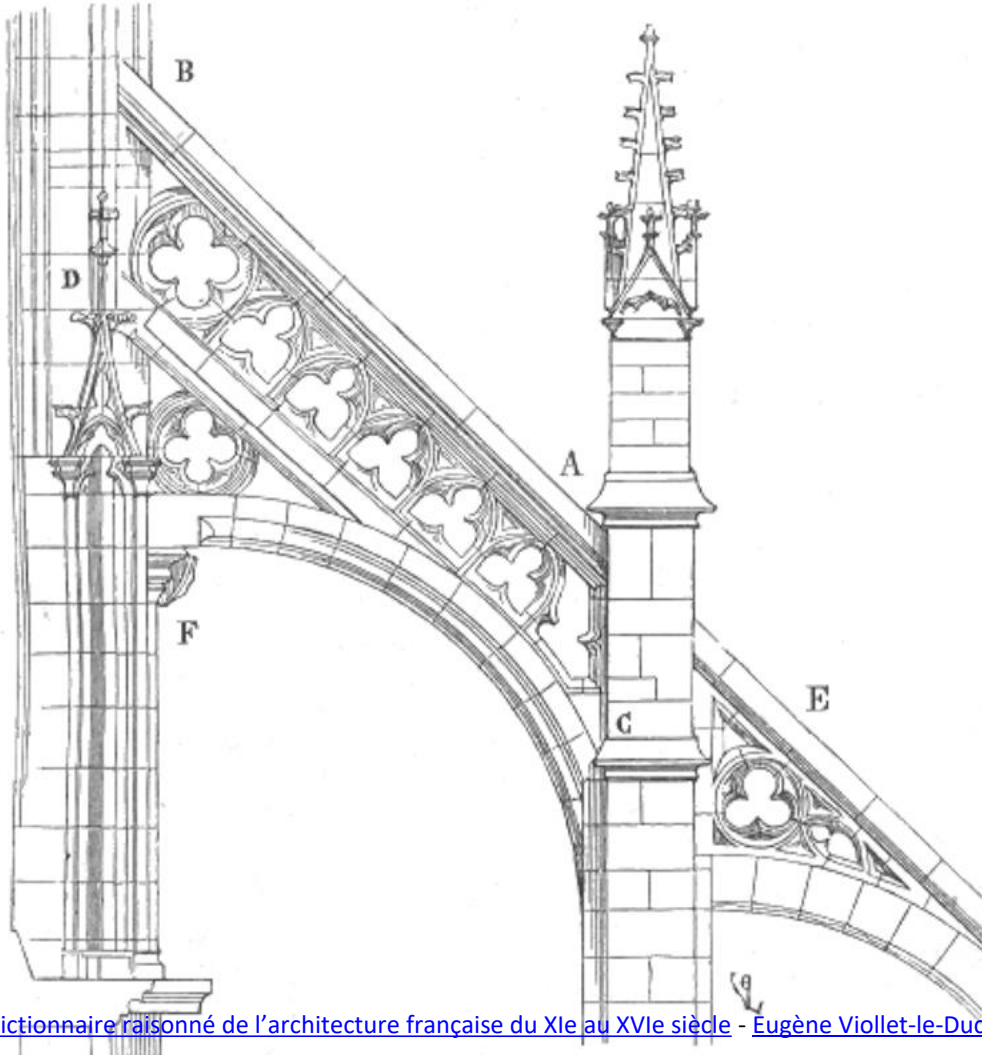


<http://ontoterminology.com/>

December 2023



## Prof. Christophe Roche

[TALOS Research Center](#)  
University of Crete (Greece)

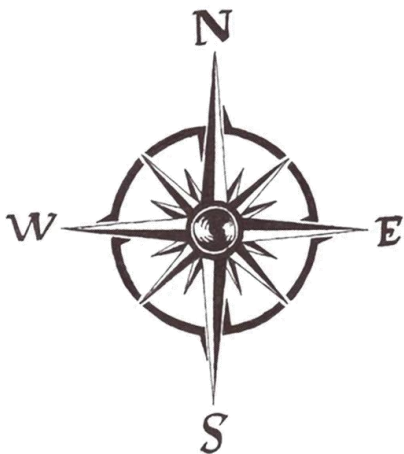
[Condillac Research Group](#)  
University Savoie Mont-Blanc (France)

[KETRC Research Centre](#)  
University of Liaocheng (China)

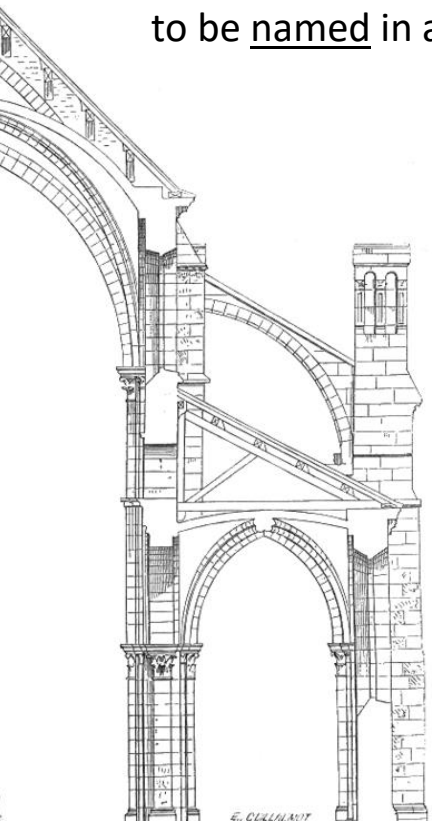
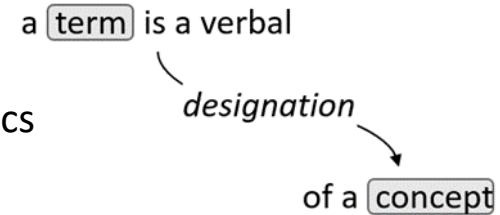
<http://christophe-roche.fr/>  
[roche.university@gmail.com](mailto:roche.university@gmail.com)

## Contents

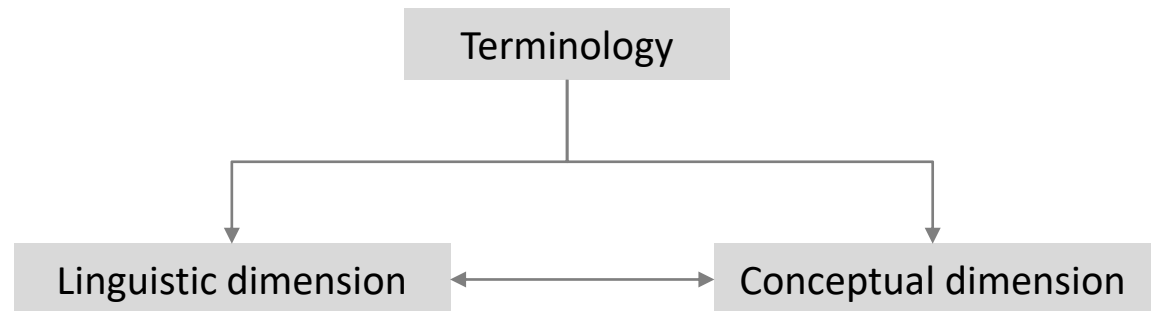
- 1) Theoretical Foundations
  - 1) Conceptual Dimension
  - 2) Linguistic Dimension
- 2) Environment
- 3) Term-guided Methodology
- 4) Search
- 5) Export
- 6) Ontoterminology - KG & W3C



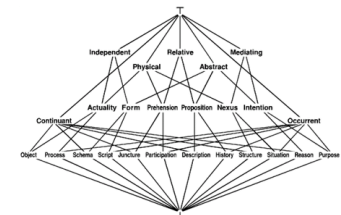
- An ontoterminology is a terminology whose conceptual system is a formal ontology
- A term is a verbal designation of a concept
- A concept is a unique combination of essential characteristics
- A concept is a set of essential characteristics enough stable to be named in a given natural language



## The double dimension of Terminology



Although objects resembling lenses date back 4,000 years and there are Greek accounts of the optical properties of water-filled spheres (6th century BC) followed by many centuries of writings on optics, the earliest known use of simple microscopes (magnifying glasses) dates back to the widespread use of lenses in eyeglasses in the 13th century. The earliest known examples of compound microscopes, which combine an objective lens near the specimen with an eyepiece to view a real image, appeared in Europe around 1620. The inventor is unknown although many claims have been made over the years. Several revolve around the spectacle-making centers in the Netherlands including claims it was invented in 1590 by Zacharias Janssen and/or Zacharias' father, Hans Martens, claims it was invented by their neighbor and rival spectacle maker, Hans Lippershey, and claims it was invented by expatriate Cornelis Drebbel who was noted to have a version in London in 1619.



a **term** is a verbal  
*designation*  
of a **concept**

➔ A concept is extra linguistic

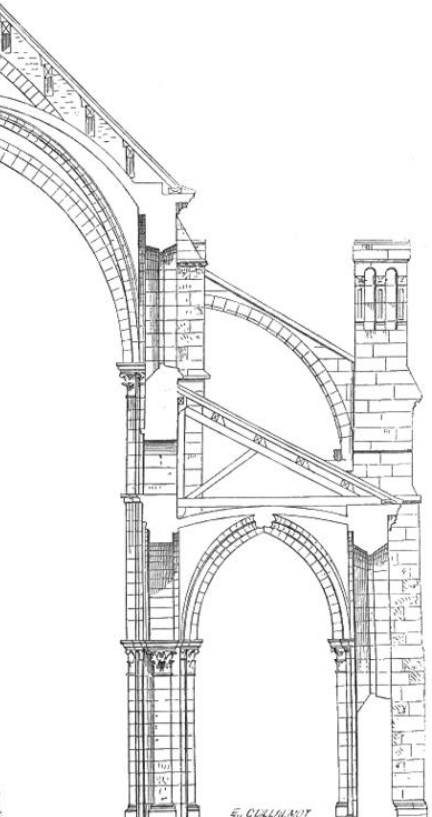
➔ A concept name is not a term

A term is given when a concept name is built in such a way that by reading it we understand the nature of the objects subsumed by the concept.

*The term "chair" denotes the concept whose name is  
 <Seat for one person with feet with back without arms>*

➔ Definition of concept in a Formal language

➔ Definition of term in Natural Language



## Conceptual dimension

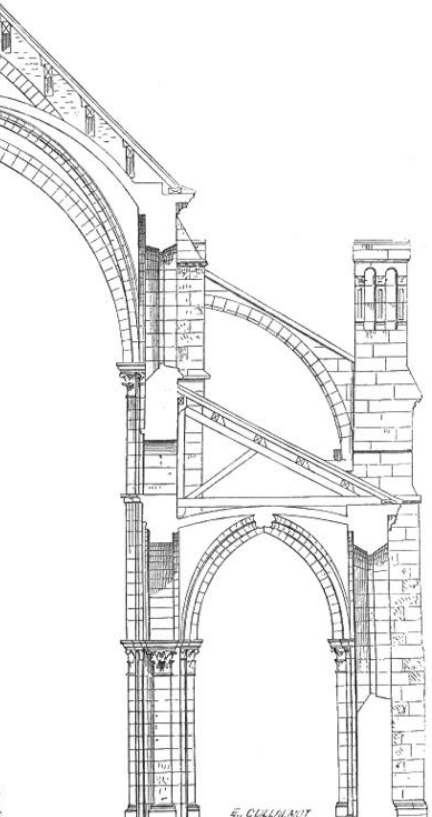
- A concept is defined as a unique combination of essential characteristics

<Seat for one person> ::= <Seat> + /one person/  
 <Seat with feet> ::= <Seat> + /with feet/  
 <Seat with back> ::= <Seat> + /with back/  
 etc.

An essential characteristic is a characteristic such as, if removed from the object, the object is no longer what it is.

### Writing conventions:

- concepts are written between chevrons and start with a capital letter  
e.g. <Seat with feet>
- differences are written between slashes and start with a lower case letter  
e.g. /with feet/
- terms are written between double quote and start with a lower case letter  
e.g. "chair"



## Conceptual dimension

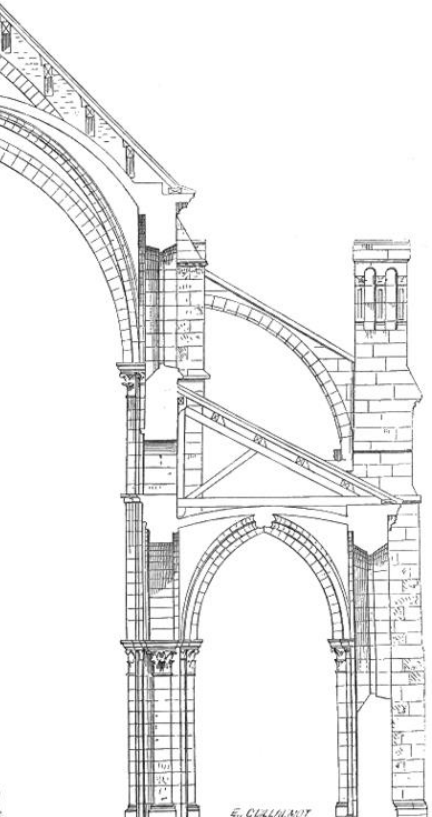
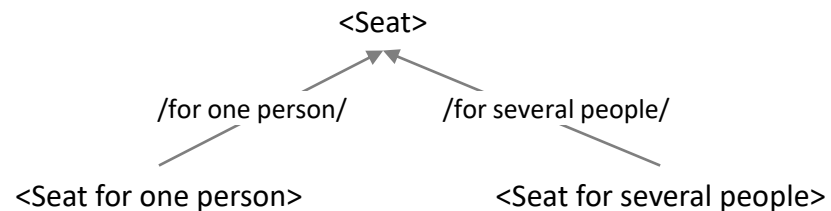
- A concept is defined as a unique combination of essential characteristics

<Seat for one person> ::= <Seat> + /one person/  
 <Seat with feet> ::= <Seat> + /with feet/  
 <Seat with back> ::= <Seat> + /with back/  
 etc.

- Essential characteristics are structured into axes of analysis and are exclusive each other

Back = { /with back/ /without back/ }  
 Feet = { /with feet/ /without feet/ }  
 etc.

↪ an essential characteristic defines and divides concepts



## Conceptual dimension

- A concept is defined as a unique combination of essential characteristics

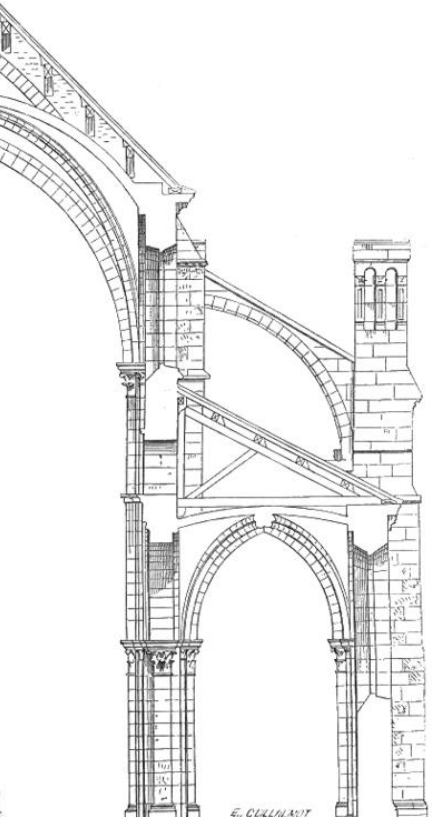
<Seat for one person> ::= <Seat> + /one person/  
 <Seat with feet> ::= <Seat> + /with feet/  
 <Seat with back> ::= <Seat> + /with back/  
 etc.

