# Where we are

- form transformation
- various forms
- structured forms
- state machines, formal grammars
- history-based models
- classifiers

# Event Extraction

- To discover *event triggers* with *specific types* and their arguments.
- Important and challenging in Information Extraction

## Example

In Baghdad, a cameraman died when an American tank fired on the Palestine Hotel.

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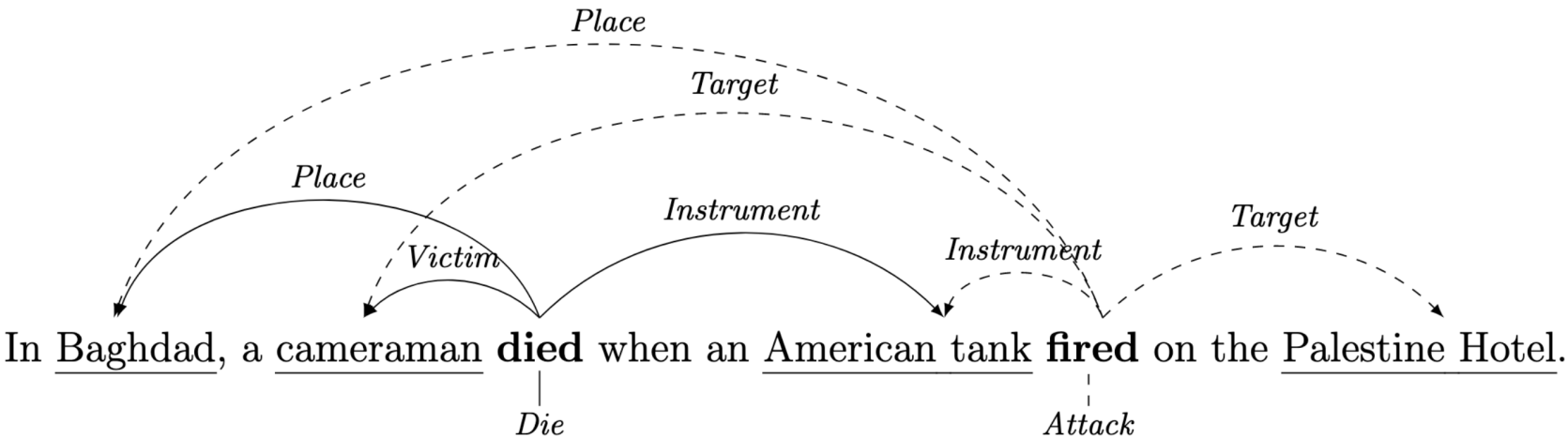
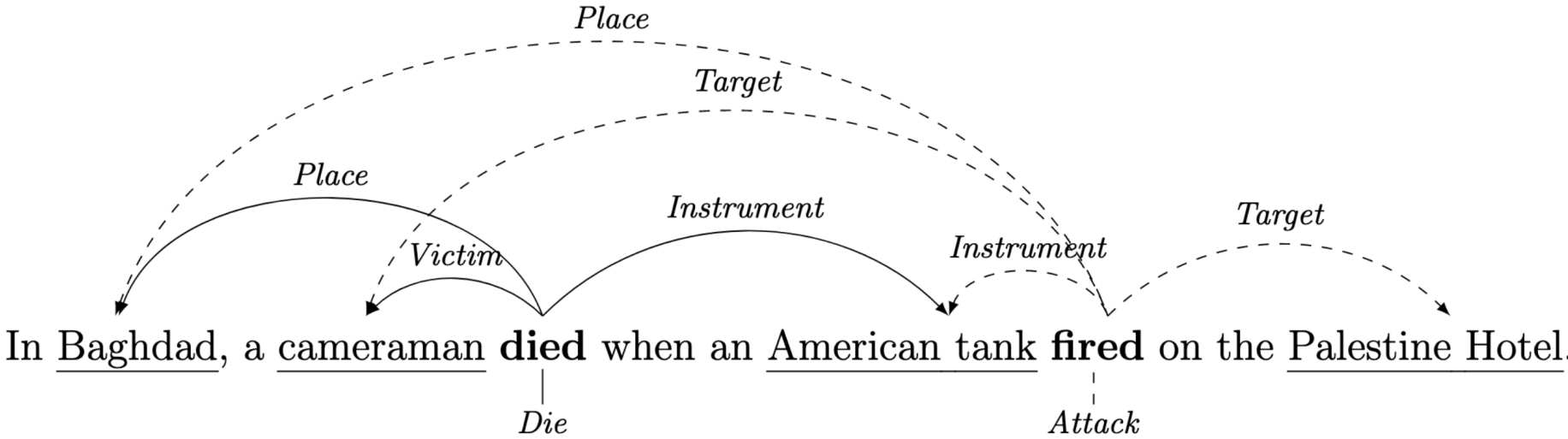
## Design a representation

- As a word tagging problem? More than one events may exist.
- Graph-structured representation? Li et al. (2013)






## Chunking

In/O Baghdad/B-ARG ,/O a/O cameraman/B-ARG died/DIE when/O an/O American/B-ARG tank/I-ARG fired/ATTACK on/O the/O Palestine/B-ARG Hotel/I-ARG ./O

## Dependency parsing

- LEFT-ARC: $(\sigma|i, j|\beta) \Rightarrow (\sigma|i, j|\beta)$
- RIGHT-ARC: $(\sigma|i, j|\beta) \Rightarrow (\sigma|i, j|\beta)$
- SHIFT: $(\sigma, j|\beta) \Rightarrow (\sigma|j, \beta)$
- POP: $(\sigma|i, \beta) \Rightarrow (\sigma, \beta)$
- SWAP: $(\sigma|i|j, \beta) \Rightarrow (\sigma|j, i|\beta)$
- *SWAP: $(\sigma|i|j, \beta) \Rightarrow (\sigma|j|i, \beta)$