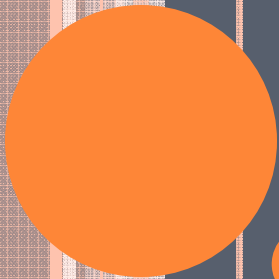


COGUI TUTORIAL

The Vocabulary



THE VOCABULARY

Basic Model

THE VOCABULARY – THE MODEL

- The vocabulary is composed of two partially ordered sets:
 1. a set of **concepts** and
 2. a set of **relations** of any **arity** (the arity is the number of arguments of the relation)
 3. a set of **individual markers** (“*” the generic marker)
- The three sets are pair wise disjoint.



THE VOCABULARY – THE MODEL

- The partial order represents a specialization relation: $t \leq t'$ is read: t is a **specialization** of t
 - If t and t' are **concepts**, $t \leq t'$ means:
every instance of the concept t is also an instance of the concept t'
 - If t and t' are **relations**, then
 - these relations have the **same arity** k , and
 - $t \leq t'$ means:
if t holds between k entities, then t' also holds between these k entities



THE VOCABULARY – THE MODEL

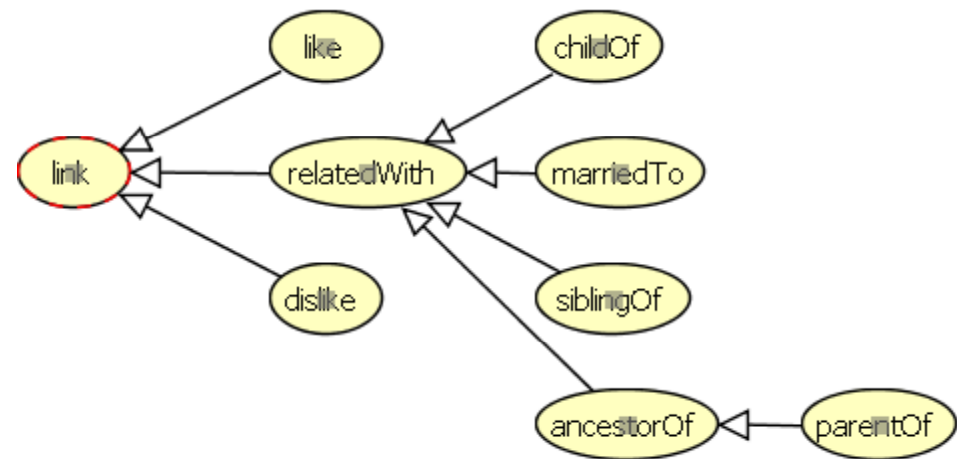
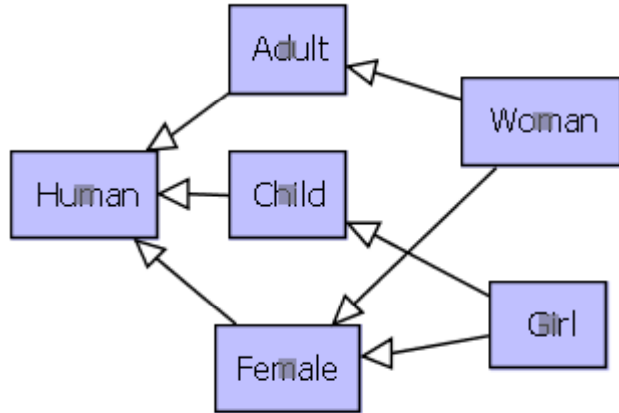
- Set of concept types: **hierarchy of concept types**
- Set of relation types: **hierarchy of relation types**

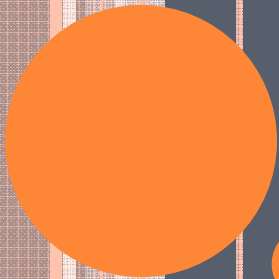
- The hierarchies can be visualized by their Hasse diagrams ($t \leq t'$ if there is a path up from t to t')

- A hierarchy is not necessarily a tree!



HIERARCHY EXAMPLE FOR CONCEPTS AND RELATIONS





THE VOCABULARY

Extensions to the Basic Model

EXTENDING THE VOCABULARY (1)

- Banned concept types: the concept types cannot have a common subtype (disjointness)
 - Example: Something cannot be a *Man* and a *Woman* at the same time.



EXTENDING THE VOCABULARY (2)

- Relation symbol signatures: a signature will specify:
 - The **arity** of the relation
 - The **maximal concept type** of each of its arguments
 - Example: *parentOf(Adult, Human)* means that the relation *parentOf* is a binary relation and that the first argument is of maximal type *Adult* and the second argument is of maximal type *Human*
- The partial order defined on relations has to conform to the partial order defined on the concept types of the relations' signatures.



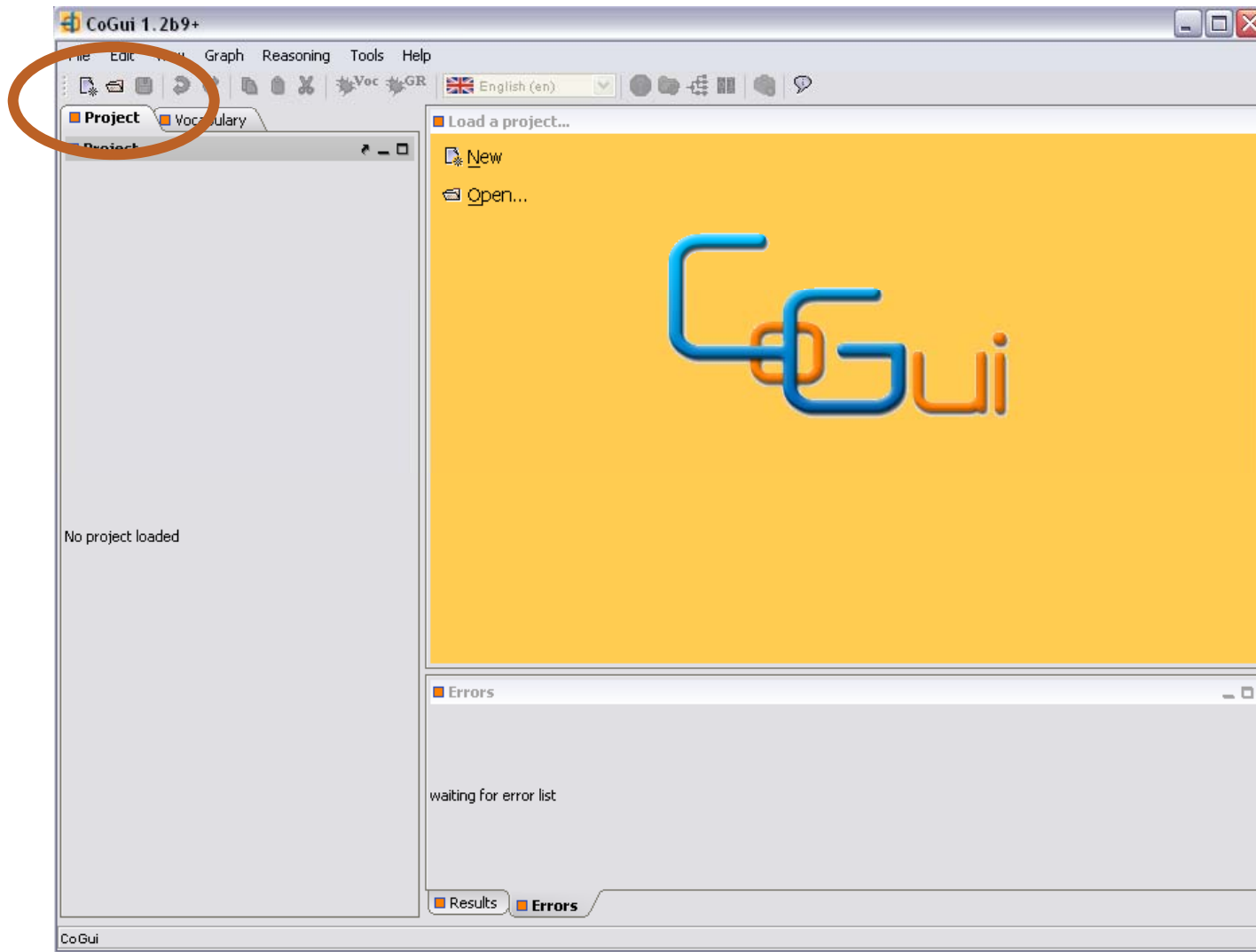


VOCABULARY

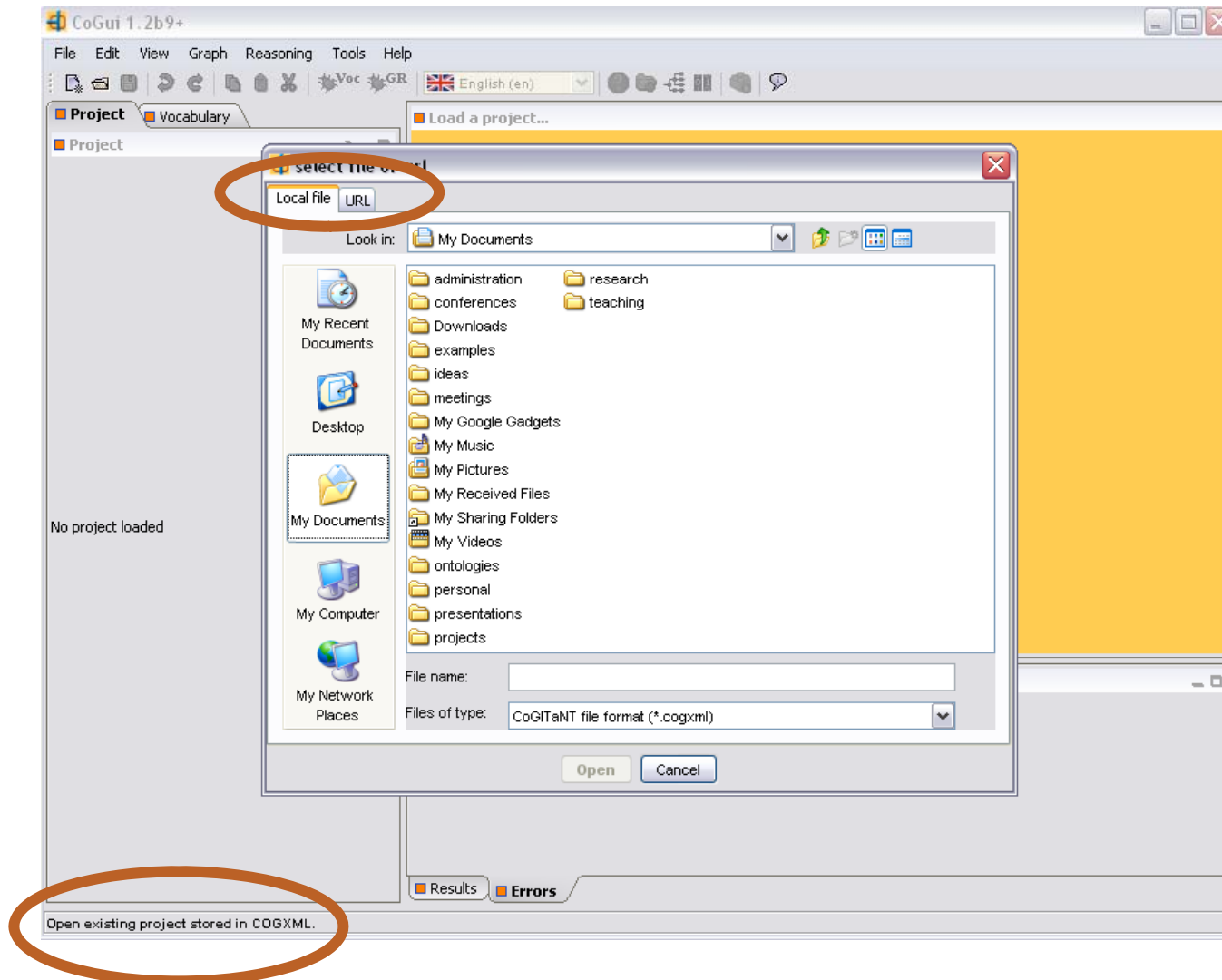
Editing Vocabulary with Cogui



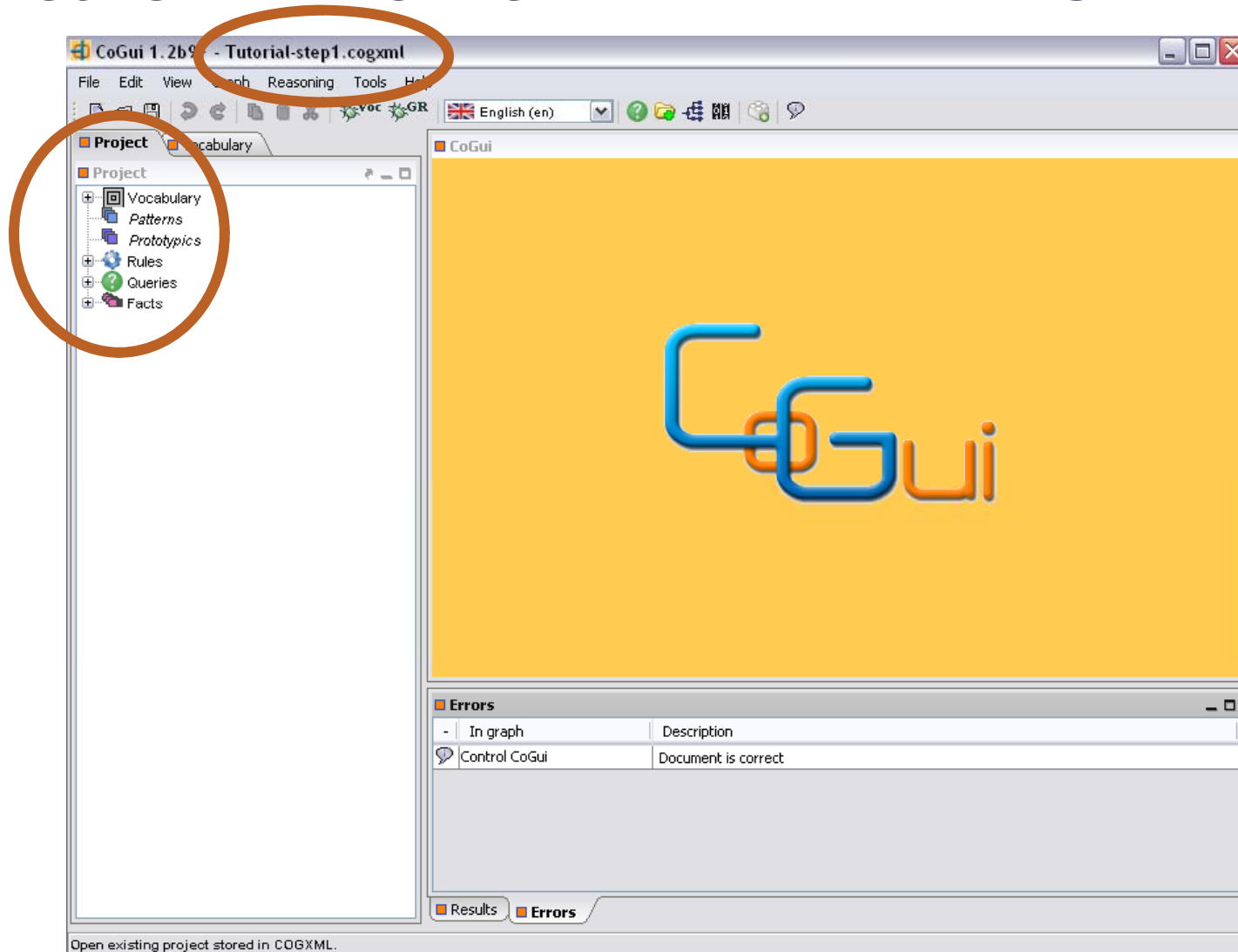
COGUI



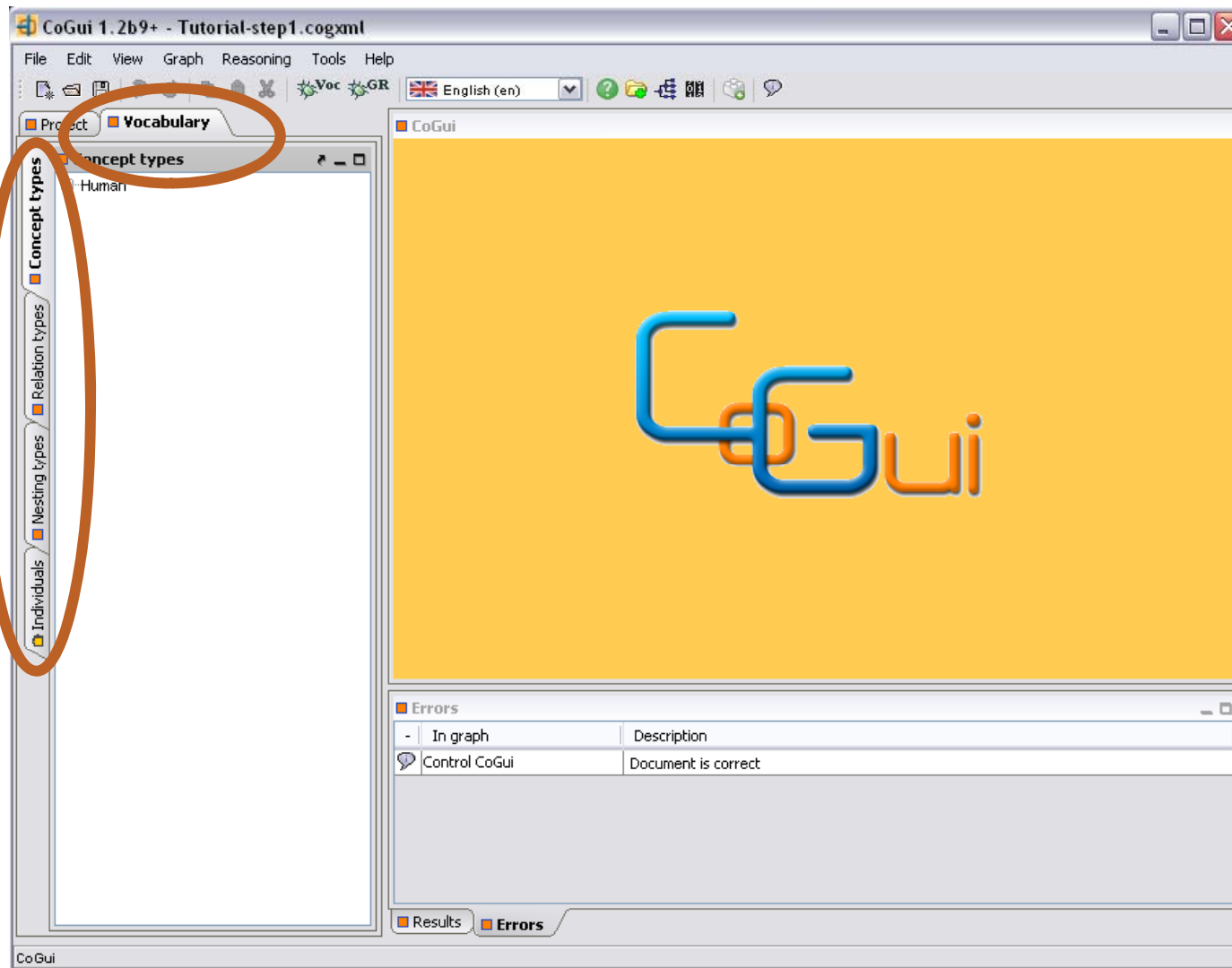
COGUI – OPEN COGXML FILE: EITHER LOCAL FILE OR BY URL



