# Trendencies in terminology

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Terminologicentrum TNC
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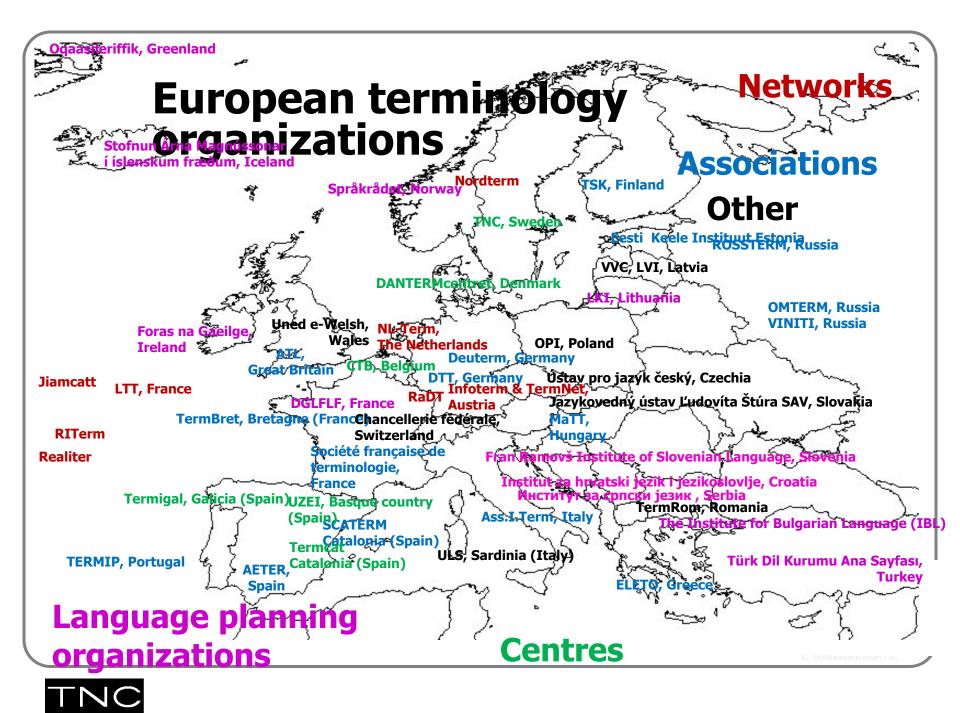
## **EAFT: Objectives**



- to further plurilingualism in Europe through terminology;
- to provide a platform at the European level for the promotion and co-ordination of terminological activities and the heightened awareness, improved recognition and continued professionalisation of the terminology sector;
- to create active liaisons with other organisations, associations and institutions in the terminology sector at all levels.







## **EAFT: The Board**





From left:

**EAFT** 

**Henrik Nilsson**, president

(Terminologicentrum TNC, Sweden)

Anca-Marina Velicu (University of

Bucharest, Romania)

**Tegau Andrews** (Bangor University, Wales)

**Eszter Papp**, vice president (University of Károli Gáspár, Hungary)

Imanol Urbieta (Uzei, Basque country)

**'Sandra Cuadrado**, secretary and treasurer (Termcat, Catalonia)

**'Ana Ostroški** (Institute of Croatian Language and Linguistics, Croatia)





## **EAFT: Activities**



- Terminology Summit (latest: 2016, Luxembourg)
- ITA (International Terminology Awards)
- Brussels Declaration
- · Agreements (Nordterm, ELRA, LTT, Infoterm
- Newsletter (EAFT Newsletter)
- SIG:s (special interest groups)
- http://eaft-aet.net









## **Summits**

**2001 Brussels (Pre-Summit)** 

**2002 Brussels** 

2004 Barcelona

**2006 Brussels** 

2008 Gatineau

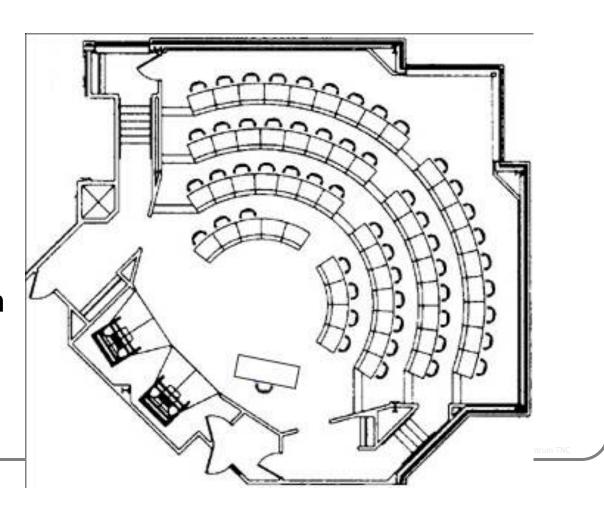
2010 Budapest

**2012 Oslo** 

2014 Barcelona

**2016 Luxembourg** 

2018 San Sebastian









## Workshops

- Concept modelling and Ontology. Which approach for which problem?,
   Vaasa, 2006 (with Nordterm)
- International Workshop on Terminology design: quality criteria and evaluation methods (TermEval), Genoa, 2006
- Minority Languages and Terminology Policies, Dublin, 2007
- The terminologist profession and the market place, Paris, 2009
- International Conference: Training in Terminology, Bucharest, 2011
- TERMINTRA (International seminar on national termbanks), Oslo, 2012
- Applications of Cognitive Terminological Theories in Terminology Management, Zagreb, 2013
- National Languages and Terminology in Higher Education, Science & Technology, Athens, 2013
- TT &T: terminology teaching and training, Copenhagen, 2016







