Temporal Event Knowledge Acquisition via Identifying Narratives

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Key Elements of Narrative

- **Chronological telling**: In narratives, events are governed by a double temporality - the chronology of the events and their presentation in the text.
- **Double temporality** enables us to acquire temporal “before/after” event knowledge across sentences.
- We explored narratology principles and built a bootstrapping approach that identifies 287k narrative paragraphs from three large text corpora.
- **Distilled knowledge** is useful to improve temporal relation classification and outperform neural network models on the narrative cloze task.

**Grammar Rules to Identify Plot Events**: use context-free grammar production rules to identify sentences that describe an event in an actantial syntax structure ($S \rightarrow NP \ VP)$.
- Also consider more complex sentence structures that are derived from the basic structure. For example, “$S \rightarrow NP \ ADVP \ VP$”, “$S \rightarrow S \ CC \ S$”.
- The headword of the VP should be in the past tense.
- The NP referring to the character should have a simple structure.

**Character Rules**: a protagonist character appears in multiple sentences and ties a sequence of events.
- The normalized length of the longest entity chain. # entity mentions / # sentences in the paragraph

**Other Writing Style Features**:
- Linguistic Inquiry and Word Count (LIWC): words denoting relativity (e.g., motion, time, space) and referring to emotion and cognitive.
- Parts-of-Speech (POS) tag frequencies

**Evaluation**

<table>
<thead>
<tr>
<th>Model</th>
<th>Choubye and Huang (2017)</th>
<th>+ CP score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models</td>
<td>51.2</td>
<td>52.3</td>
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**Data & model**: http://nlp.cs.tamu.edu/resources.html