

Same As Sowa?



Limited Conception

Cat is on mat

This is turned into two concepts and a relation – “On”

But On has several meanings

- Pay on demand
- Occurred on 24th May
- Go on until the end

There needs to be a graph reader who understands which meaning of On is meant

- Where is the cat? – on the mat
- Where is the mat – under the cat

The notion of coincident location appears nowhere

- When is the cat on the mat? – presumed for all time



Complex Knowledge

- Complex knowledge requires tens of thousands of connections to represent it – a 50 page contract might require half a million network elements to represent all it says – such a network is unexaminable by a human – it is easier to read the words
- So what is the point of a conceptual graph?



Picture worth a thousand words

- A conceptual graph may be useful in some small area where the graph reader already understands the area and the concepts and relations – it can function as a wiring diagram, where paths can be followed independently



A passive and static model



Time and Control

Introduce a dynamic aspect

The cat is currently on the mat

Or a control aspect

- Clause 23 – the owner shall....
- Clause 25 – If... clause 23 shall not apply

and conceptual graphs fail – they are static and passive



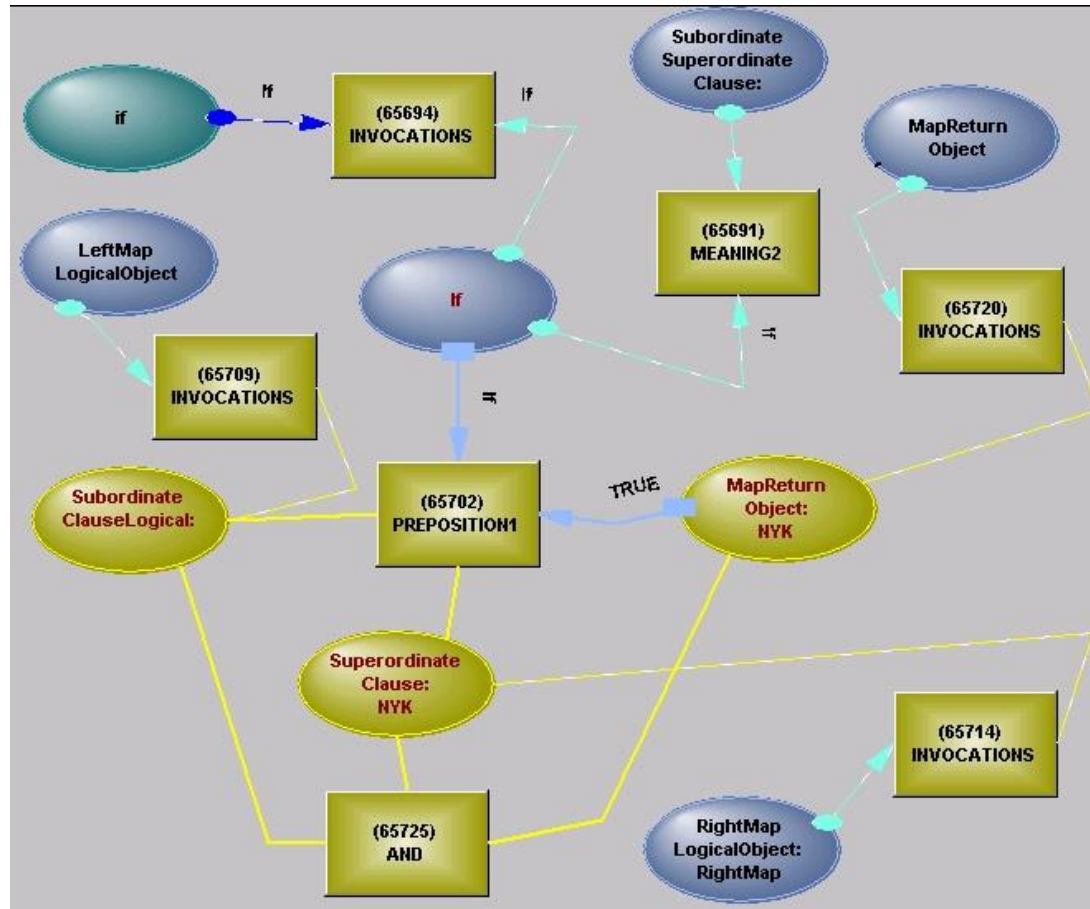
Four Conceptual Failures

What is needed is a representation that is

- Active rather than passive
- Dynamic rather than static
- Integrated rather than segmented
- Self-complete rather than relying on an external graph-reader