COGUI – OPEN AN EXISTING PROJECT: THE PROJECT WINDOW ON THE LEFT HAND SIDE



COGUI – VOCABULARY: CONCEPTS, RELATIONS, NESTINGS AND INDIVIDUALS

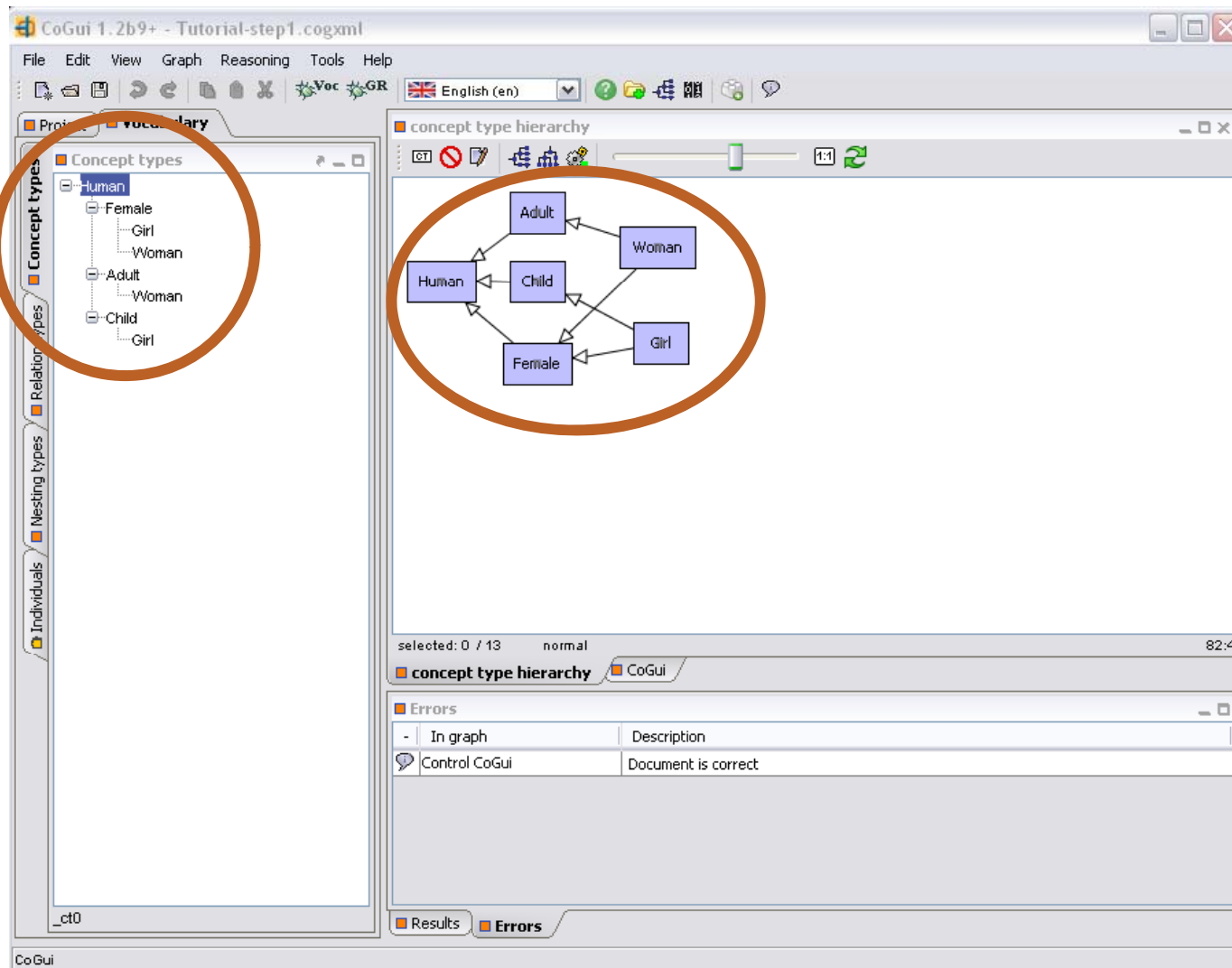




VOCABULARY

1. Concept Hierarchy

COGUI – CONCEPT HIERARCHY: VISUALISE BOTH THE THREE VIEW ON LEFT HAND SIDE AND GRAPH ON RIGHT HAND SIDE



COGUI – CONCEPT HIERARCHY DISPLAY: CHANGE THE DISPLAY OF THE HIERARCHY (WHICH IS NOT NECESSARILY A TREE)

The screenshot shows the CoGui 1.2b9+ interface. The main window displays a concept hierarchy diagram with nodes: Human, Adult, Child, Female, Woman, and Girl. The diagram shows relationships: Human is a parent of Adult, Child, and Female; Adult is a parent of Woman; Child is a parent of Girl; and Female is a parent of Girl. A red circle highlights a toolbar icon representing the hierarchy display options.

The left sidebar shows a tree view of concept types:

- Concept types
 - Human
 - Female
 - Girl
 - Woman
 - Adult
 - Woman
 - Child
 - Girl

The 'Errors' panel at the bottom shows:

In graph	Description
Control CoGui	Document is correct



COGUI – CONCEPT HIERARCHY DISPLAY: CHANGE THE DISPLAY IN THE GRAPH VIEW

CoGui 1.2b9+ - Tutorial-step1.cogxml

File Edit View Graph Reasoning Tools Help

English (en)

Project Vocabulary

Concept types

- Human
 - Female
 - Girl
 - Woman
 - Adult
 - Woman
 - Child
 - Girl

Relation types

Nesting types

Individuals

concept type hierarchy

selected: 0 / 13 normal 612:317

Errors

In graph	Description
Control CoGui	Document is correct

Results Errors

CoGui



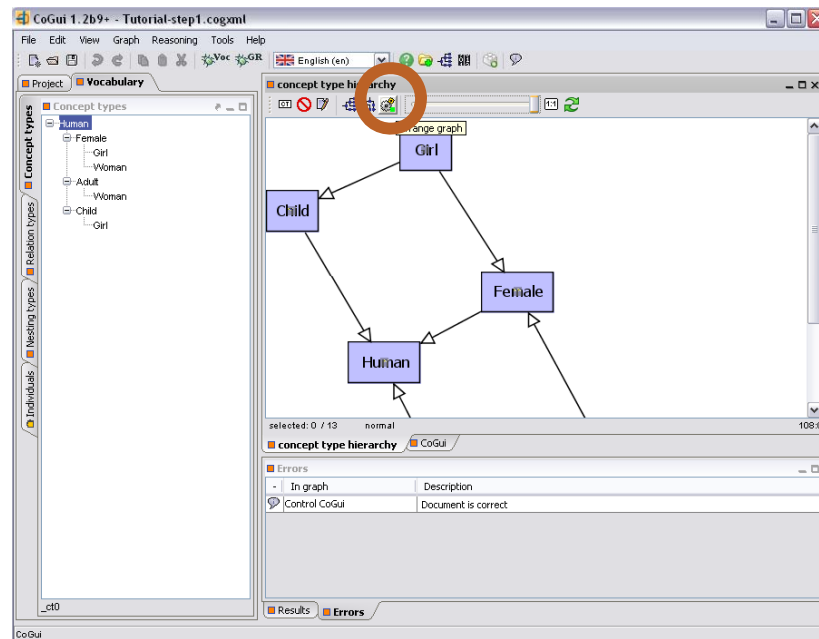
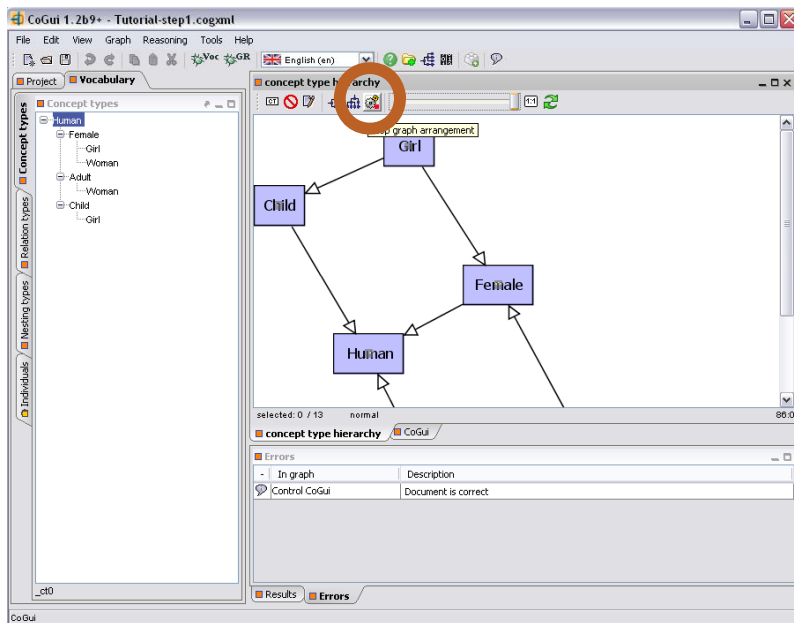
COGUI – CONCEPT HIERARCHY DISPLAY: ZOOM IN AND OUT OF THE GRAPH FOR BETTER VIEW

The screenshot displays the CoGui 1.2b9+ interface for a tutorial step. The main window shows a concept type hierarchy graph with nodes: Human, Adult, Child, Female, Girl, and Woman. Arrows indicate relationships: Adult, Child, and Female are subtypes of Human; Girl and Woman are subtypes of Adult; and Girl and Woman are subtypes of Child. A zoom slider is highlighted with an orange circle, showing a zoom level of 150.0%. The interface includes a menu bar (File, Edit, View, Graph, Reasoning, Tools, Help), a toolbar, and a sidebar with tabs for Project, Vocabulary, Concept types, Relation types, Nesting types, and Individuals. The bottom panel shows an Errors table with the following content:

In graph	Description
Control CoGui	Document is correct



COGUI – CONCEPT HIERARCHY DISPLAY: TO ARRANGE GRAPH CORRESPONDING TO SPRING LAYOUT START THE LAYOUT AND **DO NOT FORGET TO STOP IT** (THE **ACTIVE** BUTTON STAYS **RED**)



COGUI – CONCEPT HIERARCHY DISPLAY: USING ZOOM AFTER SPRING LAYOUT VIEW

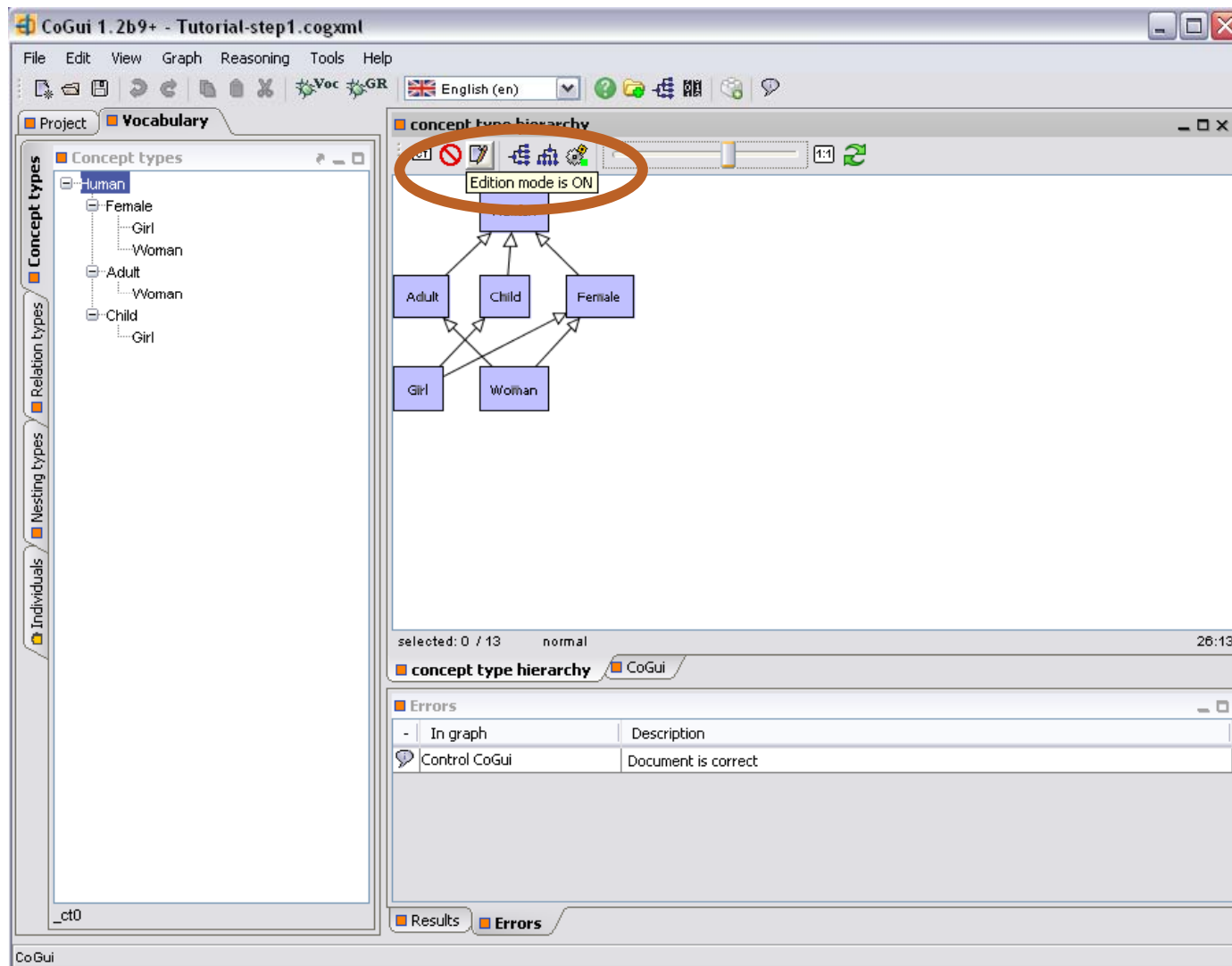
The screenshot displays the CoGui 1.2b9+ interface for a concept type hierarchy. The main window, titled "concept type hiera...", shows a hierarchical diagram with nodes: "Child", "Girl", "Female", "Human", "Adult", and "Woman". The "Girl" node is selected. The diagram is a spring layout view. Two orange circles highlight the zoom controls: a magnifying glass icon and a slider. The left sidebar shows a tree view of "Concept types" with "Human" selected. The bottom panel shows an "Errors" list with two entries: "In graph" and "Control CoGui".

selected: 0 / 13 normal 197.0

-	In graph	Description
Control CoGui		Document is correct



COGUI – CONCEPT HIERARCHY EDITION: WHEN THE **EDITION** BUTTON IS **ON** THE **GRAPH VIEW** CAN BE USED ALSO FOR EDITING GRAPHS



COGUI – CONCEPT HIERARCHY EDITION: WHEN EDITION IS ON A CONCEPT TYPE CAN BE ADDED USING THE GRAPH VIEW

The screenshot shows the CoGui 1.2b9+ interface. The main window displays a concept type hierarchy in graph view. The graph shows a hierarchy of concept types: Human (parent), Adult, Child, and Female (children of Human); Girl and Woman (children of Adult); and Girl and Woman (children of Child). A new concept type, 'conceptType62', is shown as a dashed box in the graph, indicating it is being added. The left sidebar shows the 'Concept types' tab selected, with a tree view showing the hierarchy. The bottom panel shows the 'Errors' section, which is currently empty, indicating that the document is correct.

In graph	Description
Control CoGui	Document is correct



COGUI – CONCEPT HIERARCHY EDITION: WHEN EDITION IS ON RIGHT CLICK ON THE NEWLY INTRODUCED NODE FOR MORE ACTIONS

The screenshot displays the CoGui 1.2b9+ interface for editing a concept hierarchy. The main window, titled "concept type hierarchy", shows a hierarchical diagram with nodes: "Human" at the top, "Adult", "Child", and "Female" in the middle, and "Girl" and "Woman" at the bottom. A newly introduced node, "conceptType62", is highlighted with a dashed blue border and a red circle. A context menu is open over this node, listing actions: "Edit label", "Label & description...", "Delete", "Navigate", "Insert concept type", and "Insert ban vertex". The "Edition" option is highlighted in yellow, and a secondary menu is visible with options: "Cut (Ctrl+X)", "Copy (Ctrl+C)", "Paste (Ctrl+V)", and "Select all".

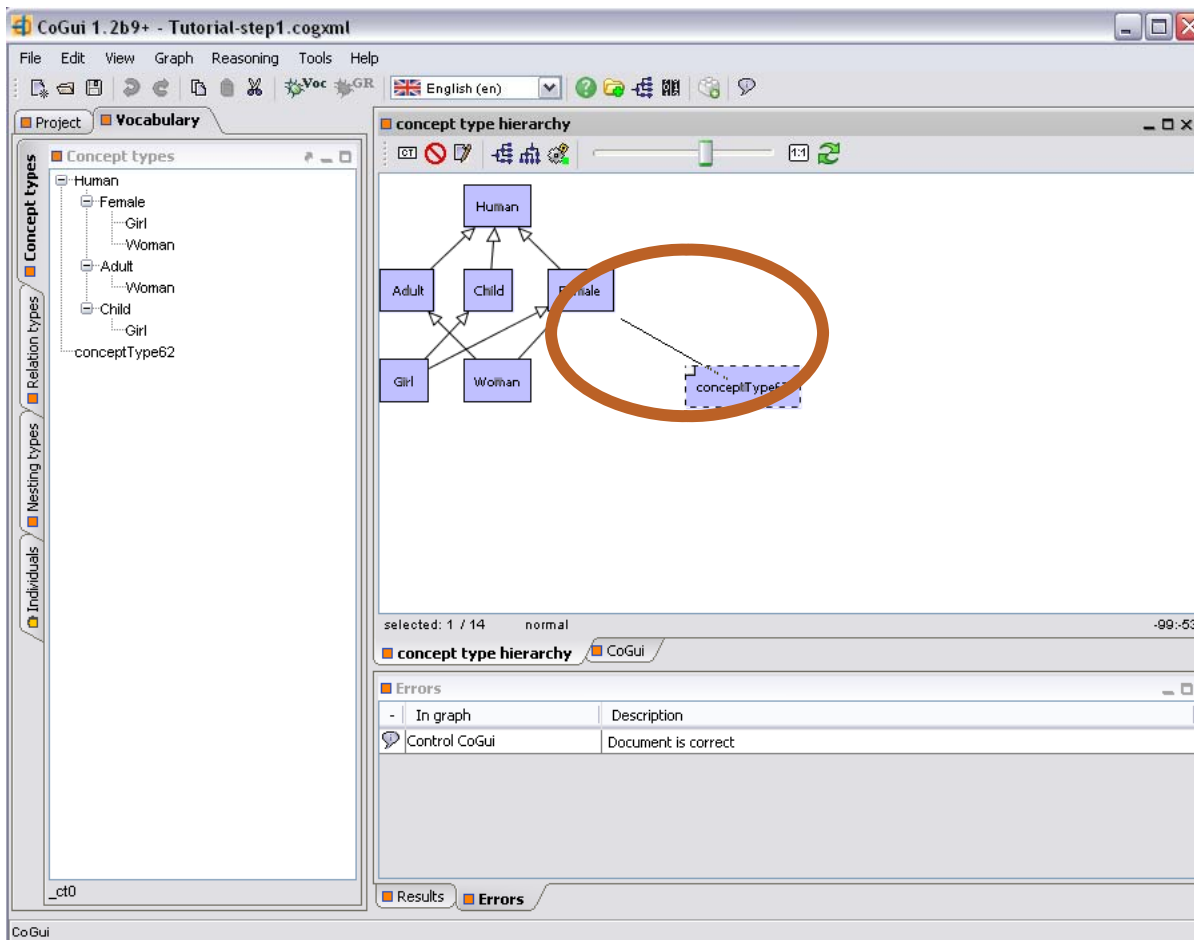
On the left, the "Project" tab is active, showing a tree view of "Concept types" under "Vocabulary". The tree includes "Human", "Female", "Girl", "Woman", "Adult", "Child", and "conceptType62".