- Essential characteristics are structured into axes of analysis and are exclusive each other

Back = { /with back/ /without back/ }  
 Feet = { /with feet/ /without feet/ }  
 etc.

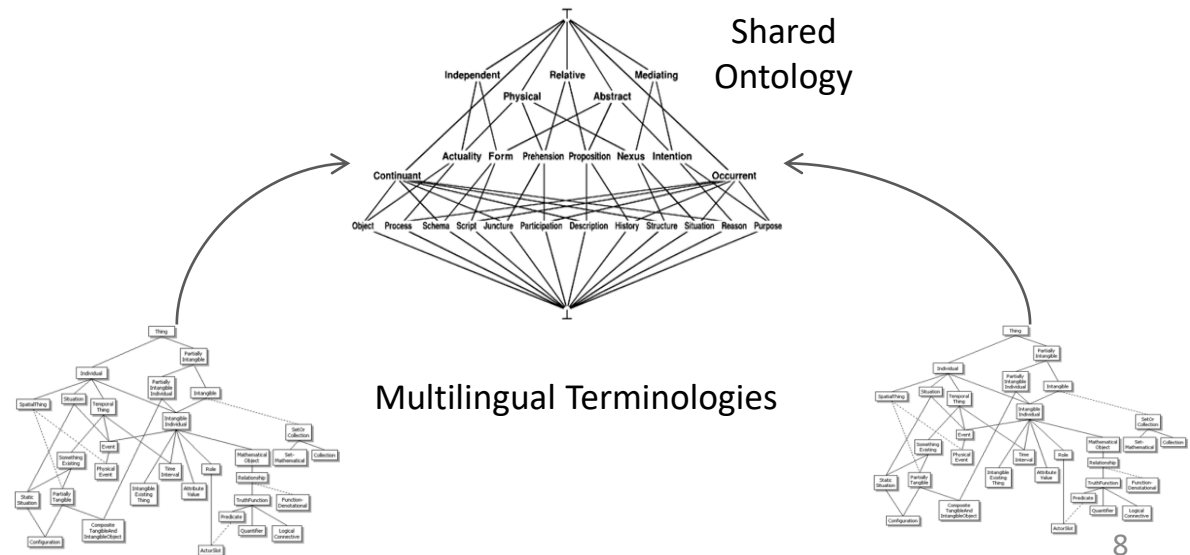
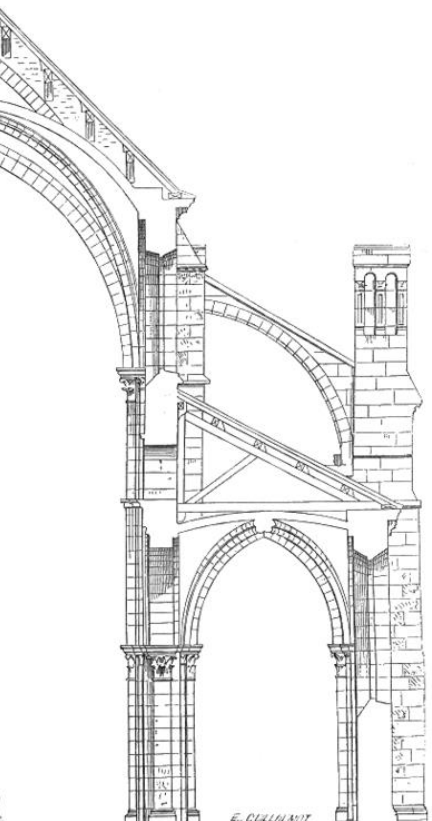
- Multiple hierarchy => multiple inheritance

<Seat for one person with feet with back without arm>  
 is-a <Seat for one person>  
 is-a <Seat with feet>  
 is-a <Seat with back>  
 etc.

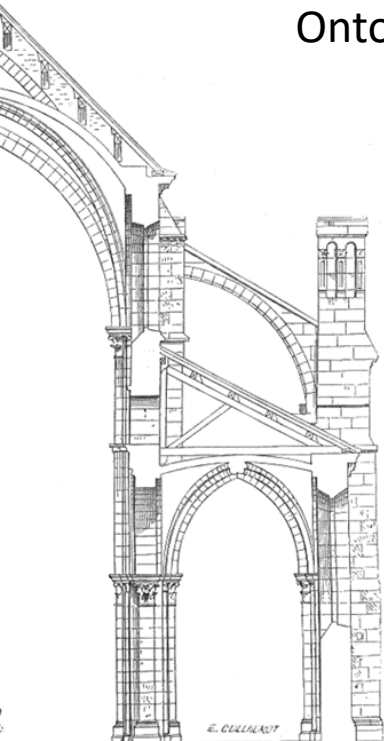


## Linguistic dimension

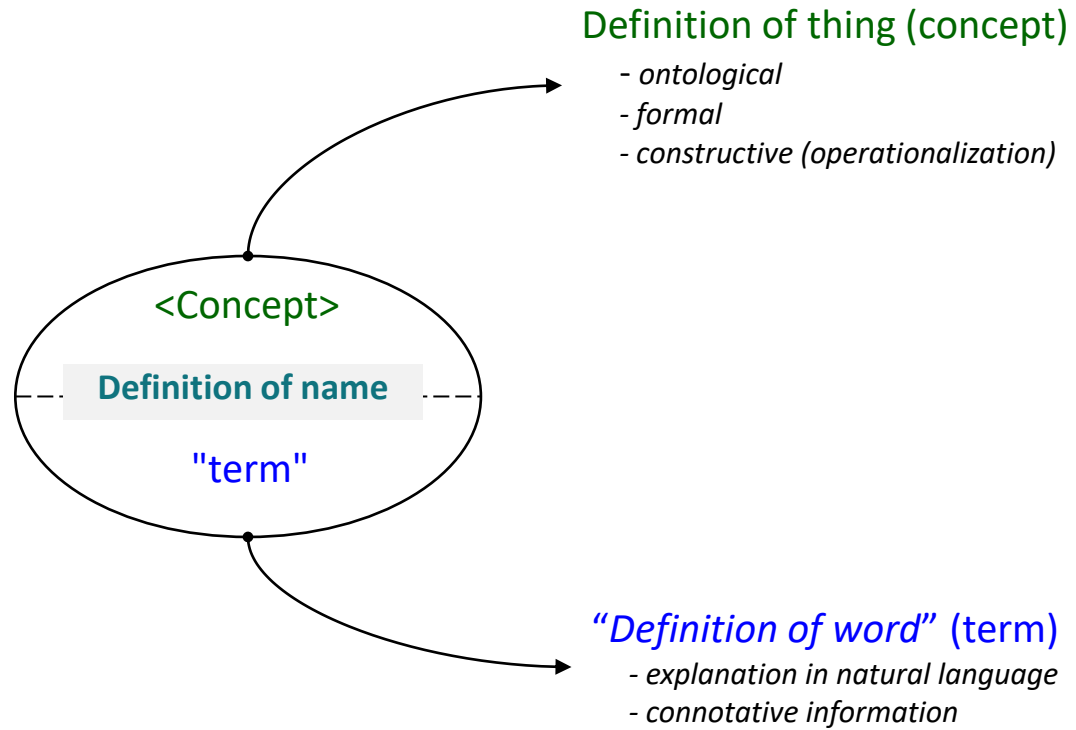
- Multi-lingual terminology
- Linguistic diversity
- Ontology shared by different terminologies
- Aristotelian definition in natural language (genus and specific difference) based on the formal definition





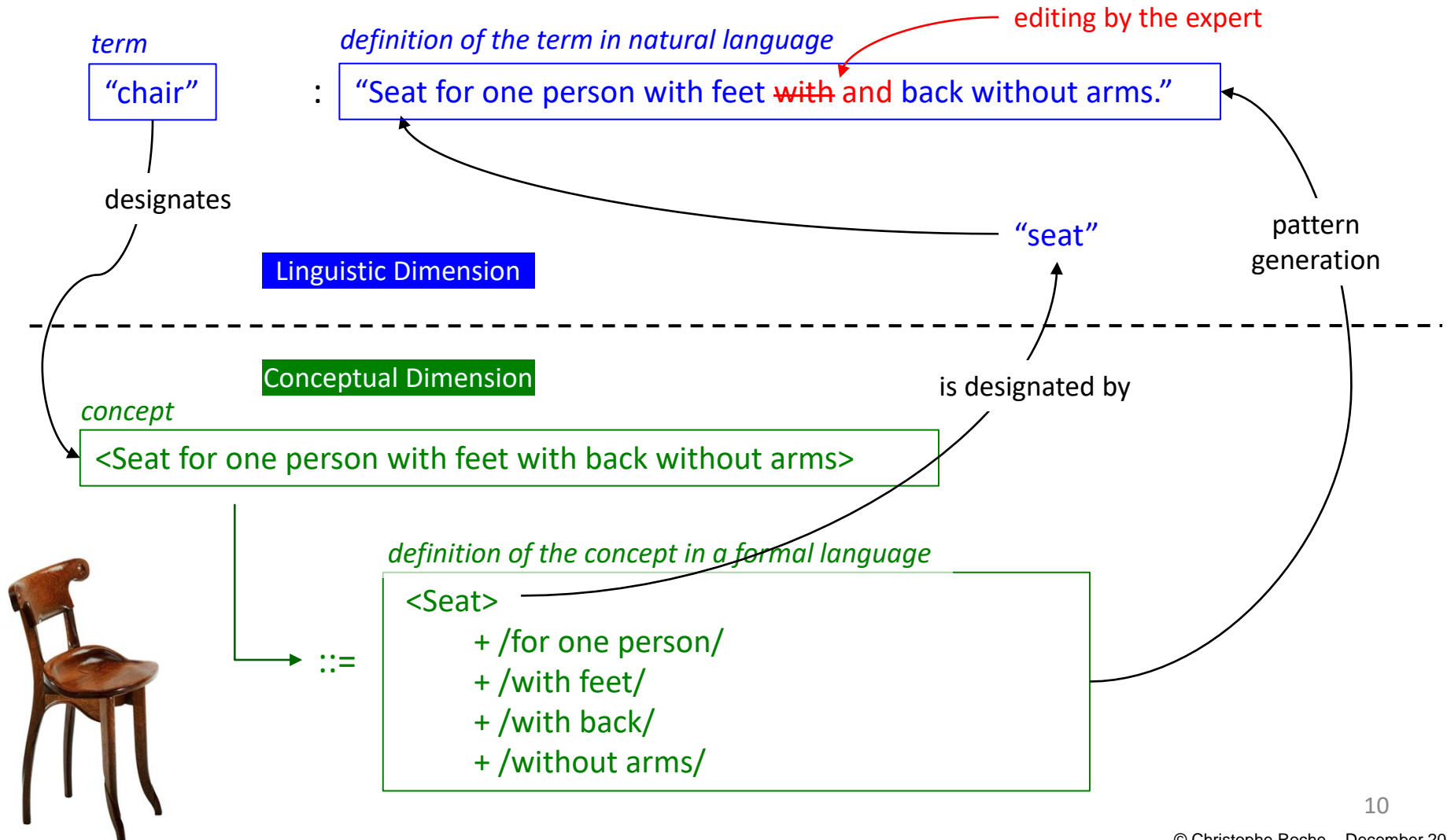


Ontoterm

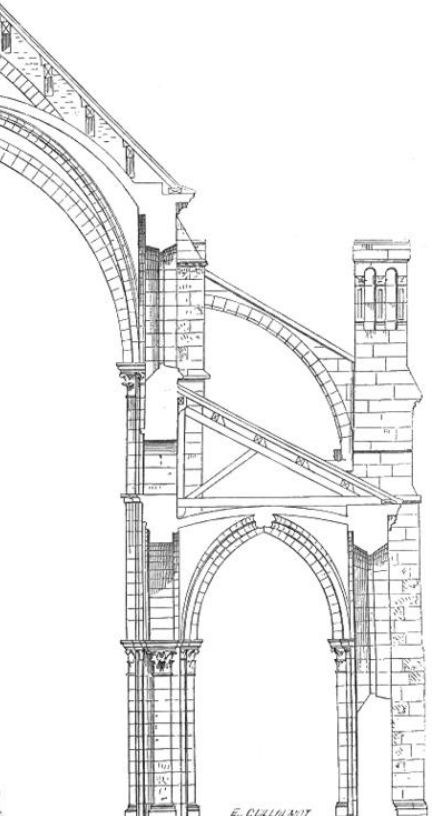


# (1) Theoretical Foundations

- From formal definition of concept → definition of term in natural language



Ontoterminology standardizes the only thing that can be standardized, namely knowledge of the field, and preserves what must be preserved, namely linguistic diversity



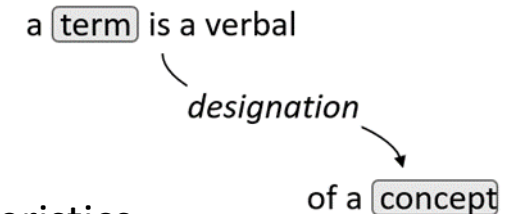
If a conceptualization is worded in natural language, it is defined in a formal language guided by epistemological principles

