

# Patterns, Constructions & Semantic Annotation

# Outline

- A proposal
- Some background
- A demonstration
- Some more background
- Hands-on

# A reminder

- For all adjectives, nouns and verbs, complementation patterns have been identified.
- There are about 100 such patterns.
- For each pattern, the node words have been identified and divided into meaning groups.
- There are about 10 meaning groups for each pattern.

# The proposal

- The pattern - meaning-group units are reconceptualised as constructions...
- ...leading to the identification of about 1,000 constructions...
- ...and leading to a 'Constructicon'...
- ... a resource for learners combining aspects of a dictionary, grammar and thesaurus

# Some background

- The relation between pattern and meaning is very apparent...
- ...and has been theorised in a number of ways.
- E.g. units of meaning, frames, constructions, local grammars.
- Here is an example of a pattern (**V n to n**) and a meaning group (The 'change' group):

# Example: **V n to n ‘change’**

- ...abbreviated his name to ‘Skelly’
- ...change the magazine to a quarterly
- ...commute the sentence to life in prison
- ...convert the pounds to dollars
- ...decreased the number to five
- ...demoted him to private
- ...drop his voice to a whisper
- ...increased the kitty to £14million
- ...keep security to a minimum

- ...lowered her voice to a breath
- ...promote me to lieutenant
- ...raise the price to £4000
- ...reduce the heat to medium
- ...shorten that time to seven years
- ...swell the numbers to 300
- ...turn the jeers to cheers
- ...cut it down to a smaller size
- ...narrow them down to a single list
- ...whittle them down to a short list of three

# Pattern and meaning annotation

	<b>Verb</b>	<b>noun</b>	<i>to</i>	<b>noun</b>
He	abbreviated	his name	to	Skelly
The judges	should commute	the sentence	to	life in prison
They	decreased	the number	to	five
The general	demoted	him	to	Private
She	lowered	her voice	to	a breath
	Reduce	the heat	to	medium
This	should shorten	that time	to	seven years
We	narrowed down	them	to	a single list



# Pattern and meaning annotation

	Verb	noun	<i>to</i>	noun
<b>CHANGE-MAKER</b>	<b>CHANGE</b>	<b>THING CHANGED</b>		<b>RESULT OF CHANGE</b>
He	abbreviated	his name	to	Skelly
The judges	should commute	the sentence	to	life in prison
They	decreased	the number	to	five
The general	demoted	him	to	Private
She	lowered	her voice	to	a breath
	Reduce	the heat	to	medium
This	should shorten	that time	to	seven years
We	narrowed down	them	to	a single list

# Annotation: FrameNet (cause\_change)

	Verb	noun	<i>to</i>	noun
<b>AGENT</b>	<b>CHANGE</b>	<b>ENTITY</b>		<b>FINAL_CATEGORY / FINAL_VALUE</b>
He	abbreviated	his name	to	Skelly
The judges	should commute	the sentence	to	life in prison
They	decreased	the number	to	five
The general	demoted	him	to	Private
She	lowered	her voice	to	a breath
	Reduce	the heat	to	medium
This	should shorten	that time	to	seven years
We	narrowed down	them	to	a single list

# So...

- We have here a construction: the ‘change *a* to *b*’ construction
- ...consisting of the pattern **V n *to* n**
- ... and 19 observed verbs...
- ...with the potential for creative use.

# Construction Grammar

- An alternative mental model to Universal Grammar (Dąbrowska 2015).
- Pairing of form and meaning (e.g. Goldberg 2005).
- Mental constructs, for which corpora provide evidence.

# Construction Grammar

- All levels of generality of meaning.
- *Apple* – [apple]
- *Apple of* poss *eye* – [adored person]
- Subject-verb inversion – [interrogative]
- Ditransitive – [transfer of possession] (Gries & Stefanowitsch)
- Appositive *as* – [interpretative] (Hiltunen)
- Causative *into* – [trick / force an action] (Stefanowitsch & Gries)
- Inserted *at* (pull at, judge at, nibble at) – [incomplete action] (Perek)

# Constructions and Patterns

- Ditransitive
  - **V n n**
  - ...*give her a book*
- Appositive *as*
  - **V n as n**
  - ...*see it as an opportunity*
- Causative *into*
  - **V n into -ing**
  - ...*talked him into stealing cigarettes*

# Constructions incorporate creativity

- *He laughed the conversation on to another tack. (S. Brett, So Much Blood)*
- *This has started people to recognise... (news interview)*
- *Several people have explained me that... (news interview)*

# Constructions form ‘level of specificity’ relations

- The transitive construction: **V n**
- The ‘abstract affects situation’ construction
- The ‘solve a problem’ construction
- The *address, attack, beat, fix, solve, settle, sort a problem* construction
- The *answer, fill, meet a need* construction
- The *break a habit* construction
- The *control, handle, improve, save a situation* construction
- The *fight, treat a disease* construction
- The *remove an obstacle* construction
- (cf Wible & Tsao 2017)



# Levels of construction specificity

THE TRANSITIVE CONSTRUCTION: V n					
ABSTRACT AFFECTS SITUATION					
OVERCOME A NEGATIVE SITUATION					
'solve a problem'	'answer a need'	'break a habit'	'handle a situation'	'treat a disease'	'remove an obstacle'

# Utterances combine constructions

- *...the vast majority of people seem to be determined to carry on regardless.*
  - *Majority: vast (58.9); of (131.1); people (29.6)*
  - *Seem: to (180.4); to be (101.9)*
  - *Determined: be (40.5); to (105.4)*
  - *Carry on: to (50.1); regardless (7.6); determined to (7.6)*
- *The (vast) majority of (people)...*
- *...seem to be...*
- *...(be) determined to...*
- *...(determined) to carry on regardless*
- (cf Dabrowska 2015; Warren and Erman 2000)

# Constructions and grammar patterns

- Make many of the same observations.
- Constructions: a mental phenomenon.
- Patterns: a phenomenon of observation.
- Constructions: at all levels of specificity.
- Patterns: at one level of specificity.

# The proposal again

- The pattern - meaning-group units are reconceptualised as constructions...
- ...leading to the identification of about 1,000 constructions...
- ...and leading to a 'Constructicon'...
- ... a resource for learners combining aspects of a dictionary, grammar and thesaurus

# Examples: identifying constructions

# The evaluative *it* construction

- *It is clear that the individual is acting...*
- *It is important that these points be well understood...*
- *It is interesting that a woman can admit it...*
- *It is likely that they will have used English tests...*
- *It is possible that one test will show no benefit...*

# The evaluative *it* construction

	Evaluation	Target
It is	clear	that the individual is acting...
It is	important	that these points are well understood
It is	interesting	that a woman can admit...
It is	likely	they will have used English tests...
It is	possible	that one test will show no benefit...

# The reactive 'that' construction

- *He's afraid that leaving the freeway might break the spell...*
- *Few people are aware that a struggle between good and evil is taking place...*
- *We are confident that you can do that.*
- *I'm disappointed that he hasn't done anything...*
- *I'm very happy that we got the goal.*



# The reactive 'that' construction

Evaluator		Evaluation / Reaction	Target
He	is	afraid	that leaving the freeway might break the spell
Few people	are	aware	that a struggle between good and evil is taking place
We	are	confident	that you can do that
I	am	disappointed	that he hasn't done anything
I	am	very happy	that we got the goal.

# The consequential 'for' construction

- *He could blame his family for his predicament.*
- *She criticised the magazine for being too graphic.*
- *I'll never forgive my mother for wrecking my marriage.*
- *...to punish him for not cooperating...*
- *The Army has reprimanded three officers for negligence.*
- *They had decided to reward me for my determination.*

# The consequential 'for' construction

Reactor	Reward/punish	Receiver		Reason
He	could blame	his family	for	his predicament.
She	criticised	the magazine	for	being too graphic.
I	will never forgive	my mother	for	wrecking my marriage.
	...to punish	him	for	not cooperating...
The Army	has reprimanded	three officers	for	negligence.
They	had decided to reward	me	for	my determination.

# Towards a constructicon...

- Starting with the grammar pattern...
- ... and the meaning groups...
- ...identifying the common meaning elements...
- ...and labelling them.

# The pattern **V n of n**

- Four meaning groups:
- The 'rob' and 'free' group
- The 'inform' group
- The 'acquit' and 'convict' group
- Verbs with other meanings

# The pattern **V n of n**

- The 'rob' and 'free' group
  - ...*cure him of a crippling disease*
  - ...*were robbed of their wristwatches*
- The 'inform' group
  - ...*inform the government of their actions*
- The 'acquit' and 'convict' group
  - ...*was cleared of attempting to murder...*
  - ...*convicted him of breaking a teacher's nose*

# The 'rob' and 'free' group

NOUN	VERB	NOUN	<i>of</i>	NOUN
The other	had defrauded	the system	of	more than \$80k
Twenty years of war	have denuded	Afghanistan	of	the trained professionals they need
...the bill	might deprive	citizens	of	fundamental rights
They	strip	them	of	their identity
I	cured	him	of	his problem
I	cannot divest	myself	of	the fear
They	need to rid	themselves	of	their reputation
It	would relieve	me	of	the responsibility

