

## Breaking Chains

We have a past participial. If it is not adjacent to the object noun phrase, or a subject noun phrase, we may not be sure about its object, and we may not be sure about its subject. It may use a collocated preposition. It may be an abbreviated infinitive form.

Some examples:

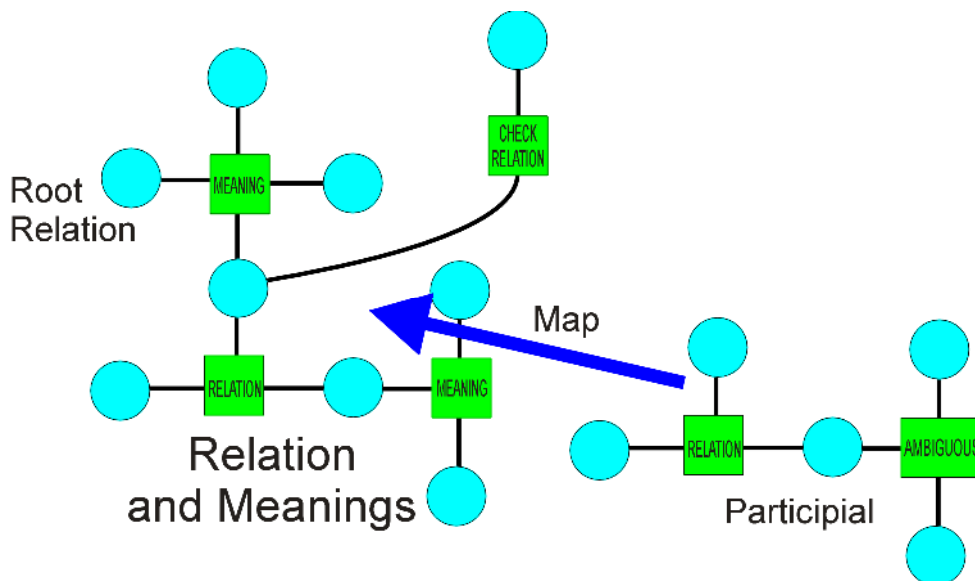
We refer to the algorithm described in section 7.5.2.

The algorithm described in a few words in the book was very useful.  
(the book described the algorithm using a few words)

He wanted the name of the person running the company.

He wanted a person of distinction running the company.  
("running" is an abbreviated infinitive form)

There may be multiple meanings for the relation, and for those meanings, there may be multiple meanings for subject and object.



A preposition may be attached to a particular relation meaning, and may have special requirements – the relation must be expressed as a noun, or in passive form, or the preposition must immediately follow the relation, or have no following noun phrase.

The meaning of...

The algorithm described in section 7.5.2

He threw out the equipment

He threw the equipment out.

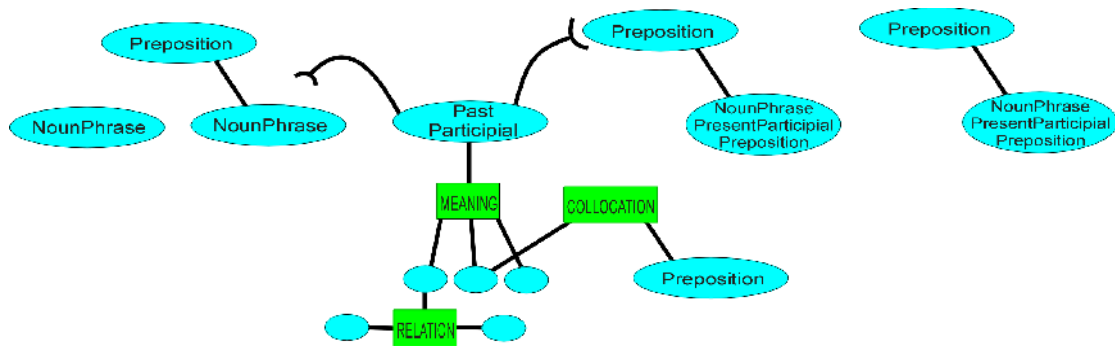
He threw the equipment out the window.

Some prepositions may attach to the root relation, meaning they apply to all meanings.

Multiple meanings may be returned – if so, a connection is made to the root relation, and the meanings stored for use in later searching or disambiguation.

We need to look at the prepositional chain more globally – if we focus on an individual participial, we may overlook some connection among participials or prepositionals. To do that, we need to consider the environment for each object in the chain, and the possible interaction among them. Sometimes the interaction goes forward in the chain.

### Past Participials



### Environment for PastParticipial

The past participial will normally refer back to a noun phrase, but may also be captured by a transinfinitive verb phrase – the capture will depend on semantics.