At the bottom, the "Errors" panel shows a table with the following content:

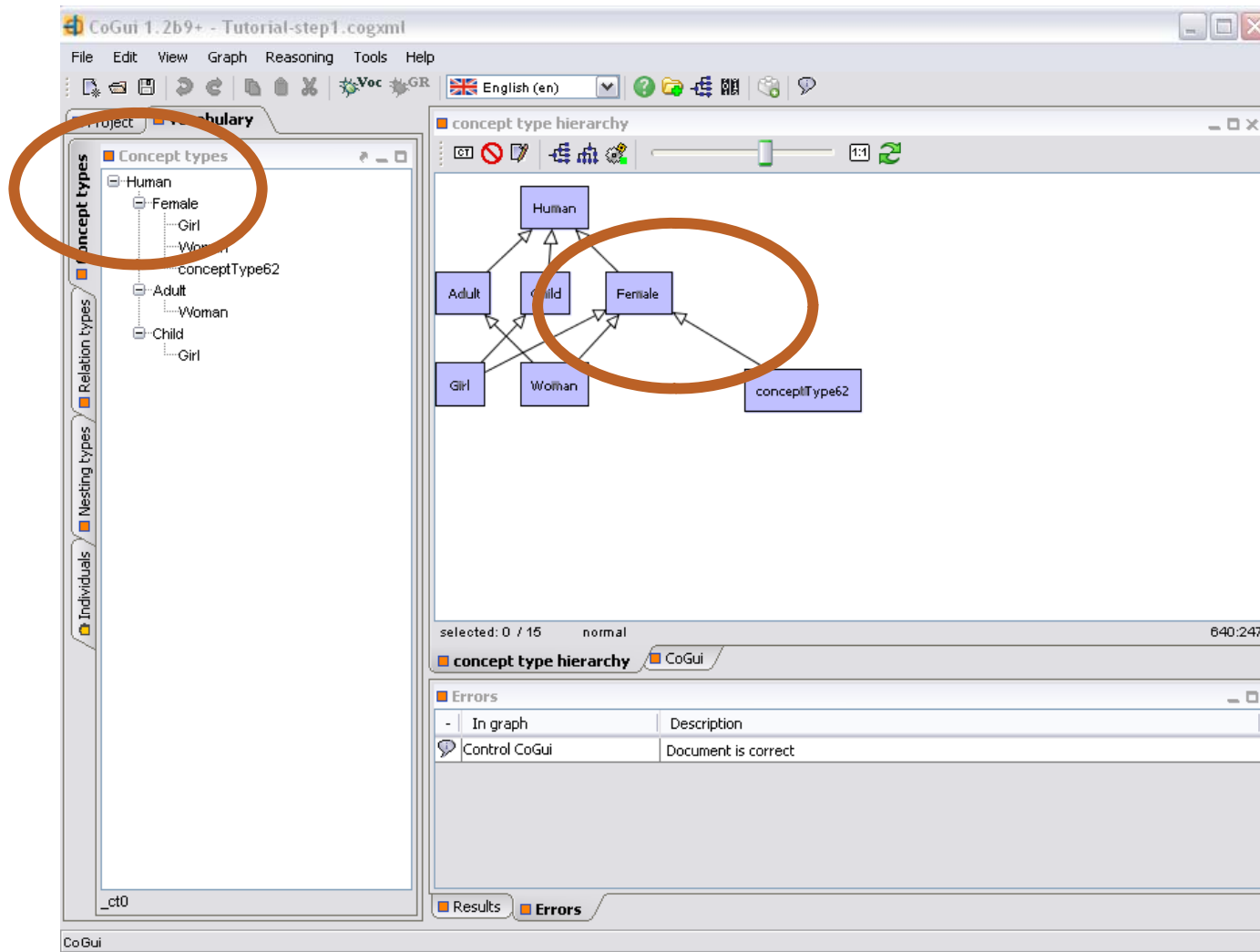
-	In graph	Description
Control CoGui		Document is correct



COGUI – CONCEPT HIERARCHY EDITION: TO ADD THE SPECIALISATION RELATION, WHEN EDITION IS ON, PUT THE MOUSE ON THE CENTER OF THE NEW CONCEPT NODE AND DRAG IT TO LINK IT TO THE DESIRED CONCEPT



COGUI – CONCEPT HIERARCHY EDITION: THE NEWLY ADDED CONCEPT NODE AND THE SPECIALISATION RELATION APPEAR IN BOTH VIEWS



COGUI – CONCEPT HIERARCHY EDITION: TO DELETE A NODE IN GRAPH VIEW, WHEN **EDITION IS ON**, RIGHT CLICK ON NODE AND SELECT DELETE

The screenshot displays the CoGui 1.2b9+ interface for editing a concept hierarchy. The main window is titled "concept type hierarchy" and shows a graph with nodes: Human, Adult, Child, Female, Girl, and Woman. A node labeled "conceptType62" is highlighted with a dashed border and a red circle. A context menu is open over this node, with the "Delete" option selected. The menu also includes options like "Edit label", "Label & description...", "Delete vertex and connected edges", "Insert concept type", and "Insert ban vertex". The status bar at the bottom indicates "selected: 1 / 15 normal" and "295:171".

selected: 1 / 15 normal 295:171

In graph	Description
Control CoGui	Document is correct



COGUI – CONCEPT HIERARCHY EDITION: THE CONCEPT HIERARCHY CAN BE EQUALLY EDITED IN THE TREE VIEW

The screenshot displays the CoGui 1.2b9+ interface for editing a concept type hierarchy. The main window is titled "CoGui 1.2b9+ - Tutorial-step1.cog.xml" and features a menu bar (File, Edit, View, Graph, Reasoning, Tools, Help) and a toolbar with various icons. The interface is divided into several panes:

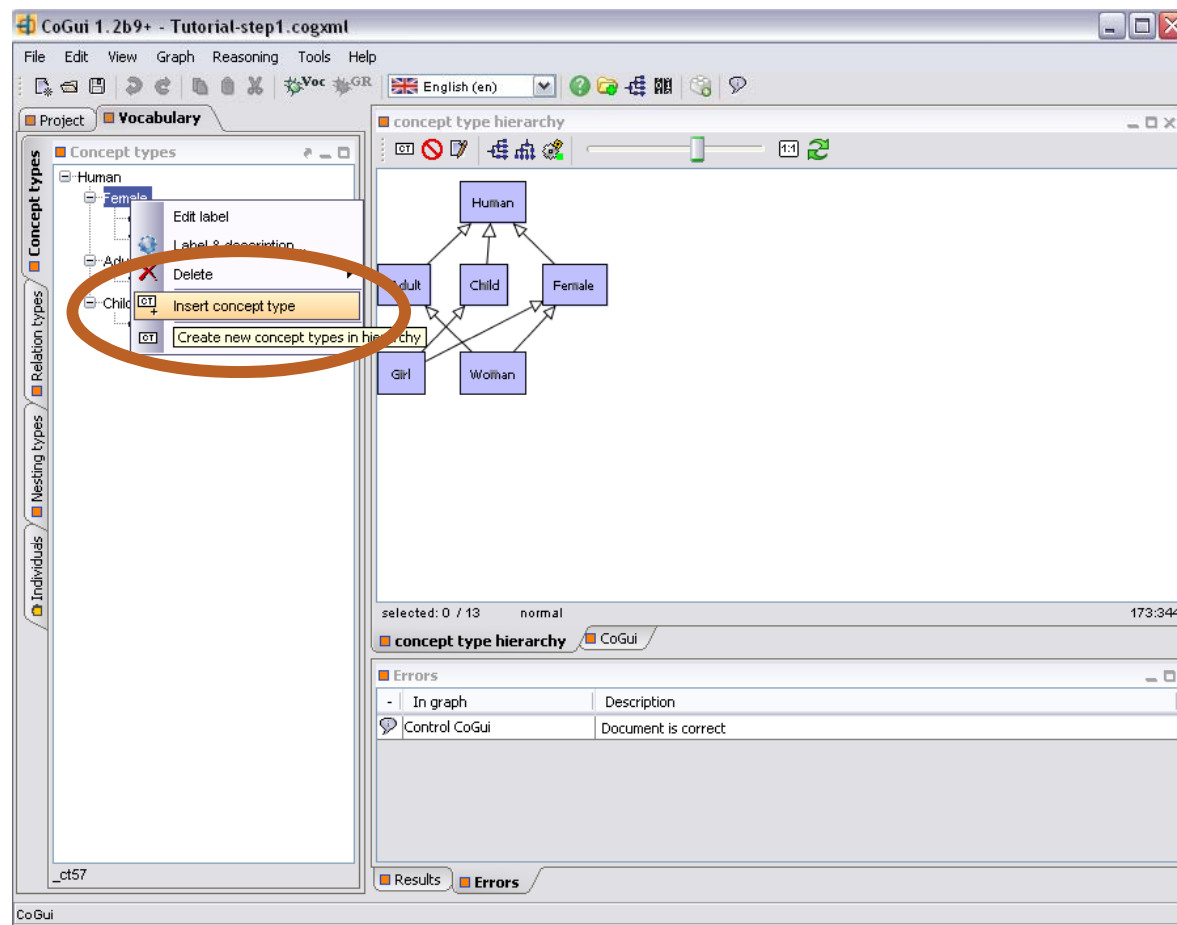
- Project Vocabulary:** A sidebar on the left with tabs for "Concept types", "Relation types", "Nesting types", and "Individuals". The "Concept types" tab is active, showing a tree view of the hierarchy. The "Female" node is circled in orange.
- concept type hierarchy:** A central pane showing a graph view of the same hierarchy. The "Female" node is also circled in orange. The graph shows "Human" at the top, with "Adult" and "Child" below it. "Adult" and "Child" both point to "Female". "Girl" and "Woman" also point to "Child".
- Errors:** A pane at the bottom right showing a table of errors. The table has two columns: "In graph" and "Description".

In graph	Description
Control CoGui	Document is correct

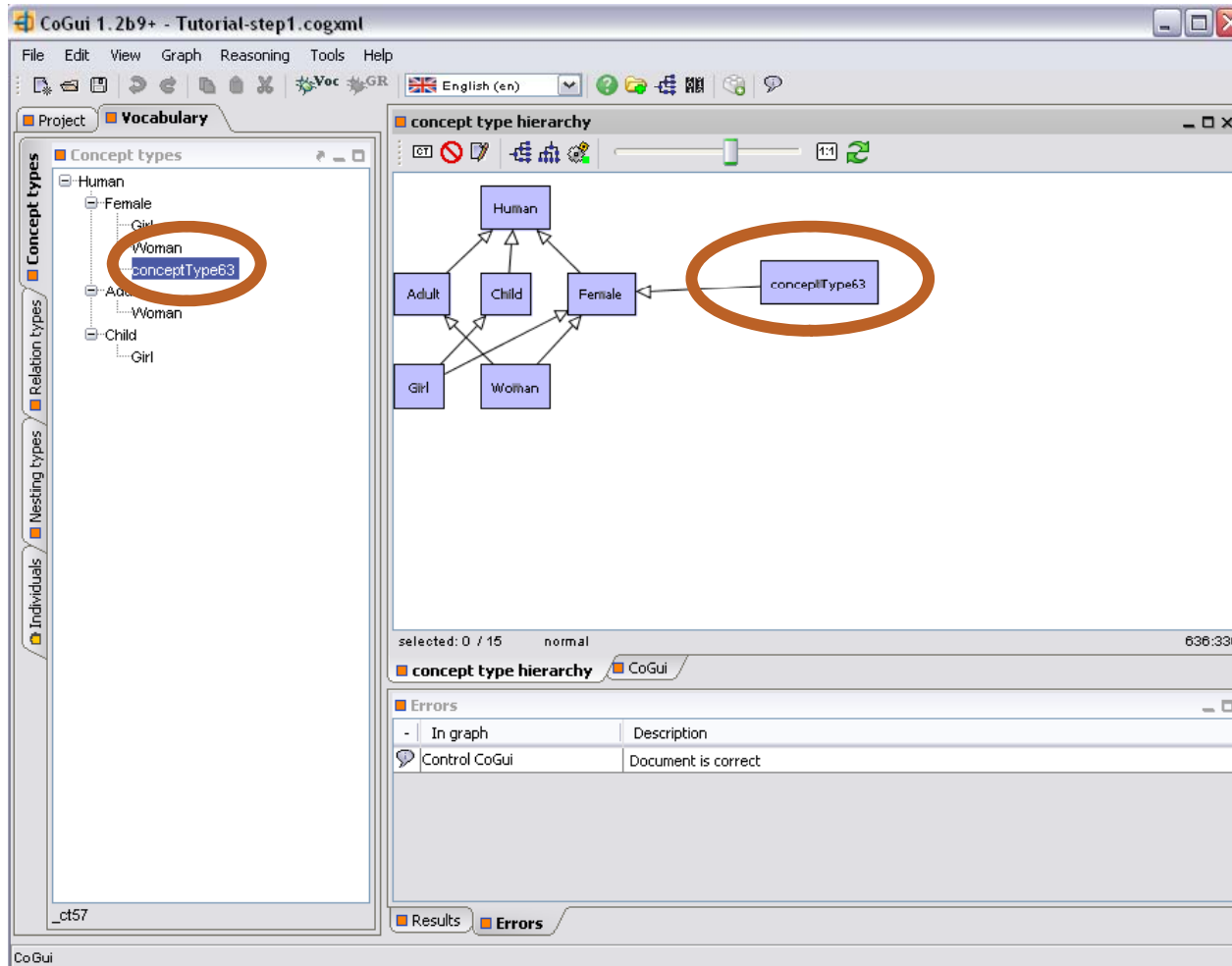
At the bottom of the window, there are tabs for "Results" and "Errors", and the "Errors" tab is currently selected. The status bar at the bottom left shows "_ct0" and "CoGui".



COGUI – CONCEPT HIERARCHY EDITION: TO ADD A NEW SUBCONCEPT TYPE FOR A CONCEPT TYPE IN TREE VIEW RIGHT CLICK ON THE NODE AND SELECT INSERT CONCEPT TYPE



COGUI – CONCEPT HIERARCHY EDITION: THE NEWLY ADDED CONCEPT TYPE IN THE HIERARCHY IS ALSO VISIBLE IN GRAPH VIEW



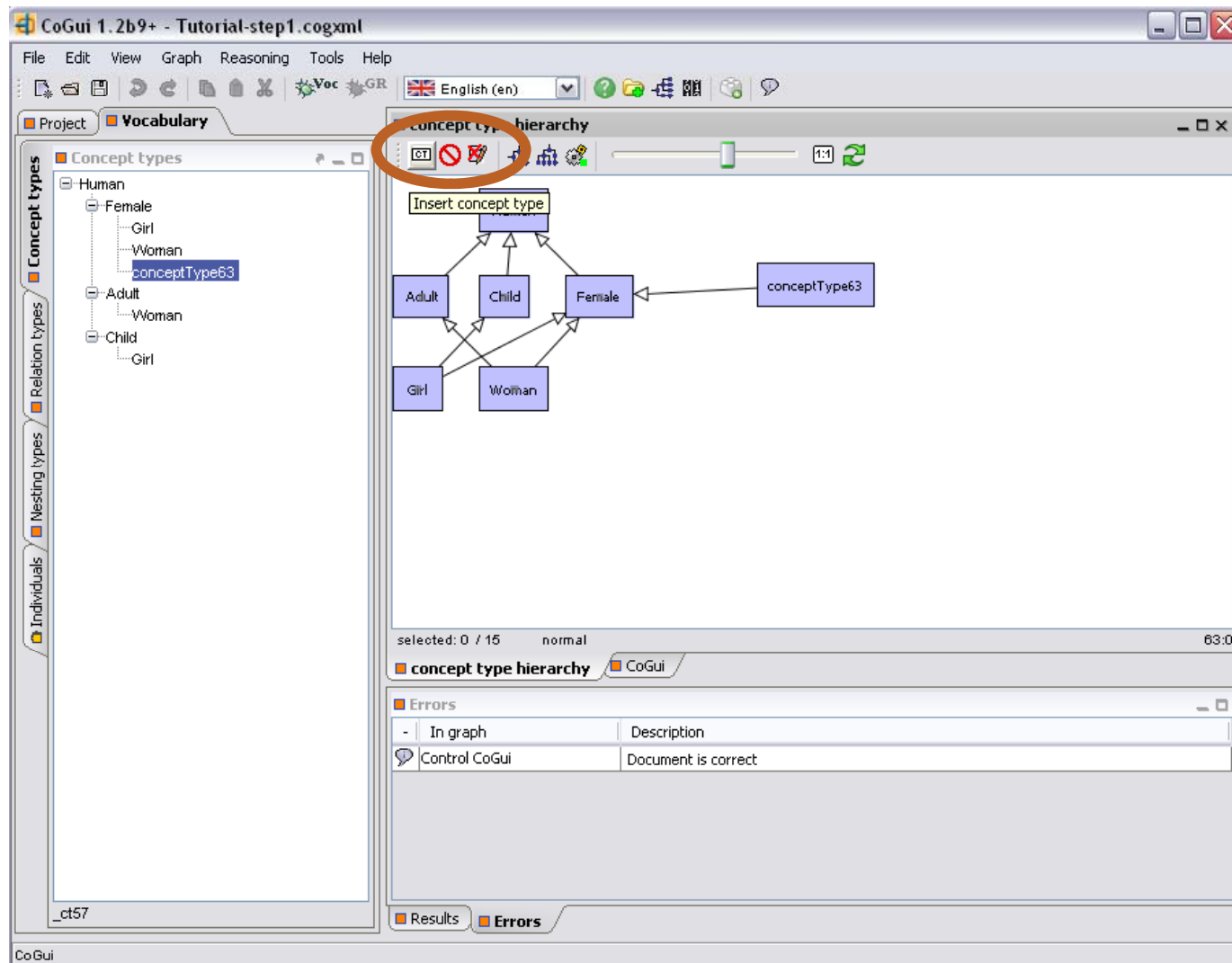
COGUI – CONCEPT HIERARCHY EDITION: TO STOP EDITING GRAPHS IN THE GRAPH EDITOR SELECT EDITION OFF

The screenshot shows the CoGui 1.2b9+ interface with a concept hierarchy graph editor. The main window displays a graph with nodes: Human, Adult, Child, Female, Girl, and Woman. A node labeled 'conceptType63' is connected to the 'Female' node. The 'Edition' button in the toolbar is circled in orange. The left sidebar shows a tree view of concept types, with 'conceptType63' selected under 'Human'. The bottom status bar shows 'selected: 0 / 15 normal 56:1' and 'concept type hierarchy CoGui'. The 'Errors' panel at the bottom right shows a table with one entry: 'Control CoGui' with the description 'Document is correct'.

In graph	Description
Control CoGui	Document is correct



COGUI – CONCEPT HIERARCHY EDITION: WHEN EDITION IS OFF WE CANNOT ADD A NEW CONCEPT TYPE USING THE GRAPH EDITOR



COGUI – CONCEPT HIERARCHY EDITION: WHEN EDITION IS OFF WE CAN STILL EDIT THE GRAPHS USING THE TREE VIEW

The screenshot displays the CoGui 1.2b9+ interface for editing a concept type hierarchy. The main window is titled "CoGui 1.2b9+ - Tutorial-step1.cogxml" and features a menu bar (File, Edit, View, Graph, Reasoning, Tools, Help) and a toolbar. The interface is divided into several panels:

- Project Vocabulary:** A sidebar on the left containing a tree view of concept types. The tree structure is as follows:
 - Human
 - Female
 - Girl
 - Woman
 - conceptType63
 - Adult
 - Woman
 - Child
 - Girl

- concept type hierarchy:** A central graph view showing a hierarchy of concept types. The graph includes nodes for "Human", "Child", "Female", "Woman", "conceptType63", and "conceptType64". Arrows indicate relationships: "Child" and "Woman" are subtypes of "Human"; "Female" is a subtype of "Human"; "conceptType63" is a subtype of "Female"; and "conceptType64" is a subtype of "conceptType63".
- Errors:** A panel at the bottom right showing a table of errors:

In graph	Description
Control CoGui	Document is correct

A context menu is open over the "conceptType63" node in the tree view, with options: "Edit label", "Label & description...", "Delete", "Insert concept type", and "Graphical editor". The "conceptType63" node in the tree view is circled in orange.



