

University of Groningen

Towards reference-aware FrameNet representations

Minnema, Gosse; Remijnse, Levi; Bos, Johan; Caselli, Tommaso; Fokkens, Antske; Nissim, Malvina; Postma, Marten; Vossen, Piek

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Final author's version (accepted by publisher, after peer review)

Publication date:

2020

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Minnema, G., Remijnse, L., Bos, J., Caselli, T., Fokkens, A., Nissim, M., Postma, M., & Vossen, P. (2020). *Towards reference-aware FrameNet representations: Bridging generic and specific event knowledge*. Poster session presented at GeCKo Symposium, Barcelona, Spain.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

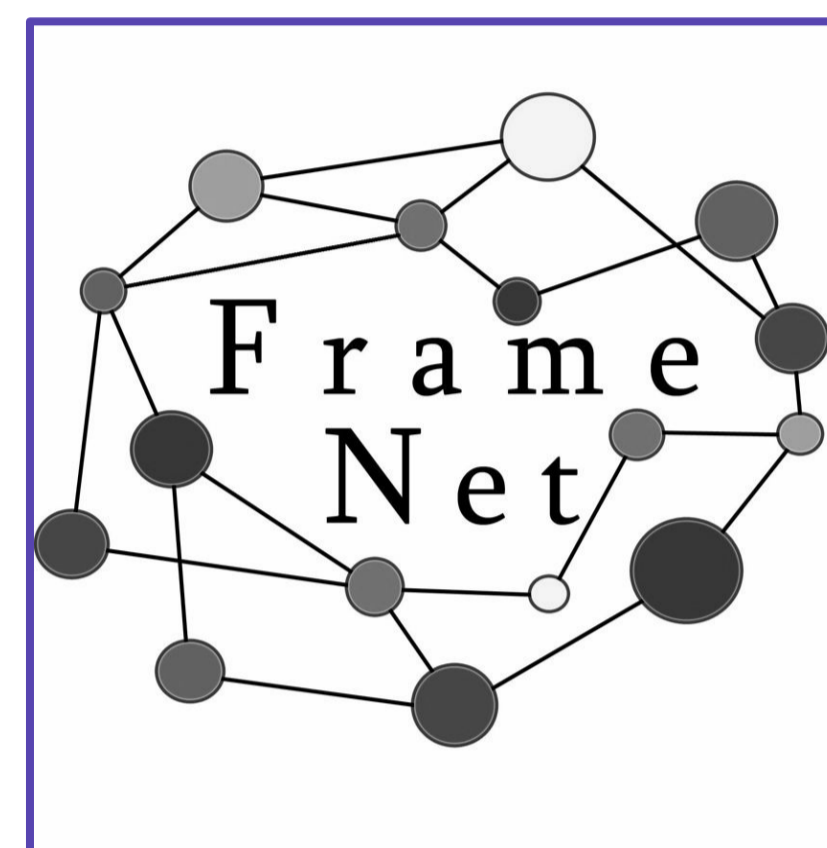
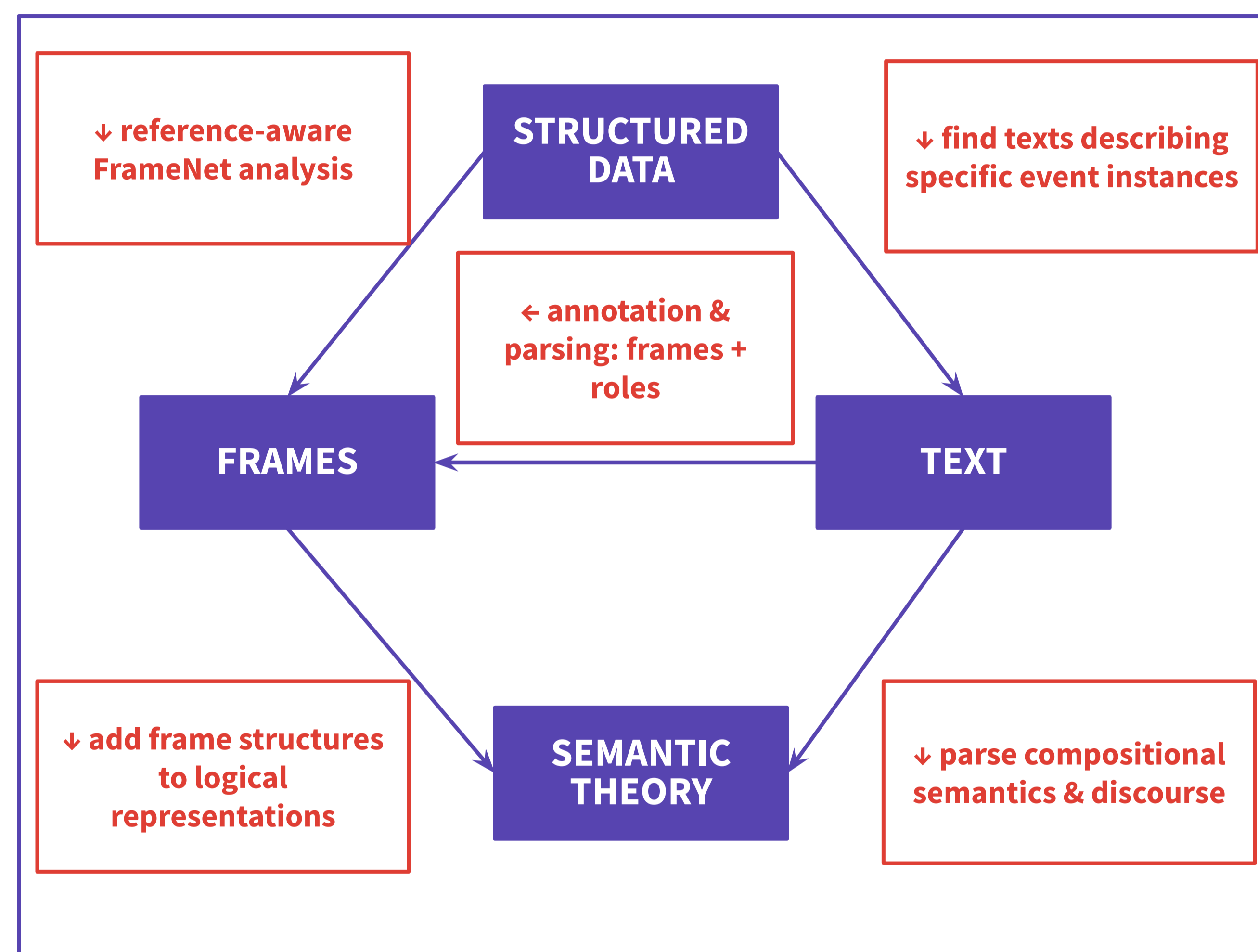
Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Towards reference-aware FrameNet representations: Bridging generic and specific event knowledge