The algorithm described in section 5.3.2

The algorithm described in a few words in section 5.3.2

He wanted the new book by Fred Nerk banned in Australia

He wanted the name of the book banned in Australia

We need to search right after the participial to find any strong prepositions, but also need to know when to stop.

The algorithm described in a few words in chapter IV of a new book by Fred Nerk

This is not “described by Fred Nerk”

It is “described in chapter IV” – a different meaning of ToDescribe.

It may be necessary to resolve anaphora to find the object of the past participial –

The person in the organisation known for his good works

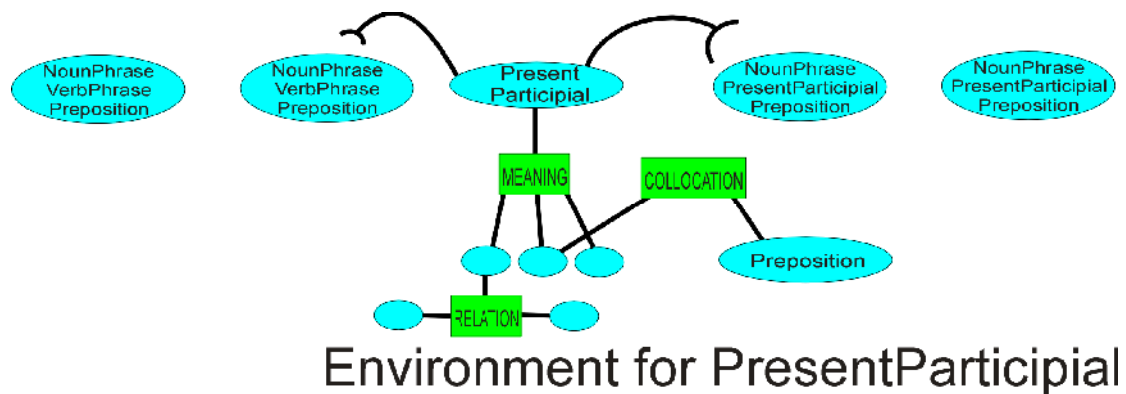
The person in the organisation known for its good works

As soon as we find a specific meaning (“in a few words” did not do that), we have to stop. That allows “book by Fred Nerk” to be turned into a different structure.

Another way of looking at it is that “book by Fred Nerk” has an implied past participial – “book written by Fred Nerk” (an implication that “the book by the coffee pot” does not have).

When should we insert these implied participials? – and how blind to context? – “He ran the book by John to get his impression” doesn’t imply that John wrote it. The “by” here has a more specific meaning tied to “ToRun”, although we can keep adding to it – “He ran the new book by John Pilger past Fred to get his impression”

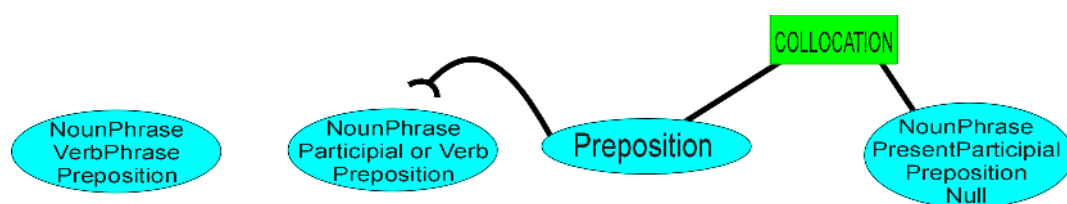
### Present Participials



The Present Participial may have a noun phrase, a verb phrase or a prepositional to its left. It can also have a comma, which may make it a secondary clause.

- The person running the company
- The person of influence running the company
- He wanted a person of influence running the company (partial infinitive)
- He was found loitering with intent (partial infinitive)
- The person accused of defrauding the company (subject participle)
- He stood without moving, staring into the distance.

### Prepositionals



## Environment for Preposition

The Prepositional may have a noun phrase, a participial or verb phrase, or a preposition to its left.

- A person of influence
- The person banned from the organisation
- The person loitering with intent

He was accused of fraud  
We put up with it for a long time  
The bill was struck down out of a sense of honour

### **Some Questions**

Do we need to build the structures so we can hypothesise about them – it is not needed in the simplest cases, but some means of incremental solving across the structure looks necessary in the harder cases.

If we do build, what do we do where meanings can have either RELATION2 or RELATION3 operators? (ToDescribe as a case in point)

We can handle the case where two or more meanings are still standing after using what we know about subject and object for a participial – what do we do where no meaning is left – use the one most likely, or go back to the root meaning, and say all are possible?