COGUI- CYCLES IN THE HIERARCHY: INTRODUCE A NEW CONCEPT IN HIERARCHY

The screenshot displays the CoGui 1.2b10 interface for 'Tutorial-step1.cogxml'. The main window shows a 'concept type hierarchy' diagram with nodes: Human, Adult, Child, Female, Woman, and Girl. A context menu is open over 'conceptType62', listing options like 'Edit label', 'Delete', and 'Insert concept type'. The left sidebar shows a tree view of 'Concept types' including Human, Female, Girl, Woman, Adult, Child, and conceptType62. The bottom status bar shows 'Errors' and 'Results'.

selected: 1 / 14 normal

In graph	Description
Control CoGui	Document is correct



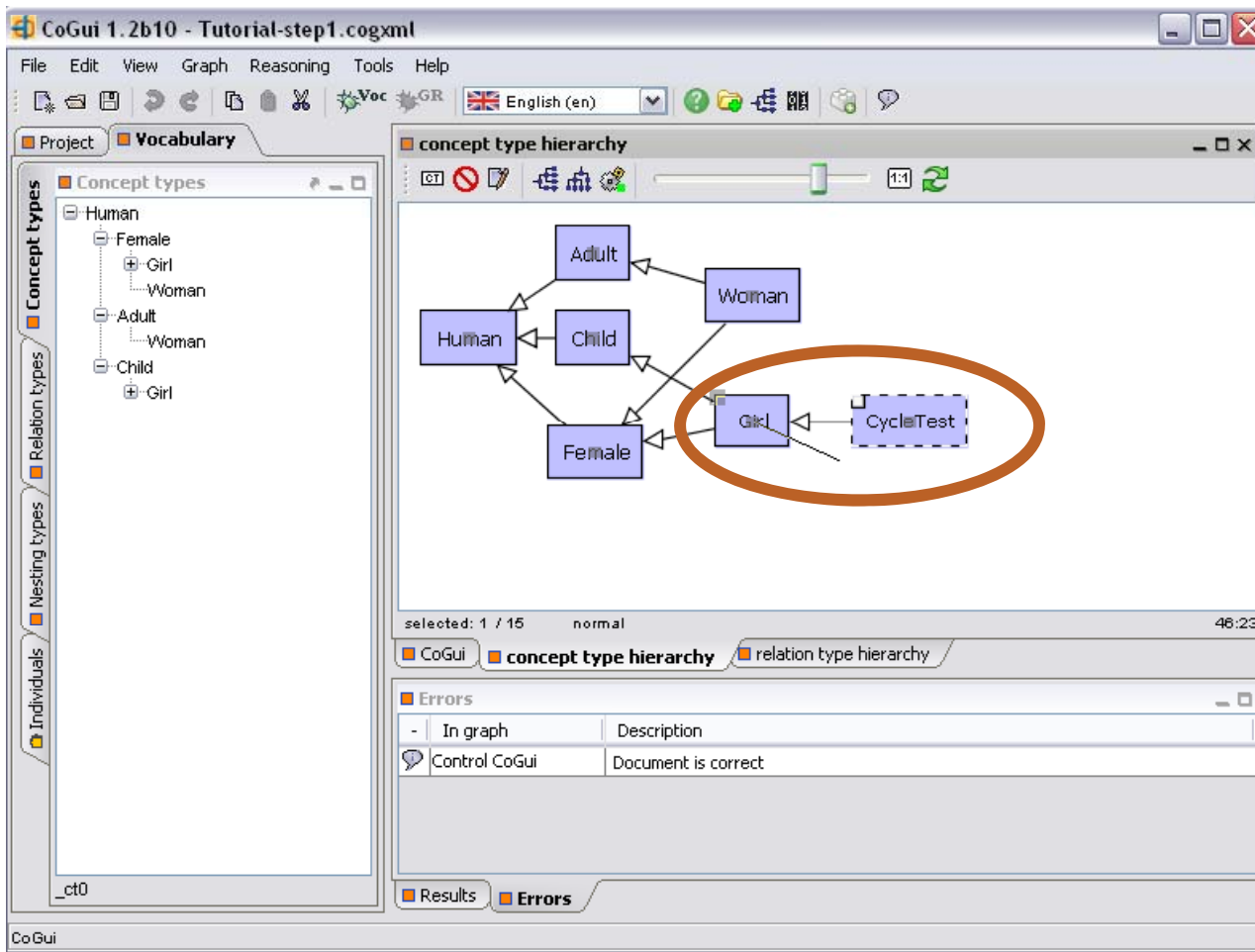
COGUI- CYCLES IN THE HIERARCHY: INTRODUCE A NEW CONCEPT IN HIERARCHY AND LINK IT IN HIERARCHY

The screenshot displays the CoGui 1.2b10 interface for editing a concept type hierarchy. The main window, titled "concept type hierarchy", shows a hierarchical diagram of concepts. The concepts are represented as boxes: "Human", "Adult", "Child", "Female", "Woman", and "Girl". "Human" is the root concept, with "Adult" and "Child" as its direct subtypes. "Adult" has "Woman" as a subtype, and "Child" has "Girl" as a subtype. "Female" is also a subtype of "Human". "Woman" and "Girl" are both subtypes of "Female". A new concept, "CycleTest", is shown as a dashed box with a dashed border, connected to "Girl" by a solid line, indicating a new link being introduced. The "Girl" node and its connection to "CycleTest" are circled in orange. The left sidebar shows a tree view of the hierarchy, and the bottom panel displays an "Errors" table.

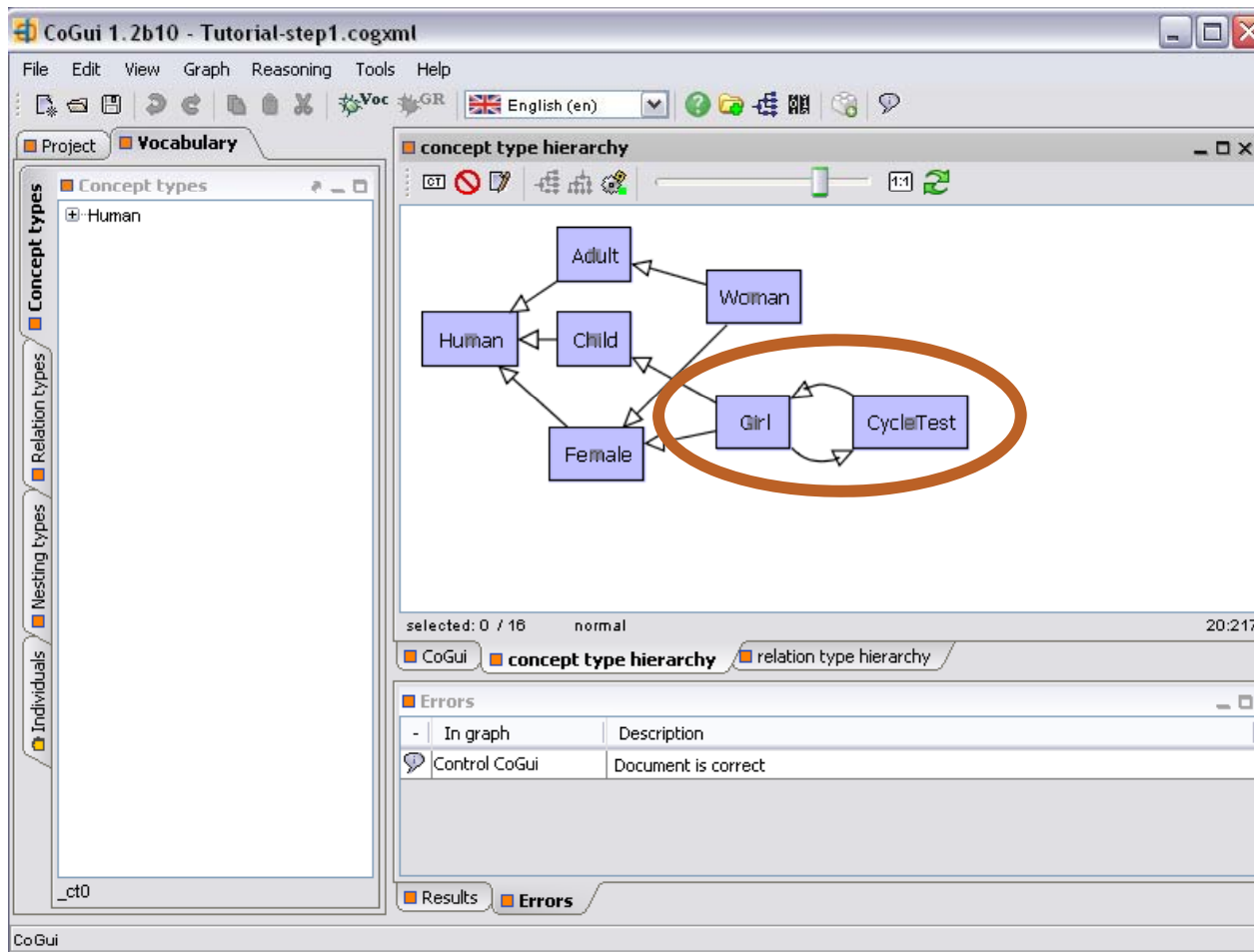
-	In graph	Description
Control CoGui		Document is correct



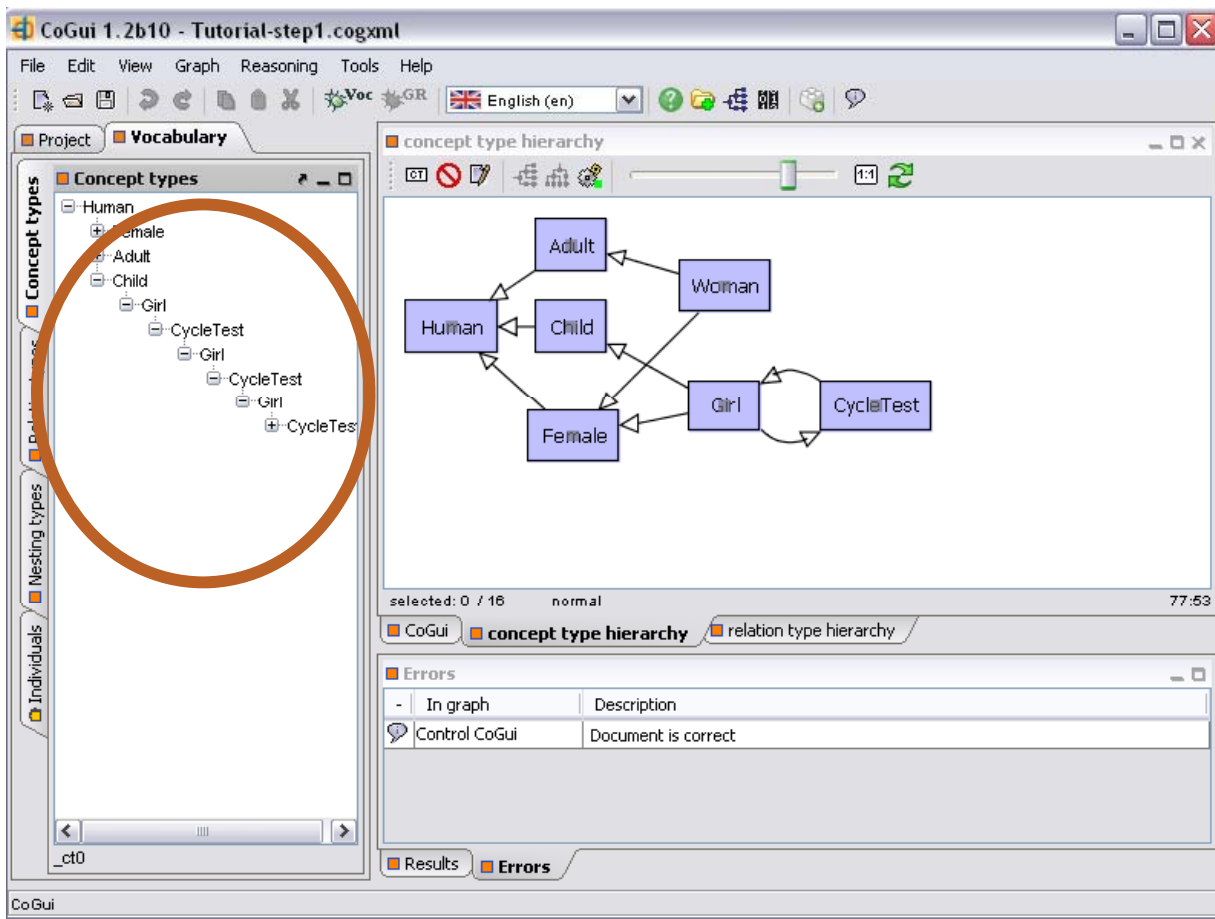
COGUI- CYCLES IN THE HIERARCHY: INTRODUCE A NEW CONCEPT IN HIERARCHY AND LINK IT IN HIERARCHY AND ADD A NEW EDGE TO CREATE A CYCLE



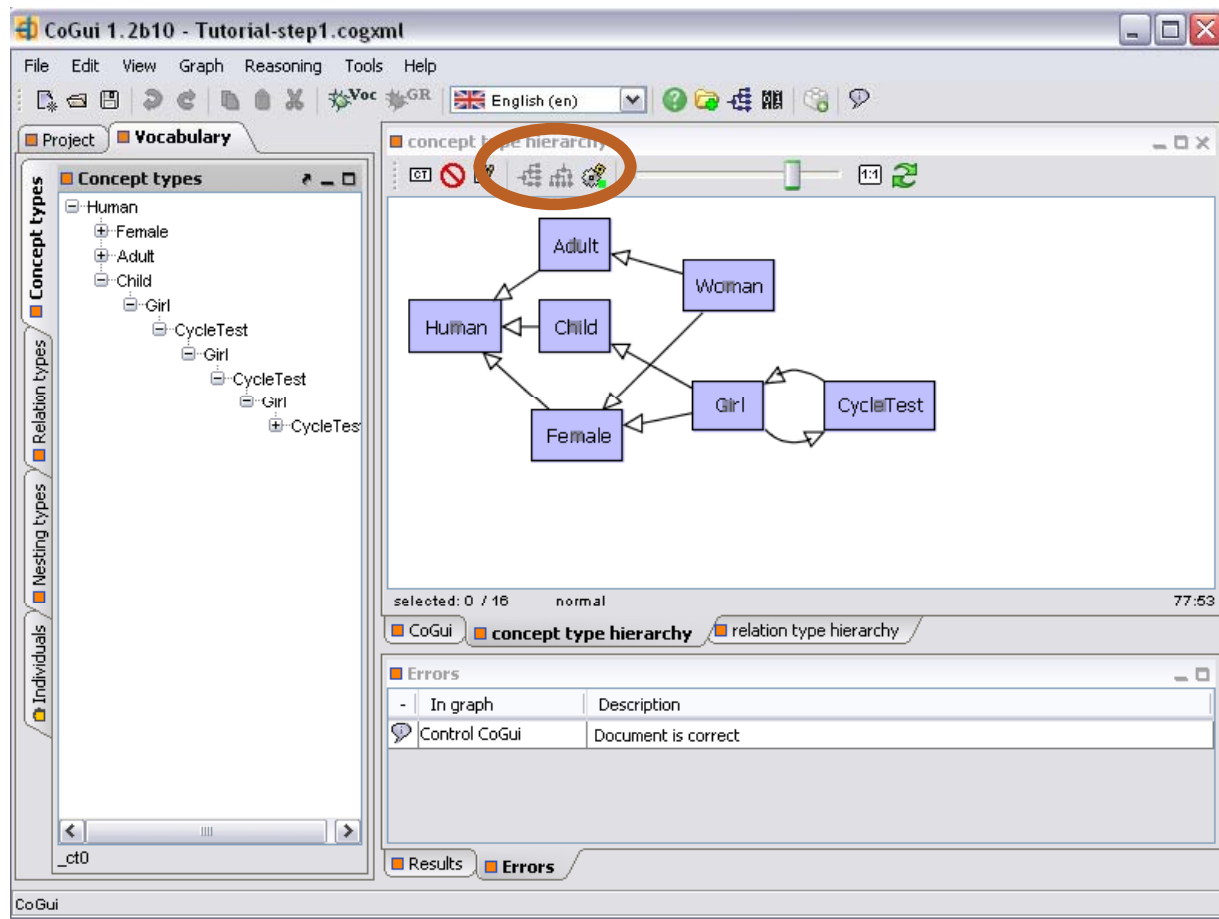
COGUI- CYCLES IN THE HIERARCHY: INTRODUCE A NEW CONCEPT IN HIERARCHY AND LINK IT IN HIERARCHY AND ADD A NEW EDGE TO CREATE A CYCLE



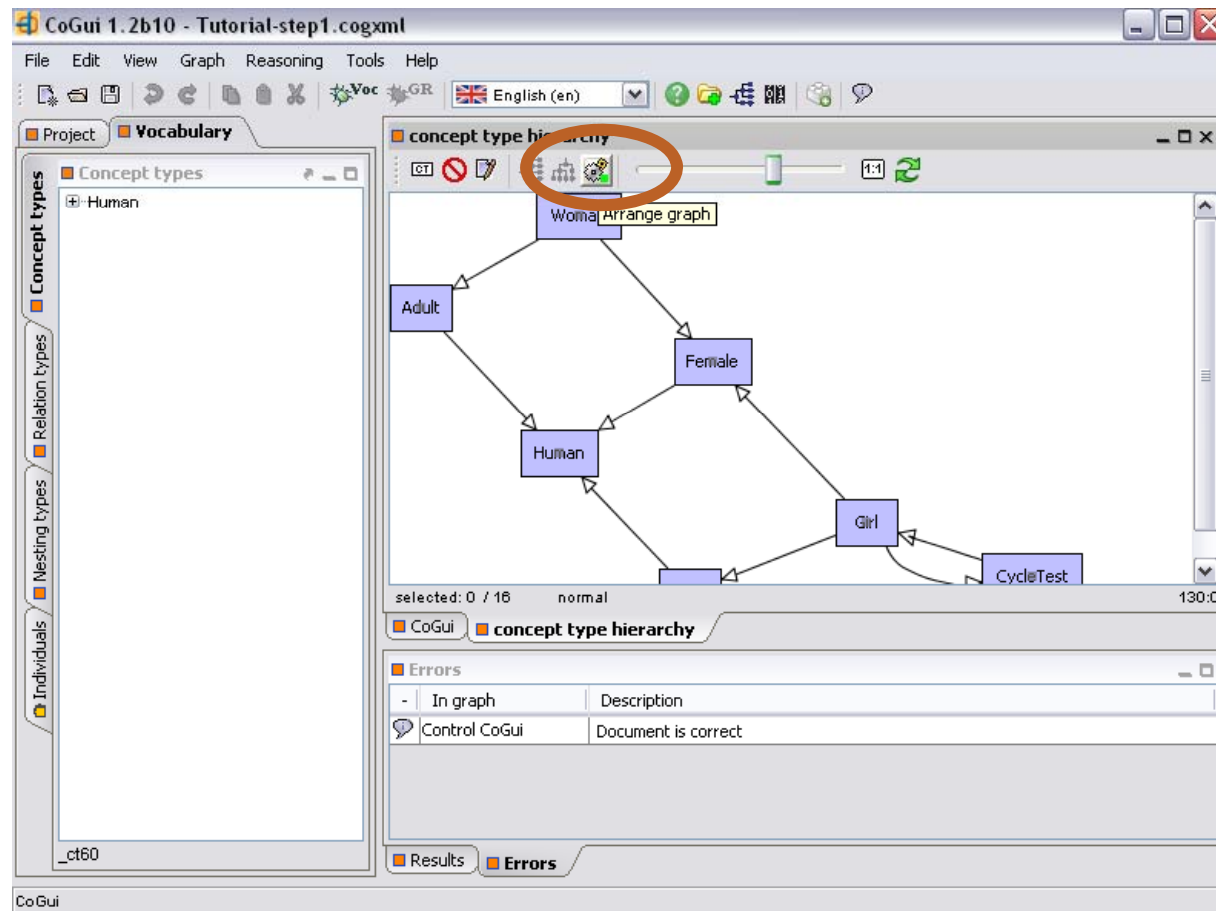
COGUI- CYCLES IN THE HIERARCHY: CAN BE VISUALISED IN THE TREE VIEW AT INFINITY



COGUI- CYCLES IN THE HIERARCHY: THE TREE DISPLAY IN THE GRAPH EDITOR IS NOT AVAILABLE



COGUI- CYCLES IN THE HIERARCHY: THE TREE LAYOUT IN THE GRAPH EDITOR IS **NOT AVAILABLE** SO **ATTENTION** WHEN USING THE SPRING LAYOUT





EXTENDING THE VOCABULARY

1. Banned Types

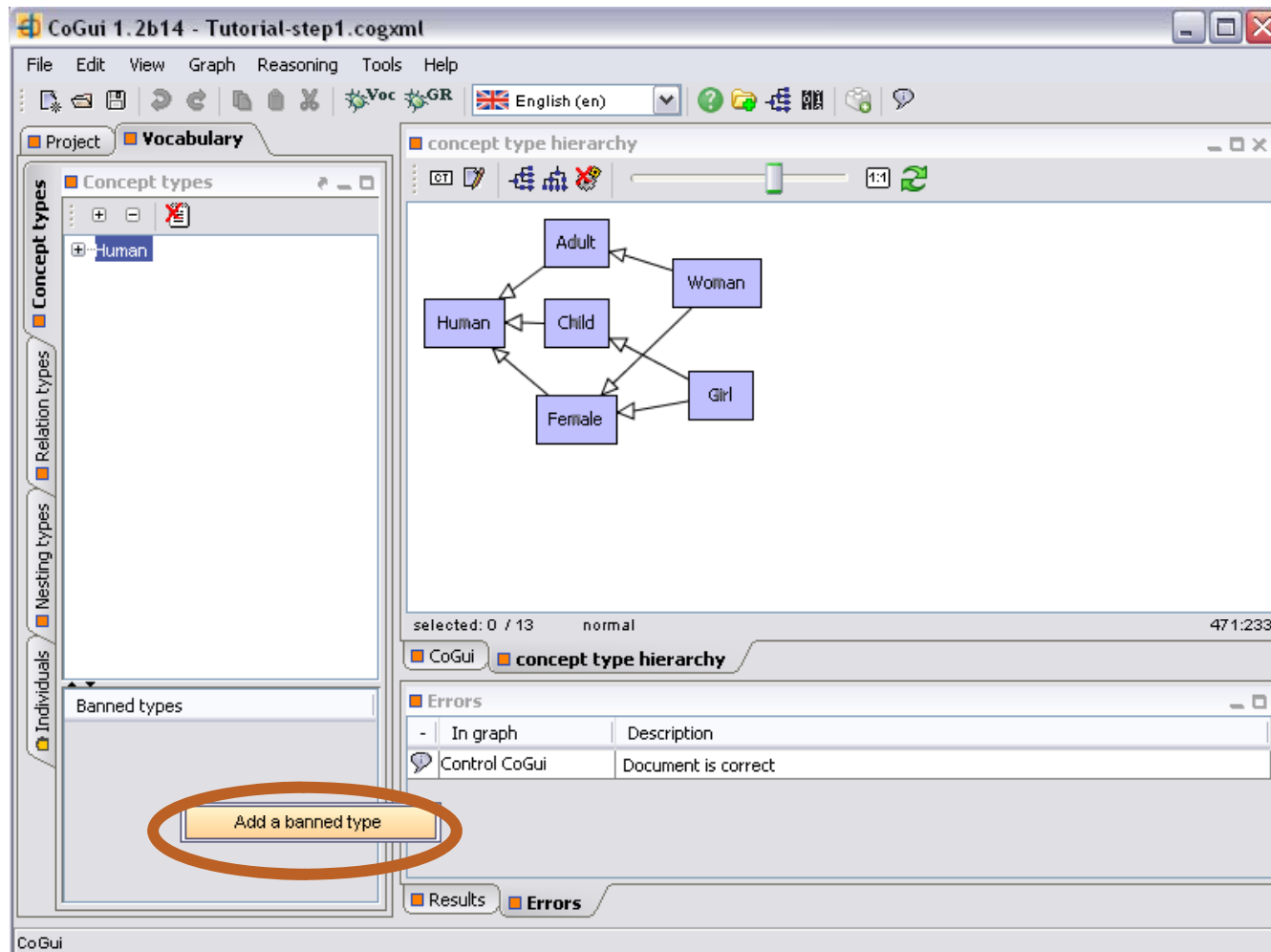
COGUI – CONCEPT HIERARCHY EDITION: BANNED TYPES

The screenshot displays the CoGui 1.2b14 interface for editing a concept type hierarchy. The main window shows a hierarchy diagram with nodes: Human, Adult, Child, Female, Woman, and Girl. Arrows indicate relationships: Human is a parent of Adult and Child; Adult is a parent of Woman; Child is a parent of Female; and both Woman and Girl are parents of Female. On the left, a 'Concept types' list contains 'Human'. Below it, a 'Banned types' section is circled in orange. The bottom panel shows an 'Errors' table with one entry: 'Control CoGui' with the description 'Document is correct'.