l.remijnse@vu.nl / www.dutchframenet.nl / g.f.minnema@rug.nl

Levi Remijnse & Gosse Minnema
w/ Johan Bos, Tommaso Caselli, Antske Fokkens, Malvina Nissim, Marten Postma & Piek Vossen

- # Study variation in framing of situations in texts
- # Reference-aware FrameNet annotation
- # DRT-based cross-lingual FrameNet parsing



MICROWORLD

IncidentId: **Q28036573**
Event Type: **murder**
Actor: **Anis Amri**
Place: **Germany**
TimeStamp: **2016-12-19**

Goals

- # How are the same situations framed by different texts?
- # Develop a FrameNet for Dutch
- Pragmatic analysis of frame variation

Data-to-text [1]

- # Categorize basic level events [2]
- # Query Wikidata for the registered incidents
- # Obtain microworlds and texts

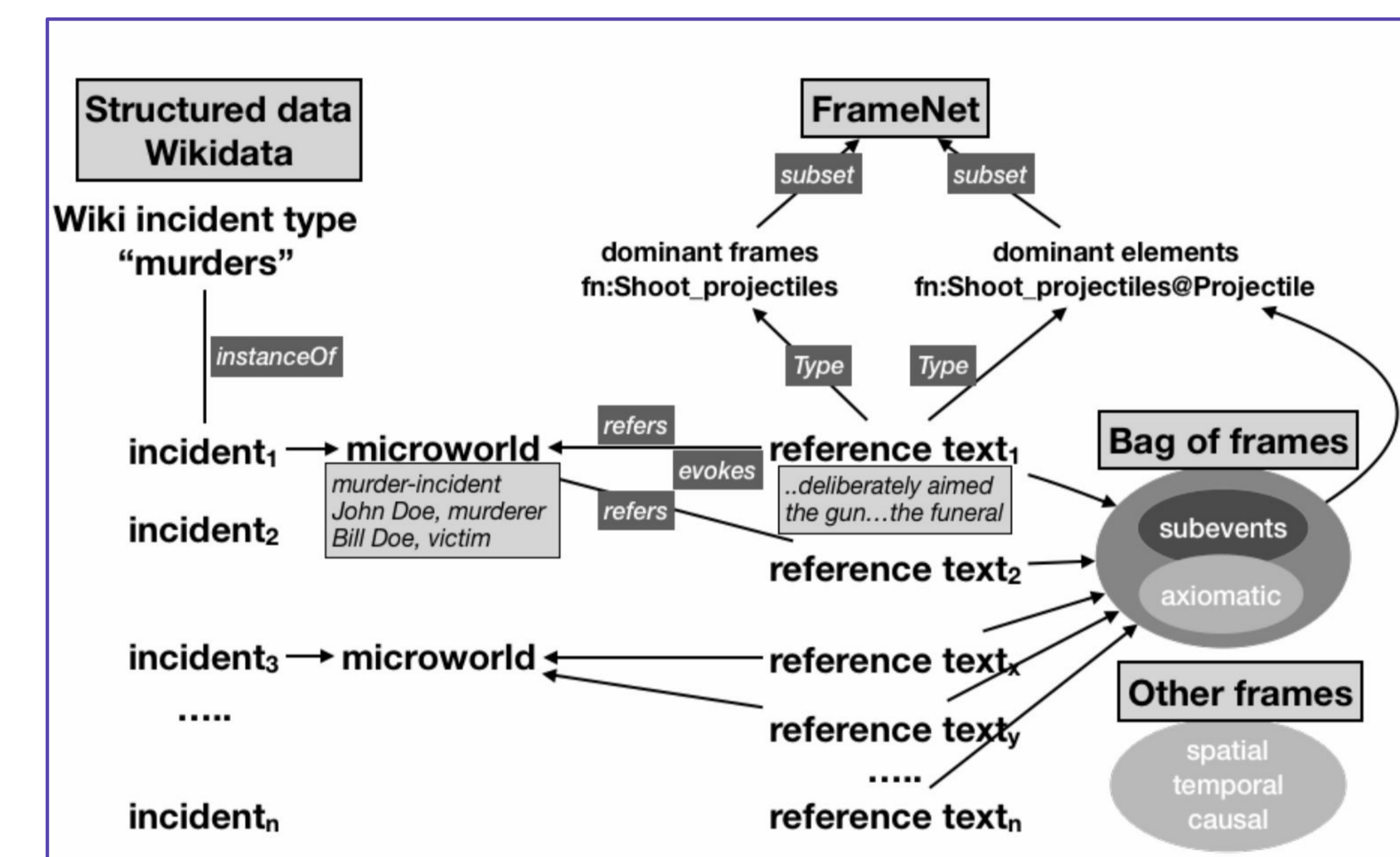
Annotation Problems

