Fruit flies like a banana

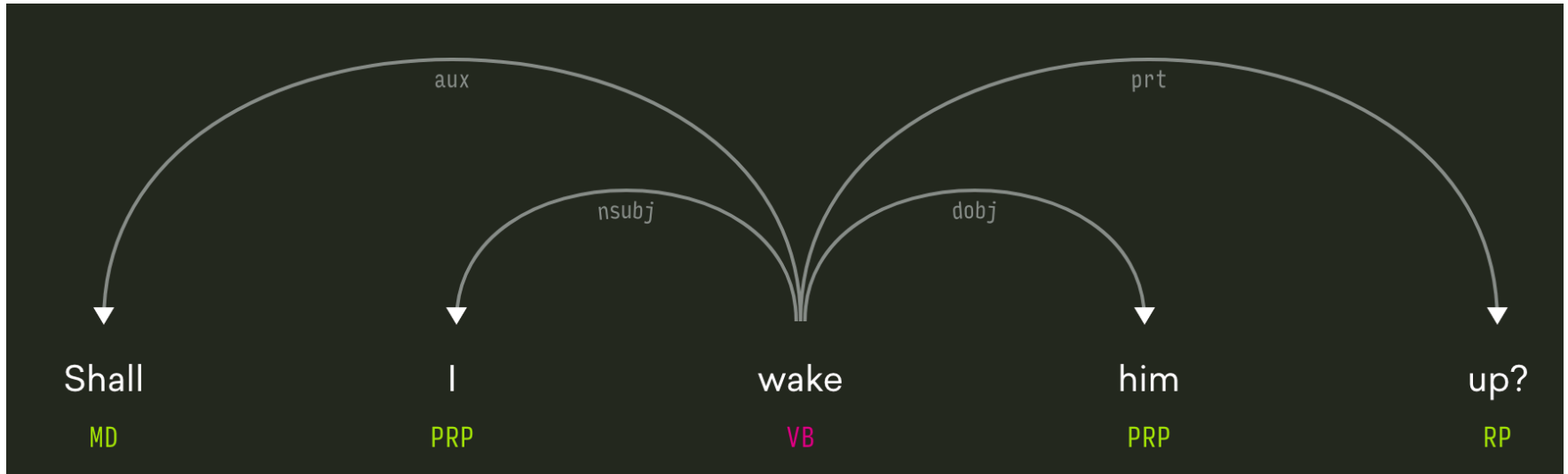*Seongmin Mun*[1], Guillaume Desagulier[2], Anne Lacheret[3] , Kyungwon Lee[4]

[1] Lifemedia Interdisciplinary Program, Ajou University, South Korea
[1,3] UMR 7114 MoDyCo - CNRS, University Paris Nanterre, France
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Introduction

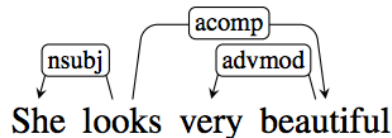Dependency tag can provide a simple description of the grammatical relationships in a sentence.

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Introduction

abbreviation	Explanation(eng)	Explanation(kor)
1.acomp	adjectival complement	형용사 수식
2.advcl	adverbial clause modifier	부사절 수식
3.advmod	adverb modifier	부사 수식
...	...	...

Introduction

***acomp*: adjectival complement**

An adjectival complement of a verb is an adjectival phrase which functions as the complement (like an object of the verb).

***advcl*: adverbial clause modifier**

An adverbial clause modifier of a VP or S is a clause modifying the verb (temporal clause, consequence, conditional clause, purpose clause, etc.).

"The accident happened as the night was falling"	*advcl*(happened, falling)
"If you know who did it, you should tell the teacher"	*advcl*(tell, know)
"He talked to him in order to secure the account"	*advcl*(talked, secure)

***advmod*: adverb modifier**

An adverb modifier of a word is a (non-clausal) adverb or adverb-headed phrase that serves to modify the meaning of the word.

"Genetically modified food"	*advmod*(modified, genetically)
"less often"	*advmod*(often, less)