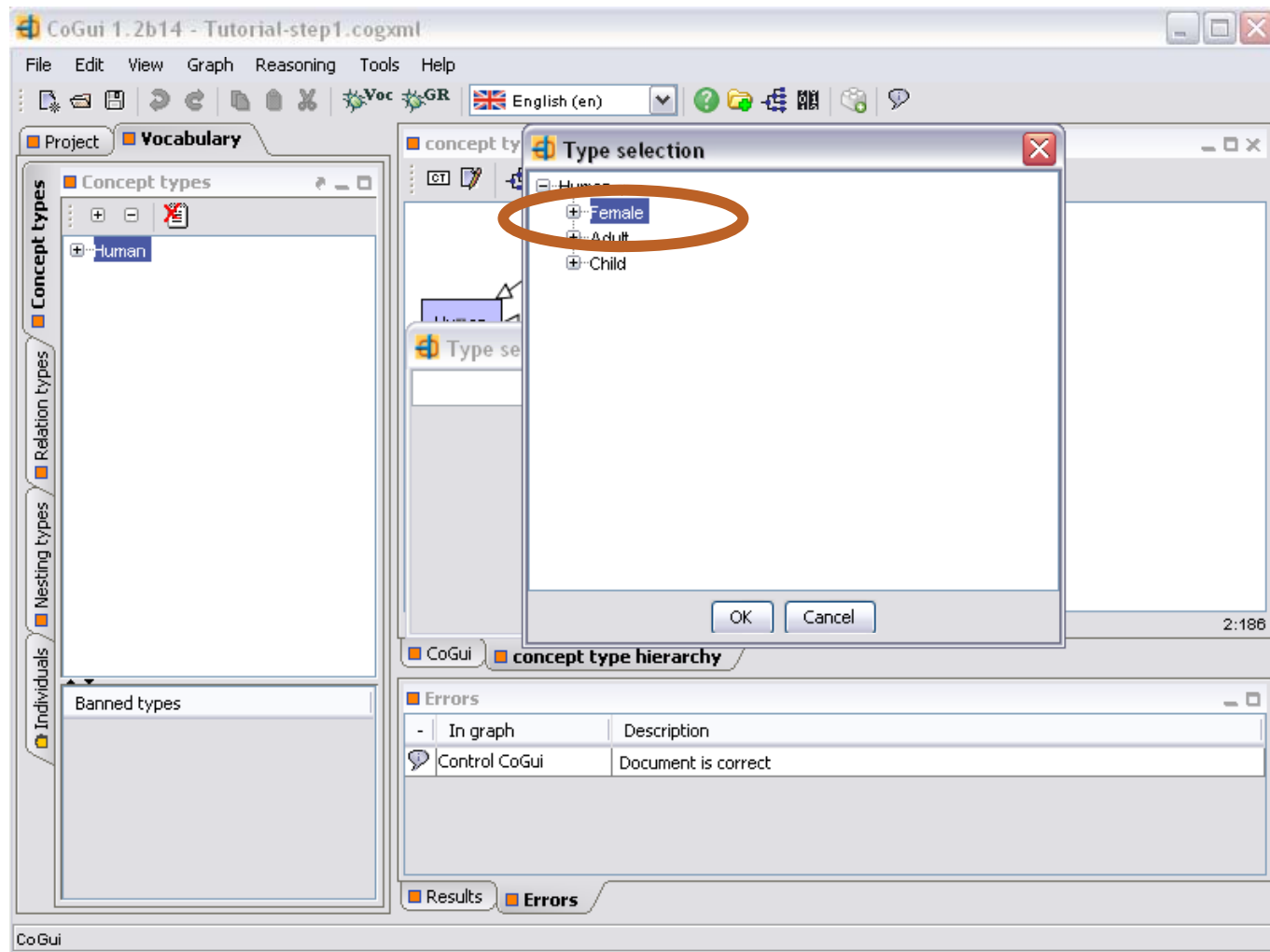
In graph	Description
Control CoGui	Document is correct



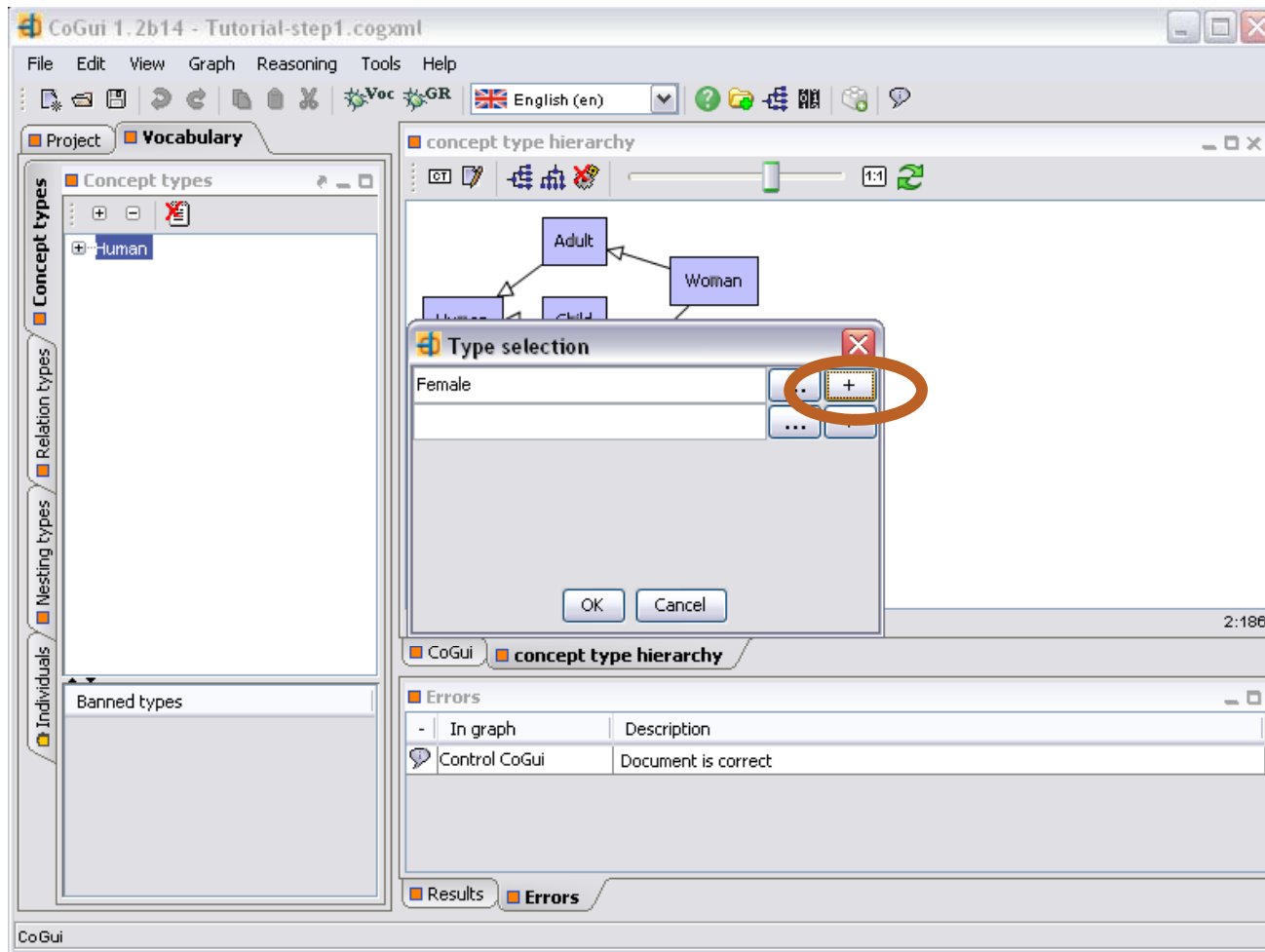
COGUI – CONCEPT HIERARCHY EDITION: BANNED TYPES – RIGHT CLICK ON THE AREA BENEATH BANNED TYPES AND CLICK ADD



COGUI – CONCEPT HIERARCHY EDITION: BANNED TYPES – SELECT THE TYPES



COGUI – CONCEPT HIERARCHY EDITION: BANNED TYPES – SELECT THE TYPES



COGUI – CONCEPT HIERARCHY EDITION: BANNED TYPES – THE BANNED TYPES WILL APPEAR IN THE LIST

The screenshot displays the CoGui 1.2b14 interface for 'Tutorial-step1.cogxml'. The main window is titled 'concept type hierarchy' and shows a hierarchical diagram of concept types. The diagram includes nodes for 'Human', 'Adult', 'Child', 'Female', 'Male', 'Woman', and 'Girl'. Arrows indicate relationships: 'Human' is a parent of 'Adult', 'Child', and 'Female'; 'Adult' is a parent of 'Woman'; 'Child' is a parent of 'Girl'; and 'Female' is a parent of 'Male'. The 'Human' node is highlighted with a blue background.

On the left side, there is a 'Concept types' panel with a list of types. The 'banned types' section is circled in orange and contains the text 'Female;Male'. Below this, there is a section for 'Individuals'.

At the bottom, there is an 'Errors' panel with a table showing the following content:

In graph	Description
control CoGui	Document is correct

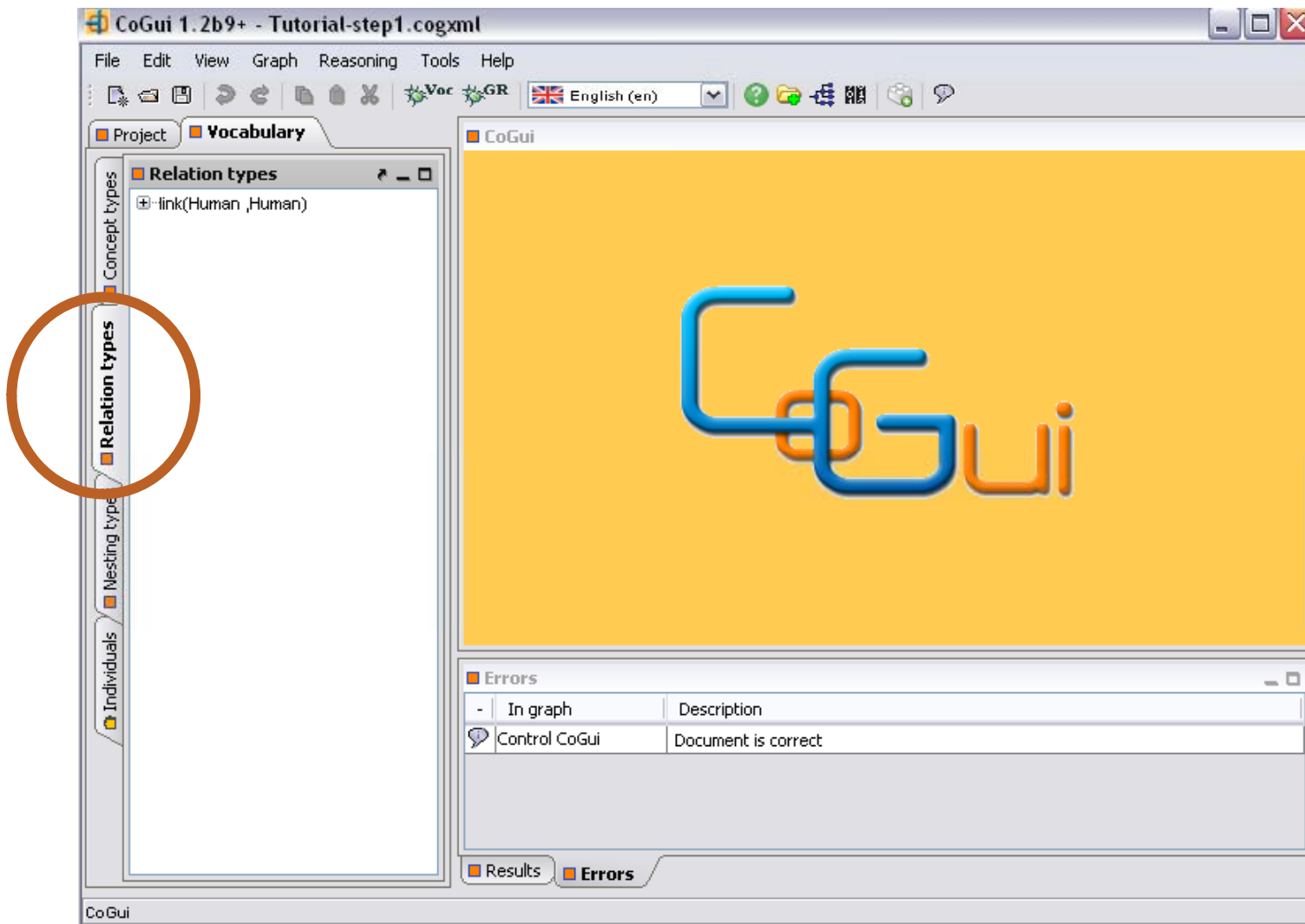




VOCABULARY

2. Relation Hierarchy

COGUI –RELATION HIERARCHY



COGUI – RELATION HIERARCHY CAN BE VISUALISED BOTH USING THE TREE VIEW AND THE GRAPH VIEW

The screenshot displays the CoGui 1.2b9+ interface. On the left, the 'Relation types' tree view is visible, with a red circle highlighting the root node 'link(Human, Human)'. The tree structure includes:

- link(Human, Human)
 - relatedWith(Human, Human)
 - marriedTo(Adult, Adult)
 - siblingOf(Human, Human)
 - ancestorOf(Human, Human)
 - parentOf(Adult, Human)
 - childOf(Human, Adult)
 - like(Human, Human)
 - dislike(Human, Human)

On the right, the 'relation type hierarchy' graph view shows a hierarchical diagram of these relations. A red circle highlights the graph structure, which is a directed acyclic graph (DAG) where 'link' is the root node. The graph structure is as follows:

- link (root node)
 - like
 - dislike
 - relatedWith
 - marriedTo
 - siblingOf
 - childOf
 - ancestorOf
 - parentOf

The bottom panel shows the 'Errors' section with a table:

In graph	Description
Control CoGui	Document is correct



COGUI – THE GRAPH VIEW FOR THE RELATION HIERARCHY PROPOSES THE SAME **DISPLAY FUNCTIONALITIES** AS FOR CONCEPTS

The screenshot displays the CoGui 1.2b9+ interface for a relation type hierarchy. The main window shows a graph with nodes representing relation types. The 'link' node is highlighted with a red circle, and its toolbar is also circled in red. The graph structure is as follows:

- link (root node)
- like, relatedWith, dislike (children of link)
- ancestorOf, marriedTo, childOf, siblingOf (children of relatedWith)
- parentOf (child of ancestorOf)

The interface includes a menu bar (File, Edit, View, Graph, Reasoning, Tools, Help), a toolbar with various icons, and a project panel on the left. The project panel shows a list of relation types under the 'Vocabulary' tab. The errors panel at the bottom shows a message: 'Control CoGui: Document is correct'.



COGUI – THE GRAPH VIEW FOR THE RELATION HIERARCHY PROPOSES THE SAME FUNCTIONALITY FOR THE **EDITION MODE**

The screenshot displays the CoGui 1.2b9+ interface for editing a relation type hierarchy. The main window is titled "relation type hierarchy" and shows a hierarchical graph of relation types. The root node is "link", which is highlighted with a red circle. Below "link" are nodes "like", "relatedWith", and "dislike". "relatedWith" has three children: "ancestorOf", "marriedTo", and "childOf". "dislike" has one child: "siblingOf". "parentOf" is a child of "ancestorOf".

The left sidebar shows a "Vocabulary" panel with a tree view of relation types. The "Relation types" section is expanded, showing a list of relation types including "link(Human ,Human)", "relatedWith(Human ,Human)", "marriedTo(Adult ,Adult)", "siblingOf(Human ,Human)", "ancestorOf(Human ,Human)", "parentOf(Adult ,Human)", "childOf(Human ,Adult)", "like(Human ,Human)", and "dislike(Human ,Human)".

The bottom panel shows an "Errors" table with the following content:

-	In graph	Description
Control CoGui		Document is correct





EXTENDING THE VOCABULARY

2. Relation signatures

COGUI – THE RELATION TYPES HAVE A SIGNATURE

The screenshot displays the CoGui 1.2b9+ interface. The main window is titled "CoGui 1.2b9+ - Tutorial-step1.cogxml". The interface is divided into several panes:

- Project Vocabulary:** A sidebar on the left with tabs for "Concept types", "Relation types", "Nesting types", and "Individuals". Under "Relation types", a list of relation types is shown, with "marriedTo(Adult,Adult)" circled in red. Other visible types include "link(Human,Human)", "relatedWith(Human,Human)", "ancestOf(Human,Human)", "parentOf(Adult,Human)", "childOf(Human,Adult)", "like(Human,Human)", and "dislike(Human,Human)".
- relation type hierarchy:** A central pane showing a hierarchical graph of relation types. The root node is "link", which has three children: "like", "relatedWith", and "dislike". "relatedWith" has four children: "ancestOf", "marriedTo", "childOf", and "siblingOf". "ancestOf" has one child: "parentOf".
- Errors:** A pane at the bottom right showing a table of errors. The table has two columns: "In graph" and "Description". The first row shows "Control CoGui" with the description "Document is correct".

The status bar at the bottom of the window indicates "selected: 1 / 17" and "normal". The bottom left corner shows the text "CoGui".



