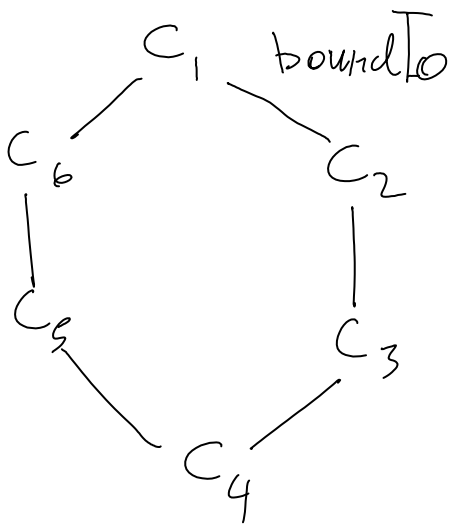


# 11/14 Circularity

Saturday, November 15, 2008  
12:43 PM

Alan Rector suggested (stated) that  
OWL does not represent circular  
things well (or at all)

We explored this as a problem case  
in the OWL discussion group



Cyclohexane

## OWL Ontology

### Classes

Molecule  
Atom

Ring Molecule  
must be a ring

How to def

### Property

boundTo (symmetric)

range: Atom

domain: Atom

hasStructure

### Individuals

Atom C<sub>1</sub> : boundTo C<sub>2</sub> : boundTo C<sub>6</sub>

Atom C<sub>2</sub> : boundTo C<sub>1</sub> : boundTo C<sub>3</sub>

Atom C<sub>3</sub> : - - - -

||            ||  
C<sub>6</sub>

Cyclohexane

: hasStructure

ring

is a

Howto Def?

Definition of Class Ring/Ring Molecule would have to be an ordered list

$$C_1 \rightarrow C_2 \rightarrow C_3 \dots C_6 \rightarrow C_1$$

An unordered list is supported in OWL. Are ordered lists possible?

An OWL reasoner would never be able to find the  $C_1 \rightarrow C_6$  cycle and classify it as a ring.