Class 11: Anaphora and co-reference resolution

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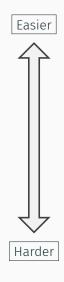
## Noun phrases and reference

- · NPs usually refer to entities in the world
- · NPs may co-refer, meaning they refer to the same entity
- They may also be nested

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Однажды Пушкин написал письмо Рабиндранату Тагору.

«Дорогой далекий друг, — писал он, — я Вас не знаю, и Выменя не знаете. Очень хотелось бы познакомиться. Всего хорошего. Саша». Когда письмо принесли, Тагор предавался самосозерцанию. Так погрузился, хоть режь его. Его жена толкала, толкала, письмо подсовывала — не видит. Он, правда, по-русски читать не умел. Так и не познакомились.
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## Kinds of reference



Interesting linguistics

Bound variables

She hurt herself Я имею свой баян

Free variables

Maša read *her* book *Она* очень нравилась.

Referring expressions

Carles Puigdemont
Catalan president
Puigdemont
president of Catalonia
President Puigdemont

More frequent

## Coreference, anaphora, cataphora

#### Coreference

- · Two mentions (NPs) refer to the same entity
- · May be identical or completely different

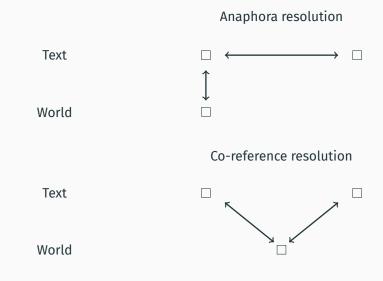
#### · Anaphora, Cataphora

- · Interpretation is in some way dependent on an antecedent
- $\boldsymbol{\cdot}$  Traditionally the antecedent came first, but not always the case.

## Cataphora

(Oscar Wilde – The Picture of Dorian Grey)

# Two different things



# Applications

Machine translation:

Text summarisation:

Information extraction: