

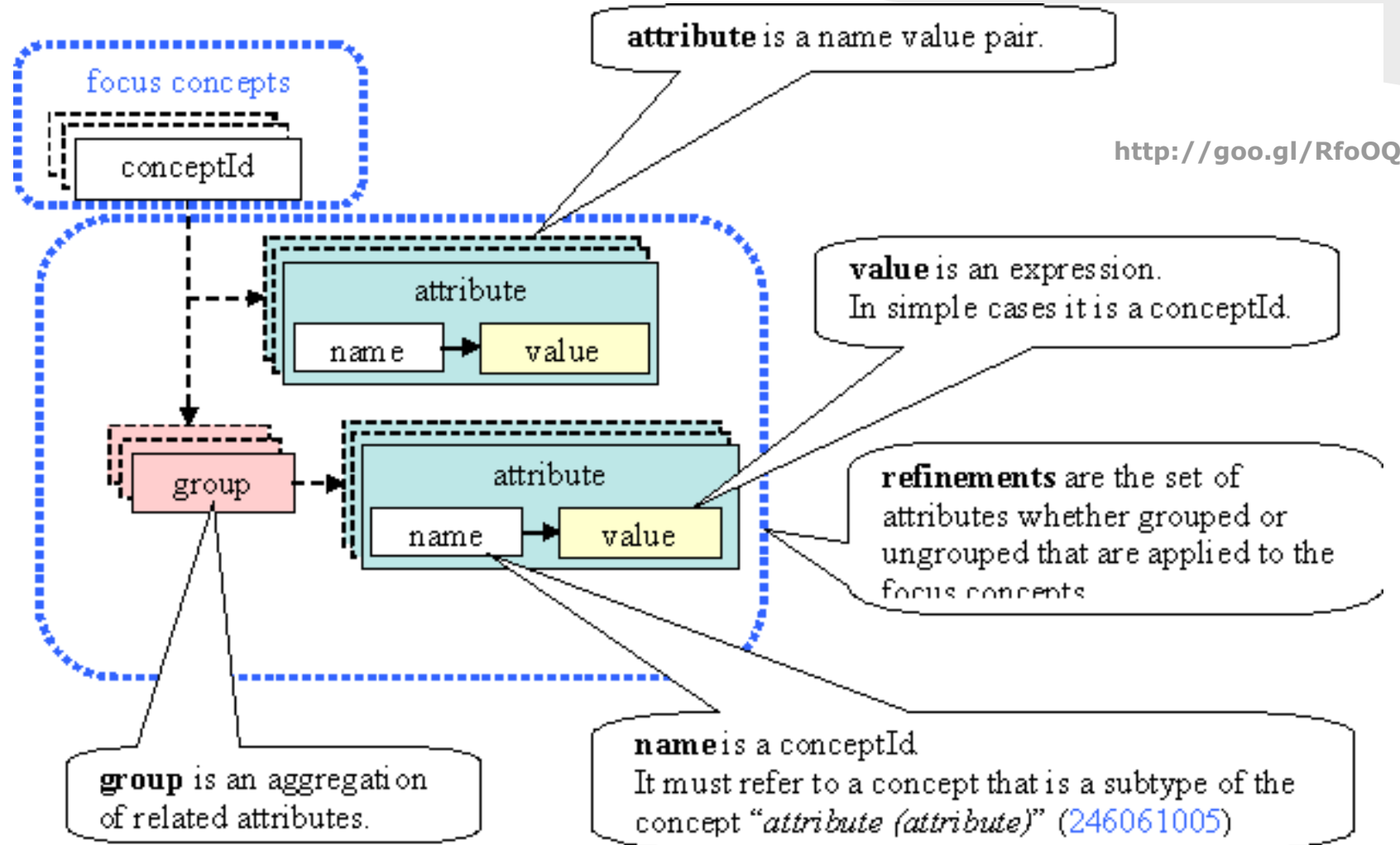
SNOMED @ UZ Leuven