- # Find typical frames in the text
- # Get around standard FN limitations

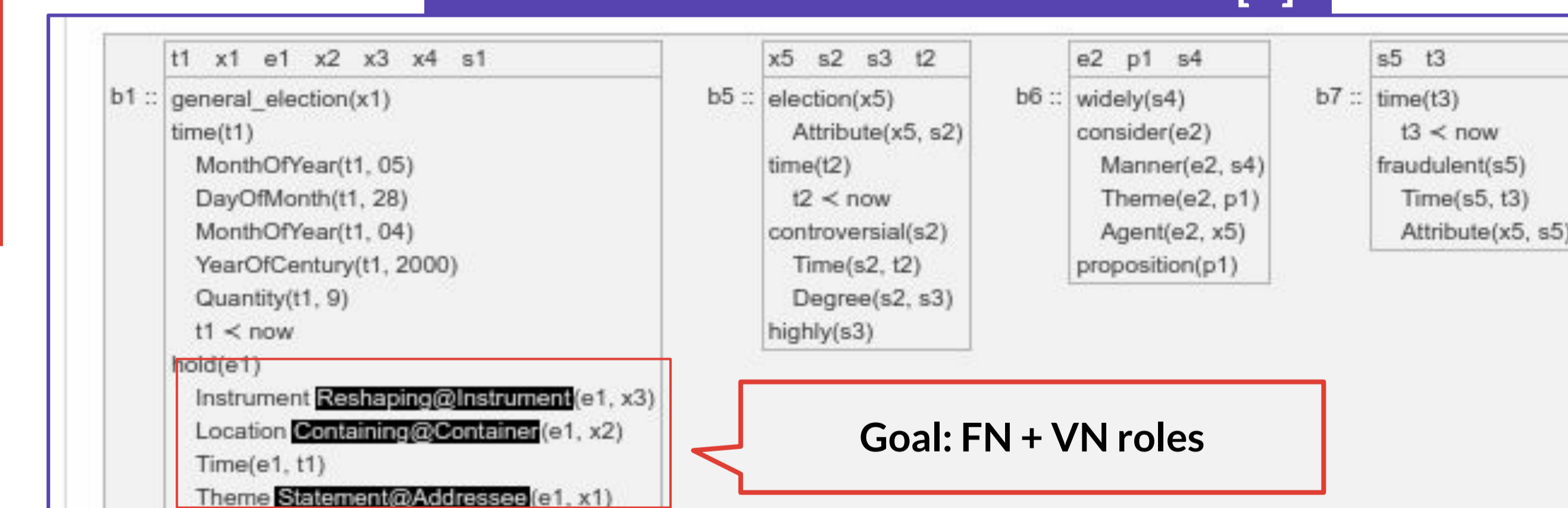
Automatic parsing

- # Integrate FrameNet and formal semantics (DRT)
- # Capture event and participant (co-)reference and pragmatic inference

DATA-TO-TEXT PIPELINE



DRT: PARALLEL MEANING BANK [4]



DUTCH MORPHOLOGY

Attack Commit_crime
dat hij door de aanslagpleger was vermoord
that he by the attack_perpetrator was murdered
'... that he was murdered by the perpetrator of the attack'

"TYPICAL FRAMES"

- Killing
- Offenses
- Weapon
- Use_firearm
- Commit_crime
- Attack

For every event type, automatically determine set of frames to be annotated

Example: murder event

ONE TARGET, MANY FRAMES

HOSTILE_ENCOUNTER
[Side 1 he] was killed in a shootout [Side 2 with police]

