

An Accuracy-Oriented Divide-and-Conquer Strategy for Recognizing Textual Entailment

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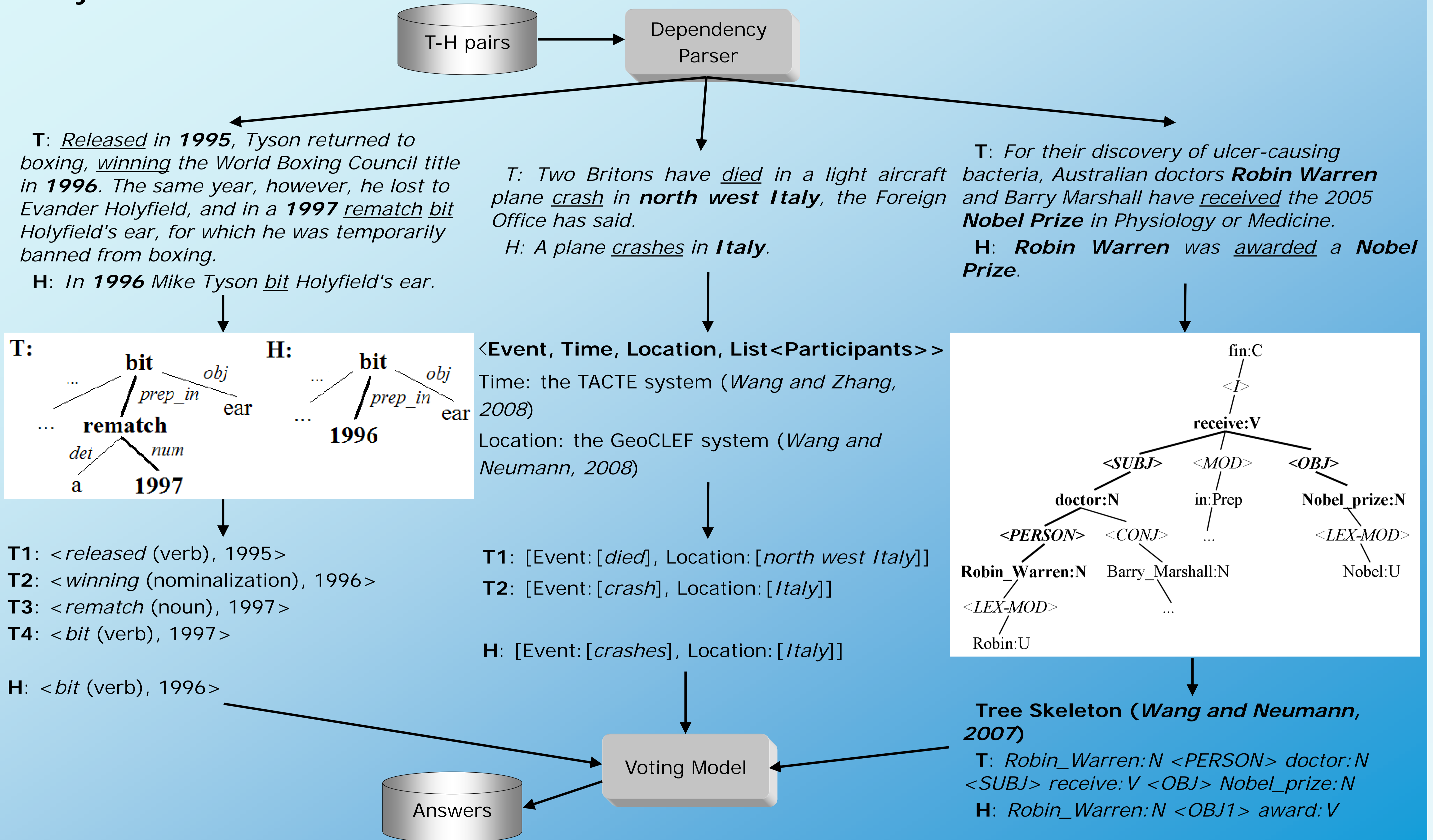
Abstract

Based on our promising results in the RTE-3 challenge (66.9% of accuracy) using a precision-oriented dependency-based approach, we explored further extensions of this perspective. This year, we achieve 70.6% for the two-way task and 61.4% for the three-way task.

Highlights

- Time Anchoring Component for RTE (Wang and Zhang, 2008)
- The Event Structure of Named-Entities
- The Tree Skeleton Structure (Wang and Neumann, 2007)
- Two Backup Modules (Wang and Neumann, 2007)

The System



Experimental Results

Tasks	TAC-M	TS-M	NE-M	BoW-BM	Tri-BM	Run1	Run2	Run3
IR(300)	75.0%/4	76.5%/85	61.0%/164	63.3%	54.3%	66.0%	72.3%	71.7%
QA(200)	90.0%/10	73.2%/82	54.8%/93	49.0%	53.5%	73.0%	72.0%	74.0%
SUM(200)	83.3%/6	74.5%/51	55.2%/67	63.5%	54.0%	64.0%	69.5%	71.5%
IE(300)	72.7%/11	74.2%/128	46.7%/152	50.0%	50.0%	66.7%	66.3%	66.7%
All(1000)	80.6%/31	74.6%/346	54.3%/477	56.5%	52.8%	67.2%	69.9%	70.6%

Answers	Run1(2)	Run2(2)	Run3(2)	Answers	Run1(3)	Run2(3)	Run3(3)
Yes(500)	66.6%	81.4%	74.8%	Yes(500)	68.2%	66.6%	72.8%
No(500)	67.8%	58.4%	66.4%	No(150)	38.7%	41.3%	33.3%
/	/	/	/	Unknown(350)	61.4%	47.1%	54.9%
All(1000)	67.2%	69.9%	70.6%	All(1000)	61.4%	56.0%	60.6%

The Two-Way Task:
 Run1: TAC-M, TS-M, and Tri-BM
 Run2: TAC-M, TS-M, and BoW-BM
 Run3: TAC-M, TS-M, NE-M, & Tri-BM, BoW-BM

The Three-Way Task:
 Run1: TAC-M, TS-M, and Tri-BM, BoW-BM
 Run2: TAC-M, TS-M, NE-M (partial), and Tri-BM, BoW-BM
 Run3: TAC-M, TS-M, NE-M, and Tri-BM, BoW-BM

From Two-Way to Three-Way:
 If BoW-BM=YES & Tri-BM=NO then **CONTRADICTION**
 If BoW-BM=YES & Tri-BM=YES then **ENTAILMENT**
 Others **UNKNOWN**

References

- R. Wang and G. Neumann. 2007. Recognizing Textual Entailment Using a Subsequence Kernel Method.
- R. Wang and G. Neumann. 2008. Ontology-based Query Construction for GeoCLEF.
- R. Wang and Y. Zhang. 2008. Recognizing Textual Entailment with Temporal Expressions in Natural Language Texts.

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HyLaP: <http://hylap.dfki.de/>
 QALL-ME: <http://qallme.itc.it/>