- Experts are guided by Tedi which proposes only valid information at each step



**1:** Enter the terms to be defined

**2:** Identify the axes of analysis and their essential characteristics

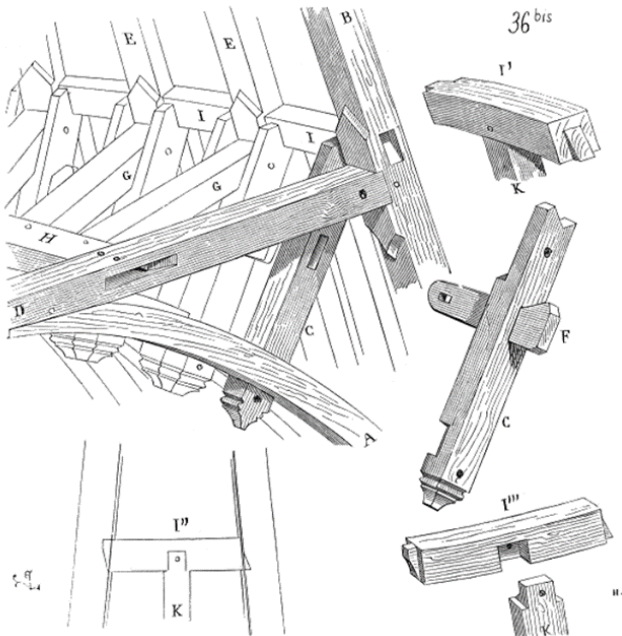


**3:** Select the set of characteristics denoted by the term

**4:** Create the concept if it does not exist

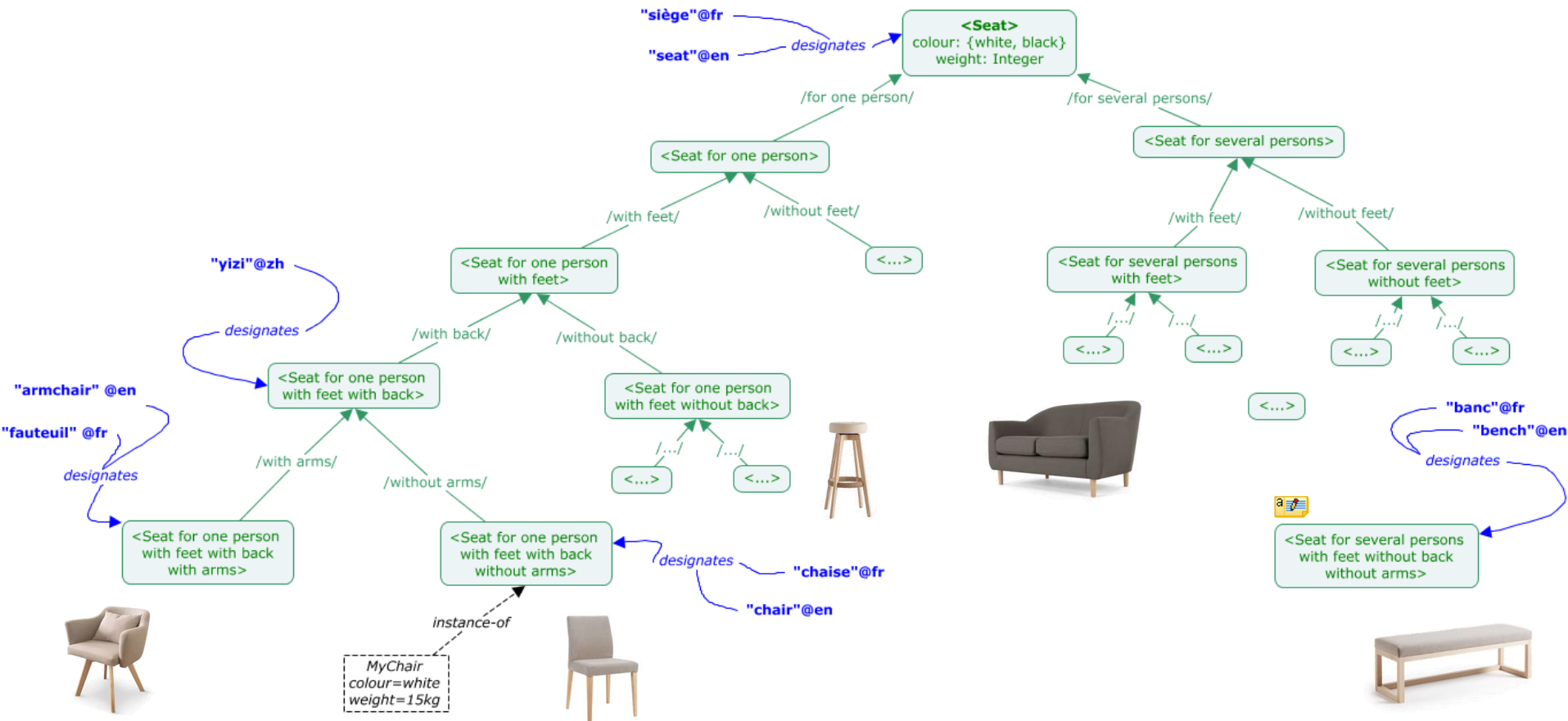
**5:** Update the concept system if necessary

**6:** Complete the linguistic dimension

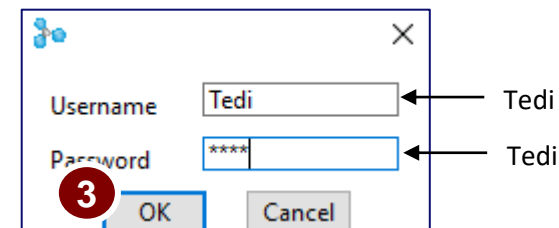
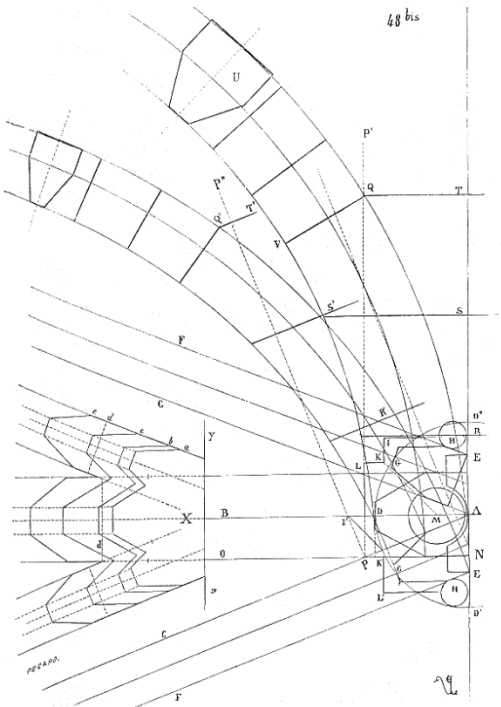


# AN Example: The Ontoterminology of Seats

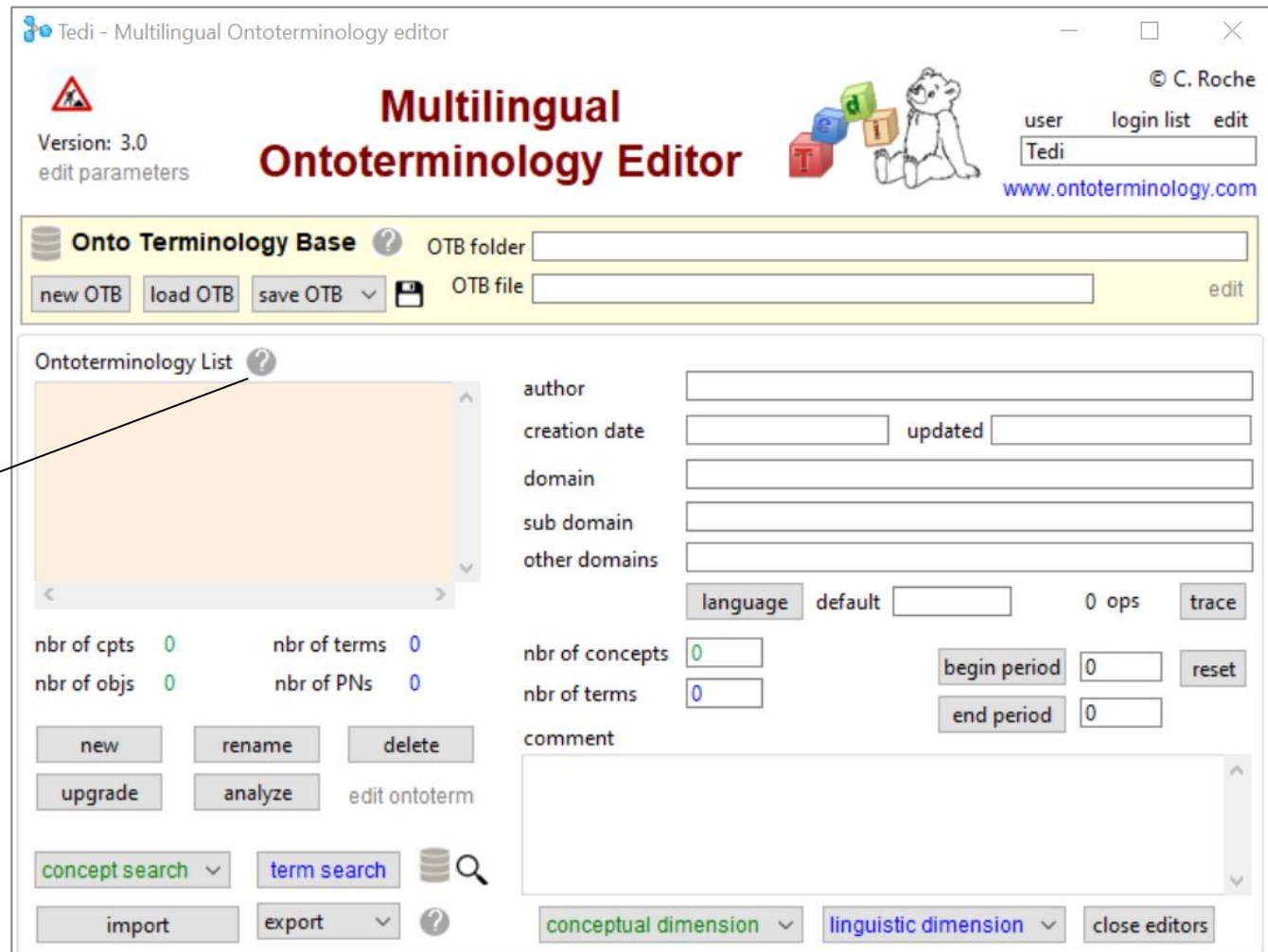
Objects	Concepts	for one person	several people	with feet	without feet	with back	without back	with arms	without arms	Designations (English)	Designations (French)
	<Seat 1 person with feet with back without arms>	X		X		X			X	"chair"	"chaise"
	<Seat 1 person with feet with back with arms>	X		X		X		X		"armchair"	"fauteuil"
	<Seat 1 person with feet without back without arms>	X		X			X		X	"stool"	"tabouret"
	<Seat several people with feet with back with arms>		X	X		X		X		"couch"	"canapé"
	<Seat several people with feet without back without arms>		X	X			X		X	"bench"	"banc"



## ■ Opening a session



## ■ Launcher



Tedi - Multilingual Ontoterminology editor

Version: 3.0  
edit parameters

## Multilingual Ontoterminology Editor

© C. Roche

user login list edit  
Tedi

[www.ontoterminology.com](http://www.ontoterminology.com)

**Onto Terminology Base** ? OTB folder

new OTB load OTB save OTB  OTB file  edit

**Ontoterminology List** ?

author

creation date  updated

domain

sub domain

other domains

language default  0 ops

nbr of cpts 0    nbr of terms 0    nbr of concepts 0

nbr of objs 0    nbr of PNs 0    nbr of terms 0

begin period 0

end period 0

comment

new rename delete

upgrade analyze edit ontoterm

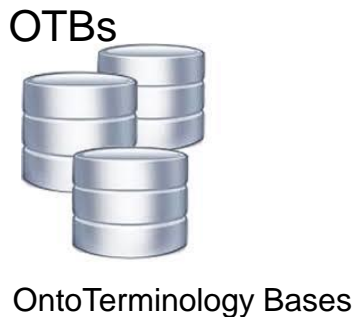
concept search  term search

import  export

conceptual dimension  linguistic dimension  close editors

Help functions

- Load an existing OTB o Create a new OTB (OntoTerminology Base)



Tedi - Multilingual Ontoterminology editor

Version: 3.0  
edit parameters

## Multilingual Ontoterminology Editor

© C. Roche

user login list edit  
Tedi

www.ontoterminology.com

Onto Terminology Base ? OTB folder

new OTB load OTB save OTB  OTB file  edit

Ontoterminology List ?

nbr of cpts	0	nbr of terms	0
nbr of objs	0	nbr of PNs	0

author

creation date  updated

domain

sub domain

other domains

language default  0 ops

nbr of concepts

nbr of terms

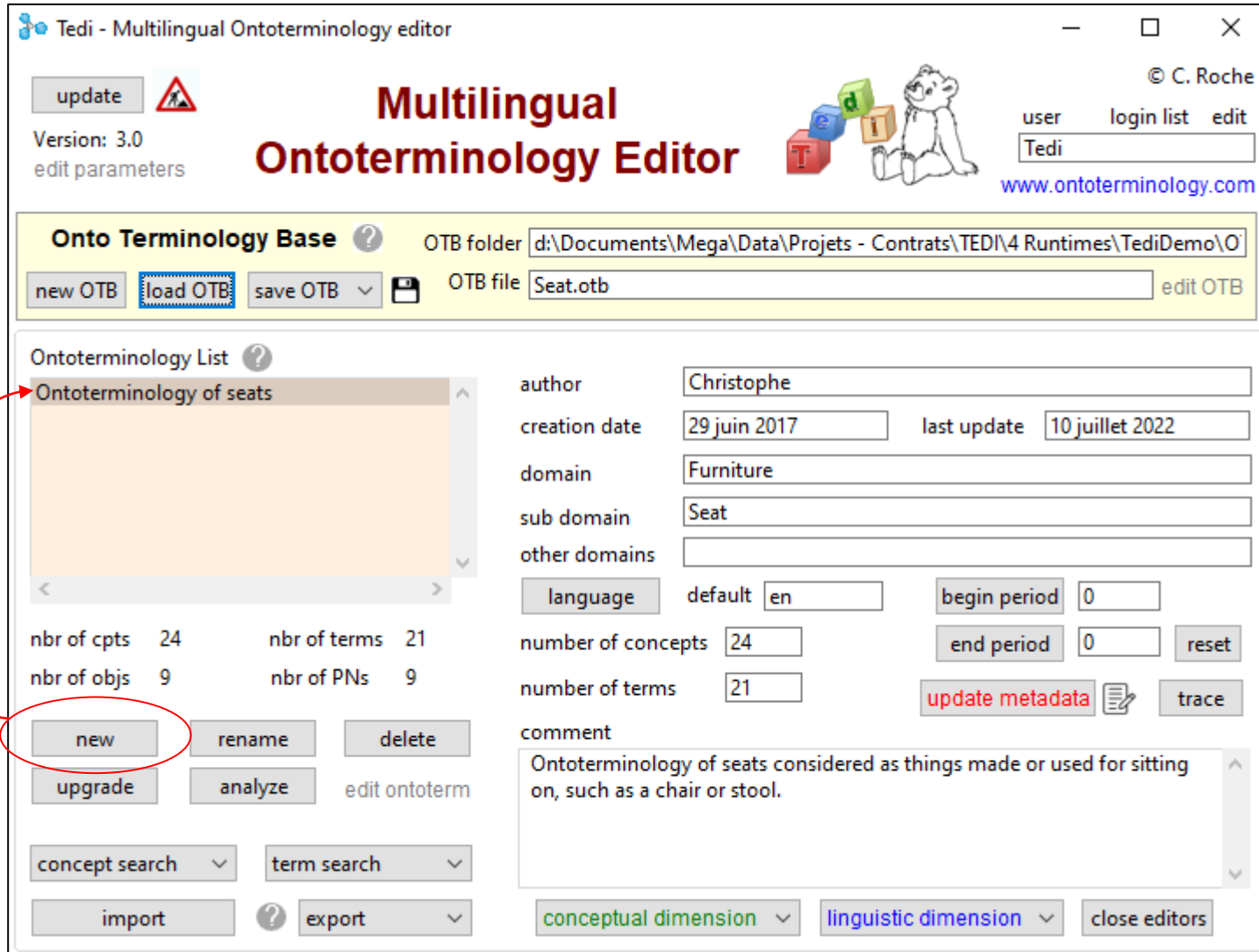
begin period

end period

comment



## ■ Create a new Ontoterminology



**Multilingual Ontoterminology Editor**

© C. Roche  
user login list edit  
Tedi  
www.ontoterminology.com

**Onto Terminology Base** ? OTB folder  OTB file  edit OTB

**Ontoterminology List** ?

- Ontoterminology of seats

author   
 creation date  last update   
 domain   
 sub domain   
 other domains

language default  begin period   
 number of concepts  end period  reset  
 number of terms  update metadata  trace

comment  
 Ontoterminology of seats considered as things made or used for sitting on, such as a chair or stool.

new rename delete  
 upgrade analyze edit ontoterm

concept search  term search   
 import  export

conceptual dimension  linguistic dimension  close editors

## ■ Launcher

Access to the editors of the conceptual dimension

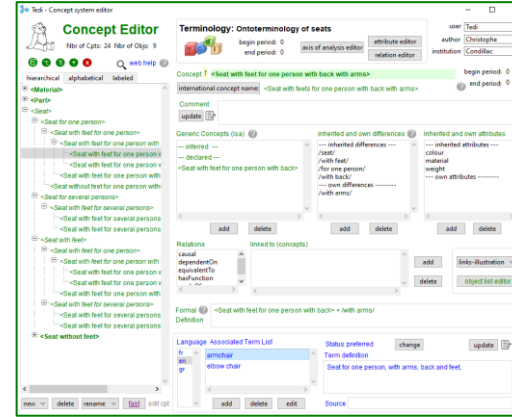
- concept editor
- object editor
- difference editor
- relation editor
- attribute editor

