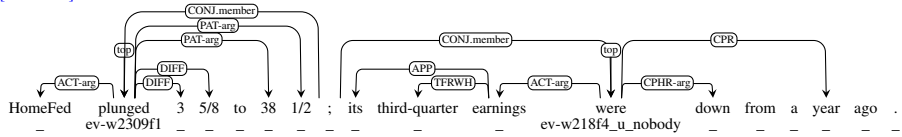
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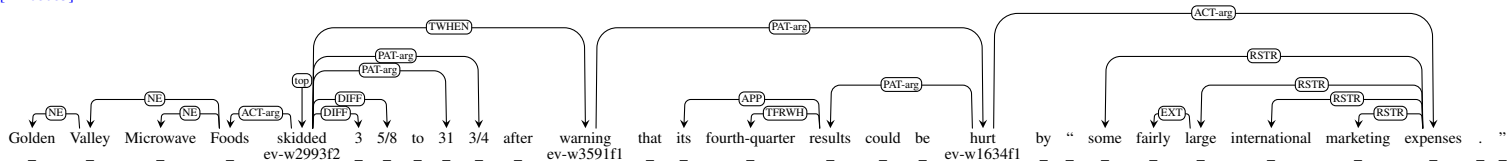
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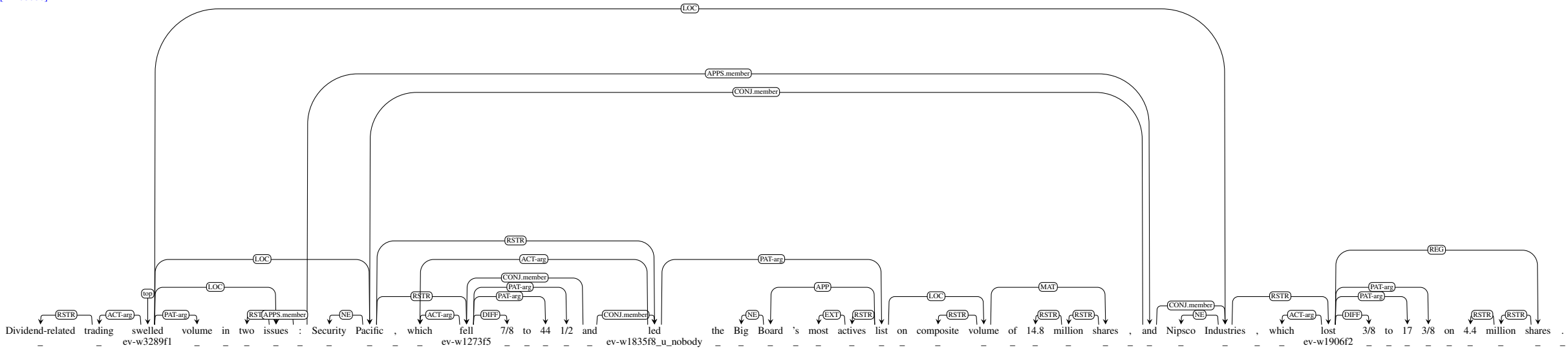
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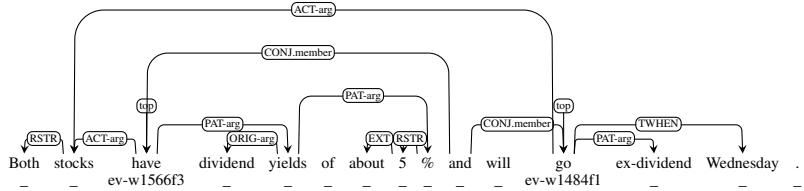
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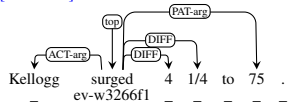
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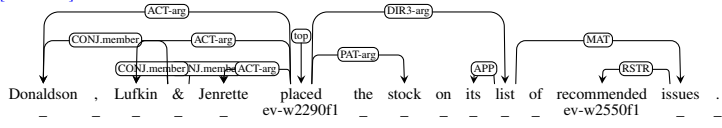
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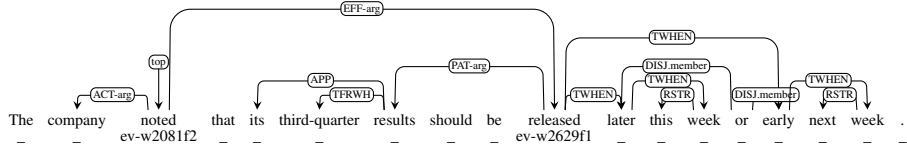
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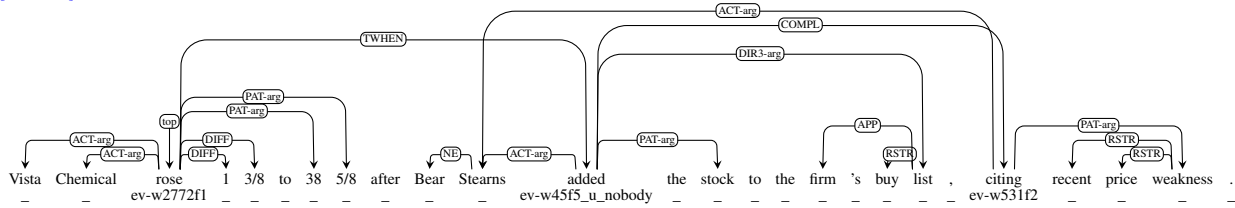
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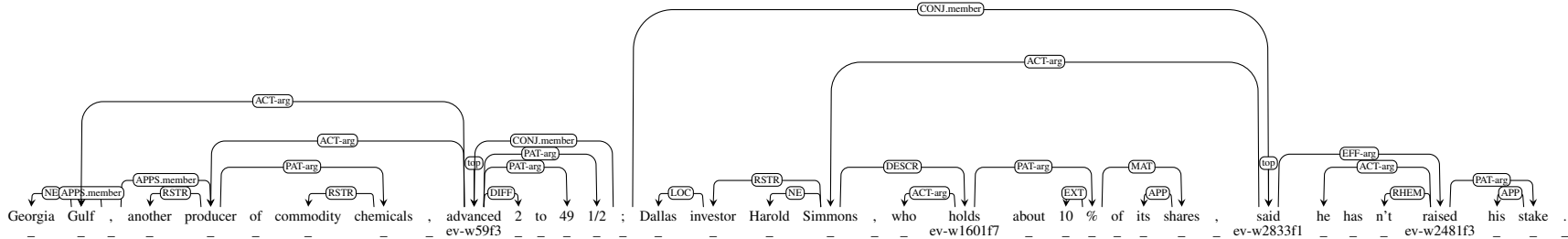
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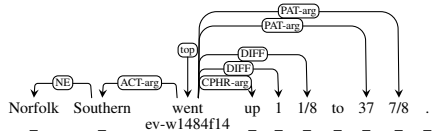
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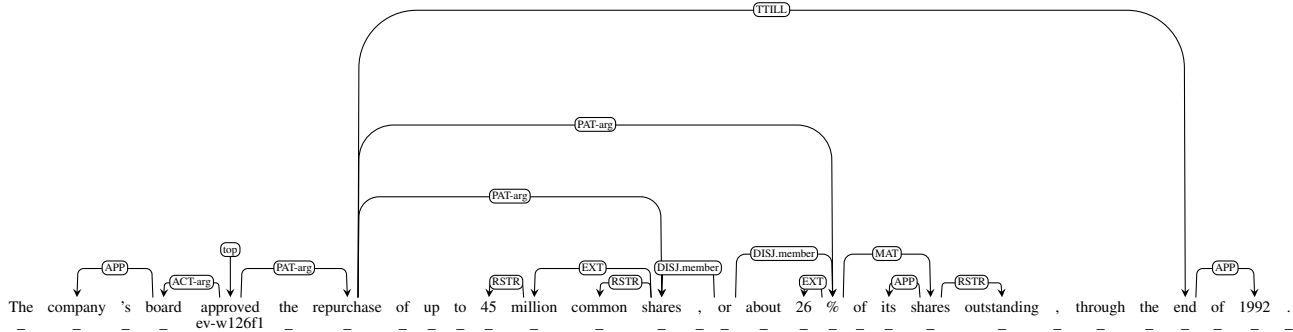
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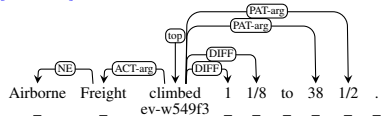
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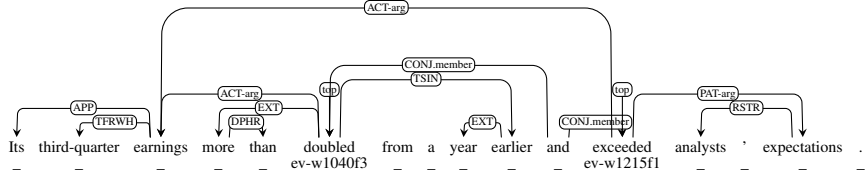
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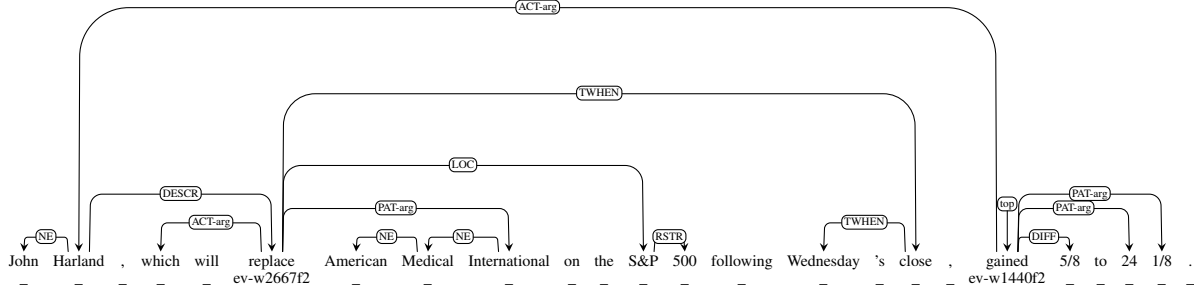
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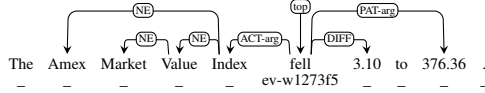
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