

L98: Introduction to Computational Semantics

Lecture 5: From Concepts to Indices

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W Please drive me to the Hawthorns development in Sawston.
S What is the address?
W Oh, I don't know. ▷How stupid I am!
S OK, let me set google map to Sawston. And you search online the place.
...
S Oh, I saw a Hill AD. It must be nearby. ▷Hill is the developer.
...
W Oh, I found the postcode — [CB22 3LH!](#)
...
OFFICE CLOSED!

Lecture 5: From Concepts to Indices

1. From nouns to objects
2. From verbs to events
3. Superpower from structures

From Nouns to Objects

How can pupils find their own rucksacks?



tag / name them

Proper noun phrases

Sky News Breakfast: Tough questions on PPE, Putin and Partygate

- Sky ▷BBC
- Sky News ▷BBC News
- Sky News Breakfast ▷BBC Breakfast
- Putin ▷Boris Johnson
- Partygate?

02/02/2022

But there are too many rucksacks. . .

Enumerate them

- (1) a. Elizabeth I
- b. Elizabeth II
- c. George VI

Point to them: Pronoun

- (2) a. Come and look at **this**.
- b. **That**'s a very good idea.
- c. Can I have one of **these**?

- Proper nouns and pronouns, by name, are nouns.
- So do nouns directly link to objects?

London, Two Trumps and Londoners

London Will See Two Trumps: The President and a Balloon Parody

Londoners will get to see two versions of Donald Trump next week: the 45th president of the U.S. and a 20-foot-high inflatable version that's orange and wearing a diaper.

news from www.bloombergquint.com



How can pupils find their own rucksacks?



bucket them

The meaning of *Trump* in *Two Trumps*



Build a bucket and then point

Bucketing with nouns



box



shoe

Pointing with determiners

- (3) a. What's in **this** box?
b. I might get myself a pair of **those** shoes.

Build a fancy bucket

The news

Londoners will get to see two versions of Donald Trump next week: the 45th president of the United States and a 20-foot-high inflatable version that is orange and wearing a nappy.

Mr Trump will be in the city for a meeting with [...]

[...] Trump Baby will fly!

[...] In a crowdfunding request, they wrote that they want the balloon to shadow the president, “haunting the skies — and hopefully the dreams — of the stain on the office of President that is Donald Trump Senior.”

The White House has brushed aside questions about protests during Mr Trump’s trip.

[...]

Build a fancy bucket

The news

Londoners will get to see two versions of Donald Trump next week: [the 45th president of the United States](#) and [a 20-foot-high inflatable version that is orange and wearing a nappy](#).

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The White House has brushed aside questions about protests during Mr Trump's trip.

[...]

Build a fancy bucket

- (4) a. the 45th president of the United States
b. a 20-foot-high inflatable version that is orange and wearing a nappy

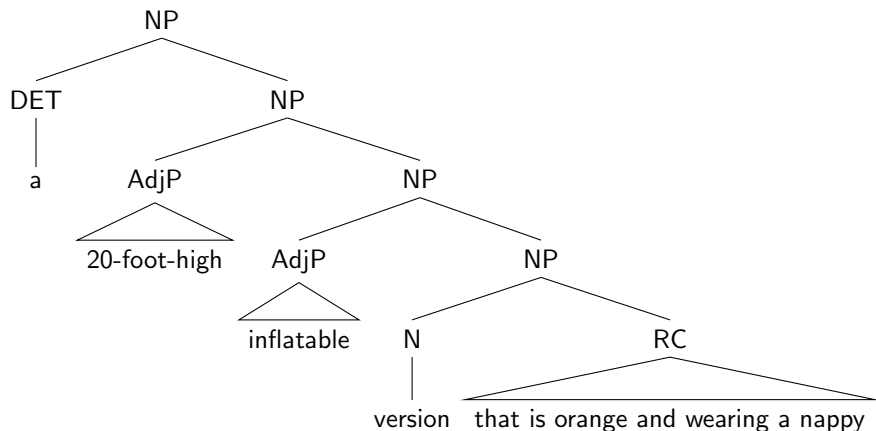
DET + modifiers + NOUN + modifiers

Database and SQL

```
SELECT * FROM Mayors  
WHERE Country='UK' AND City='Cambridge';
```

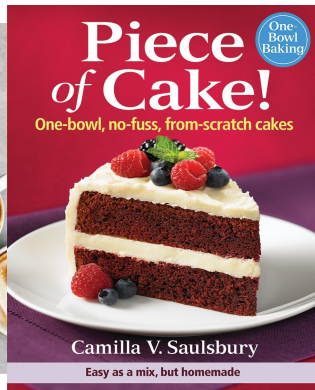
Syntax for building buckets

Syntactico-semantic composition

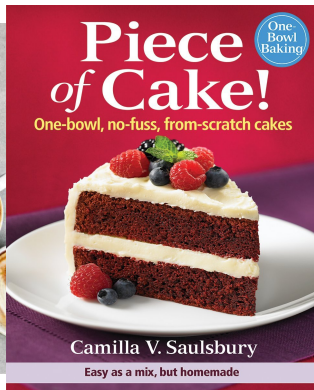


More on modification in Lecture 7

Well done! Let's have some **coffee** and **cake**.



Well done! Let's have some **coffee** and **cake**.



oops! mass nouns and more...

Individualisation: *cutting* objects from space

Find a container

- (5) a. a **cup** of coffee
b. a **glass** of water

Cut your cake

- (6) a **piece** of cake

Hypothesis: All Mandarin nouns are mass nouns



yī liàng qì chē
一辆汽车
a car



yī miàn jìng zǐ
一面镜子
a mirror



yī duǒ huā
一朵花
a flower



yī bǎ yǐ zǐ
一把椅子
a chair



yī zhāng zhuō zǐ
一张桌子
a table



yī zhī bǐ
一支笔
a pen



yī wèi kè rén
一位客人
a guest



yī tóu zhū
一头猪
a pig



yī jià fēi jī
一架飞机
a plane



yī liè huǒ chē
一列火车
a train



yī sōu chuán
一艘船
A boat



yī méi huǒ jiàn
一枚火箭
a rocket

Well done! Let's go to a party!

Well done! Let's go to a party!

Oops! Nouns go to events

Party: a social [event](#) at which a group of people meet to . . .

from Cambridge Dictionary

Well done! Let's go to a party!

Oops! Nouns go to events

Party: a social [event](#) at which a group of people meet to ...

from Cambridge Dictionary

Quite often

Partygate is an ongoing political [scandal](#) surrounding gatherings of United Kingdom government and Conservative Party staff [...]

[...], a political **scandal** is an [action](#) or [event](#) regarded as morally or legally wrong and causing general public outrage.

from Wikipedia

From Verbs To Events

Cutting events from time

WN S: (n) **event** (something that happens at a given place and [time](#))

Downing Street alleged party: timeline at a glance

A new Covid-19 variant, Alpha, sees London moved under tier three restrictions. The toughest at the time.

16 Dec
2020



18 Dec
2020

Reports dozens of people attended a staff Christmas party at Downing Street.

The PM's then-press secretary Allegra Stratton filmed answering mock questions about a Downing Street Christmas party.

22 Dec
2020



4 Jan
2021

Boris Johnson announces third national lockdown.

The Daily Mirror reports the 2020 Christmas party took place.

1 Dec
2021



7 Dec
2021

Footage from 2020 of Allegra Stratton joking about the alleged party is leaked to ITV News.

PM apologises for the video clip but insists he's been assured that there was no party and no Covid rules were broken. He promises to launch an internal review. The SNP calls for Mr Johnson's resignation.

8 Dec
2021



Telicity: Where to cut?

+Progressive

+**Inherent endpoint**: accomplishments

- draw a circle
- run a mile
- write a letter

–**Inherent endpoint**: activities

- run, walk, sleep, chat
- push a cart

–Progressive

+**Instantaneous/punctual**: achievements

- reach (the hilltop)
- find (him), see (him)

–**Instantaneous/punctual**: states (do not involve change)

- hate, believe, know, be red

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Vendler classes

Semelfactives

Vendler classes

	Telic	Atelic
Periods	Accomplishments (<i>run a mile</i>)	Activities (<i>push the cart</i>)
Instants	Achievements (<i>spot the plane</i>)	States (<i>know the answer</i>)

Semelfactives

blink, sneeze, knock, jump, tap, flap, flash, beep...

Different views, e.g. Bach (1986)

- telic and instantaneous
- a subtype of achievements

slides based on Dun Deng

Linguistic relativity



How to identify semelfactives?

touch and kick

How to identify semelfactives?

touch and kick

Some languages have special morphological marking

- **Russian**: -nu
- xixi-nu-t
- 'to make a single giggle'

Some languages, e.g. **English**, don't

For languages that don't mark semelfactives, it is very important to distinguish conceptual and linguistic argument.

slides based on Dun Deng

Verbal classifiers in Mandarin

下, 遍, 趟, 回, 次, 顿, 通, 场, 番, 记...

Mandarin semelfactives

The verbal classifier 下 picks out semelfactive events

- 眼睛/eye 眨/wink 了/Perf. 三/three 下/time
- 'The eye made three single winks.'
- 手指/finger 敲/knock 了/Perf. 三/three 下/time
- 'made three single knocks with the finger (on the table)'

Mandarin achievements

死/die, 赢/win, 进/enter, 到/reach, 倒/fall...

- 赢/win 了/Perf. 三/three *下/次/time
- 'win three times'

Unlike English, there is linguistic evidence to distinguish the two kinds of verbs in Mandarin.

Time

- **Speech time**
- **Event time**
- **Reference time**

Roughly

E,R,S	Sam is working.
S – E,R	Sam will work.
E,R – S	Sam worked.
E – R – S	Sam had worked.
S – E – R	Sam will have worked.
R – E – S	Sam would work.

Prelecture exercise

Howard: Something doesn't make sense. Look. In 2015 Biff steals the Sports Almanac and takes the time machine back to 1955 to give it to his younger self. But as soon as he does that he changes the future, so the 2015 he returns to would be a different 2015. Not the 2015 that Marty and Doc were in.

Leonard: This is Hot Tub Time Machine all over again. Look. If future Biff goes back to 2015 right after he gives young Biff the Almanac, he could get back to the 2015 with Marty and Doc in it. Because it wasn't until his 21st birthday that 1955 Biff placed his first bet.

Sheldon: Is *placed* the right **tense** for something that would've happened in the future of a past that was affected by something from the future?

Leonard: **Had will have placed?**

Modality

Is it possible to anchor events without a reference to time?

Modality

Is it possible to anchor events without a reference to time?



Modality

Is it possible to anchor events without a reference to time?



When we talk about likelihood, permission, obligation, and ability

- *can, could, shall, should, will, would, may, might, must*
- *ought, have to, be obliged to, be able to, be capable of, it's possible that, it's necessary for * to, it's obligatory to, it's permissible that, possibly, necessarily, maybe, perhaps. . .*

Superpower from Structures

Structures are the boss

Words can mean so many different things, but structures cannot.

- (7)
- a. stone
 - b. three stones
 - c. much stone
 - d. to stone a bird
 - e. be stoned

Reading

- <https://web.stanford.edu/~bclevin/lisa09aspapp.pdf>