Access to the editors of the linguistic dimension

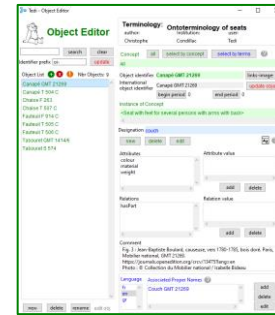
- term editor
- proper name editor
- feature editor

- A set of dedicated editors accessible from the Tedi Launcher

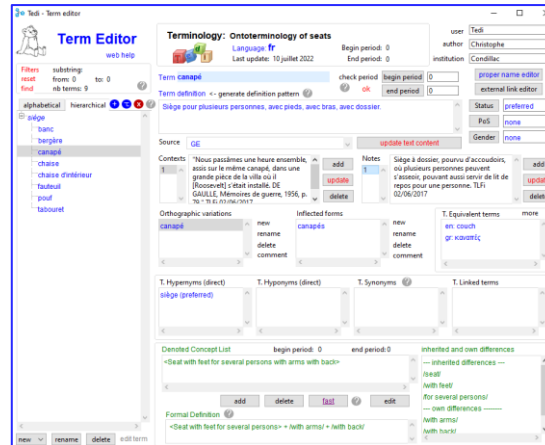
## Concept editor



## Object editor



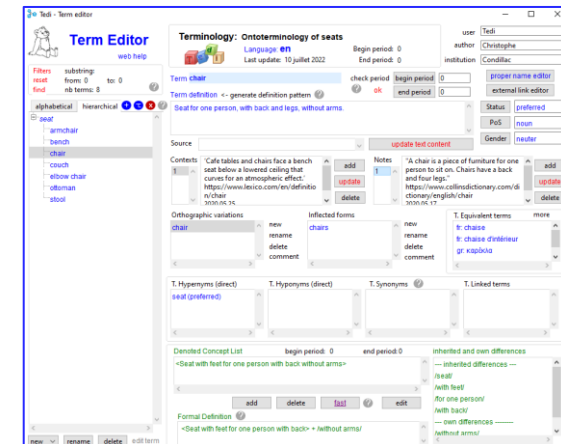
## Term editor (Fr)



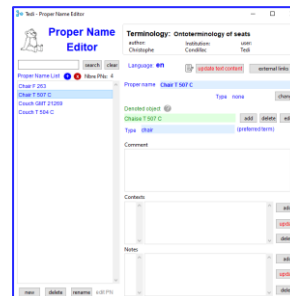
## Proper names editor (Fr)



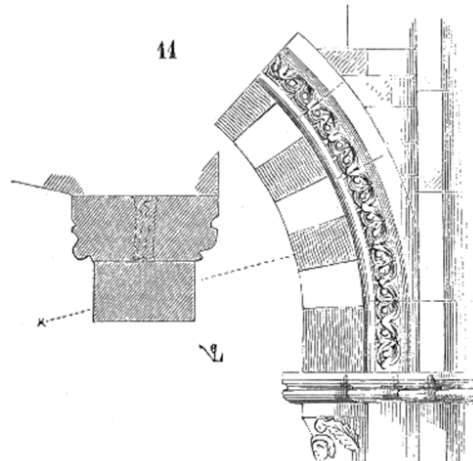
## Term Editor (En)



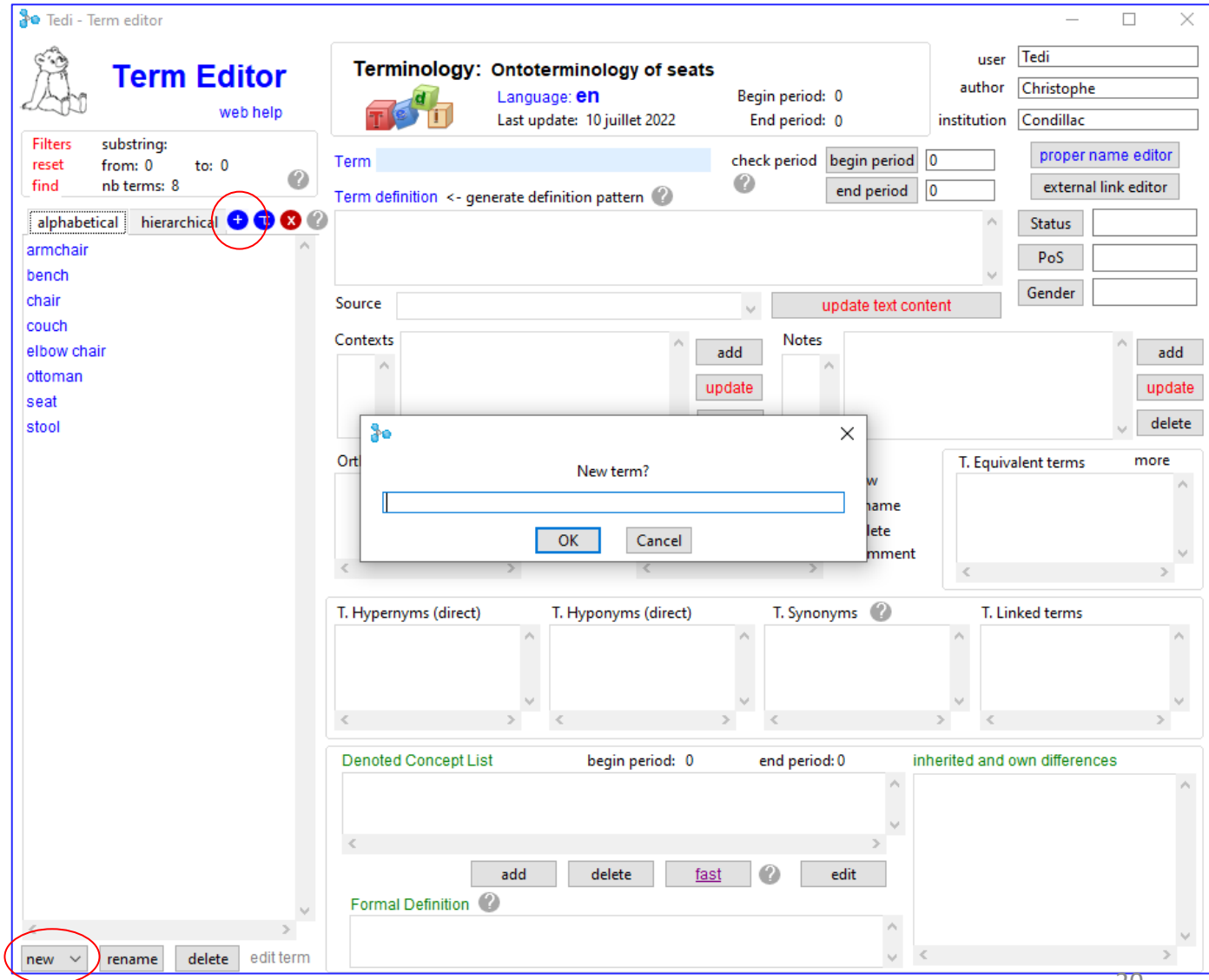
## Proper names editor (En)



11



## 1 Enter the terms



**Term Editor** web help

**Filters** substring: from: 0 to: 0 nb terms: 8

alphabetical hierarchical **+** **T** **x** **?**

armchair  
bench  
chair  
couch  
elbow chair  
ottoman  
seat  
stool

**Terminology: Ontoterminology of seats**

Language: **en** Last update: 10 juillet 2022 Begin period: 0 End period: 0

Term  check period begin period  end period

Term definition <- generate definition pattern **?**

Source  update text content

Contexts  add update Notes  add update delete

Orth  name delete comment

T. Equivalent terms more

T. Hypernyms (direct) T. Hyponyms (direct) T. Synonyms **?** T. Linked terms

Denoted Concept List begin period: 0 end period: 0 inherited and own differences

Formal Definition **?**

new **v** rename delete edit term

## 2 Identify the Axes of Analysis and their essential characteristics

**Tedi - Concept system editor**

**Concept Editor**  
Nbr of Cpts: 24 Nbr of Objs: 9

Terminology: Ontoterminology of seats  
begin period: 0 end period: 0  
**axis of analysis editor** (circled in red)  
attribute editor  
relation editor

user: Tedi  
author: Christophe  
institution: Condillac

Concept ? **<Seat with feet for one person with back with arms>**  
begin period: 0 end period: 0  
international concept name: <Seat with feets for one person with back with arms>

Comment  
update

Generic Concepts (isa) ?  
--- inferred ---  
--- declared ---  
<Seat with feet for one person with back>

inherited and own differences ?  
--- inherited differences ---  
/seat/  
/with feet/  
/for one person/  
/with back/  
--- own differences -----  
/with arms/

inherited and own attributes  
--- inherited attributes ---  
colour  
material  
weight  
--- own attributes -----

Relations  
causal  
dependentOn  
equivalentTo  
hasFunction  
linked to (concepts)  
add delete  
links-illustration  
object list editor

Formal ?  
Definition <Seat with feet for one person with back> + /with arms/

Language Associated Term List  
fr armchair  
en elbow chair  
gr  
Status: change  
Term definition  
Source

new delete rename fast edit cpt

## 2 Identify the Axes of Analysis and their essential characteristics



Looking for differences between objects



an essential characteristic is called "difference" in Tedi

/without arms/



/with arms/



Tedi - Axis of analysis editor

### Axis of Analysis Editor

national  
 international

**Terminology**    begin period: 0    end period: 0

Ontoterminology of Seat

add dependencies

International axis name

Arm

Begin period: 0    End period: 0

Comment

update comment

Axis of analysis List ?

- Arm
- Back
- Feet
- Number of persons

new   delete   rename   edit axis

Difference (essential characteristic) List ?

- /with arms/
- /without arms/

new   delete   rename   edit diff

International difference name

/without arms/

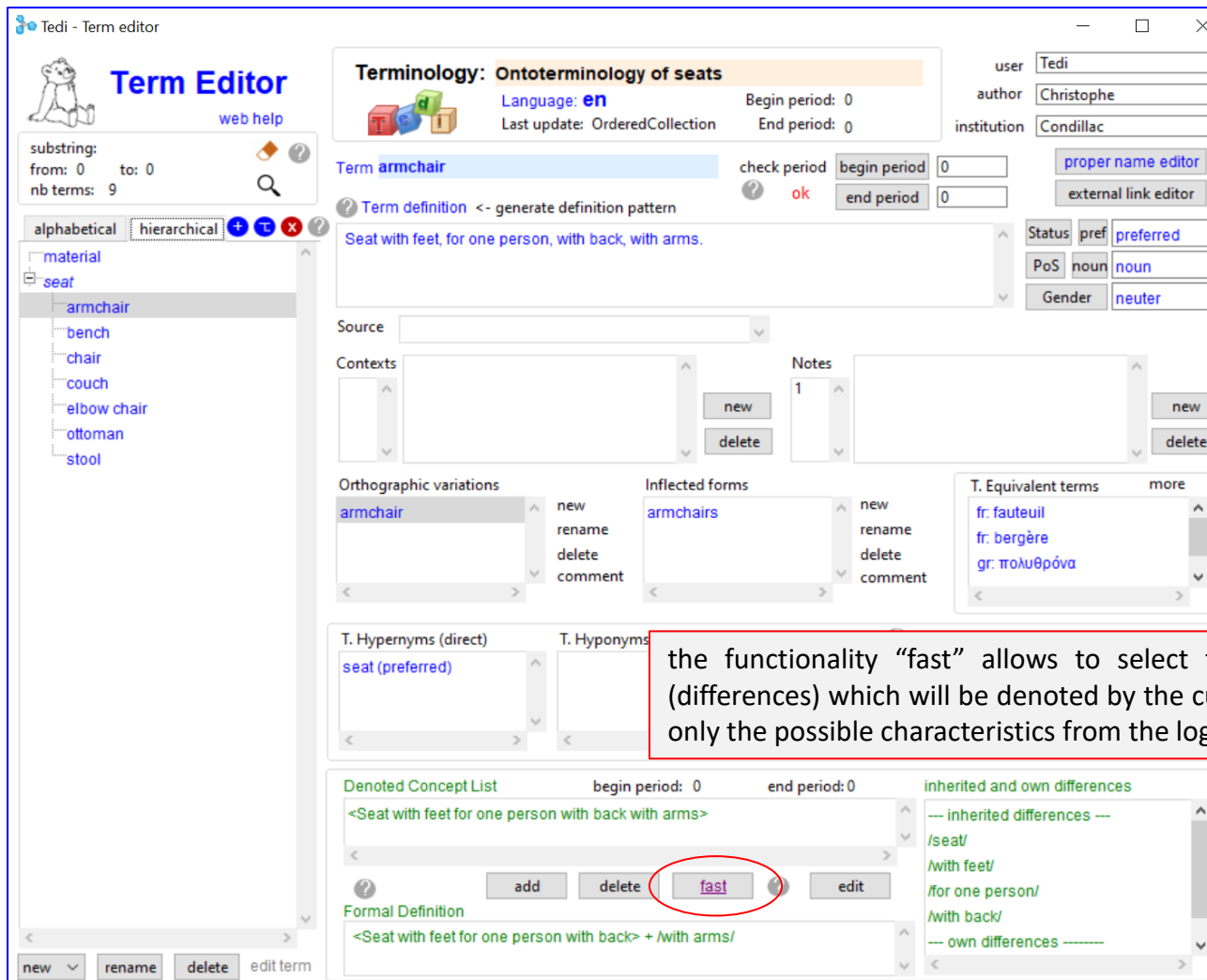
Comment

update comment

22

© Christophe Roche – December 2023

## 3 Select the set of characteristics denoted by a term

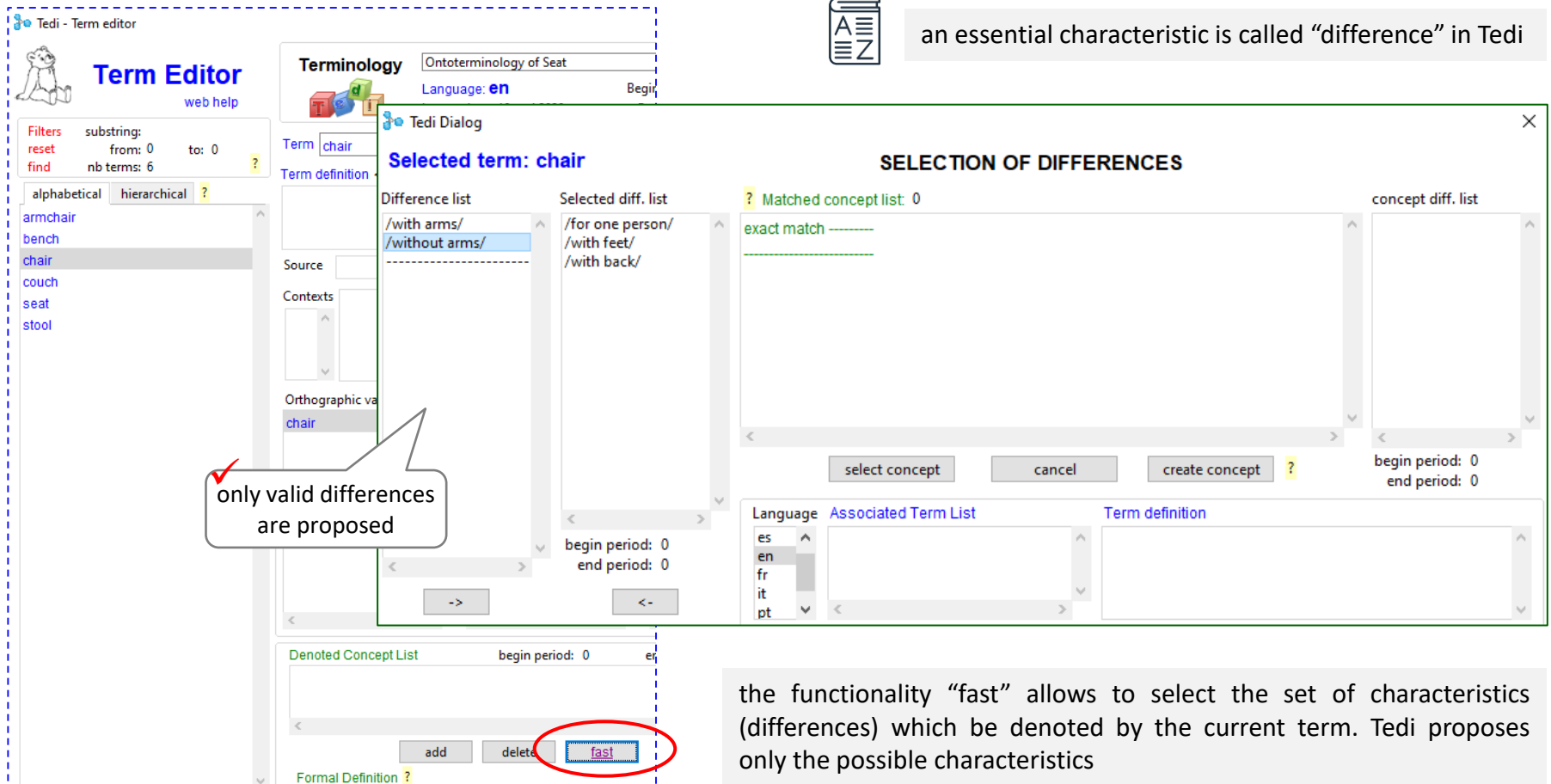


The screenshot shows the TEDI Term Editor interface for the term "armchair". The interface is divided into several sections:

- Terminology:** Ontoterminology of seats. Language: en. Last update: OrderedCollection. Begin period: 0, End period: 0.
- Term:** armchair. Check period: begin period 0, end period 0. Buttons: proper name editor, external link editor.
- Term definition:** <- generate definition pattern. Definition: "Seat with feet, for one person, with back, with arms."
- Status:** preferred. **PoS:** noun. **Gender:** neuter.
- Source:** (empty field)
- Contexts:** (empty list with new/delete buttons)
- Notes:** 1 (with new/delete buttons)
- Orthographic variations:** armchair (with new/rename/delete/comment buttons)
- Inflected forms:** armchairs (with new/rename/delete/comment buttons)
- T. Equivalent terms:** fr: fauteuil, fr: bergère, gr: πολυθρόνα (with more button)
- T. Hypernyms (direct):** seat (preferred)
- T. Hyponyms:** (empty list)
- Denoted Concept List:** <Seat with feet for one person with back with arms>. Buttons: add, delete, **fast** (circled in red), edit.
- Formal Definition:** <Seat with feet for one person with back> + /with arms/
- Inherited and own differences:**
  - inherited differences ---
  - /seat/
  - /with feet/
  - /for one person/
  - /with back/
  - own differences -----

the functionality "fast" allows to select the set of characteristics (differences) which will be denoted by the current term. Tedi proposes only the possible characteristics from the logical point of view.

## 3 Select the set of characteristics denoted by a term



an essential characteristic is called “difference” in Tedi

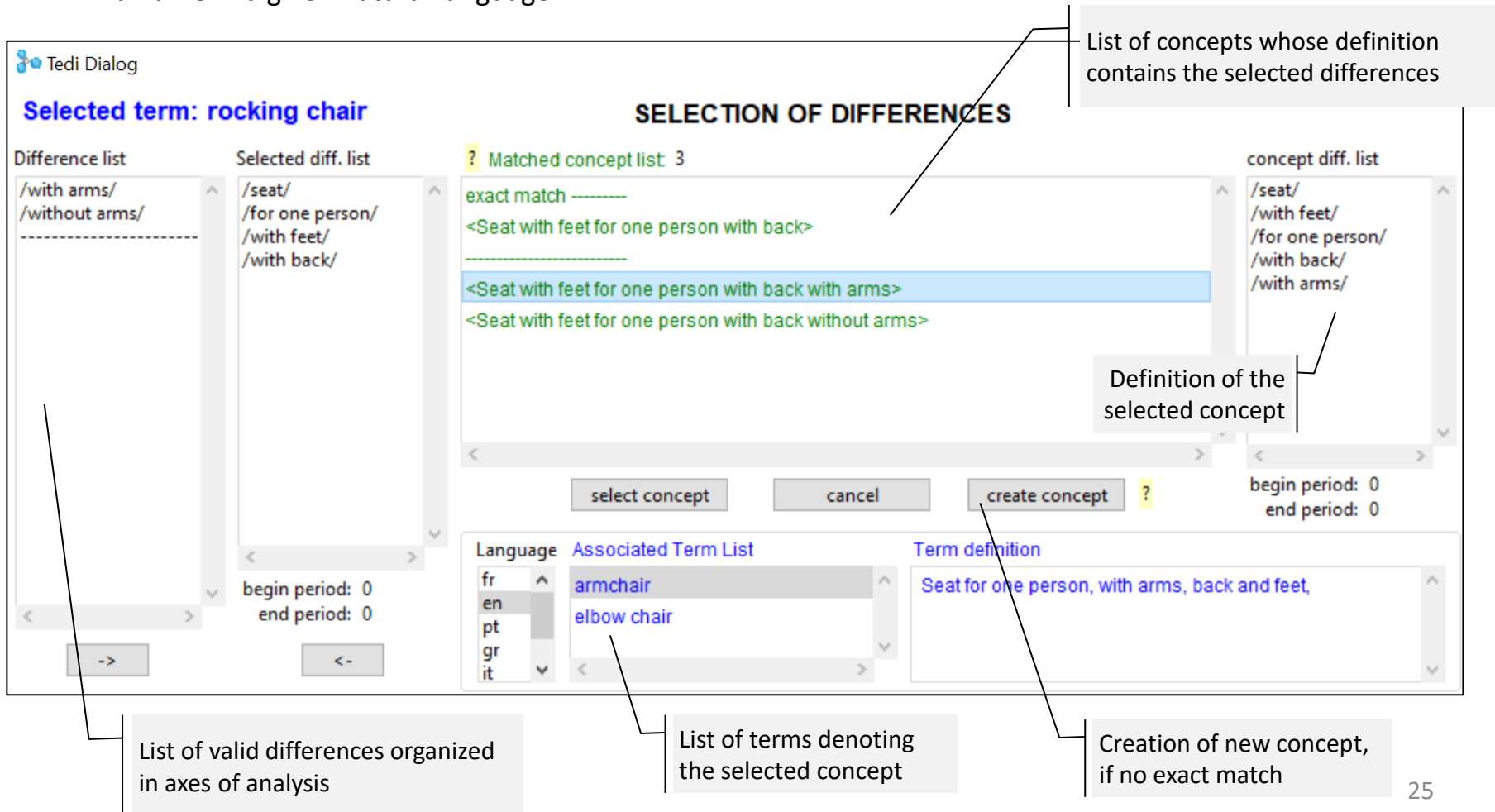
only valid differences are proposed

the functionality “fast” allows to select the set of characteristics (differences) which be denoted by the current term. Tedi proposes only the possible characteristics



## ■ Connecting Terms and Concepts

- Terms are known to experts
- A term denotes a set of essential characteristics stable enough to have a name in a given natural language



**Tedi Dialog**

**Selected term: rocking chair**

**SELECTION OF DIFFERENCES**

**Difference list**

- /with arms/
- /without arms/

**Selected diff. list**

- /seat/
- /for one person/
- /with feet/
- /with back/

**? Matched concept list: 3**

- exact match -----
- <Seat with feet for one person with back>
- <Seat with feet for one person with back with arms>** (selected)
- <Seat with feet for one person with back without arms>

**concept diff. list**

- /seat/
- /with feet/
- /for one person/
- /with back/
- /with arms/

**begin period: 0**  
**end period: 0**

**Language**

- fr
- en
- pt
- gr
- it

**Associated Term List**

- armchair
- elbow chair

**Term definition**

Seat for one person, with arms, back and feet,

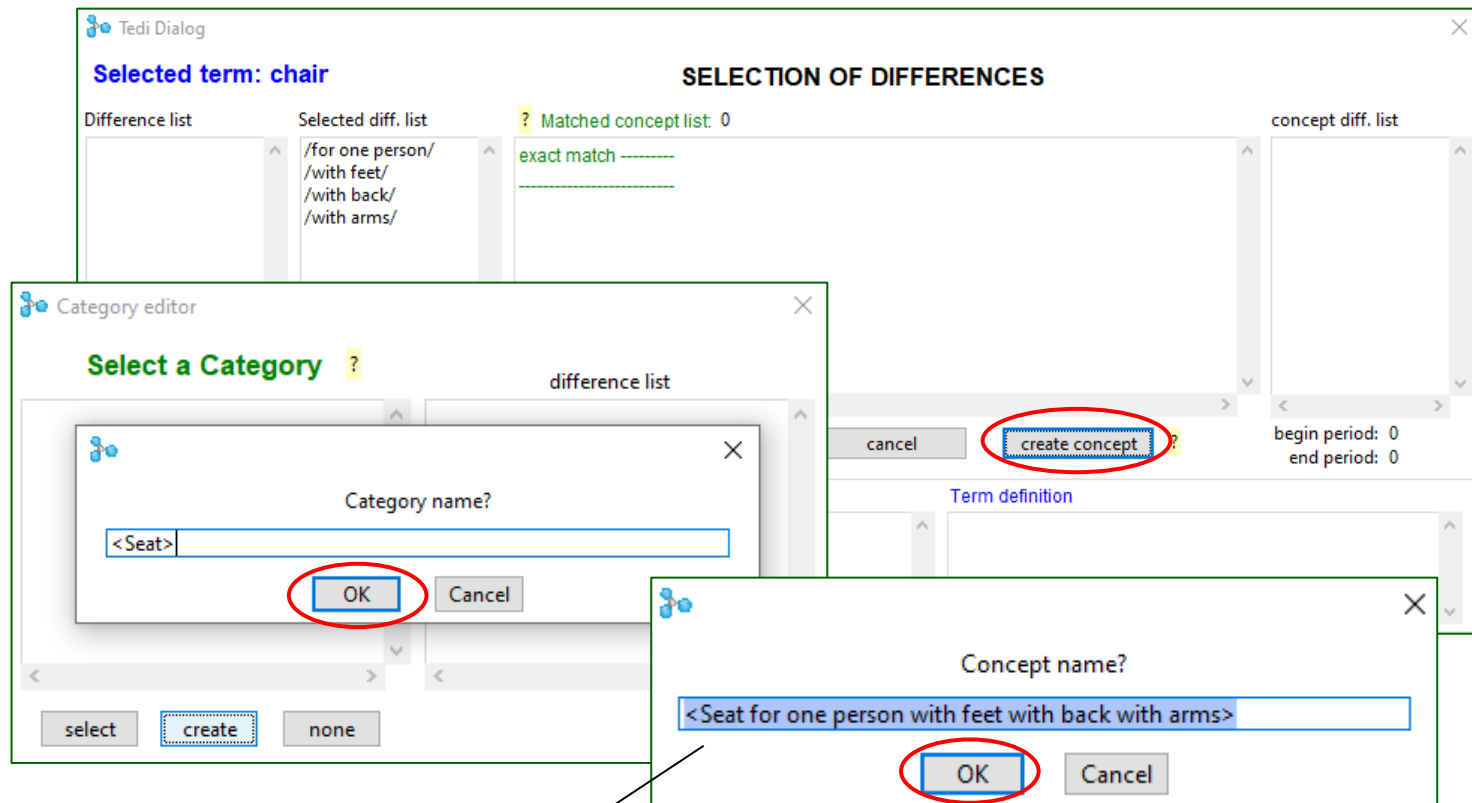
**Buttons:** select concept, cancel, create concept ?

**Callouts:**

- List of valid differences organized in axes of analysis
- List of terms denoting the selected concept
- Creation of new concept, if no exact match
- Definition of the selected concept
- List of concepts whose definition contains the selected differences

## 4 Create the concept if it does not exist

Each concept belongs to a category. Create a new one if necessary



The screenshot illustrates the workflow for creating a new concept in TEDI. It shows three overlapping windows:

- Tedi Dialog:** Displays the 'Selected term: chair' and a 'SELECTION OF DIFFERENCES' section. The 'Matched concept list' shows 'exact match'. The 'create concept' button is circled in red.
- Category editor:** Shows a 'Select a Category' dialog with '<Seat>' entered in the 'Category name?' field. The 'OK' button is circled in red.
- Concept name? dialog:** Shows the auto-generated concept name '<Seat for one person with feet with back with arms>' in the input field. The 'OK' button is circled in red.

Automatic creation of concept name

## 5 Update the conceptual system is necessary

The screenshot shows the TEDI Concept Editor interface. The main window is titled "Tedi - Concept system editor" and "Concept Editor". It displays the following information:

- Terminology:** Ontoterminology of Seat
- begin period:** 0
- end period:** 0
- Buttons:** attribute edit, relation edit, axis of analysis editor
- Concept ?** <Seat for one person with feet with back without arms>
- international concept name** <Seat for one person with feet with back without ar
- Comment** (with an update button)
- Generic Concepts (isa) ?**
  - inferred ---
  - declared ---
  - <Seat>
- inherited and own differences**
  - inherited differences ---
  - own differences -----
  - /for one person/
  - /with feet/
  - /with back/
  - /without arms/

On the left side, there is a tree view showing a hierarchy of concepts: <Seat> and <Seat for one person with feet with back v...>. Above the tree view are buttons for "hierarchical", "alphabetical", "labeled", and "?".

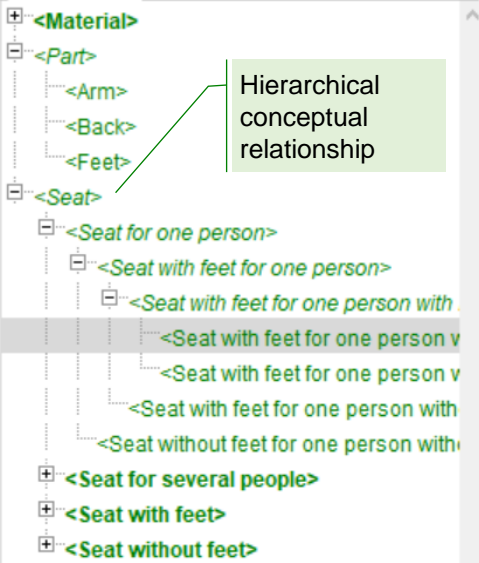


# Concept Editor

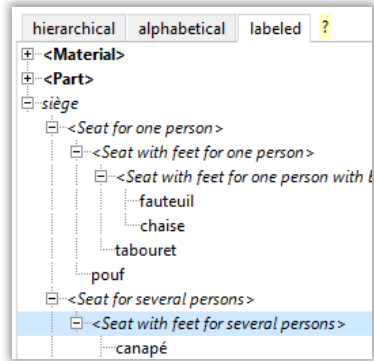
Nbr of Cpts: 24 Nbr of Obj: 9

⊕ ⊖ ⊗ ⊕ ⊗ 🔍 web help

hierarchical alphabetical labeled ?



Hierarchical conceptual relationship



## Terminology: Ontoterminology of seats



begin period: 0  
end period: 0

axis of analysis editor

attribute editor

relation editor

user Tedi

author Christophe

institution Condillac

begin period: 0

end period: 0

object editor objs: 3

links-illustration

Time period management

Concept ? <Seat with feet for one person with back with arms>

international concept name: <Seat with feets for one person with back with arms>

Comment

Generic Concepts (isa) ?

--- inferred ---  
 --- declared ---  
 <Seat with feet for one person with back>

inherited and own differences ?