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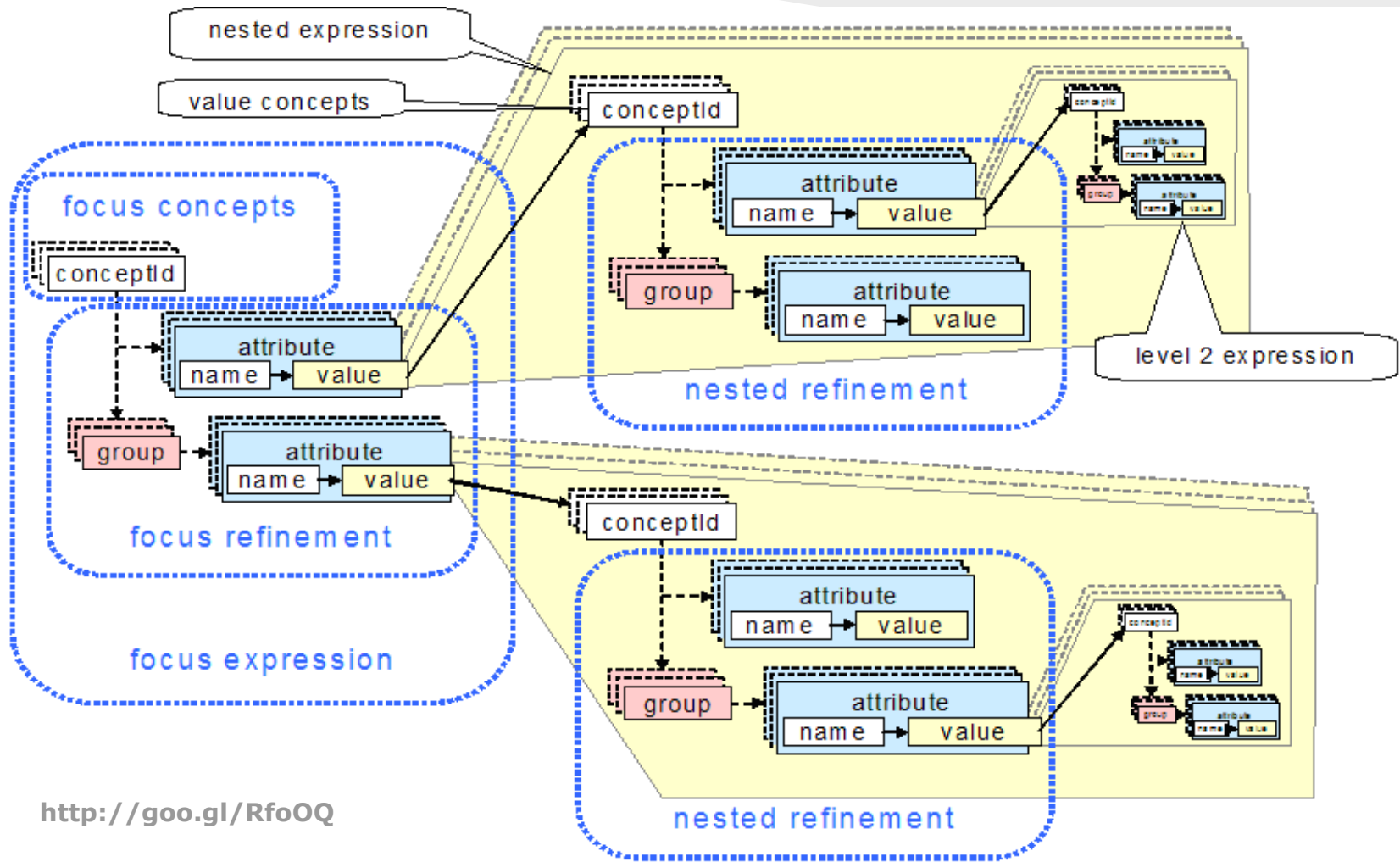
Why SNOMED?