# The 'deprive someone of something' construction

NOUN	VERB	NOUN	<i>of</i>	NOUN
<b>remover</b>	<b>remove-neg</b>	<b>possessor</b>		<b>removed-thing</b>
The other	had defrauded	the system	of	more than \$80k
Twenty years of war	have denuded	Afghanistan	of	the trained professionals they need
...the bill	might deprive	citizens	of	fundamental rights
They	strip	them	of	their identity
<b>remover</b>	<b>Remove-pos</b>	<b>possessor</b>		<b>removed-thing</b>
I	cured	him	of	his problem
I	cannot divest	myself	of	the fear
They	need to rid	themselves	of	their reputation
It	would relieve	me	of	the responsibility



# The 'inform' group

NOUN	VERB	NOUN	<i>of</i>	NOUN
They	assured	us	of	their help
The army (was not obliged to)	inform	the government	of	its actions
The doctor	had not warned	him	of	the risks of surgery
The broadcast	convinced	me	of	the need to improve our education system

# The 'inform someone of something' construction

NOUN	VERB	NOUN	<i>of</i>	NOUN
<b>informer</b>	<b>inform (dir)</b>	<b>informed</b>		<b>message</b>
They	assured	us	of	their help
The army (was not obliged to)	inform	the government	of	its actions
The doctor	had not warned	him	of	the risks of surgery
<b>evidence</b>	<b>inform (indir)</b>	<b>informed</b>		<b>message</b>
The broadcast	convinced	me	of	the need to improve our education system

# The 'acquit' and 'convict' group

NOUN	VERB	NOUN	<i>of</i>	NOUN
Newport magistrates	convicted	him	of	breaking a teacher's nose
I	suspected	him	of	trapping me
A jury	cleared	him	of	two charges of indecent assault
The settlement	absolved	the company	of	all criminal responsibility

# The 'suspect someone of something' construction

NOUN	VERB	NOUN	<i>of</i>	NOUN
<b>causer</b>	<b>cause link</b>	<b>actor-action link</b>		
		<b>actor.....</b>		<b>....action (bad)</b>
Newport magistrates	convicted	him	of	breaking a teacher's nose
I	suspected	him	of	trapping me
A jury	cleared	him	of	two charges of indecent assault
The settlement	absolved	the company	of	all criminal responsibility

# A more difficult example

# The pattern **V n *with* n**

- Two structures
  - Structure 1: 5 meaning groups
  - Structure 2: 21 meaning groups
- 26 meaning groups in all
- Where possible, combine several groups.

# Eight main meaning groups

- a) **Bring about a connection between two distinct entities (physical or metaphorical), as a material, verbal, or mental process. 1.1 and 1.2, 2.18**
- b) Add one thing to another 2.5 and 2.6 and 2.7 and 2.8 and 2.9
- c) Put things in a place. 2.10
- d) **Transfer ownership or possession. 2.1**
- e) Doing things alternately. 1.3; Indicate time sequence 2.16 and 2.17
- f) Share activity 2.3
- g) **Bring about a feeling 2.12**
- h) (passive) undergo problems 2.13

# Meaning: effect a connection

- **Examples:**

- compare yourself with the competition; have been lumped together with the worst examples of...; couldn't square what I was doing with the view of the world...; we confuse talking about an issue with doing something...
- Combine career aspirations with spiritual values; fuse technology with culture; the question is interlinked with the question of human rights; mix it up with fertilizer; is thrown together with young people; combine shimmying across the stage with sending her voice...
- Meat can be interchanged with pulses; replace the people with robots; replace it with walking up and down hill



- **Semantic roles**

Causer/Construer	Connect	Entity 1	<i>with</i>	Entity 2
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- Construction: the ‘construe connection *with*’ construction

# Meaning: transfer ownership / possession

- Examples:
  - entrust them with their jewels;
  - furnishes him with a weapon;
  - honour him with a concert;
  - inject the chimpanzees with a dose of...;
  - land them with a huge bill;
  - provide us with food.

- Semantic roles

transferer	transfer	animate	<i>with</i>	non-animate
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- Construction: the ‘provide someone *with*’ construction

# Meaning: bring about a feeling or idea

- Examples:
  - acquaint the clerks with details...;
  - won't bore you with private matters;
  - confront Muriel with her stupidity;
  - familiarize oneself with computers;
  - contented herself with squeezing her fingers

- Semantic roles

causer	change in mental state	changed person	<i>with</i>	situation
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- Construction: the ‘resultative-mental *with*’ construction

# Hands-on semantic annotation

- Choose one of the patterns. (Hint: **V n prep n** patterns are easiest.)
- Work through the meaning groups, attaching semantic labels. Re-assign words to groups as necessary.
- Propose a title for the constructions.