COGUI – TO CHANGE THE SIGNATURE OF A RELATION TYPE RIGHT CLICK AND SELECT EDIT

The screenshot shows the CoGui 1.2b9+ interface. The main window displays a relation type hierarchy graph. The 'relatedWith' node is selected, and a context menu is open over it. The menu options are:

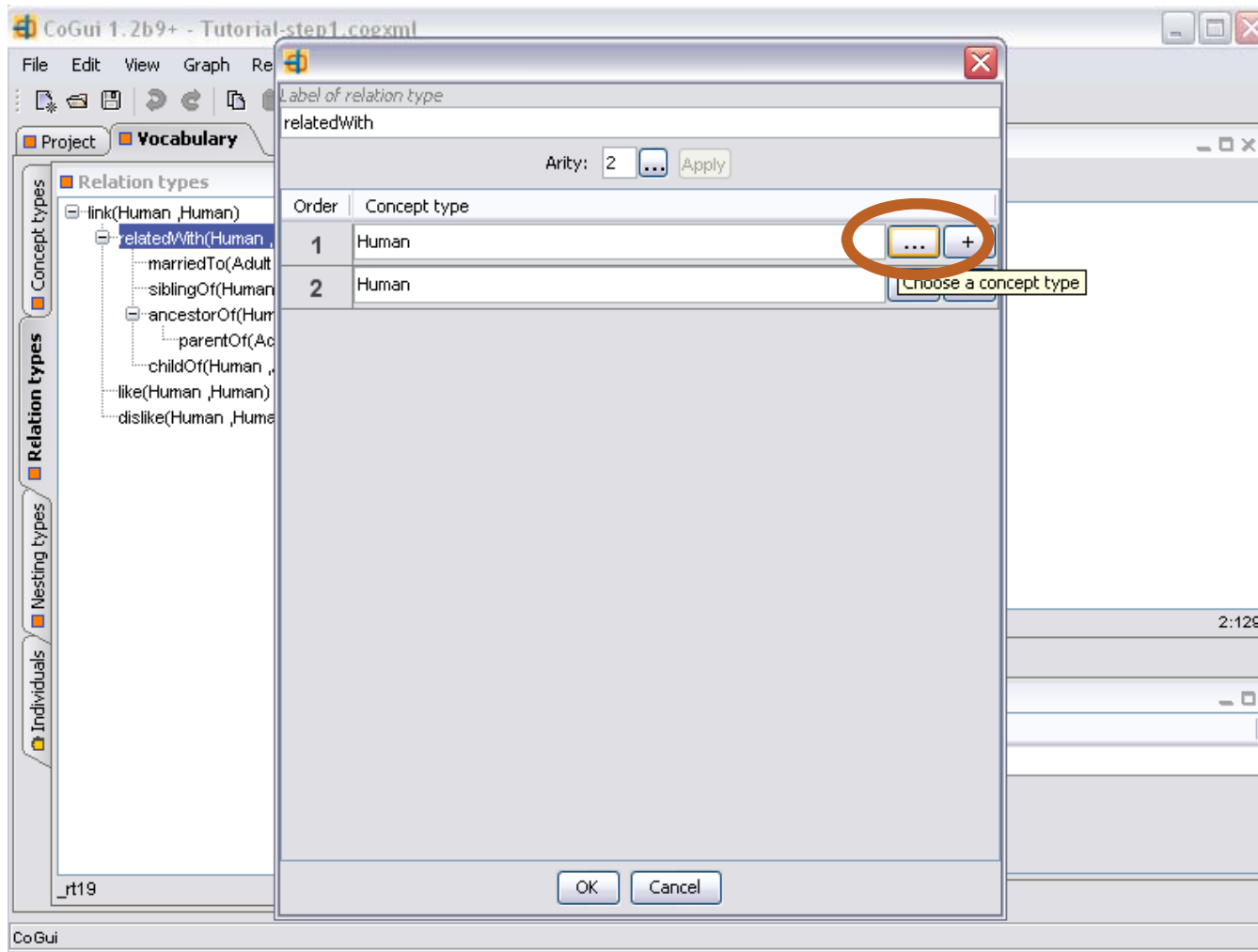
- Edit label
- Label & description
- Edit signature...** (highlighted with an orange oval)
- Suggest signature...
- Delete
- Insert relation type
- Graphical editor

The graph shows a hierarchy where 'link' is the root, and 'relatedWith' is a child of 'link'. Other children of 'link' include 'dislike'. 'relatedWith' has children 'marriedTo', 'childOf', and 'siblingOf'. 'parentOf' is also shown as a separate node.

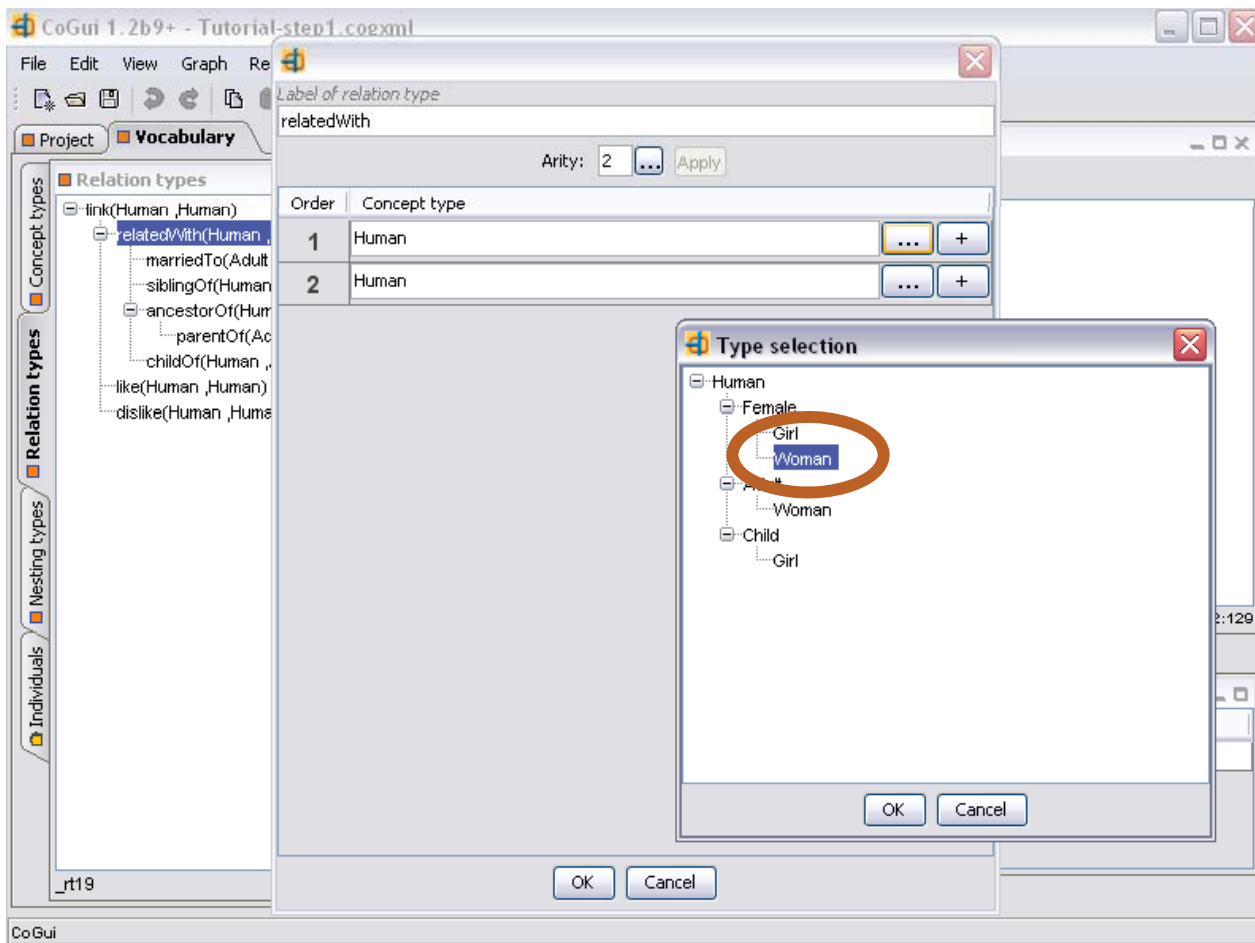
The interface includes a menu bar (File, Edit, View, Graph, Reasoning, Tools, Help), a toolbar, and several panels: 'Project Vocabulary', 'Relation types', 'Nesting types', 'Individuals', 'Errors', 'Results', and 'Errors'. The 'Errors' panel shows a message: 'Control CoGui Document is correct'.



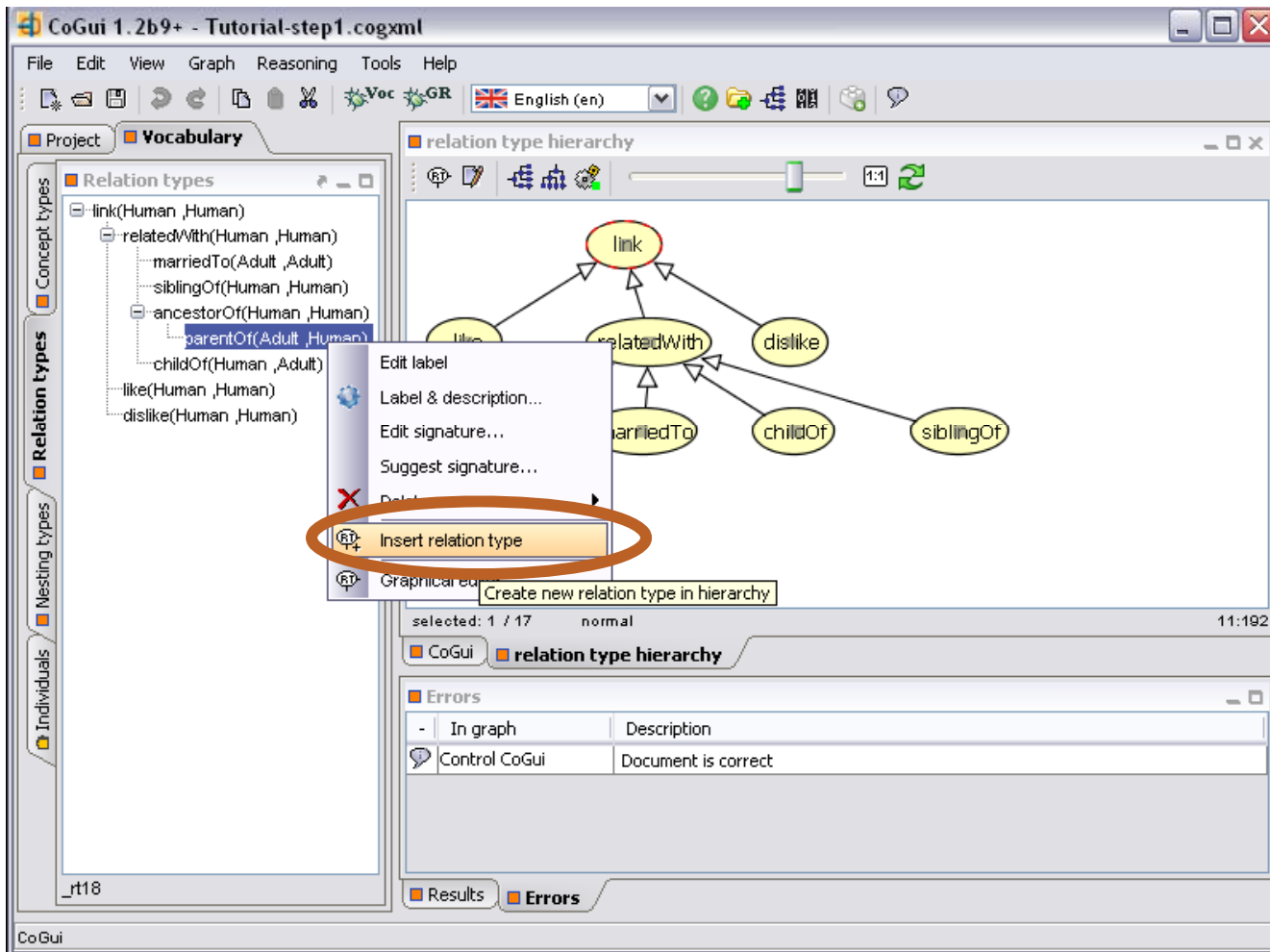
COGUI – TO **CHANGE THE SIGNATURE** OF A RELATION TYPE RIGHT CLICK AND SELECT EDIT SIGNATURE THEN CHOOSE THE CONCEPT TYPE



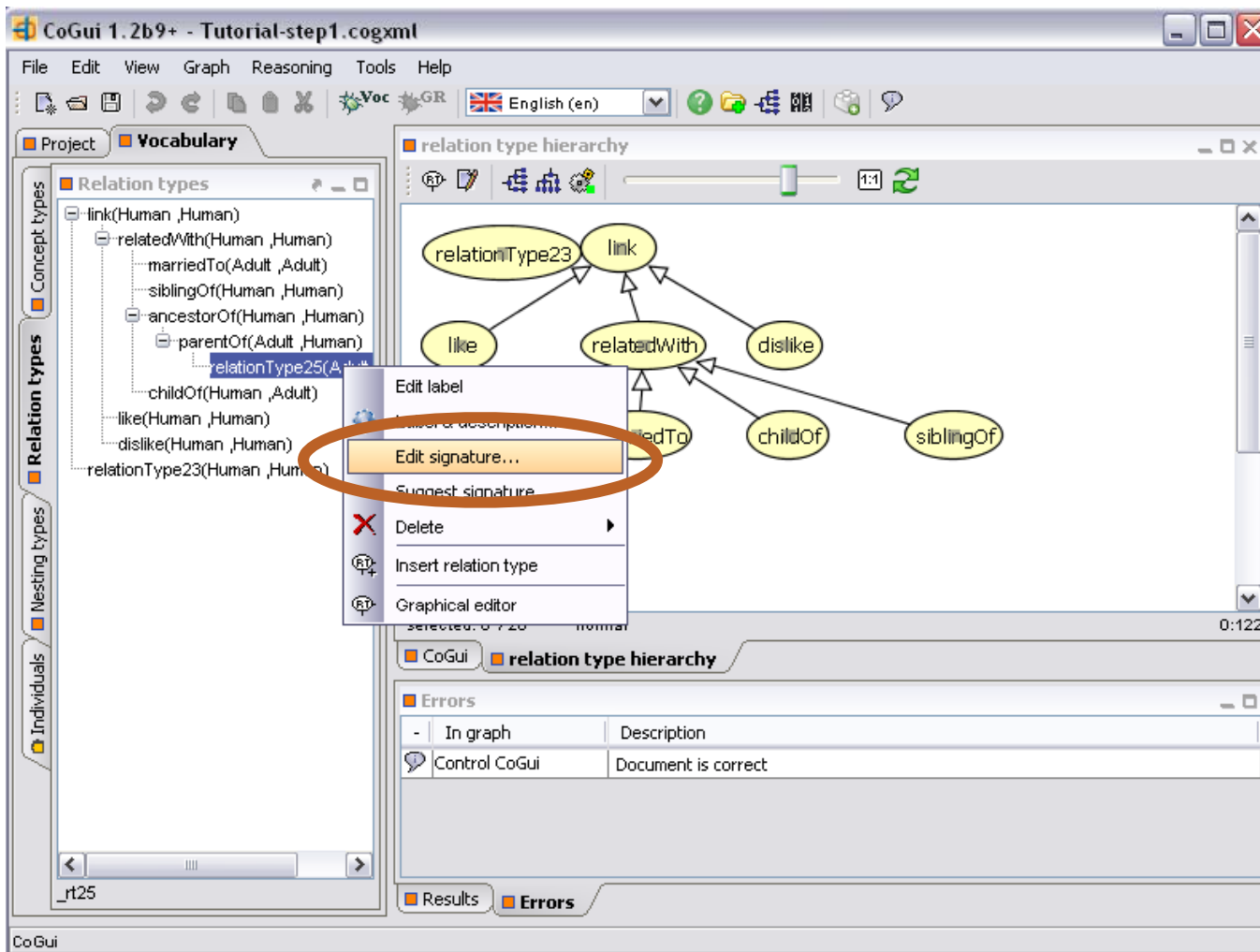
COGUI – TO **CHANGE THE SIGNATURE** OF A RELATION TYPE RIGHT CLICK AND SELECT EDIT SIGNATURE THEN CHOOSE THE CONCEPT TYPE IN THE PROPOSED HIERARCHY



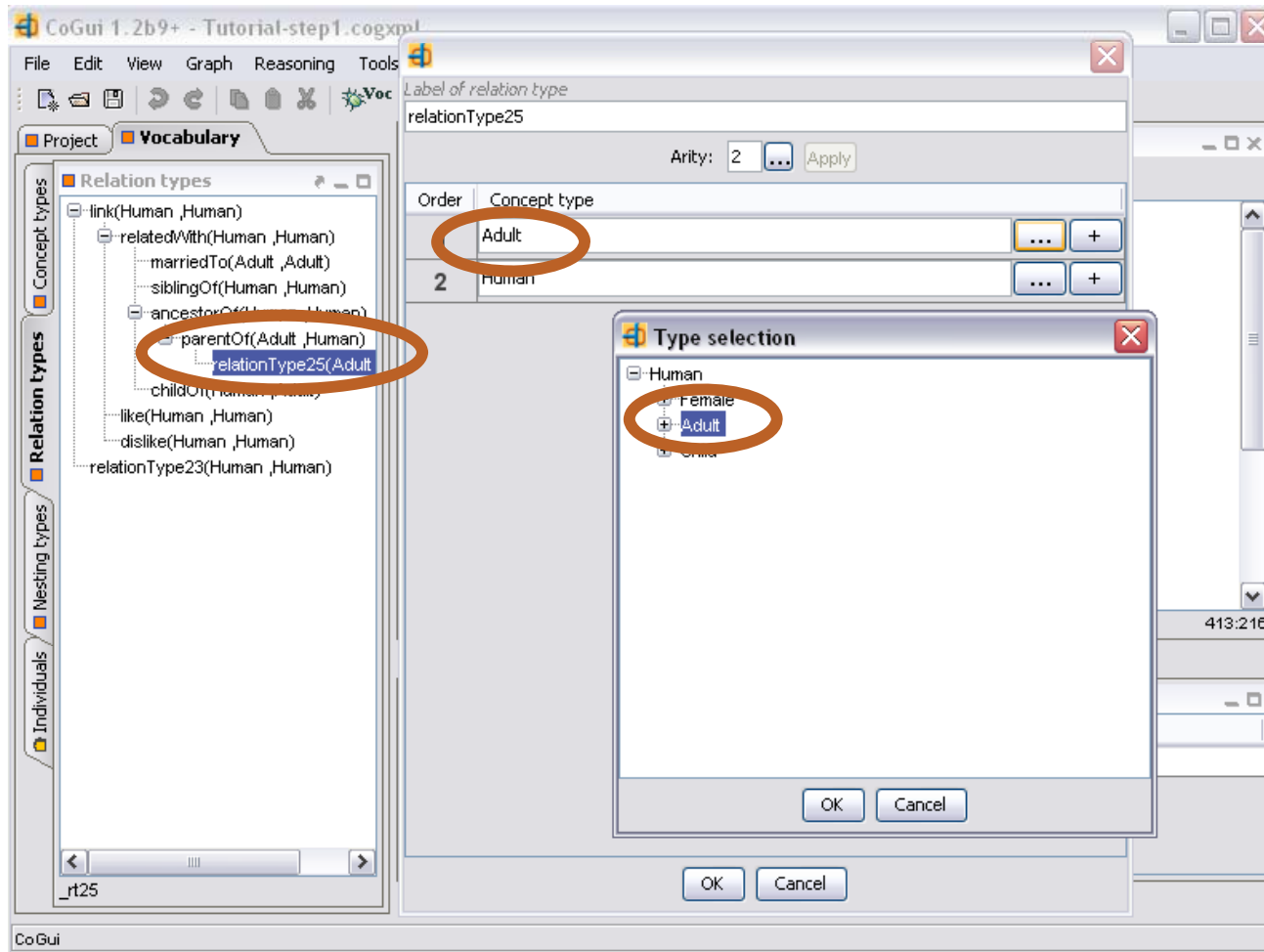
COGUI – TO INSERT A NEW RELATION TYPE RIGHT CLICK IN THE HIERARCHY THEN **SELECT INSERT RELATION TYPE**



COGUI – TO INSERT A NEW RELATION TYPE RIGHT CLICK IN THE HIERARCHY THEN SELECT INSERT RELATION TYPE THEN **EDIT ITS SIGNATURE**