ONE FRAME, MANY TARGETS

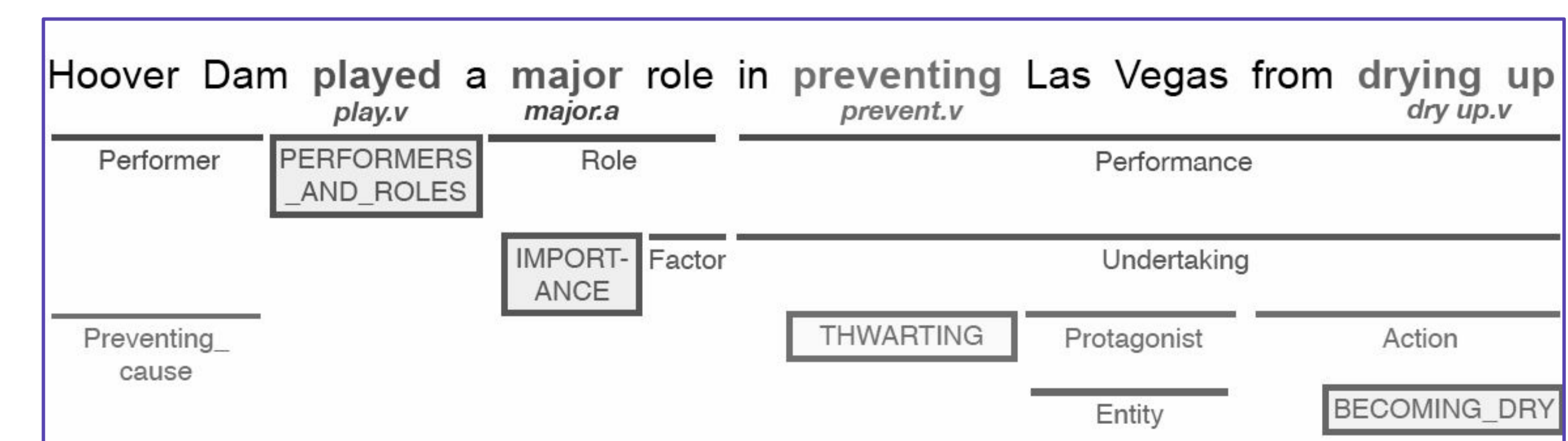
On 19 December 2016, a truck was deliberately driven into the Christmas Market [...] in Berlin, leaving 12 people dead and 56 others injured.

deliberately + Killing = Offense?
leave + dead = Killing?

REFERENCE TEXT

[EN] 2016 Berlin truck attack
On 19 December 2016, a truck was deliberately driven into the Christmas market next to the Kaiser Wilhelm Memorial Church at Breitscheidplatz in Berlin, leaving 12 people dead and 56 others injured. One of the victims was the truck's original driver, Łukasz Urban, who was found shot dead in the passenger seat. The truck was eventually stopped by its automatic brakes. The perpetrator was Anis Amri, a Tunisian failed asylum seeker. Four days after the attack, he was killed in a shootout with police near Milan in Italy. An initial suspect was arrested and later released due to lack of evidence. The Islamic State of Iraq and the Levant gave Anis Amri instructions. ISIL released a video of Amri pledging allegiance to the terror group's leader, Abu Bakr al-Baghdadi.

FN-PARSING: OPEN-SESAME [3]



References: [1] Vossen, P. Illievski, F. Postma, M., and Segers, R. (2018). Do not Annotate, but validate: a data-to-text method for capturing event data. In: *Proceedings of the Eleventh International Conference on Language Resources and Evaluation (LREC-2018)*. [2] Morris, M. W. and Murphy, G. L. (1990). Converging operations on a basic level in event taxonomies. *Memory & cognition*, 18(4):407-418. [3] Swayamdipta S., Thomson S., Dyer C., Smith N.A. (2017). Frame-Semantic Parsing with Softmax-Margin Segmental RNNs and a Syntactic Scaffold. <https://arxiv.org/abs/1706.09528>. [4] Abzianidze L., Bjerva L., Evang K., Haagsma H., Van Noord R., Ludmann P., Nguyen D., Bos J. (2017). The Parallel Meaning Bank: Towards a Multilingual Corpus of Translations Annotated with Compositional Meaning Representations. EACL. [5] Hartmann S., Kuznetsov I., Martin T., Gurevych I. (2017). Out-of-domain FrameNet Semantic Role Labeling.