Synonymy in Terminology: The Contribution of Ontoteterminology

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Etienne Bonnot de Condillac (1714 - 1780):

French Philosopher:
- Locke
- Essay about human knowledge
- Logic, Language

nature. Because words are the signs of our ideas, the system inherent in natural language must be based on the system inherent in our knowledge. Thus, languages have different types of words only because our ideas belong to different classes; they have means to connect ideas only because the only way we think is by connecting ideas (Condillac 1775: 27).
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- **Industrial Context**

  - Onomia
    
    [www.onomia.com](http://www.onomia.com)

- **EDF**

- **CIH**

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Context

Industrial Applications

- Specialized Dictionaries
- Knowledge Capitalization
- Knowledge Mapping
- e-Learning
- Content Management Systems
- Semantic Search Engine
- Semantic Web

⇒ Terminology
Specialized Dictionary

Denotative

Ontotermology
## Terminology

### Definition

- **ISO 1087-1**

Terminology

“set of **designations** belonging to one **special language**”

Designation

“representation of a **concept** by a sign which denotes it”

Special language

“language used in a **subject field** and characterized by the use of specific linguistic means of expression”

Term

“verbal **designation** of a **general concept** in a specific **subject field**”

Concept

“unit of knowledge created by a unique combination of **characteristics**”

Subject field

“field of special knowledge”

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Terminology

Objective

ISO 704

“The terminology work dealt with in this International Standard is concerned with terminology used for unambiguous communication in natural, human language. The goal of terminology work as described in this International Standard is, thus, a clarification and standardization of concepts and terminology for communication between humans.”
Terminology

Comments

- Terminology is not a specialized lexicography
- Terminology imposes a prescriptive approach
- Terminology has 2 dimensions: - conceptual - linguistic
- Terminology follows an onomasiological approach
**Synonymy**

**Definitions**

- **Synonymy**
  
  "Expressions with the same meaning are synonymous" [Lyons]

- **Near-synonymy**
  
  "expressions that are more or less similar, but not identical, in meaning" [Lyons]

- **Denotative *versus* Connotative**
  
  Words can vary along two dimensions:
  
  - denotative (semantics)
  - connotative (stylistic)
**Synonymy**

**Synonymy in Terminology**

- Principles of the GTT (General Theory of Terminology)

- Standardization

- Bi-univocity
  - a term denotes one concept: monosemy
  - a concept is denoted by only one term: mononymy

⇒ No synonymy in terminology

The terminology world is marvellous
## Objectives

### Standardization

- Unambiguous communication
- Help for understanding and writing technical documents
- Quality assessment of technical documents
- Training, e-Learning
- Specialized Dictionary
- ...

⇒ Removing synonyms

Defining (imposing) standardized terms

*Such an approach does not work*
Objectives

There are synonyms (polysemes) in terminology

There are absolute synonyms in terminology

“Relais tout ou rien” ≡ “Relais TOR”
(“on-off relay”)

“voltage threshold relay” ≡ “voltage relay”

“Relais tout-ou-rien bistable” ≡ “Relais bistable”
(“on-off bistable relay”)

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Objectives

There are synonyms (polysemes) in terminology

There are *absolute* synonyms in terminology

“jante massive soudée” ≡ “jante soudée”
**Objectives**

**There are synonyms (and polysemes) in terminology**

There are near-synonyms in terminology

“turbine” ≅ “wheel”
Some normalized terms are never used

“voltage threshold relay” ≡ “voltage relay”

“jante massive soudée” ≡ “jante soudée”

If synonymy can not be avoided...
Objectives

Synonymy must be explained...

... from the domain knowledge point of view...
Objectives

Synonymy must be explained...

... from the linguistic point of view

“Relais tout ou rien” $\equiv$ “Relais TOR” (“on-off relay”)

“jante massive soudée” $\equiv$ “jante soudée”

“Relais tout-ou-rien bistable” $\equiv$ “Relais bistable” (“on-off bistable relay”)

“turbine” $\equiv$ “wheel”
A definition of (near-) synonymy in terminology

Signified versus Concept

- Synonymy is a linguistic relationship built in discourse;
- Synonymy is defined in relation to word sense (meaning);
- A term in discourse is used as a word and then has a signified.

A double semantic triangle
Ontotermology

A definition of (near-) synonymy in terminology

- A signified is not a concept
- A concept is language-independent
- A term (designation, signifier) is not a denomination (identifier)
- Two dimensions: Conceptual and Linguistic

⇒ There are two different semiotic systems which do not match
A definition of (near-) synonymy in terminology

2 terms are (near-) synonymous from a terminological point of view (i.e. independently of any discourse) if and only if they denote the same concept.

Onomasiological approach

⇒ Conceptual relationships must-should-can explain synonymy

⇒ Representation of the conceptual system
Ontotermiology

Ontology

“the branch of metaphysics dealing with the nature of being”

“An ontology is a specification of a conceptualization” Tom Gruber

“An ontology is a shared description of concepts and relationships of a domain expressed in a formal (computer readable) language” C.Roche

Upper Cyc

KR Sowa
The choice of the formal language is important

Epistemological principles
**Ontotermology**

- **Unifies ontology and terminology**
- **Focuses on concept**
  - a concept does not represent the meaning of a term but a domain knowledge
  - terms speak about domain knowledge
- **The double semantic triangle**

  - **Ontoterm**
    - concept
    - formal definition
    - reasoning
  - **Term**
    - linguistic definition (explanation)
    - context of use (stylistic, etc.)
Ontotermontology

(near-) synonymy, polysemy

“voltage threshold relay” ≡ “voltage relay”
Ontotermology

(near-) synonymy, polysemy

"jante massive soudée" ≡ "jante soudée"

ellipsis
Ontotermiology

(near-) synonymy, polysemy

metonymy

“turbine” ≅ “wheel”
Specialized Dictionary

- Term list
- Concept card
- Formal definition
- Term card
- Linguistic explanation
- Interactive browser

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Conclusion

Why synonymy in terminology?

- Natural language is not a formal language
  ⇒ rhetorical figures are common in LSP: ellipsis, metonymy

Synonymy is a linguistic expression of conceptual relationships

Ontoterminology

- Unifies the two dimensions of terminology
- The double semantic triangle

Perspectives

- A term conveys more than its denoted concept
  ⇒ linguistic dimension: - context of use (stylistic, sociolinguistic…)
    - corpus studies