COGUI – THE RELATION HIERARCHY **RESPECTS** THE CONCEPT HIERARCHY FOR ITS SIGNATURE



COGUI – THE RELATION HIERARCHY **RESPECTS** THE CONCEPT HIERARCHY FOR ITS SIGNATURE

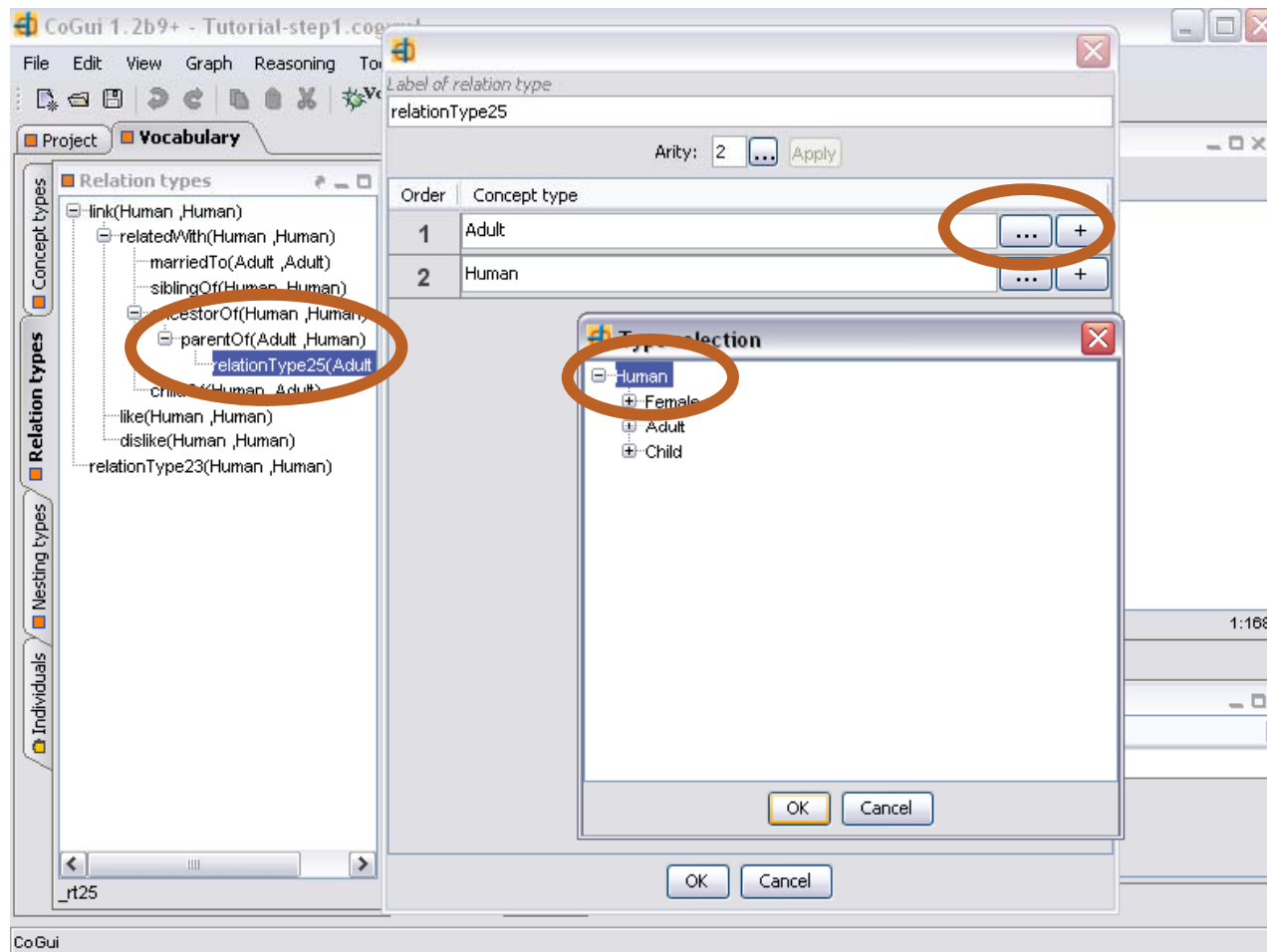
The screenshot displays the CoGui 1.2b9+ interface. The main window is titled "CoGui 1.2b9+ - Tutorial-step1.cog.xml". The interface is divided into several panes:

- Project Vocabulary:** Contains a tree view of relation types. The "Relation types" section is expanded, showing a hierarchy: link(Human, Human) is the root, with children relatedWith(Human, Human), marriedTo(Adult, Adult), siblingOf(Human, Human), ancestorOf(Human, Human), parentOf(Adult, Human), relationType25(Adult, Adult), childOf(Human, Adult), like(Human, Human), dislike(Human, Human), and relationType23(Human, Human). The "like" relation type is highlighted.
- relation type hierarchy:** A graphical view of the relation type hierarchy. It shows "link" at the top, with "relationType23" and "like" as children. "relatedWith" is a child of "link", and "dislike" is a child of "relatedWith". "marriedTo", "childOf", and "siblingOf" are children of "relatedWith".
- Context Menu:** A menu is open over the "like" node in the graphical view. The menu items are: "Edit label", "Label & description...", "Suggest signature..." (highlighted with an orange circle), "Insert relation type", and "Graphical editor".
- Errors:** A table at the bottom right showing error messages. The table has two columns: "In graph" and "Description". The first row shows "Control CoGui" with the description "Document is correct".

The status bar at the bottom left shows "CoGui" and the bottom right shows "Results" and "Errors". The time "13:164" is displayed in the bottom right corner of the main window.



COGUI – CHOOSING AN INVALID SIGNATURE



COGUI – CHOOSING AN INVALID SIGNATURE

The screenshot shows the CoGui 1.2b9+ interface with the following components:

- Toolbar:** A red circle highlights the 'Voc' button.
- Project Panel:** Shows 'Vocabulary' and 'Relation types'.
- Relation types List:** A list of relation types including 'link(Human ,Human)', 'relatedWith(Human ,Human)', 'marriedTo(Adult ,Adult)', 'siblingOf(Human ,Human)', 'ancestorOf(Human ,Human)', 'parentOf(Adult ,Human)', 'relationType25(Human ,Hum...)', 'childOf(Human ,Adult)', 'like(Human ,Human)', 'dislike(Human ,Human)', and 'relationType23(Human ,Human)'. A red circle highlights 'relationType25(Human ,Hum...)'.
- relation type hierarchy:** A graph showing relationships between relation types. 'relationType23' is a parent of 'link'. 'like', 'relatedWith', and 'dislike' are children of 'link'. 'ancestorOf', 'marriedTo', 'childOf', and 'siblingOf' are children of 'relatedWith'. 'parentOf' is a child of 'ancestorOf', and 'relationType25' is a child of 'parentOf'.
- Errors Panel:** A table with the following content:

-	In graph	Description
Control CoGui		Document is correct



COGUI – VALIDATE THE VOCABULARY

The screenshot displays the CoGui 1.2b9+ interface for a project named 'Tutorial-step1.cogxml'. The 'Vocabulary' tab is active, showing a 'Relation types' tree on the left and a 'relation type hierarchy' graph on the right. The 'Errors' panel at the bottom is circled in orange and contains the following message:

In graph	Description
Relation types hi...	Signatures are not compatible: Human is not a kind of Adult (num order=1)

The 'relation type hierarchy' graph shows a tree structure with nodes: link, relatedWith, dislike, like, ancestorOf, marriedTo, childOf, siblingOf, parentOf, and relationType25. The 'Errors' panel also has a red circle around it.



COGUI – ALWAYS VALIDATE THE VOCABULARY BEFORE USING IT

The screenshot displays the CoGui 1.2b9+ interface for a tutorial project. The main window is titled "CoGui 1.2b9+ - Tutorial-step1.cogxml". The interface includes a menu bar (File, Edit, View, Graph, Reasoning, Tools, Help) and a toolbar with icons for file operations and a "Voc" icon circled in orange. The left sidebar shows a tree view of "Relation types" under the "Vocabulary" tab, listing various relations like link, relatedWith, marriedTo, siblingOf, ancestorOf, parentOf, childOf, like, and dislike. The main area shows a "relation type hierarchy" diagram with nodes like link, relatedWith, like, dislike, ancestorOf, marriedTo, childOf, siblingOf, parentOf, and relationType25. The "Errors" panel at the bottom, also circled in orange, contains a table with the following content:

-	In graph	Description
⊘	Relation types hi...	Signatures are not compatible: Human is not a kind of Adult (num order=1)

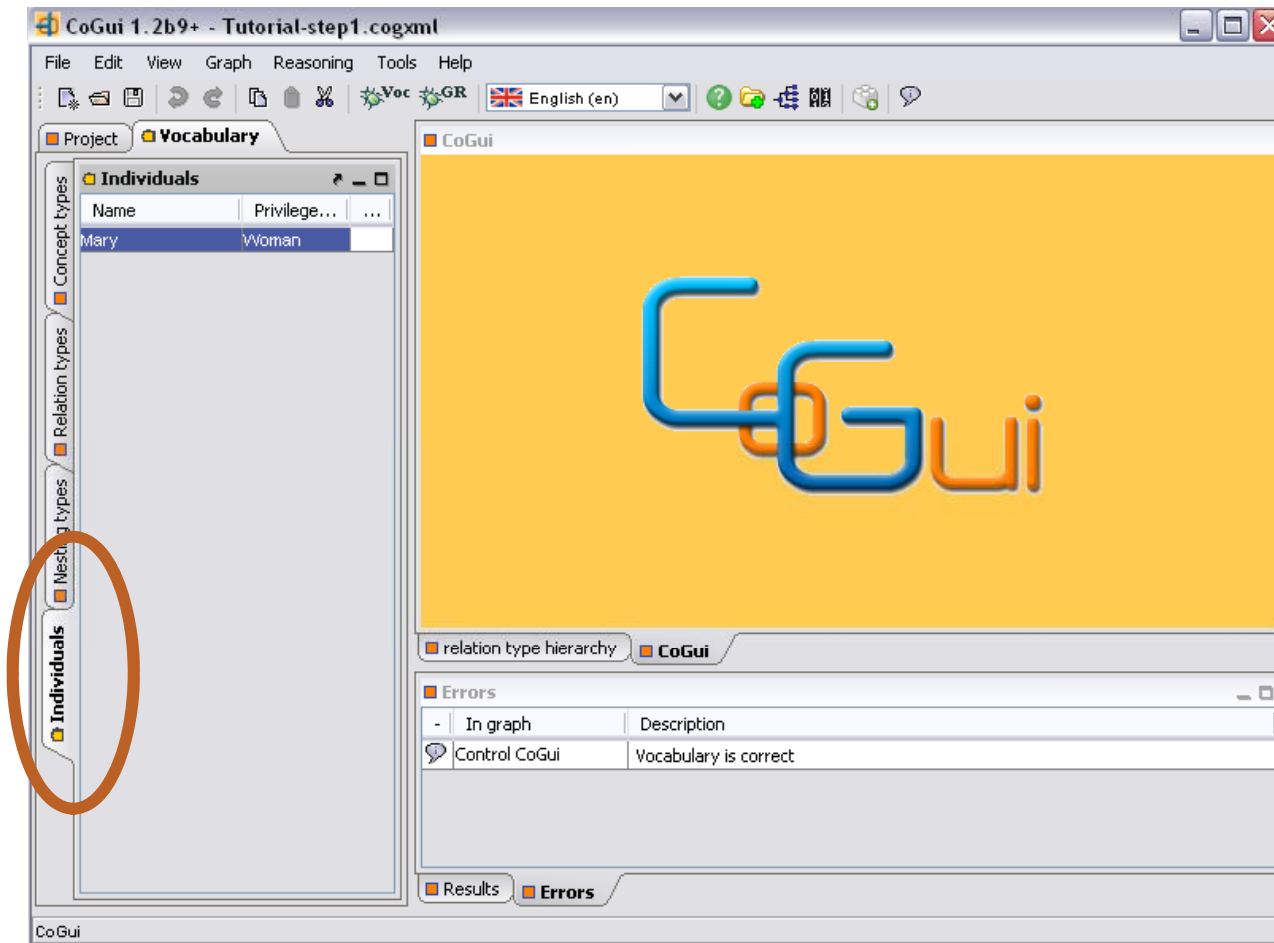




VOCABULARY

3. Individuals

COGUI – INDIVIDUALS

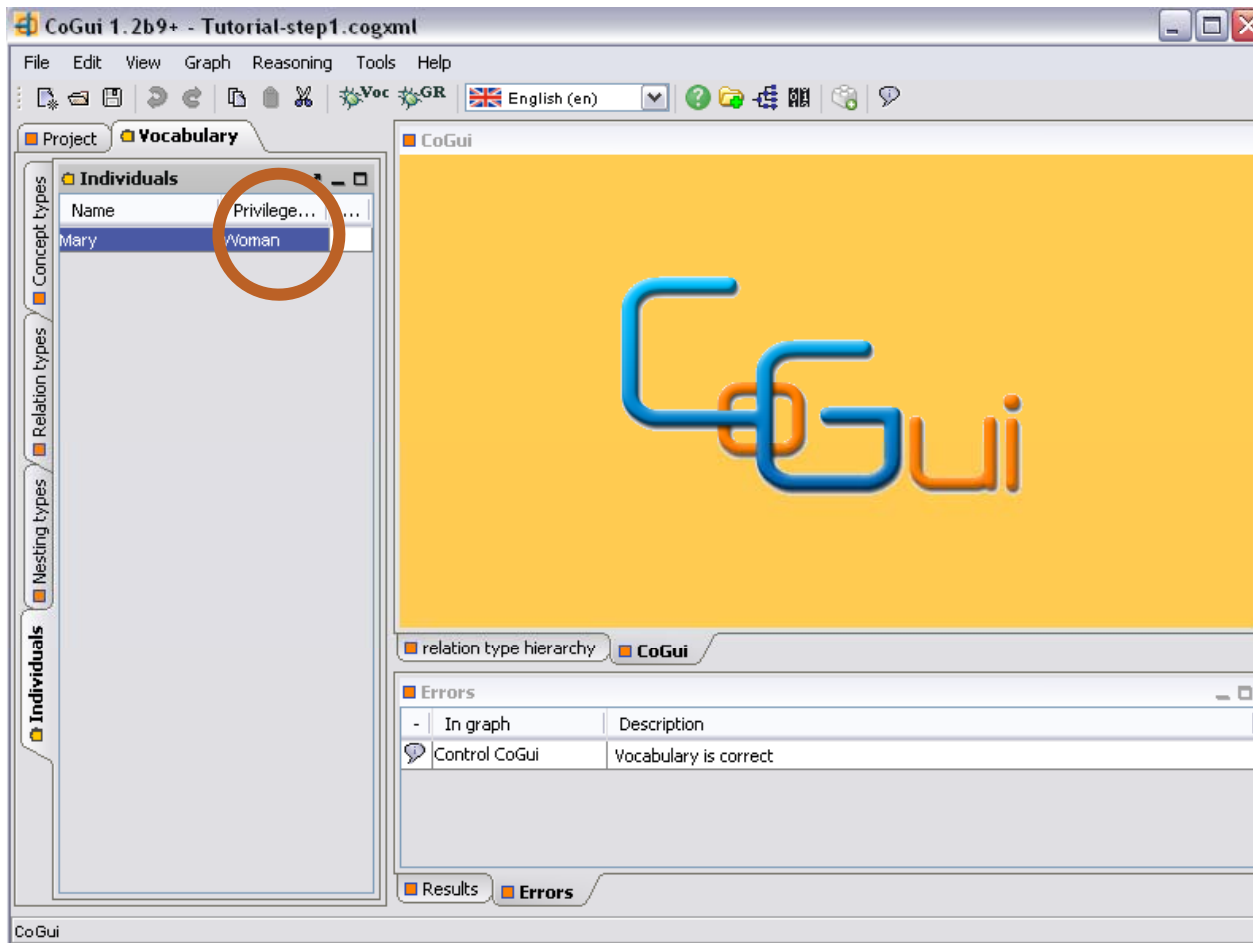




EXTENDING THE VOCABULARY

3. Individual Typing

COGUI – INDIVIDUAL TYPING



COGUI – MULTILINGUAL CAPABILITIES

The screenshot displays the CoGui 1.2b10 interface for a tutorial project. The main window is titled "CoGui 1.2b10 - Tutorial-step1.cogxml" and features a menu bar (File, Edit, View, Graph, Reasoning, Tools, Help) and a toolbar with various icons. The interface is divided into several panels:

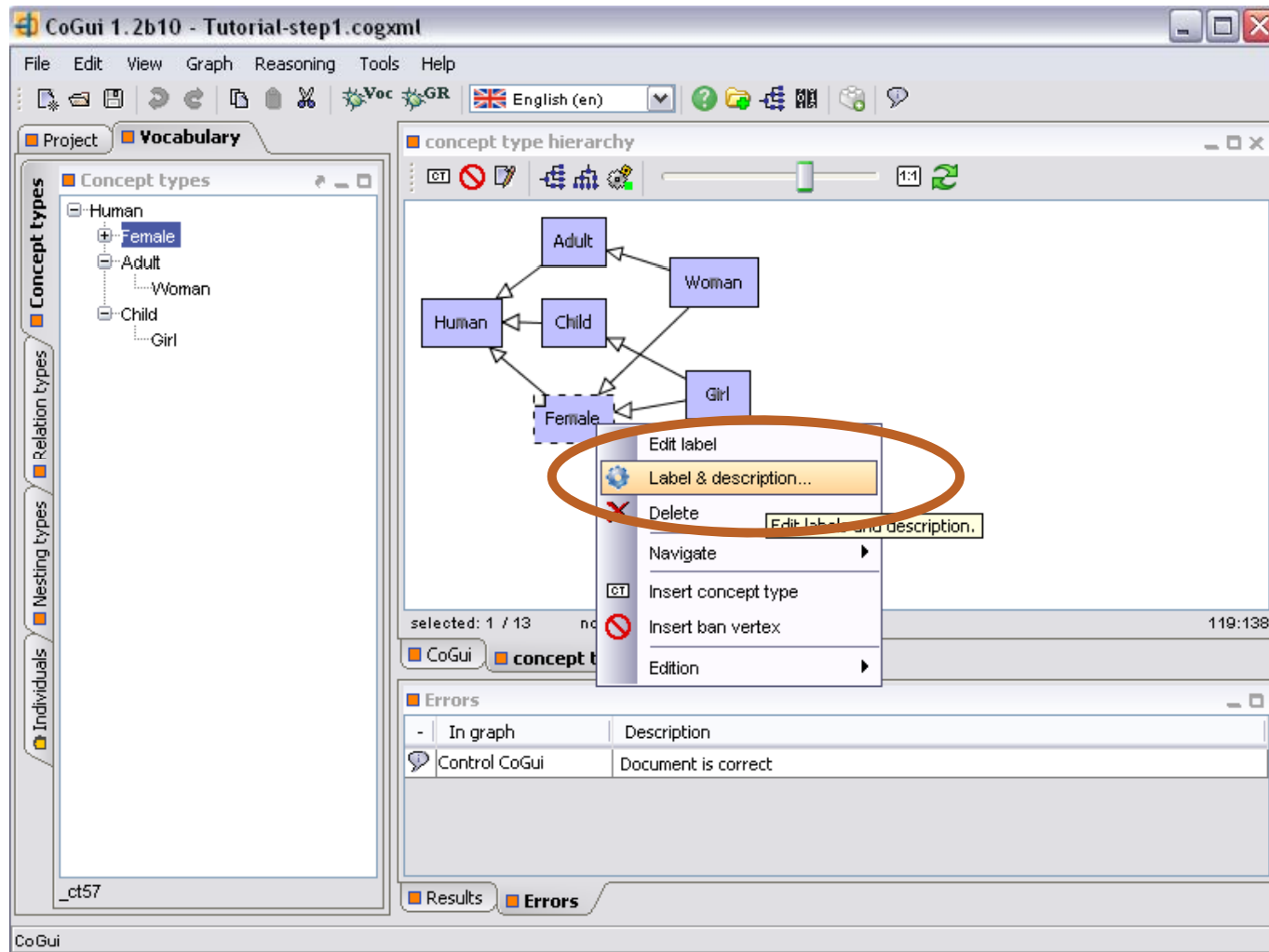
- Project Vocabulary:** A sidebar on the left with a tree view of concept types. The "Concept types" section is expanded, showing a hierarchy: Human (parent), Female (child), Adult (child), Woman (child), Child (child), Girl (child), and Female (child).
- concept type hierarchy:** A central diagram showing a network of concept types. "Human" is the root, with "Adult" and "Child" as children. "Adult" has "Woman" as a child, and "Child" has "Girl" as a child. "Female" is a child of both "Adult" and "Child".
- Female details:** A yellow box provides information for the selected "Female" concept:
 - Female**
 - no description in English
 - Translations**
 - 🇬🇧 Female
- Errors:** A table at the bottom right showing the status of the document:

-	In graph	Description
🗨️	Control CoGui	Document is correct

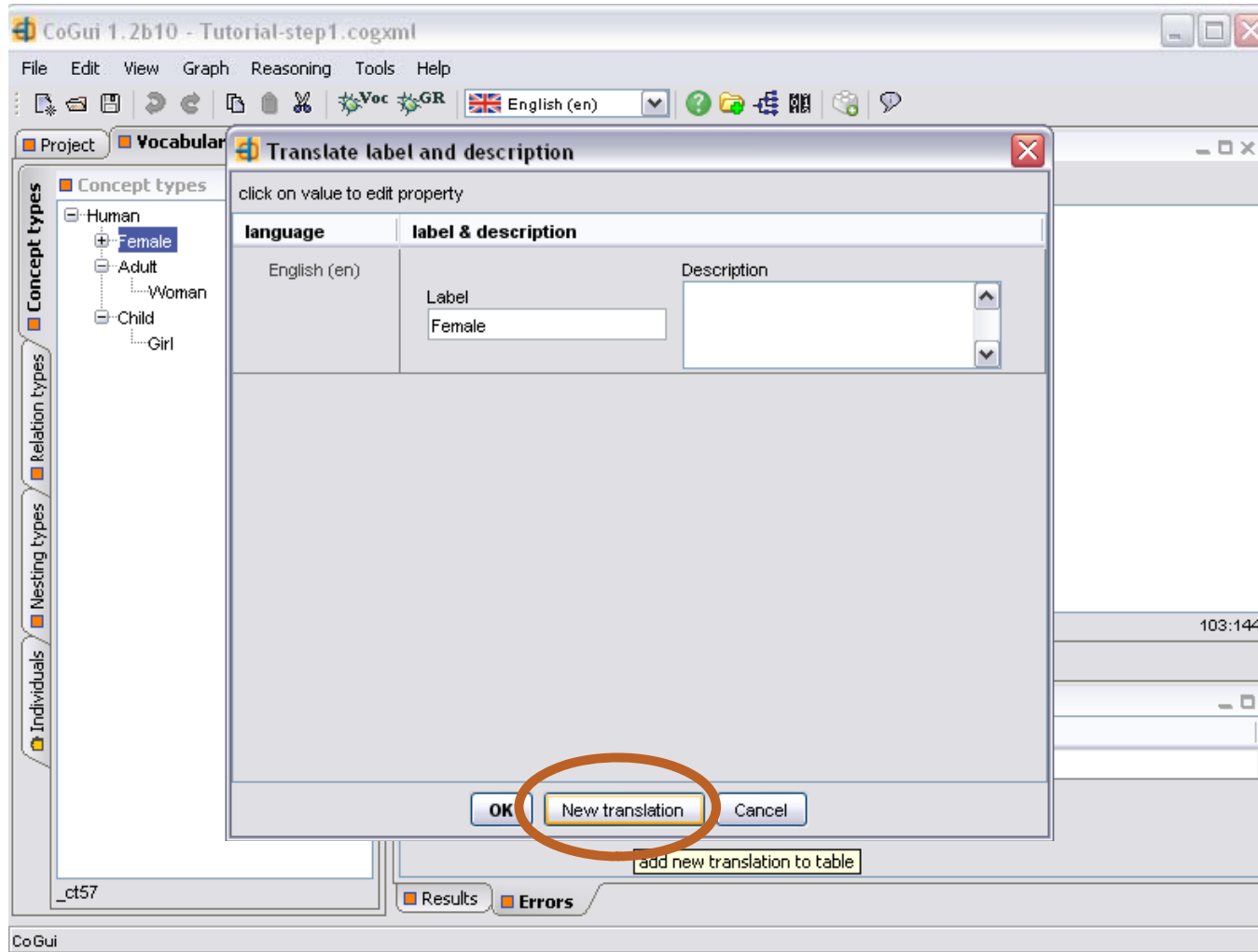
The status bar at the bottom indicates "selected: 1 / 13" and "normal" with a timestamp of "117:138". The CoGui logo is visible in the bottom left corner.