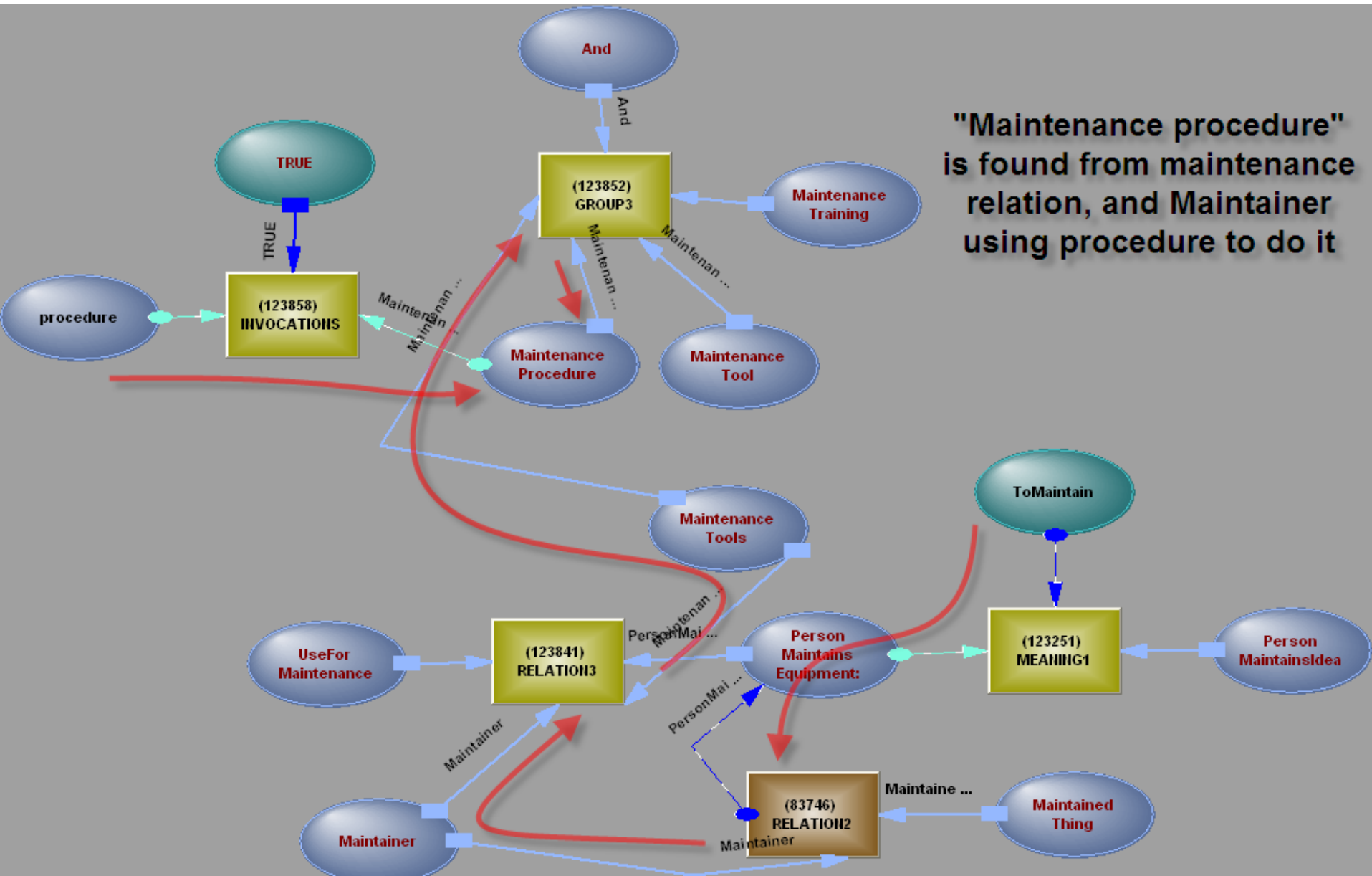
Active Map for Joining Clauses



Words are converted to structures – structures which operate on other structures



Semantic Modelling

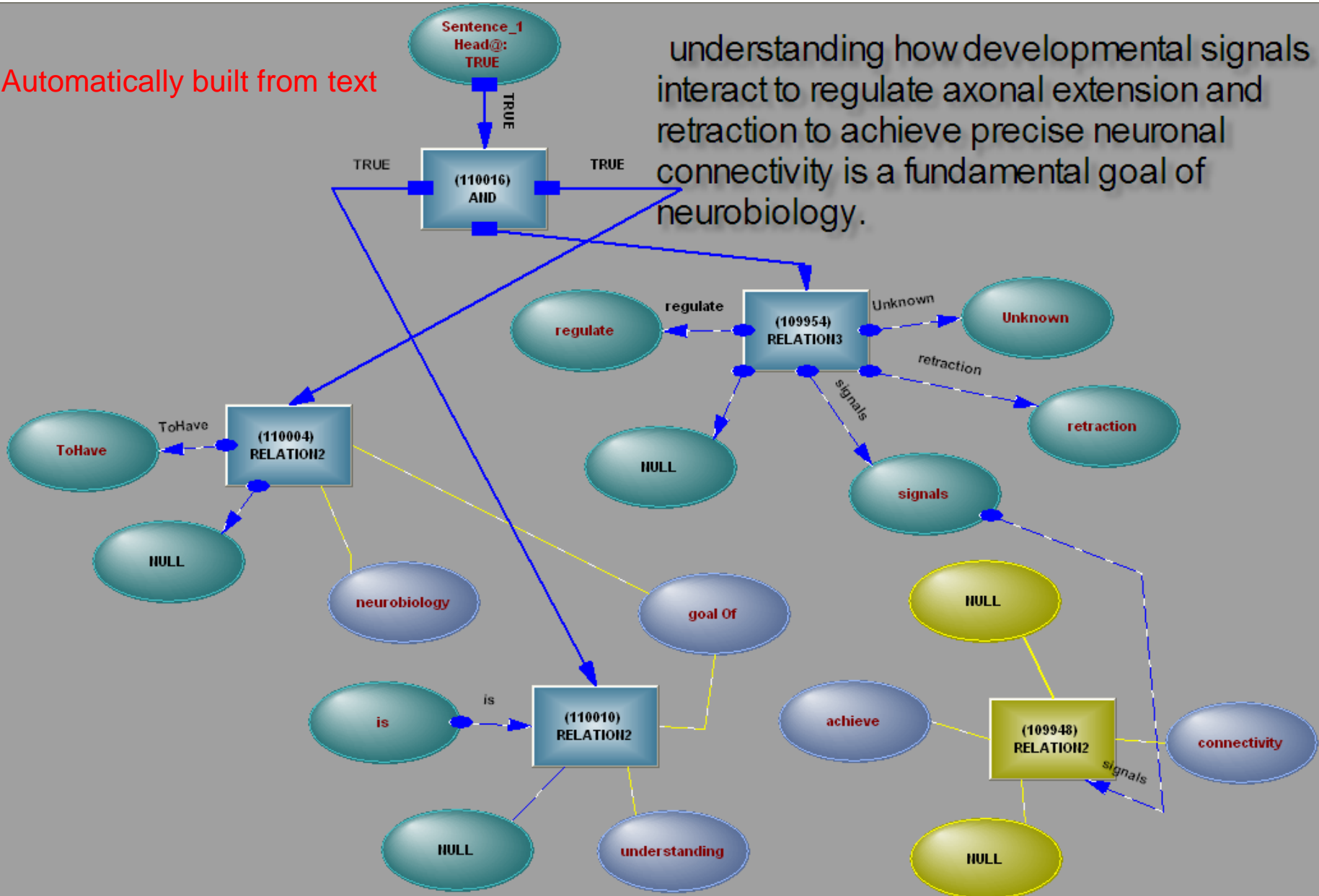


"Maintenance procedure" is found from maintenance relation, and Maintainer using procedure to do it