- Modern coding system, yet enough market traction
- Implements most of Cimino's desiderata
 - <http://goo.gl/ocml8>
- Extendable through use of post-coordination
- Large knowledge graph
 - Can be used for searching unstructured data

SNOMED building blocks



SNOMED building blocks



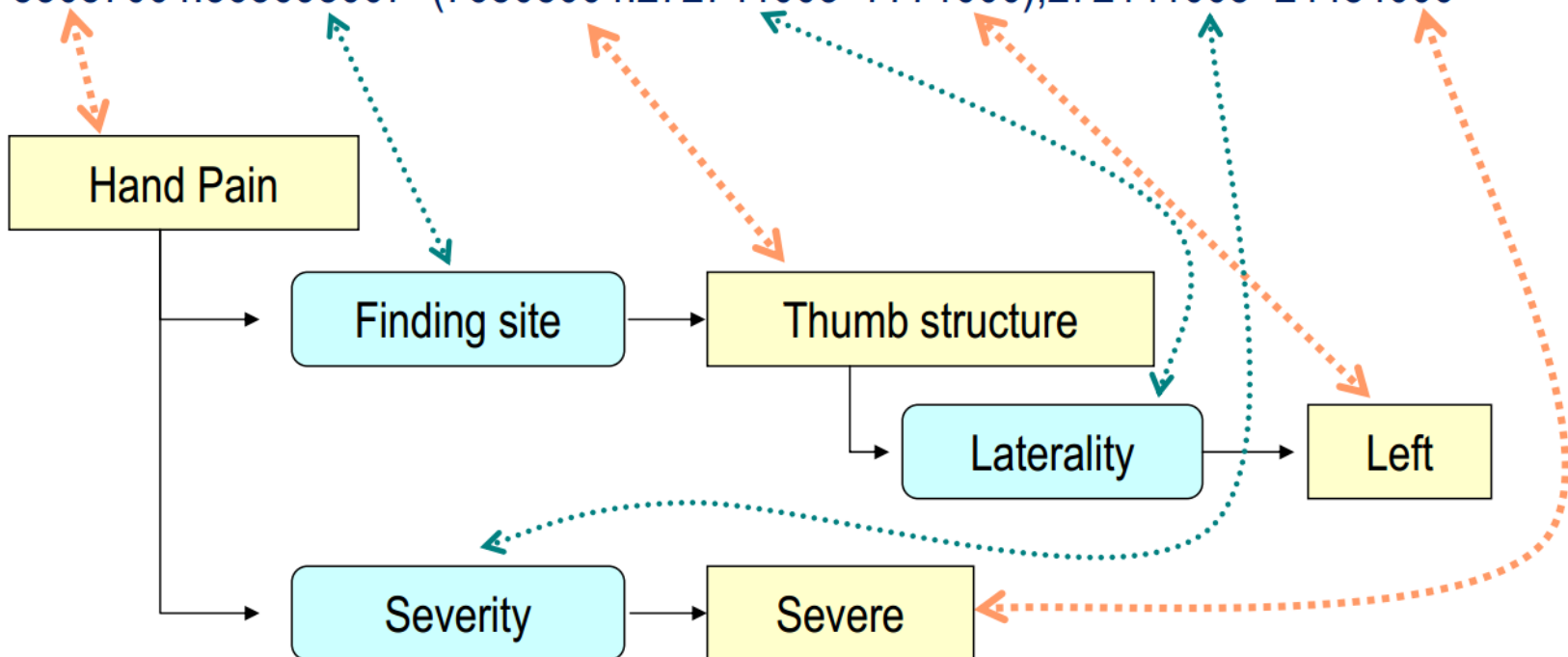
<http://goo.gl/RfoOQ>

Compositional grammar

<http://goo.gl/WxZl2>

Compositional grammar mapped to diagrammatic representation

53057004:363698007=(76505004:272741003=7771000),272141005=24484000



Post-coordination

Procedure.code <= Procedure (71388002)

Will validate all (and only) concepts subsumed by 71388002

Procedure.code <= Pancreatectomy (33149006)

Will validate all (and only) concepts subsumed by 33149006.

