

Clumping

Most noun phrases will need the components to be clumped. Together with any prepositional phrases hanging off the components.

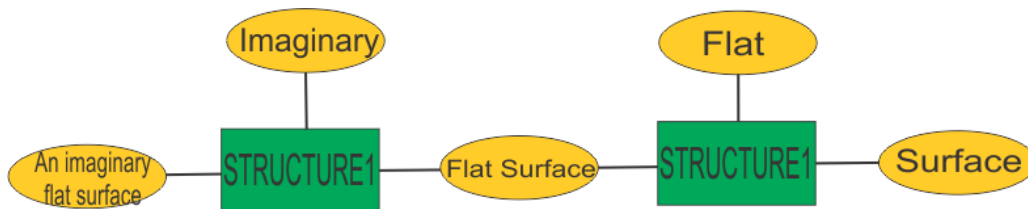
Some examples:

An imaginary flat surface

“imaginary” operates on an object – the object being “flat surface”, so this needs to be clumped before applying “imaginary”, giving

An (imaginary (flat surface))

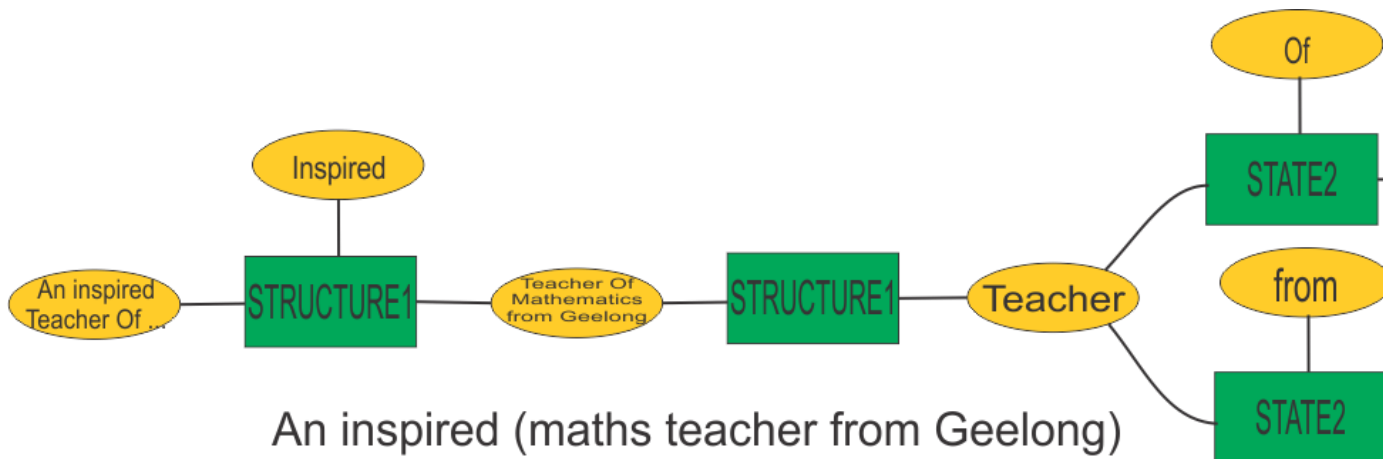
The clumping looks like



Plane: An Imaginary Flat Surface

The words "imaginary", "flat" and "surface" have, respecting the parts of speech of their usage, between them have 26 different definitions. This is managed behind the scenes.

A more complicated case, with prepositions (some adjectives and prepositions can act in parallel – a large red car)



An inspired (maths teacher from Geelong)

“maths teacher” is turned into “teacher of mathematics”.

The same concept applies to clauses:

He knew ((there would be trouble) and (he would be blamed))

The “and” is functioning as a structural element (as in “Jack and Jill”). A separate logical AND distributes a logical value to the subordinate clauses from a logical connection on the “knew” relation.

Some more examples from dictionary definitions

(thin (inert ((surface layer) of oxide))

a (broad (fast-moving (mass of flames)))

a (common ((viral infection) In pigs))

The effect is that a definition clumps words into objects, which are operated on by other objects having definitions – it is definitions all the way down.

This is a million miles away from Deep Learning or PaLM, where we choose not to tell the machine what it would need to know to “understand” the text, then have learned discussions on why the text is not understood.

People do a great deal of language processing unconsciously, and then because it is unconscious, are blissfully unaware of it. We need to become aware of it - it is not like teaching a child, who shares the same mental apparatus, so much need not be said, because it is obvious.