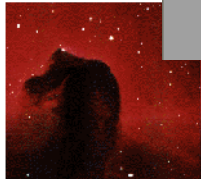
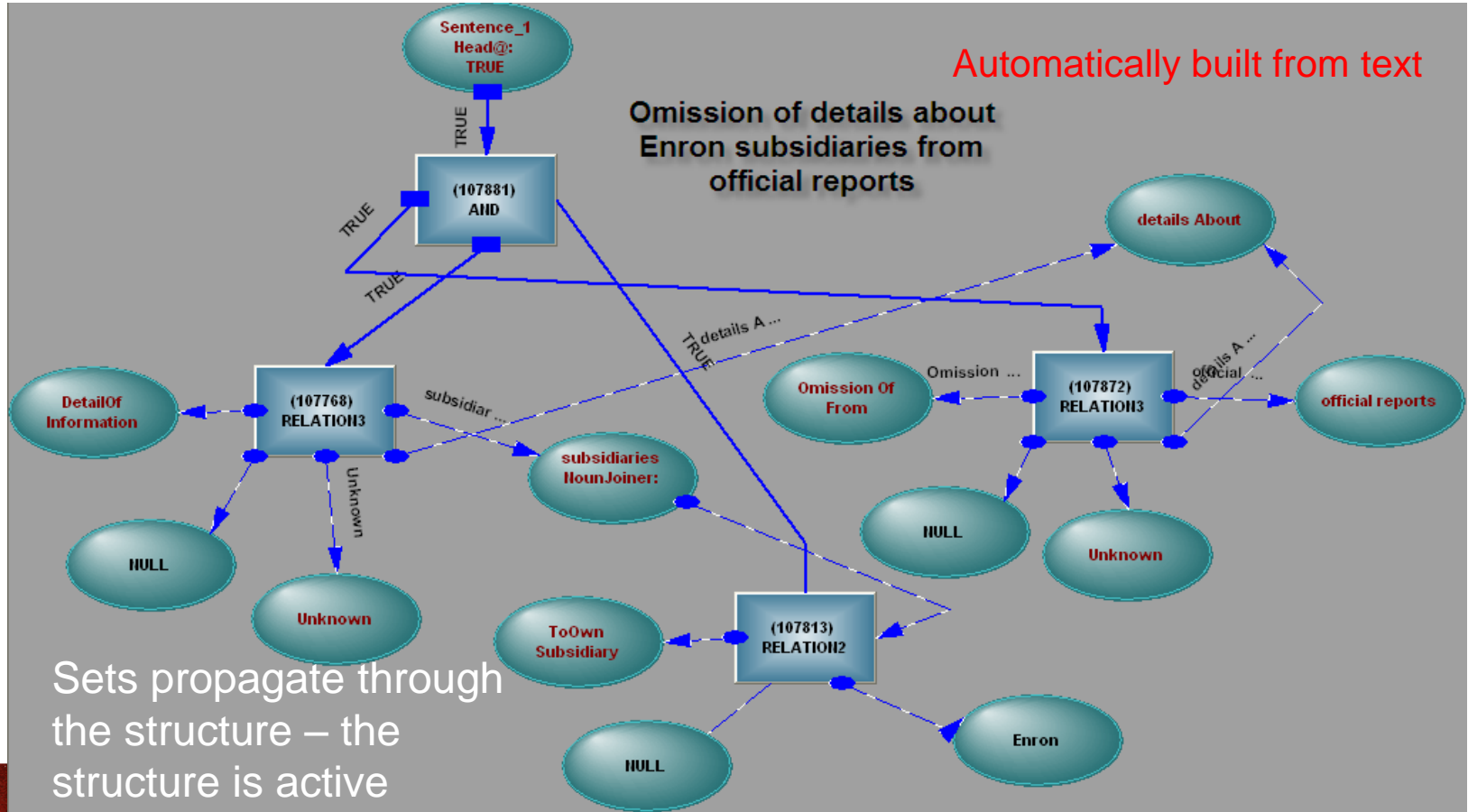
Bioinformatics Stuff

Automatically built from text

understanding how developmental signals interact to regulate axonal extension and retraction to achieve precise neuronal connectivity is a fundamental goal of neurobiology.



Searching



Active Structure

does not have these conceptual limitations



An active and dynamic model – the model responds to its environment



No Graph-Reader

The semantics are within the structure, not external to it, in an omniscient graph-reader, who merely needs to be reminded of connections

The graph-reader is the graph - it is active



Active Structure
has very different goals to
Sowa's work

The difference is that between a graph and a structure – a graph is an aide mémoire, a structure can stand alone