Since Expressions can be created that would 'make' a valid subtype, this notation is not appropriate (a valid Expression with the focus concept 29630005 will not be recognised as being valid)

71388002:
Procedure
(Primitive)

29630005:
Operation on
pancreas (Fully
defined)

33149006:
Pancreatectomy
(Fully defined)

9524002: Total
pancreatectomy
(Fully defined)

By refinement of its method and procedure site Attributes, **29630005: Operation on pancreas** can be refined to 'make' a post-coordinated Expression equivalent to **9524002: Total pancreatectomy**

29630005|Operation on pancreas|:
260686004|method|=129304002|excision - action|,
363704007|procedure site|=181277001|entire pancreas|

What & Where

- First: problem list
- Make SNOMED the lingua franca for coding both diagnoses and procedures
- Granularity of coding
 - Determining a minimum level of coding for each specialty
 - This level is shown in the patient summary; click through to get more detail (coded or in full text)
- Optional: where codes are needed

Hurdles

- SNOMED is complex
- IT tools for coding absolutely necessary
- SNOMED browsers not readily commercially available
 - Some no longer supported
 - Others not embeddable in a clinical workstation
- UZ Leuven builds simple Nexuz SNOMED Browser
 - Prototype
 - Text based search (nothing fancy)
 - Embeddable version in the works

- Child of ?
 Clinical finding (finding)
 Procedure (procedure)
- Other:

♥ Pericarditis (disorder) (3238004)

Favourites



Snomed Tree

∨ Descriptions

- (en) Pericarditis (disorder)
- (en) Pericarditis
- (fr) péricardite
- (nl) pericarditis

∨ Outgoing Relationships

— Group #1 —

- localisatie => Pericardial structure (body structure)
- Associated morphology (attribute) => Inflammation (morphologic abnormality)

∨ Incoming Relationships

∨ Indirect Parents

- ♥ Inflammatory disorder of the cardiovascular system (disorder)
- ♥ mediastinitis
- ♥ pericardaandoening
- ♥ Pericardial finding (finding)
- ♥ Inflammation of specific body systems (disorder)
- ♥ Inflammatory disorder of mediastinum (disorder)
- ♥ Disorder of mediastinum (disorder)
- ♥ Disorder of cardiovascular system (disorder)

Children

- ♥ pericarditis (3238004)
 - ♥ Pericarditis related to hypersensitivity AND/OR autoimmunity (disorder) (111300007)
 - ♥ Obliterative pericarditis (disorder) (111300007)
 - ♥ Pericarditis associated with familial Mediterranean fever (disorder) (123599008)
 - ♥ serofibrineuze pericarditis (123599008)
 - ♥ Acute pericarditis (15555002)
 - ♥ pyopericarditis (22167000)
 - ♥ chronische pericarditis (23627006)
 - ♥ Drug-induced pericarditis (disorder) (23842007)

Parents

- ♥ pericarditis (3238004)
 - ♥ Inflammatory disorder of the cardiovascular system (disorder) (1289980)
 - ♥ mediastinitis (47597000)
 - ♥ pericardaandoening (55855009)

SNOMED is exhaustive :-)

The screenshot shows the 'Nexuz Snomed Browser' interface. The browser's address bar contains the search term 'Batman'. Below the address bar, there are radio buttons for selecting the type of concept: 'Child of?', 'Clinical finding (finding)', 'Procedure (procedure)', and 'Other:'. The 'Other:' option is selected, and a dropdown menu is visible. On the left side, there is a 'Favourites' sidebar with a star icon. The main content area displays the following information:

- Batman (occupation) (159725002)**
- Descriptions
 - (en) **Batman (occupation)**
 - (en) Batman
- Outgoing Relationships
- Incoming Relationships
- Indirect Parents
 - Domestic helper (occupation)
 - Domestic helper/maids (occupation)
 - Personal services occupation (occupation)
 - Catering/personal services (occupation)
 - Occupation (occupation)
 - Social context (social concept)