Previous studies

A: **[S1:M-GRET]** *Hi everyone.* **[S2:P-STAT]** *I have recently purchased USB flash and I am having trouble renaming it, please help me.*
B: **[S3:A-INQU]** *What is the size and brand of this flash?*
A: **[S4:Q-CLRF]** *It is a 4GB SanDisk flash.*
B: **[S5:A-SOLU]** *Install gparted, select flash drive and rename.*
A: **[S6:M-NEGA]** *I got to the Right click on partition and the label option was there but grayed out.*
B: **[S7:A-SOLU]** *Sorry again, I meant to right click the partition and select Unmount and then select Change name while in gparted.*
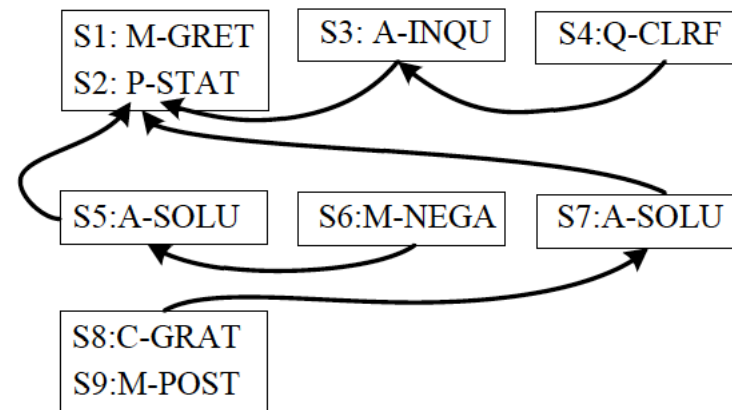A: **[S8:C-GRAT]** *Thank you so much.* **[S9:M-POST]** *I now have an "Epic USB" You Rock!*

Figure 1: Example of a Question Answering Thread in Ubuntu Support Forum

Figure 2: Dependency Structure of the Above Example

Zhonghua Qu and Yang Liu, 'Sentence Dependency Tagging in Online Question Answering Forums', *Proceedings of the 50th Annual Meeting of the Association for Computational Linguistics*, pages 554–562, Jeju, Republic of Korea, 8-14 July 2012.

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Research background and purpose

Dependency tag have an incredibly serious problem, misunderstanding 'root' in the sentence.

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Research background and purpose

"Fruit flies like a banana."

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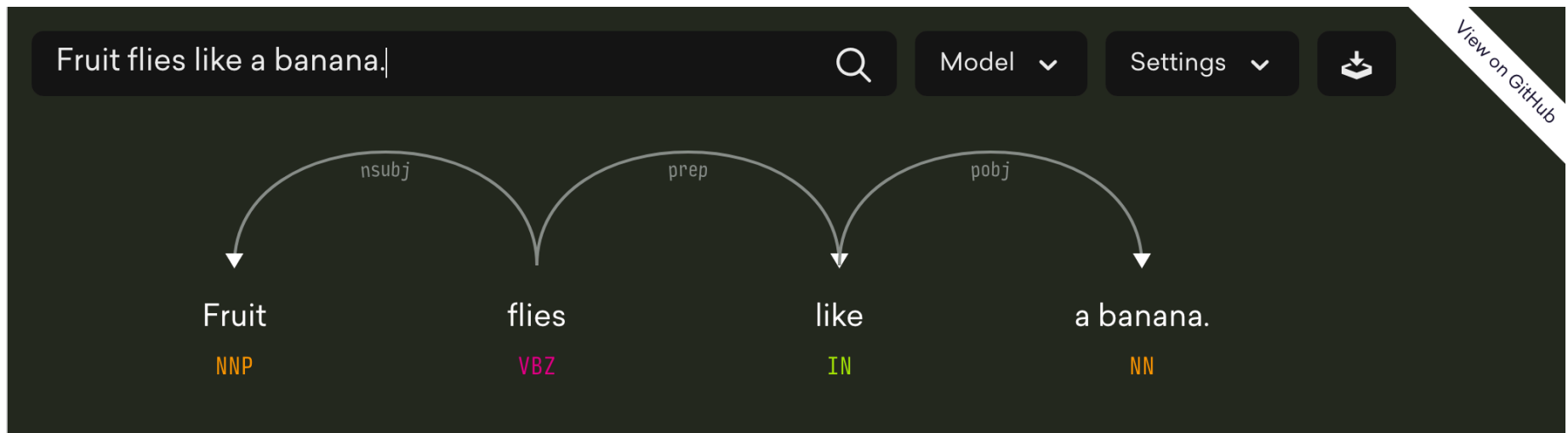Paris Nanterre AJOU UNIVERSITY

Research background and purpose

"***Fruit flies*** like a banana."

Fruit flies ➡ Multi-word expression.

Demonstration(Explosion-displaCy)

https://demos.explosion.ai/displacy/

Demonstration(Stanford-CoreNLP)

```
dependency graph:
-> flies/VBZ (root)
  -> Fruit/NNP (nsubj)
  -> banana/NN (nmod:like)
    -> like/IN (case)
    -> a/DT (det)
  -> ./. (punct)
```

https://stanfordnlp.github.io/CoreNLP/

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Development

We can develop our own 'Dependency tag' with our algorithm to recognize multi-word expression in the sentence.

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Demonstration(Our own system)

Parse tree :

```
(ROOT
  (S (MWE Fruit flies)
    (VP (VB like)
      (NP (DT a) (NN banana)))
    (. .)))
```

Dependency tag:

```
[dep(like-2, Fruit flies-1), root(ROOT-0, like-2), det(banana-4, a-3), dobj(like-2, banana-4)]
```

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Q&A

Thank you for listening.

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