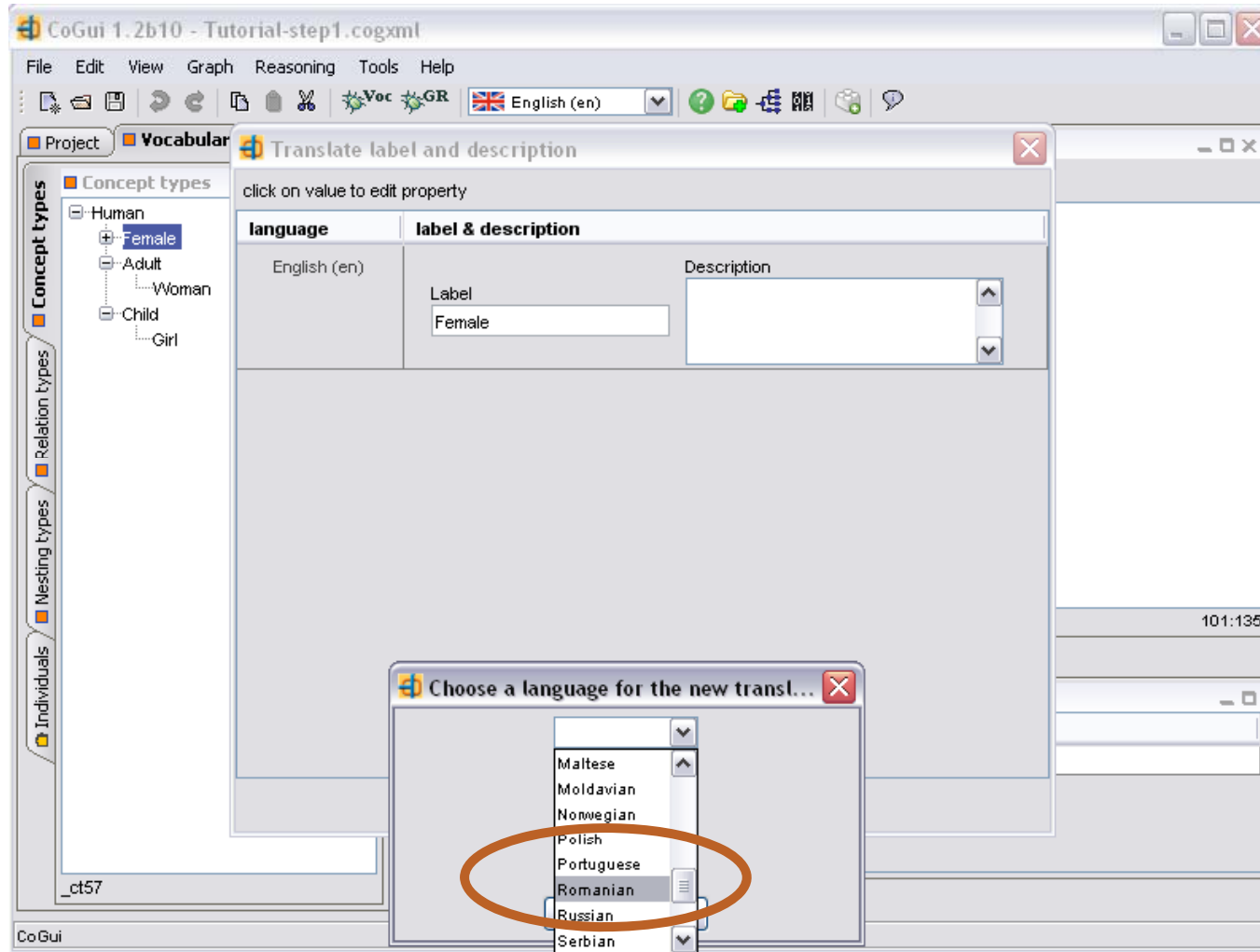
FOR TRANSLATIONS RIGHT CLICK AND SELECT LABEL AND DESCRIPTION



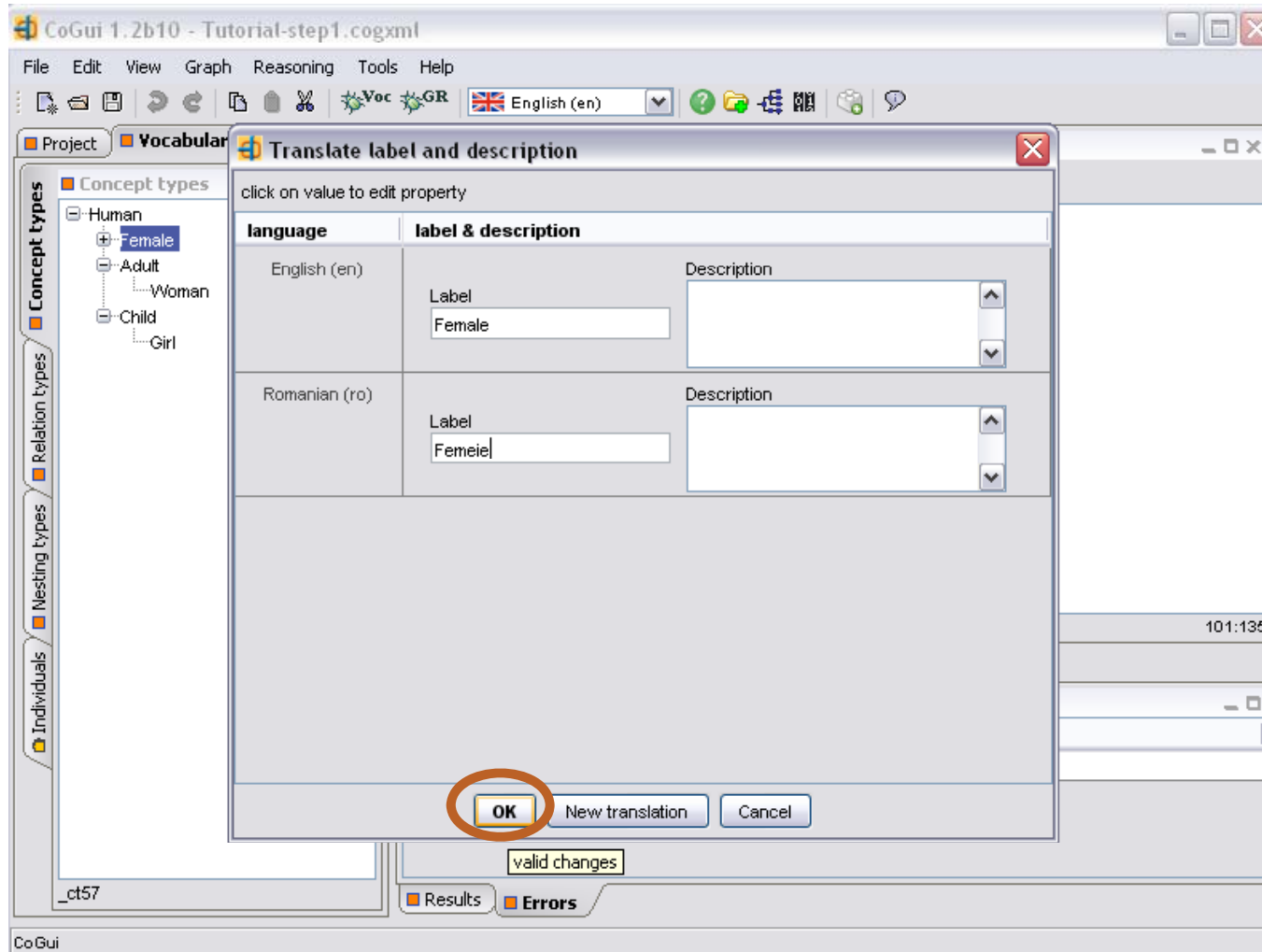
CLICK ON NEW TRANSLATION TO ADD A NEW TRANSLATION



SELECT THE LANGUAGE IN WHICH YOU WANT TO TRANSLATE



WRITE THE TRANSLATION THEN CLICK OK



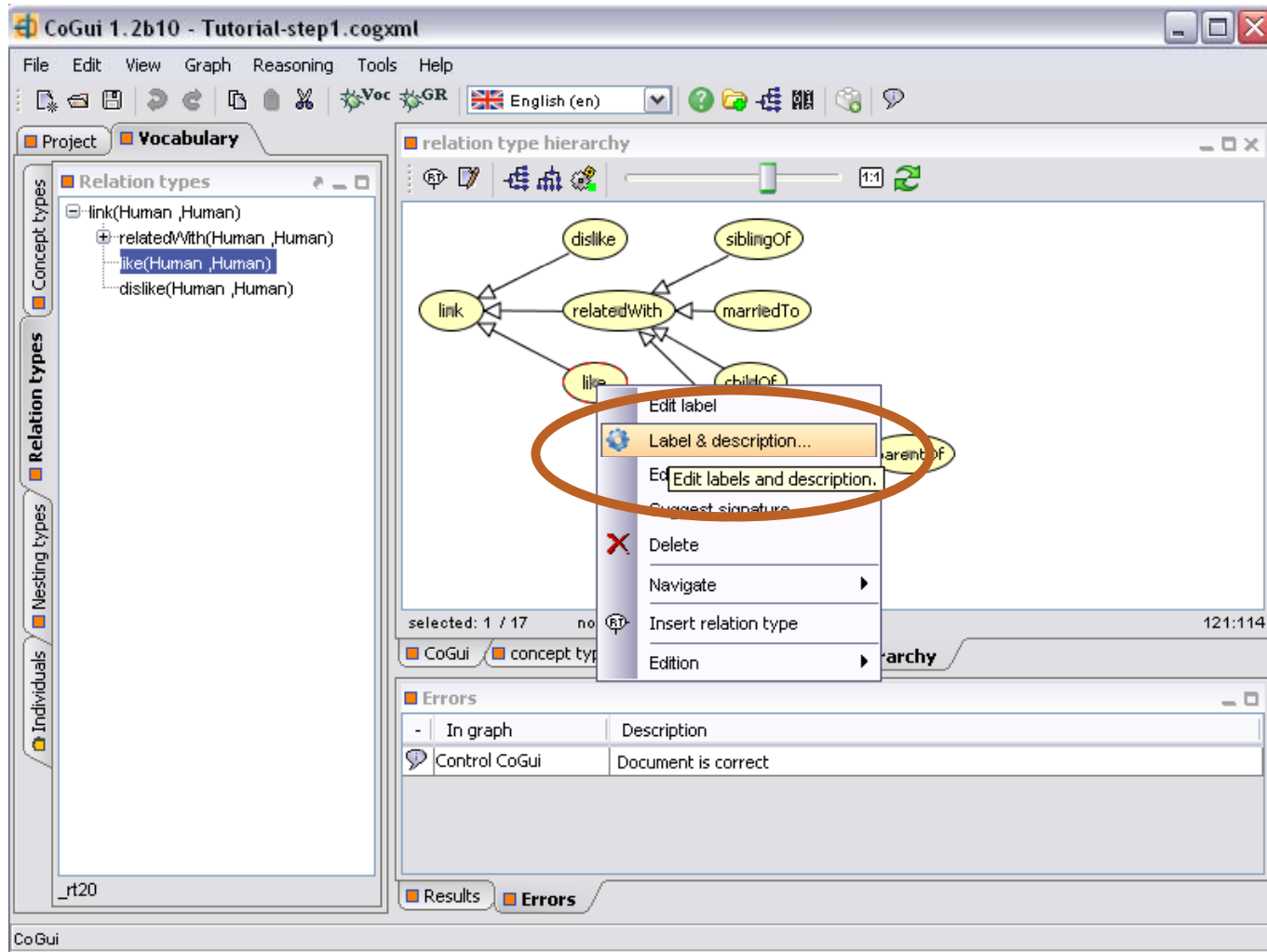
THE DIFFERENT TRANSLATIONS WILL APPEAR ON MOUSE OVER NODE

The screenshot displays the CoGui 1.2b10 interface. On the left, a tree view under 'Concept types' shows a hierarchy: Human (expanded) -> Female (selected) -> Adult -> Woman -> Child -> Girl. The main window, titled 'concept type hierarchy', shows a graph of these concepts. A tooltip for the 'Female' node is visible, containing the text 'Female', 'description in English', and a section titled 'Translations' with a list item 'Female' next to a UK flag icon. The 'Errors' panel at the bottom shows a message: 'Control CoGui | Document is correct'.

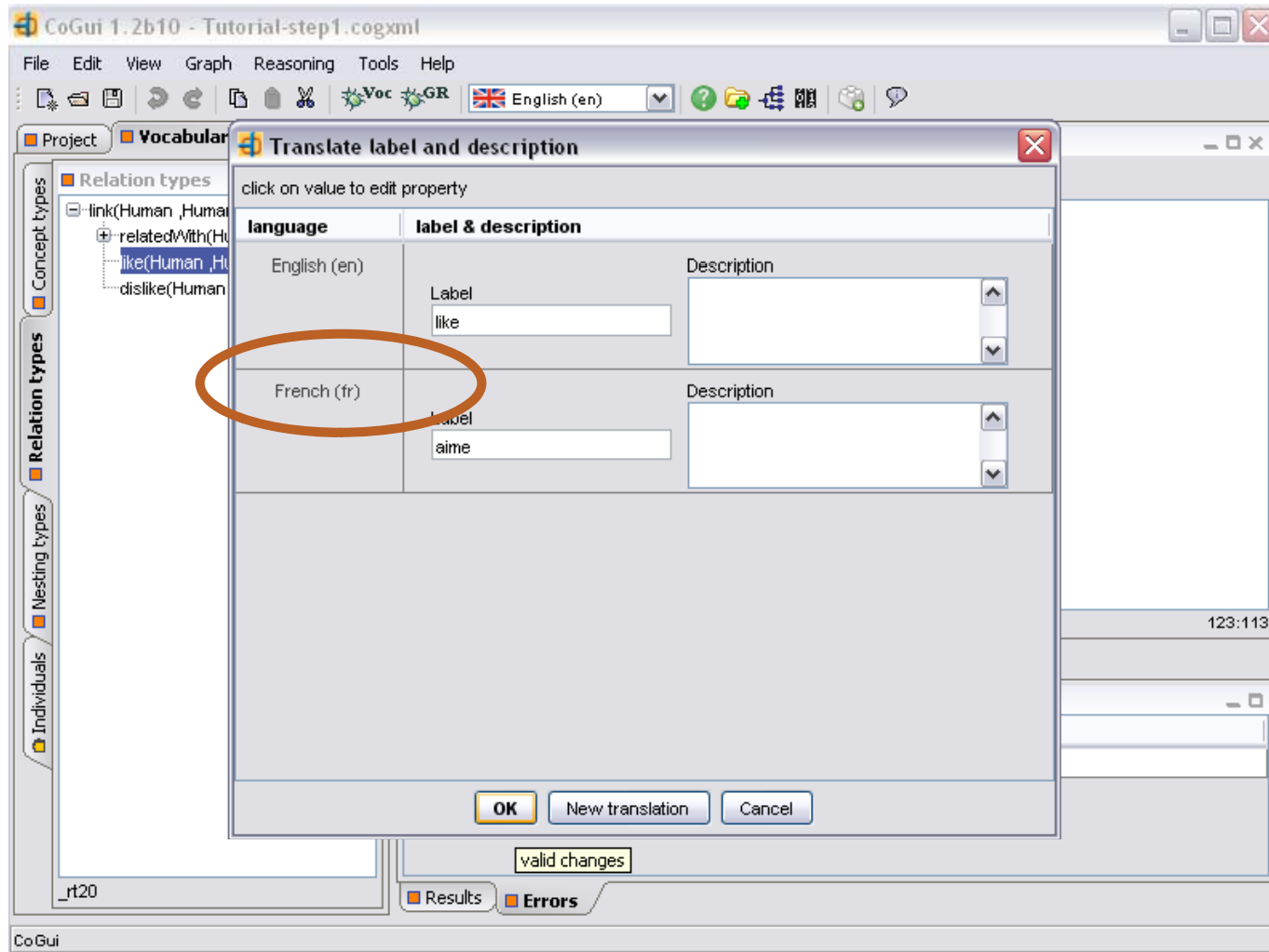
In graph	Description
Control CoGui	Document is correct



YOU CAN ALSO TRANSLATE RELATIONS



IF YOU TRANSLATE AN ENTITY IN FRENCH



WHILE THE SELECTED LANGUAGE IS ENGLISH
THE TRANSLATION WILL NOT APPEAR

The screenshot shows the CoGui 1.2b10 interface for 'Tutorial-step1.cogxml'. The language is set to 'English (en)'. The main window displays a 'relation type hierarchy' diagram with nodes: link, relatedWith, dislike, siblingOf, like, marriedTo, childOf, ancestorOf, and parentOf. The 'Errors' panel at the bottom shows a message: 'Control CoGui | Document is correct'.

selected: 1 / 17 normal 534:47

In graph	Description
Control CoGui	Document is correct



CHANGING THE LANGUAGE TO FRENCH WILL HIGHLIGHT THE NON TRANSLATED CONCEPTS

The screenshot shows the CoGui 1.2b10 interface with the language set to French. The main window displays a relation type hierarchy graph. The nodes in the graph are:

- fr:Dislike (not translated)
- fr:SiblingOf (not translated)
- fr:link (not translated)
- fr:relatedWith (not translated)
- fr:marriedTo (not translated)
- fr:buildOf (not translated)
- fr:ancestorOf (not translated)
- fr:parentOf (not translated)
- aime (highlighted with a brown circle, indicating it is not translated)

The interface also shows a list of relation types on the left, including 'not translated' and 'aime'. The bottom panel shows the 'Errors' section, which is currently empty, indicating that the document is correct.