--- inherited differences ---  
 /seat/  
 /with feet/  
 /for one person/  
 /with back/  
 --- own differences -----  
 /with arms/

inherited and own attributes

--- inherited attributes ---  
 colour  
 material  
 weight  
 --- own attributes -----

External resources

Relations: 3 used: 1 ?

madeOf

add

delete

linked to (range)

Default list of relations

Formal ?

Definition

<Seat with feet for one person with back> + /with arms/

Formal definition

Language Associated Term List

fr  
en  
gr  
zh

armchair

elbow chair

Status: preferred

change

begin period: 0

end period: 0

Term definition

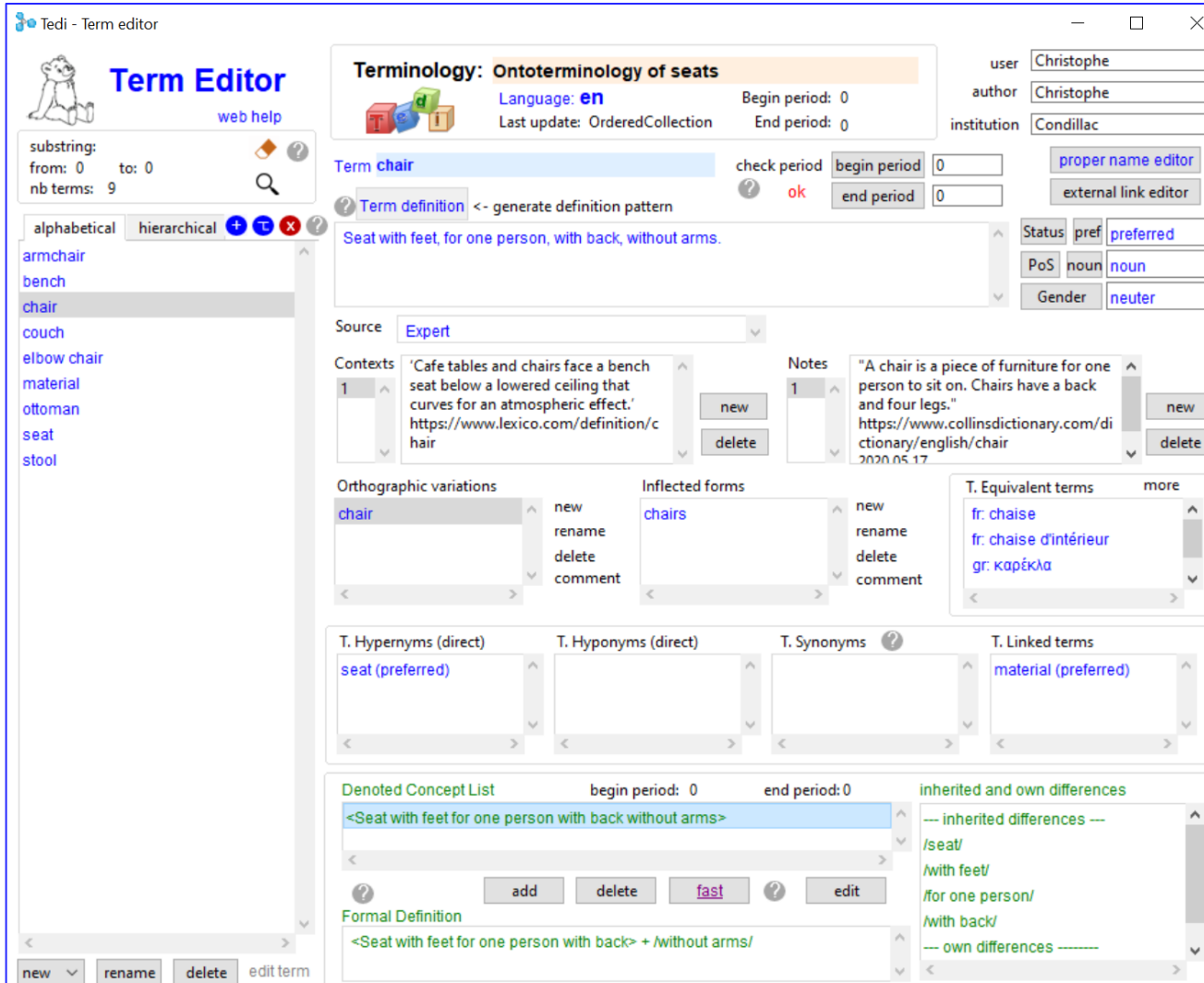
Seat with feet, for one person, with back, with arms.

Source

28

new delete rename fast edit cpt

## 6 Complete the linguistic dimension



The screenshot shows the TEDI Term Editor interface for the term "chair". The main window is titled "Terminology: Ontoterminology of seats" and is in the "en" language. The user is "Christophe" from the "Condillac" institution. The term "chair" is selected, and its definition is "Seat with feet, for one person, with back, without arms." The source is "Expert".

The interface includes several panels for editing the term's linguistic and conceptual information:

- Contexts:** A list of contexts with a note: "Cafe tables and chairs face a bench seat below a lowered ceiling that curves for an atmospheric effect." with a URL: <https://www.lexico.com/definition/c-hair>.
- Notes:** A note: "A chair is a piece of furniture for one person to sit on. Chairs have a back and four legs." with a URL: <https://www.collinsdictionary.com/dictionary/english/chair> and a date: 2020.05.17.
- Orthographic variations:** A list containing "chair".
- Inflected forms:** A list containing "chairs".
- T. Equivalent terms:** A list containing "fr: chaise", "fr: chaise d'intérieur", and "gr: καρέκλα".
- T. Hypernyms (direct):** A list containing "seat (preferred)".
- T. Hyponyms (direct):** An empty list.
- T. Synonyms:** An empty list.
- T. Linked terms:** A list containing "material (preferred)".
- Denoted Concept List:** A list containing "<Seat with feet for one person with back without arms>".
- Formal Definition:** A list containing "<Seat with feet for one person with back> + /without arms/".
- inherited and own differences:** A list containing "--- inherited differences ---", "/seat/", "/with feet/", "/for one person/", and "/with back/".

The interface also features a sidebar with a list of terms: armchair, bench, chair, couch, elbow chair, material, ottoman, seat, and stool. The "chair" term is currently selected.



# Term Editor

web help

substring:  
from: 0 to: 0  
nb terms: 9

alphabetical hierarchical

- armchair
- bench
- chair
- couch
- elbow chair
- material
- ottoman
- seat
- stool

alphabetical hierarchical ?

- seat
  - armchair
  - bench
  - chair
  - couch
  - elbow chair
  - ottoman
  - stool

Terminological hypernymy

Automatic calculation of terminological hypernyms, hyponyms, synonyms for every term

## Terminology: Ontoterminology of seats



Language: en

Begin period: 0

Last update: OrderedCollection

End period: 0

user: Christophe

author: Christophe

institution: Condillac

Term chair

check period: begin period: 0

end period: 0

Term definition <- generate definition pattern

Seat with feet, for one person, with back, without arms.

Time period management

Status

Status pref preferred

PoS noun noun

Gender neuter

Source: Expert

Contexts

1 'Cafe tables and chairs face a bench seat below a lowered ceiling that curves for an atmospheric effect.'  
https://www.lexico.com/definition/c-hair

new delete

Notes

1 "A chair is a piece of furniture for one person to sit on. Chairs have a back and four legs."  
https://www.collinsdictionary.com/dictionary/english/chair  
2020.05.17

new delete

Orthographic variations

chair

new rename delete comment

Inflected forms

chairs

new rename delete comment

T. Equivalent terms more

fr: chaise  
fr: chaise d'intérieur  
gr: καρέκλα

T. Hypernyms (direct)

seat (preferred)

T. Hyponyms (direct)

Automatic calculation of terminological equivalents

T. Synonyms

T. Linked terms

material (preferred)

Denoted Concept List

begin period: 0

end period: 0

<Seat with feet for one person with back without arms>

Formal Definition

<Seat with feet for one person with back> + /without arms/

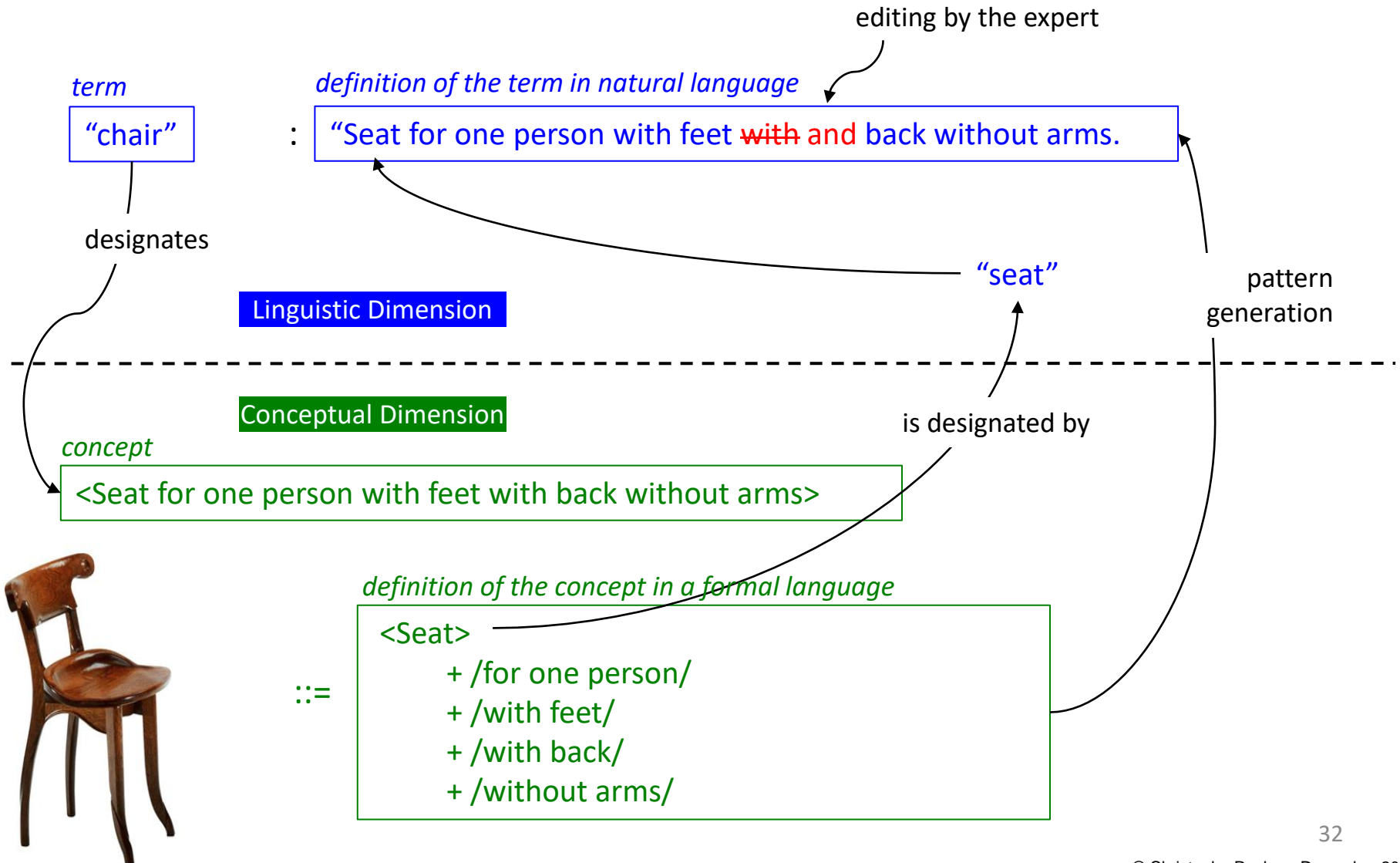
inherited and own differences

--- inherited differences ---  
/seat/  
/with feet/  
/for one person/  
/with back/  
--- own differences -----

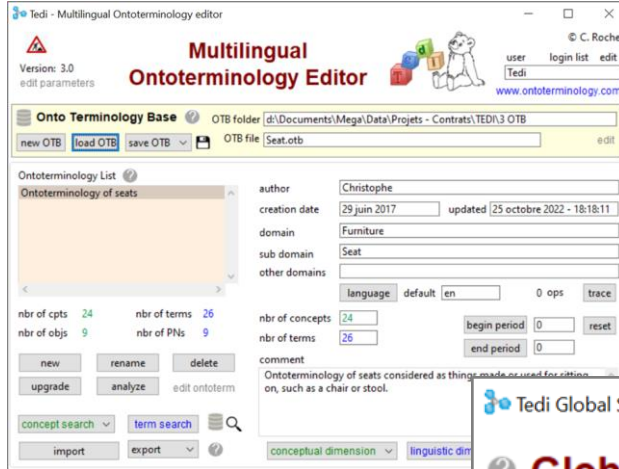
## 6 Complete the linguistic dimension

The screenshot shows the 'Tedi - Term editor' interface. On the left, there is a list of terms: armchair, bench, chair (highlighted), couch, seat, and stool. Above this list are filter options: 'alphabetical' and 'hierarchical'. The main area displays the 'Terminology' for 'Ontoterminology of Seat' in English, with a last update of 19 mai 2020. The 'Term' field contains 'chair'. Below the term, there is a 'Term definition' field with the text 'Seat for one person, with feet, with back, without arms.' A red circle highlights the 'generate definition pattern' button next to the definition field. Below the definition, there is a 'Source' field and a 'Contexts' section with a text box containing a quote: 'His face is etched with happiness and pain as he leans back in his chair.' Times, Sunday Times (2016) https://www.collinsdictionary.com/dictionary/english/chair 2020.05.18. There are 'add', 'update', and 'delete' buttons next to the context text. At the bottom, there are sections for 'Orthographic variations' and 'Inflected forms'.

