

# Part II

## Competing Approaches

# Terminology (Schimtz, 2006)

1. Terminology: Set of designations belonging to one special language.
2. Discipline that studies the structure, formation, development, usage and management of terminologies in various subject fields.

# 2<sup>nd</sup> Approach Terminology and Information Tools

1. Terminology (1930s): national projects (1960s)
2. Terminography (1976) (Linguistics)
3. Knowledge Engineering (2000) (Linguistics + Knowledge Management)

# Terminology: National Projects

The making of terminological dictionaries focuses on presenting an unambiguous relationship between terms, concepts and objects



**Standardized and Harmonized Terms**

# Triadic Relationship (Odgen & Richards, 1923)

- Objects: entities in the real world
- Concepts: units of knowledge
- Terms: verbal designations of concepts

# Practical Work: Records (Schimtz, 2006)

1. Concept-related categories
2. Term-related categories
3. Administrative-related categories

# Concept-related categories

- Definition
- Subject field
- Illustration (symbol or formula)
- Classification
- Superordinate concept
- Subordinate concept
- Co-ordinate concept

# Term-related categories

- Synonyms
- Abbreviated forms
- Orthographical variants
- Context (example)
- Grammar data
- Variants (geographical, register)
- Project code



# Administrative categories

- Identification number
- Date of creation (adaptation)
- Author
- Source
- Reliability
- comments

# Examples

InterActive Terminology for Europe

carrying amount

accounting

# Problems (1970s)

- (i) Synonymy
- (ii) Polysemy
- (iii) Homonymy
- (iv) Variation
- (v) Anisomorphism
- (vi) Idiosyncrasy (multidimensional perspective)

# Solutions

- (i) Terminography (1970s)
- (ii) Knowledge Engineering (2000s)

# Assumptions

- Linguistics (especially, Corpus Linguistics)
- Knowledge Management
- Computer Science
- Information Science

# Examples

1. Basic Concepts and Best Practices:
  - Applied Linguistics

Virginia Tech Multimedia Music Dictionary ? Why is Linguistics needed for compiling this dictionary?

# Critical Remarks

Terminology is a “language discipline dedicated to the scientific study of the concepts and terms used in specialized languages.”

# Critical Remarks

Terminological work needs:

1. Describing conceptual relations
2. Describing a term's combinatorial potential (Yes, but Time Cost?)



# Critical Remarks

1. Present conceptual Organizations
2. Offer the **multidimensional** nature of terms
3. Extract semantic and syntactic information through the use of corpora

# Critical Remarks

Conceptual Organizations must reflect some kind of **internal structure**, usually:

- Generic-specific;
- Whole-to-part
- Associative relations

# Critical Remarks

**Multidimensionality:** Term  
description(s) can be approached  
from several aspects or dimensions  
(partly agree)

# Critical Remarks

- (semi-)automatic extraction of semantic and syntactic information through the use of corpora, especially from the Internet used as a corpus.
- Methods: working in knowledge-rich contexts

# Results

- Terminological Products do not show what the theory says they must show
- Results:
  - Glossaries
  - Vocabularies
  - Terminology Databases (Data Bank)
  - Knowledge bases

**TERMIUM**  **TERMIUM**  
**Plus<sup>®</sup>**

The Government of Canada's  
terminology and linguistic data bank.

**TERMIUM Plus<sup>®</sup>**

# TERMIUM Plus®

carrying amount (database)

accounting (Translation Bureau)

# National Languages

DANTERM

Ordbog

TERMCAT

Cercaterm: accounting



# Individual Projects

- Communicative Terminology:
  - Genome
- Frame-based Terminology:
  - OncoTerm & EcoLexicon
- Termontography:
  - FF POIROT

# Communicative Terminology

- Terms are multidimensional
- Terms behave as words do
- Terms contain three dimensions:
  - Linguistic dimension
  - Cognitive dimension
  - Communicative dimension

# GENOME

## Knowledge database on Human Genome:

- Terminological bank
- Textual corpus
- Document bank
- Picture bank

# Frame-based Terminology

## Frame-based Linguistics:

- Conceptual organization
- Multidimensionality
- Extraction of semantic and syntactic information through the use of multilingual corpora

# OncoTerm: Frame Based Terminology

Sistema Bilingüe de Información y Recursos  
Oncológicos (2002)

1,896 related concepts (meaning/conceptual relations)

4,033 terms

# EcoLexicon: Frame-Based Terminology

## Terminological Knowledge Base:

- Environmental event is conceptualized as a dynamic process that is initiated by an agent. This affects a patient and produces a result.
- Records: Terms, Graphical Resources and Domains

# EcoLexicon

Water

Stream

Capillary water

# Termonography

- Multidisciplinary and Functional Approach:
  - Terminography
  - Ontology engineering
- Knowledge-rich Contexts retrieved from corpora



# Knowledge-rich Context

“Knowledge-rich contexts are naturally occurring utterances that explicitly describe attributes of domain-specific concepts or semantic relations holding between them at a certain point in time, in a manner that is likely to help the reader of the context understand the concept in question.” (Schumann, 2012)

# Knowledge-rich Context

- Knowledge-rich contexts are extracted by knowledge base management systems that are used for creating and displaying relationships between units of information.
- Methods: lexical language patterns; contexts; semantic relations; knowledge patterns; knowledge probes; bag-of-equivalents; term alignment approach

# Example: FF POIROT


FF POIROT

Ontology and Fraud

Tools





# Critical Evaluation

Terminology Proper  Documentation

Terminography  Linguistics deals  
with Language and not with Information  
Tools

Knowledge Engineering  Prototypes

# Critical Evaluation

- Theory  must focus on the nature of information tools:
  - User's needs  Always punctual needs in specific usage situations
  - Access routes  Always quick and easy routes
  - Data  Always prepared for allowing users to convert data into Information

# Summary

- Terminology has been ‘kidnapped’ by linguists and knowledge engineers.
- Linguists and knowledge engineers are wrong in their assumptions.
- Terminological/knowledge bases do not deliver what they claim.