#### Generation of definition pattern in natural language







Tedi - Multilingual Ontoterminology editor

**Multilingual Ontoterminology Editor**

Version: 3.0  
edit parameters

user: login list edit  
Tedi

www.ontoterminology.com

Onto Terminology Base OTB folder: d:\Documents\Mega\Data\Projets - Contrats\TEDI\3 OTB

new OTB load OTB save OTB OTB file: Seat.otb edit

Ontoterminology List

author: Christophe

creation date: 29 juin 2017 updated: 25 octobre 2022 - 18:18:11

domain: Furniture

sub domain: Seat

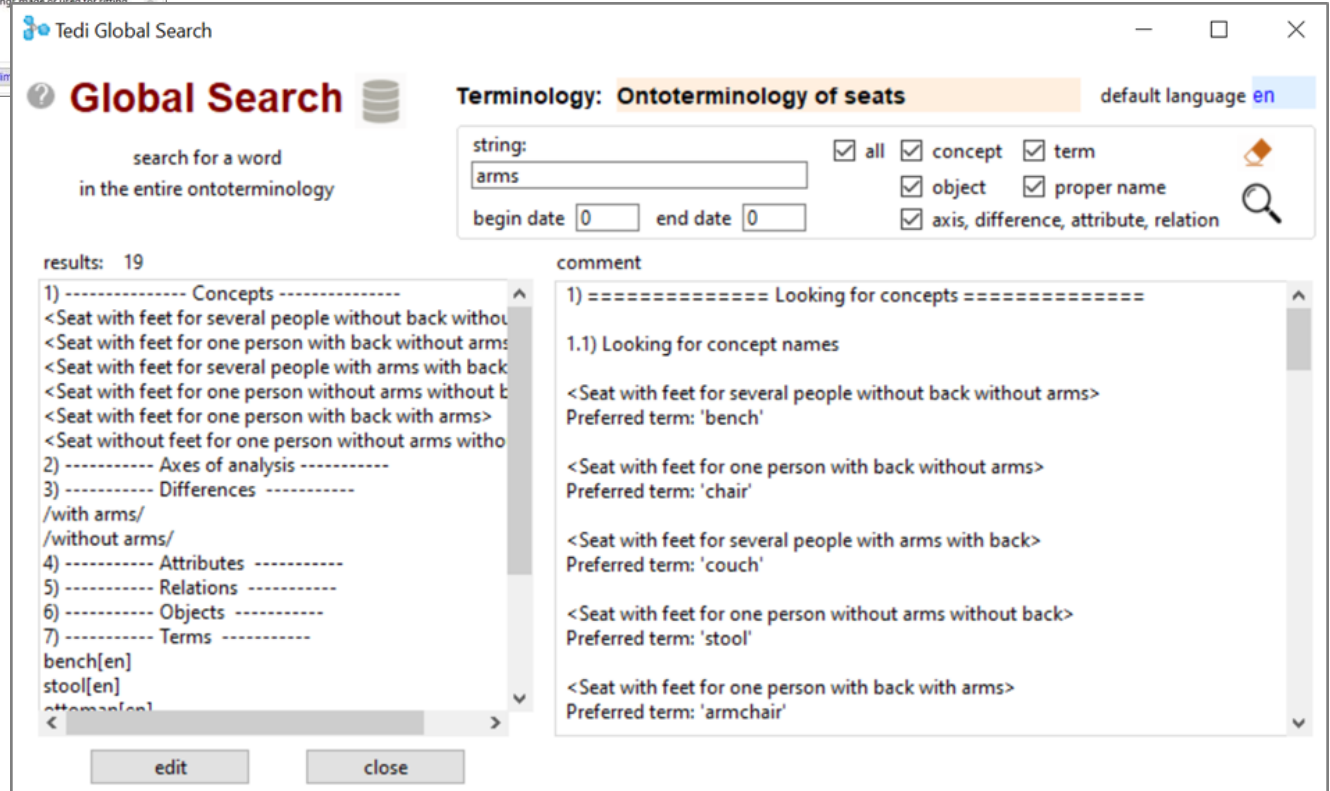
other domains:

language: default en 0 ops trace

begin period: 0 reset  
end period: 0

comment: Ontoterminology of seats considered as things made or used for sitting on, such as a chair or stool.

concept search term search  
import export conceptual dimension linguistic dim



Tedi Global Search

**Global Search**

search for a word in the entire ontoterminology

Terminology: **Ontoterminology of seats** default language en

string: arms

begin date 0 end date 0

all  concept  term  
 object  proper name  
 axis, difference, attribute, relation

results: 19

1) ----- Concepts -----  
<Seat with feet for several people without back without arms>  
<Seat with feet for one person with back without arms>  
<Seat with feet for several people with arms with back>  
<Seat with feet for one person without arms without back>  
<Seat with feet for one person with back with arms>  
<Seat without feet for one person without arms without back>

2) ----- Axes of analysis -----  
3) ----- Differences -----  
/with arms/  
/without arms/

4) ----- Attributes -----  
5) ----- Relations -----  
6) ----- Objects -----  
7) ----- Terms -----  
bench[en]  
stool[en]  
<ottoman[en]>

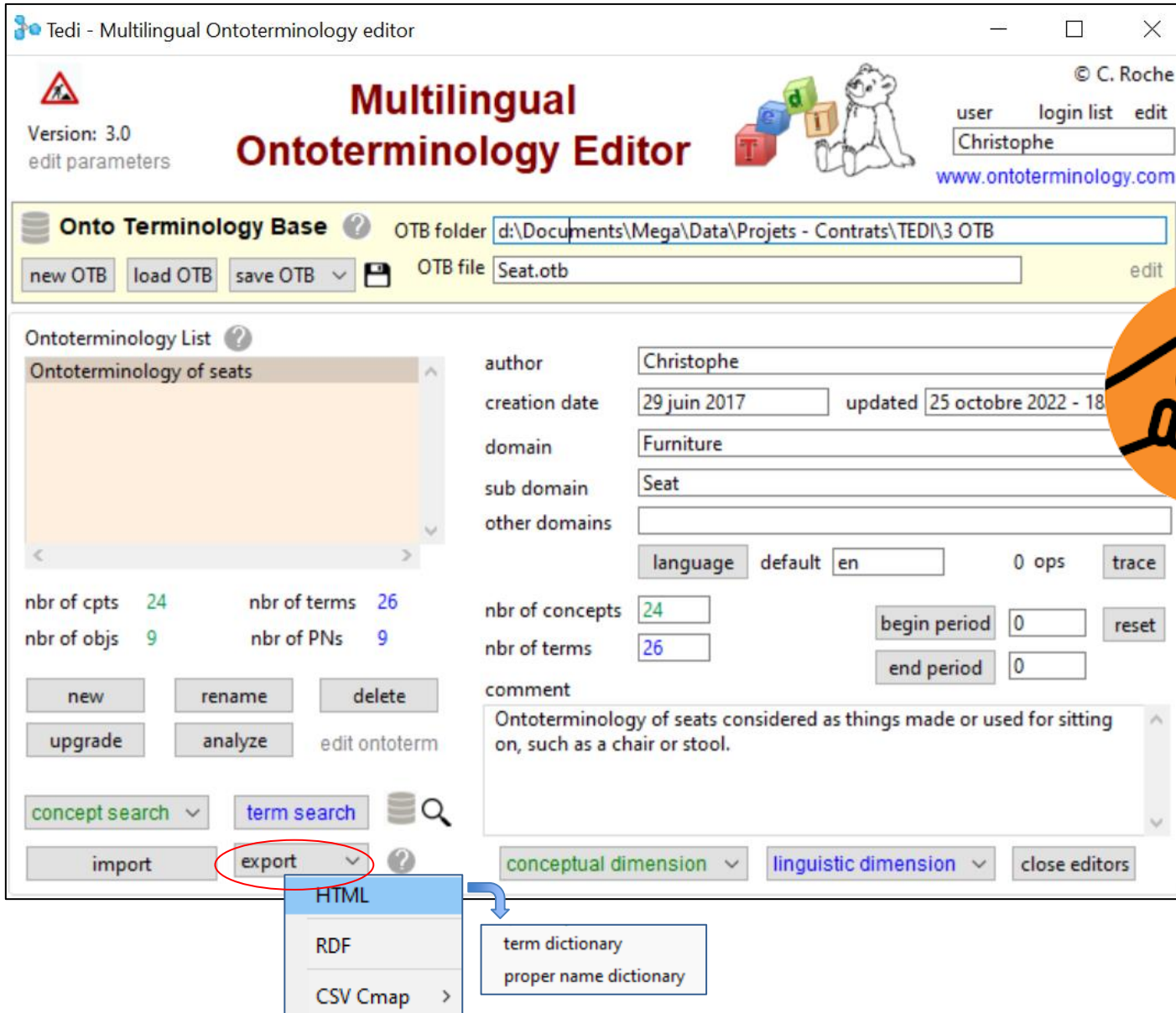
comment

1) ===== Looking for concepts =====  
1.1) Looking for concept names  
<Seat with feet for several people without back without arms>  
Preferred term: 'bench'  
<Seat with feet for one person with back without arms>  
Preferred term: 'chair'  
<Seat with feet for several people with arms with back>  
Preferred term: 'couch'  
<Seat with feet for one person without arms without back>  
Preferred term: 'stool'  
<Seat with feet for one person with back with arms>  
Preferred term: 'armchair'

edit close

## (5) Interchange Formats

- 1) Theoretical Foundations
- 2) Methodology
- 3) Environment
- 4) Export



The screenshot shows the TEDI Multilingual Ontoterminology Editor interface. The main window title is "Tedi - Multilingual Ontoterminology editor". The version is 3.0. The user is logged in as "Christophe". The current ontology is "Ontoterminology of seats". The interface includes a sidebar with "Ontoterminology List" and a main area with various fields and buttons. The "export" button is highlighted with a red circle, and a dropdown menu is open, showing options: "HTML", "RDF", and "CSV Cmap". A blue arrow points from the "HTML" option to a box containing "term dictionary" and "proper name dictionary".

Version: 3.0  
edit parameters

**Multilingual Ontoterminology Editor**

© C. Roche  
user login list edit  
Christophe  
www.ontoterminology.com

Onto Terminology Base ? OTB folder d:\Documents\Mega\Data\Projets - Contrats\TEDI\3 OTB  
new OTB load OTB save OTB OTB file Seat.otb edit

Ontoterminology List ?  
Ontoterminology of seats

author Christophe  
creation date 29 juin 2017 updated 25 octobre 2022 - 18  
domain Furniture  
sub domain Seat  
other domains  
language default en 0 ops trace  
nbr of concepts 24 begin period 0 reset  
nbr of terms 26 end period 0  
comment  
Ontoterminology of seats considered as things made or used for sitting on, such as a chair or stool.

new rename delete  
upgrade analyze edit ontoterm

concept search term search  
import export conceptual dimension linguistic dimension close editors

HTML  
RDF  
CSV Cmap >

term dictionary  
proper name dictionary



## Term Dictionary on "Ontoterminology of seats" (en)

TEDI Version: 3.5 - Date: 4 décembre 2023 - Time: 15:24:44 - [www.ontoterminology.com/tedi](http://www.ontoterminology.com/tedi)

search:

armchair

bench

chair

couch

elbow chair

material

ottoman

seat

stool

### chair

**Definition:** Seat with feet, for one person, with back, without arms.

**Status:** preferred

**Source:** Expert

**Context(s):**

1) 'Cafe tables and chairs face a bench seat below a lowered ceiling that curves for an atmospheric effect.'

<https://www.lexico.com/definition/chair>

**Note(s):**

1) "A chair is a piece of furniture for one person to sit on. Chairs have a back and four legs."

<https://www.collinsdictionary.com/dictionary/english/chair>

2020 05 17

**Equivalent(s):**

- fr: chaise (preferred)

- fr: chaise d'intérieur (alternative)

- gr: καρέκλα (preferred)

**Concept:** <Seat with feet for one person with back without arms>

**essential characteristic(s):** /seat/, /with feet/, /for one person/, /with back/, /without arms/,

**a kind of:** <Seat with feet for one person with back>,

**linked to:** <Material>, <Part>,

**rdfs:seeAlso** <https://fr.wikipedia.org/wiki/Chaise>

**skos:exactMatch** <http://vocab.getty.edu/page/aat/300037772>

**Web reference:** [Le grand salon de l'Impératrice au château de Fontainebleau du temps de l'impératrice Eugénie](#)

**Illustration:** Chaises estampillées Georges Jacob, grand cabinet du Dauphin, château de Versailles.



**Objects of this type: 2**

## Proper Name Dictionary on "Ontoterminology of seats" (en)

TEDI Version: 3.5 - Date: 4 décembre 2023 - Time: 15:25:29 - [www.ontoterminology.com/tedi](http://www.ontoterminology.com/tedi)

search:

**Chair F 263**

**Chair T 507 C**

**Couch GMT 21269**

**Couch T 504 C**

**Chair F 263**

is a: chair

**Equivalent(s):**

- fr: Chaise F 263

**Denoted object:** Chaise F 263

is a: <Seat with feet for one person with back without arms>

**Comment:** Fig. 6 : Benoît-François Boulard, chaise, 1806, bois doré. Paris, Mobilier national, F 263.

<https://journals.openedition.org/crcv/13475?lang=en>

Photo : © Collection du Mobilier national / Isabelle Bideau



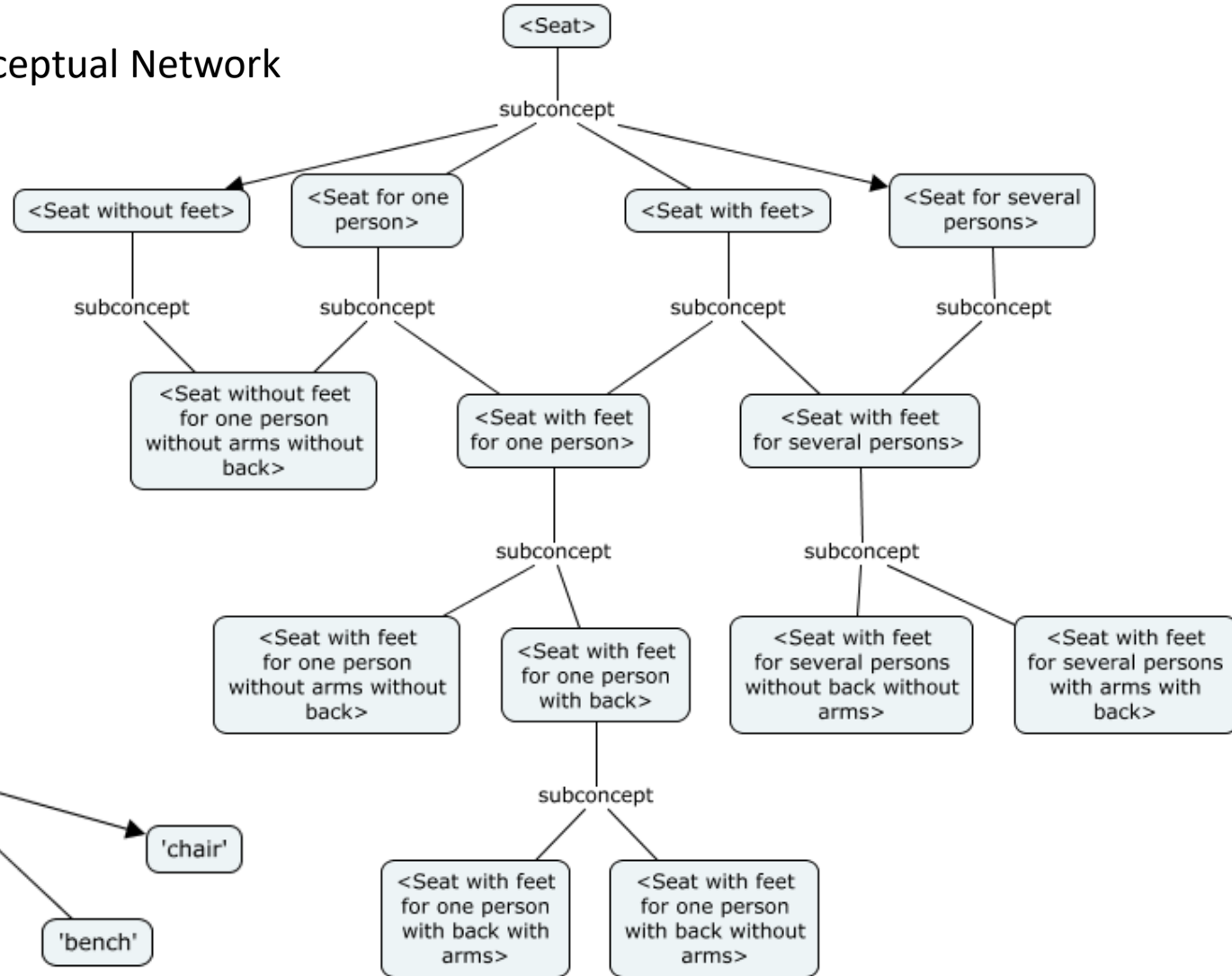
foaf:depiction <https://journals.openedition.org/crcv/docannexe/image/13475/img-6-small580.jpg>

rdfs:seeAlso <https://journals.openedition.org/crcv/13475?lang=en>

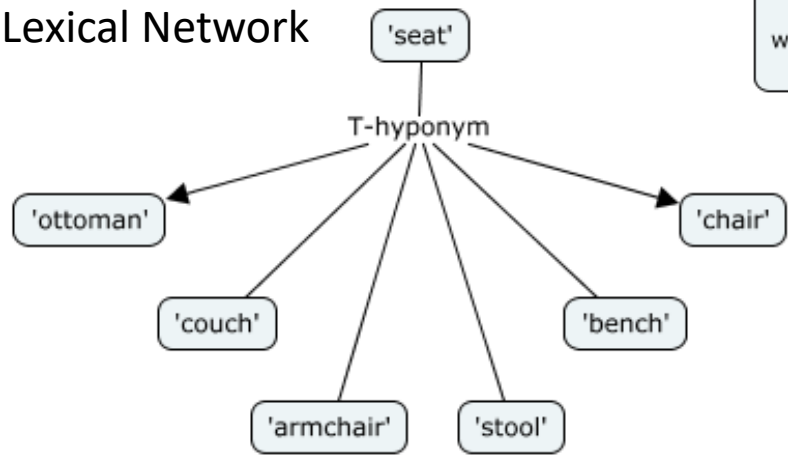


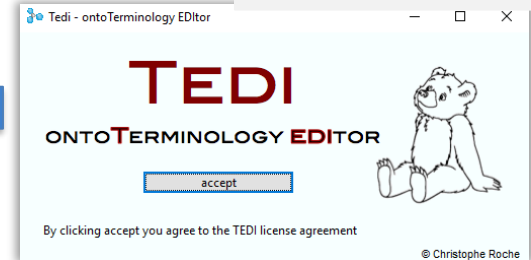
CmapTools

## Conceptual Network



## Lexical Network





```
<?xml version="1.0" encoding="utf-8"?>
<!-- Ontoterminology: Ontoterminology of seats -->
<!-- Author: Christophe -->
<!-- Creation date of ontoterminology: 29 juin 2017 -->
<!-- Export date: 25 mai 2020 time: 13:02:51 -->
<!-- Generated by Tedi version: 2.1 - http://christophe-roche.fr/tedi -->

<rdf:RDF xmlns="http://www.ontologia.fr/OTB/Seat#"
  xml:base="http://www.ontologia.fr/OTB/Seat"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:skos="http://www.w3.org/2004/02/skos/core#"
  xmlns:foaf="http://xmlns.com/foaf/0.1/"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:xml="http://www.w3.org/XML/1998/namespace"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:vs="http://www.w3.org/2003/06/sw-vocab-status/ns#"
  xmlns:vann="http://purl.org/vocab/vann/">
  <owl:Ontology rdf:about="http://www.ontologia.fr/OTB/Seat.rdf">
    <dc:title>Ontoterminology of seats</dc:title>
    <dc:description>Ontoterminology of seats considered as things made or used for
on, such as a chair or stool.</dc:description>
    <dc:issued rdf:datatype="http://www.w3.org/2001/XMLSchema#date">2017-6-29</dc:
    <dc:modified rdf:datatype="http://www.w3.org/2001/XMLSchema#date">2020-5-25</d
    <dc:creator>Christophe Roche</dc:creator>
    <dc:publisher>Condillac</dc:publisher>
  </owl:Ontology>

  <!-- Object Properties: -->

  <owl:ObjectProperty rdf:about="#hasPart">
    <owl:inverseOf rdf:resource="#partOf"/>
    <rdfs:domain rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
    <rdfs:range rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
  </owl:ObjectProperty>
```

```
-----
Core Vocabularies used for RDF Export
-----
Concepts:
- owl:Class          - owl:DatatypeProperty  - owl:Ontology
- owl:NamedIndividual - owl:ObjectProperty

Object Properties:
- foaf:depiction  - skos:altLabel      - skos:narrowMatch  - owl:sameAs
- rdf:type        - skos:broader      - skos:note
- rdfs:comment    - skos:broadMatch     - skos:prefLabel
- rdfs:label      - skos:closeMatch     - skos:related
- rdfs:seeAlso    - skos:definition    - skos:relatedMatch
- rdfs:subClassOf - skos:exactMatch     - skos:scopeNote
-----
Ontoterminology Vocabularies used for RDF Export
-----
Concepts:
- ovr:Concept  - ovr:Term  - ovr:Ontology
- ovr:Object   - ovr:ProperName

Object Properties:
- ovr:term      - ovr:language  - ovr:denotedByTerm  - ovr:denotedConcept
- ovr:properName - ovr:status    - ovr:denotedByProperName
-----
Server: update the file: .htaccess
-----
# Turn off MultiViews
Options -MultiViews
# Directive to ensure *.rdf files served as appropriate content type,
# if not present in main apache config
AddType application/rdf+xml .rdf
# Rewrite engine setup
RewriteEngine On
RewriteBase /OTB
# Rewrite rule to serve RDF/XML content from the vocabulary URI
RewriteRule ^krater$ krater.rdf
RewriteRule ^Siege$ Siege.rdf
etc.
```

### Concept

```

<owl:Class rdf:about="#Seat_with_feet_for_one_person_with_back_without_arms">
  <skos:prefLabel xml:lang="fr">chaise</skos:prefLabel>
  <skos:definition xml:lang="fr">Siège avec dossier, pour une personne, avec pieds, sans bras.</skos:definition>
  <skos:note xml:lang="fr">Siège à dossier et généralement sans bras. Source : TLFi 31052017</skos:note>
  <skos:example xml:lang="fr">"Les cafés à l'entour avaient depuis longtemps couché sur leurs tables de marbre leurs chaises tendrement rabotées par des derrières peu soucieux de voyages. QUENEAU, Pierrot mon ami, 1942, p. 199." Source : TLFi 31052017</skos:example>
  <skos:altLabel xml:lang="fr">chaise d'intérieur</skos:altLabel>
  <skos:definition xml:lang="fr">Siège avec dossier, pour une personne, avec pieds, sans bras.</skos:definition>
  <skos:prefLabel xml:lang="en">chair</skos:prefLabel>
  <skos:definition xml:lang="en">Seat for one person, with back and legs, without arms.</skos:definition>
  <skos:note xml:lang="en">"A chair is a piece of furniture for one person to sit on. Chairs have a back and four legs."
https://www.collinsdictionary.com/dictionary/english/chair
2020-05-17</skos:note>
  <skos:example xml:lang="en">'Cafe tables and chairs face a bench seat below a lowered ceiling that curves for an atmospheric effect.'
https://www.lexico.com/definition/chair
2020-05-25</skos:example>
  <skos:prefLabel xml:lang="gr">καρέκλα</skos:prefLabel>
  <skos:definition xml:lang="gr">Κάθισμα για ένα άτομο, χωρίς μπράτσα, με πλάτη και πόδια. </skos:definition>
  <skos:broader rdf:resource="#Seat_with_feet_for_one_person_with_back"/>
  <rdfs:subClassOf rdf:resource="#Seat_with_feet_for_one_person_with_back"/>
  <rdfs:subClassOf rdf:resource="#without_arms"/>
  <rdfs:subClassOf>
    <owl:Restriction>
      <owl:onProperty rdf:resource="hasPart"/>
      <owl:someValuesFrom rdf:resource="#Back"/>
    </owl:Restriction>
  </rdfs:subClassOf>
  <foaf:depiction rdf:resource="https://upload.wikimedia.org/wikipedia/commons/thumb/e/e0/Ch%C3%A2teau_de_Versailles%2C_appartement_du_Dauphin%2C_grand_cabinet_du_Dauphin%2C_chaises.jpg/800px-Ch%C3%A2teau_de_Versailles%2C_appartement_du_Dauphin%2C_grand_cabinet_du_Dauphin%2C_chaises.jpg"/>
  <skos:exactMatch rdf:resource="http://vocab.getty.edu/page/aat/300037772"/>
  <rdfs:seeAlso rdf:resource="https://fr.wikipedia.org/wiki/Chaise"/>
</owl:Class>

```



### Individual

```
<owl:NamedIndividual rdf:about="#Chaise_T_507_C">
  <skos:prefLabel>Chaise T 507 C</skos:prefLabel>
  <rdf:type rdf:resource="#Seat_with_feet_for_one_person_with_back_without_arms"/>
  <foaf:depiction rdf:resource="https://journals.openedition.org/crcv/docannexe/
  image/13475/img-13-small480.jpg"/>
  <rdfs:seeAlso rdf:resource="https://journals.openedition.org/crcv/13475?lang=en"/>
</owl:NamedIndividual>
```

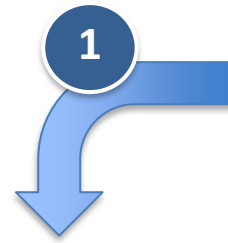






# (6) Ontoterminology and W3C

<http://ontologia.fr/OTB/seat.rdf>



RDF Export



```
<?xml version="1.0" encoding="utf-8"?>
<!-- Ontoterminology: Ontoterminology of seats -->
<!-- Author: Christophe -->
<!-- Creation date of ontoterminology: 29 juin 2017 -->
<!-- Export date: 25 mai 2020 time: 13:02:51 -->
<!-- Generated by Tedi version: 2.1 - http://christophe-roche.fr/tedi -->

<rdf:RDF xmlns="http://www.ontologia.fr/OTB/Seat#"
  xml:base="http://www.ontologia.fr/OTB/Seat"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:skos="http://www.w3.org/2004/02/skos/core#"
  xmlns:foaf="http://xmlns.com/foaf/0.1/"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:xml="http://www.w3.org/XML/1998/namespace"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:vs="http://www.w3.org/2003/06/sw-vocab-status/ns#"
  xmlns:vann="http://purl.org/vocab/vann/">
  <owl:Ontology rdf:about="http://www.ontologia.fr/OTB/Seat.rdf">
    <dc:title>Ontoterminology of seats</dc:title>
    <dc:description>Ontoterminology of seats considered as things made or used for sitting on, such as a chair or stool.</dc:description>
    <dc:issued rdf:datatype="http://www.w3.org/2001/XMLSchema#date">2017-6-29</dc:issued>
    <dc:modified rdf:datatype="http://www.w3.org/2001/XMLSchema#date">2020-5-25</dc:modified>
    <dc:creator>Christophe Roche</dc:creator>
    <dc:publisher>Condillac</dc:publisher>
  </owl:Ontology>

  <!-- Object Properties: -->

  <owl:ObjectProperty rdf:about="#hasPart">
    <owl:inverseOf rdf:resource="#partOf"/>
    <rdfs:domain rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
    <rdfs:range rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
  </owl:ObjectProperty>
```



Protégé

# Querying in SPARQL

<http://demo.openlinksw.com/sparql>



OpenLink Virtuoso SPARQL Query Editor



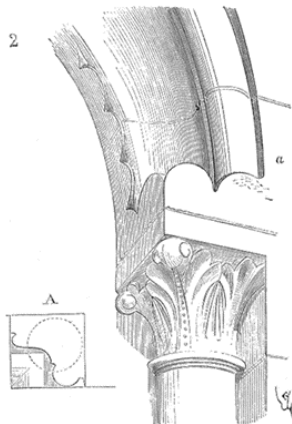
```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
```

```
SELECT ?name ?definition
FROM <http://ontologia.fr/OTB/seat.rdf>
```

```
WHERE {
    ?concept rdf:type owl:Class.
    ?concept skos:prefLabel ?name.
    ?concept skos:definition ?definition.
    FILTER (lang(?name) = 'en')
    FILTER (lang(?definition) = 'en')
}
```

```
ORDER BY ?name
LIMIT 100
```

name	definition
"armchair"@en	"Seat for one person, with arms, back and feet, "@en
"bench"@en	"Seat without back or arms, for more than one persons, with feet, "@en
"chair"@en	"Seat for one person, with back and legs, without arms."@en
"couch"@en	"Seat formore than one people, with arms, back and feet. "@en
"ottoman"@en	"Seat without back or armrsets, for one person, without feet, which usually serves as foot rest or box, with the seat part hinged onto the lower part."@en
"seat"@en	"Piece of furniture designed for seating on."@en
"stool"@en	"Seat for one person, with feet, wihout arm and back. "@en



# Querying in SPARQL



label	type	img
"Canapé GMT 21269"	"couch"@en	<a href="https://journals.openedition.org/crcv/docannexe/image/13475/img-3-small480.jpg">https://journals.openedition.org/crcv/docannexe/image/13475/img-3-small480.jpg</a>
"Canapé T 504 C"	"couch"@en	<a href="https://journals.openedition.org/crcv/docannexe/image/13475/img-10-small480.jpg">https://journals.openedition.org/crcv/docannexe/image/13475/img-10-small480.jpg</a>
"Chaise F 263"	"chair"@en	<a href="https://journals.openedition.org/crcv/docannexe/image/13475/img-6-small580.jpg">https://journals.openedition.org/crcv/docannexe/image/13475/img-6-small580.jpg</a>
"Chaise T 507 C"	"chair"@en	<a href="https://journals.openedition.org/crcv/docannexe/image/13475/img-13-small480.jpg">https://journals.openedition.org/crcv/docannexe/image/13475/img-13-small480.jpg</a>
"Fauteuil F 914 C"	"armchair"@en	<a href="https://journals.openedition.org/crcv/docannexe/image/13475/img-5.jpg">https://journals.openedition.org/crcv/docannexe/image/13475/img-5.jpg</a>
"Fauteuil T 505 C"	"armchair"@en	<a href="https://journals.openedition.org/crcv/docannexe/image/13475/img-11.jpg">https://journals.openedition.org/crcv/docannexe/image/13475/img-11.jpg</a>
"Fauteuil T 506 C"	"armchair"@en	<a href="https://journals.openedition.org/crcv/docannexe/image/13475/img-12.jpg">https://journals.openedition.org/crcv/docannexe/image/13475/img-12.jpg</a>
"Tabouret GMT 1414/6"	"stool"@en	<a href="https://journals.openedition.org/crcv/docannexe/image/13475/img-9-small480.jpg">https://journals.openedition.org/crcv/docannexe/image/13475/img-9-small480.jpg</a>
"Tabouret S 574"	"stool"@en	<a href="https://journals.openedition.org/crcv/docannexe/image/13475/img-7-small580.jpg">https://journals.openedition.org/crcv/docannexe/image/13475/img-7-small580.jpg</a>

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
```

```
SELECT ?label ?type ?img
FROM <http://ontologia.fr/OTB/seat.rdf>
```

```
WHERE {
  ?object rdf:type owl:NamedIndividual.
  ?object skos:prefLabel ?label.
  ?object rdf:type ?concept.
  ?concept skos:prefLabel ?type.
  ?object foaf:depiction ?img.
  FILTER (lang(?type)='en')
}
```

```
ORDER BY ?label
LIMIT 100
```



### [Mind the Gap: Ontology Authoring for Humanists](#)

C. Roche M. Papadopoulou. 1st International Workshop for Digital Humanities and their Social Analysis (WODHSA)- Episode V: The Styrian Autumn of Ontology, September 23-25, a Workshop hosted by Joint Ontology Workshops, Medical University of Graz (Austria), September 23-25, 2019

### [Building ontology-based dictionaries for Greek material culture terms](#)

M. Papadopoulou & C. Roche. 1st International Workshop on Open Data and Ontologies for Cultural Heritage. Rome, Italy, June 3, 2019

### [Twinning Classics and A.I.: Building the new generation of ontology-based lexicographical tools and resources for Humanists on the Semantic Web](#)

M. Papadopoulou, C. Roche. In S. Krauwer, D. Fišer (eds.) – Twin Talks at DHN 2018 – Understanding Collaboration in Digital Humanities. Open access, University of Copenhagen, 5th March 2019

### [Ontologization of Terminology. A worked example from the domain of ancient Greek dress](#)

M. Papadopoulou, C. Roche. AIDAinformazioni Journal, number 1-2/2018, volume XXXVI

### [Ontological definition – abstract](#)

C.Roche. Handbook of Terminology, Volume 1, John Benjamins Publishing, 2015, pp.128-152

### [Ontoterminology: How to unify terminology and ontology into a single paradigm](#)

C.Roche. LREC 2012, Eighth international conference on Language Resources and Evaluation, Istanbul (Turkey), 21-27 May 2012, pp. 2626-2630

# Any Comments or Remarks?

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