### Brussels Declaration Déclaration de Bruxelles

рl Deklaracja Brukselska o międzynarodowej współpracy terminologic Διακήρυξη των Βρυξελών για τη Διεθνή Συνεργασία στην Ορολογία<sup>1</sup> Przedstawiciele krajowych i międzynarodowych stowarzyszeń, s dokumentacji terminologicznej, ύν ενώσεων. δικτύων και uwzględniając, że termir Brusselyfirlýsingin świadomi, że termino σε όλες τις ανθρώπινες um alþjóðlegt samstarf um íðorðamál komunikacji specialistvo promowaniu różnorodne εταφοράς πληροφορίας στην Fulltrúar íðorðastofnana, -samtaka og skráningarmiðstöðva á lands- og alþjóðavísu στη διατήρηση και προανωνή uznajac potrzebe uśw terminologii jako narzęd telja að íðorðamál komi óhjákvæmilega við sögu í öllu því sem menn fást við, ειδικούς και τους λαμβάνοντες

#### Declaración de Bruxelas para unha cooperación terminolóxica

Os representantes das asociacións nacionais e internacionais, da documentación en terminoloxía.

considerando que a terminoloxía está presente en todas as actividades humanas

conscientes de que a terminoloxía non é só un medio privilexiado de tr comunicación especializada, senón que desempeña tamén un papel primord da diversidade cultural e lingüística,

recoñecendo a necesidade de concienciar tanto os profesionais coma os respo sobre o valor esencial da terminoloxía como instrumento de comunio coñecementos,

#### Brysseldeklarationen

#### för internationellt samarbete på terminologiområdet

Representanter för nationella och internationella terminologiorganisationer, nätverk och terminologidokumentationscentraler

anser att terminologi är en del av mänskliga aktiviteter,

är medvetna om att terminologi är ett verktyg för kunskapsstrukturering och effektiv fackkommunikation, men även att terminologi spelar en central roll för att befästa och föra fram kulturell och språklig mångfald,

understryker behovet av att få professionella yrkesutövare och beslutsfattare att förstå terminologins utomordentliga betydelse för kommunikation och kunskapsöverföring,

understryker det nödvändiga i att integrera användarnas intressen, behov och förväntningar i professionella terminologers arbetsmetoder,

understryker behovet av samarbete mellan alla aktörer och intressenter på en internationell nivå, och särskilt behovet av att på ett samordnat sätt ta del av varandras terminologiska resurser,



ev.



## Terminologicentrum TNC (Swedish Centre for Terminology)

- is the central organization in Swedish for terminology and LSP
- has a mission to create, maintain and develop Swedish terminology.





- Founded by engineers in 1941 as Tekniska nomenklaturcentralen (Swedish Centre for Technical Terminology)
- Private company with varying state grants
- Restructured as Terminologicentrum TNC in 2000
- 5 people employed today
- 105 publications, cd-rom Termdok (1988)
- national termbank (Rikstermbanken) (2009)





## Terminologicentrum TNC (Swedish Centre for Terminology)

- terminological services and support to authorities, organizations and enterprises
- terminological products, e.g. terminological glossaries and databases, manuals for technical writing
- collection, processing and dissemination of terminology of specialised subject fields
- terminological reviews of standards and other documents containing terminology
- lectures and courses on the principles and methods of terminology work and technical writing
- co-operation with other language institutions on a national level and with terminological institutions on an international level
- maintains the national termbank, Rikstermbanken





## **Trendency?**

#### The Nutrient Intakes of Rural High-Schoolers with Depressire Tendencies

SG Rhie, GS Lee - Korean Journal of Community Nutrition, 1999 - KoreaMed ... method. The family situations of the subjects were mostly nuclear family(73%), agricultural work(53%), and having religion(53%). Only 3% of the students suffered depression where as 19% showed depression **trendencies**. The ...

## Laser Fusion Solidification Treatment of ZG45 Steel Surface and Its Thermal Analyses [J]

C Gi, SJW Wen-ge - Journal of Dalian University of Technology, 1989 - en.cnki.com.cn ... [References], Chinese Journal Full-text Database, 1 Hits. 1, Guo Ning (Dalian Institute of Technology, 116023);DEVELOPMENT **TRENDENCIES** OF LASER HEAT TREATMENT TECHNIQUE[J];Journal of Applied Optics;1993-04. [Citations], ...

#### Feature and Development Trendency of the Market of Late Thick Newspaper Era

X LIU, X LIAN - Journal of Nanchang University (Humanities and ..., 2009 - en.cnki.com.cn ... and press issuing market gets rational gradually;at the same time,digital media is intervening more and more the newspaper industry market.Based on that,the press market of late thick newspaper will present many important development **trendencies**:the newspaper industry ...

#### ☆ 99 >>

#### Review of Reform Trends of Project Management Research Direction

K LV, D LU, J WANG - Construction Economy, 2009 - en.cnki.com.cn

... Secondly,project is playing social activity instead of the traditional management tools,and these **trendencies** are clear:from engineering project to commercial project,from product-oriented to value-oriented,and from narrow project to broad project. ...





## Trendency ...

"Anybody else notice a trend/tendency (a trendency\*!)? ...
\*Figured I would throw in trendency to be ever so irritating"

"Three is a trend, Or sorry, I mean: three is a tendency." (Jönsson, 2014)

#### trend

- direction
- objective
- •long-term

general direction maintained by a winding or irregular course; often a new development in clothing, make-up, etc.

#### tendency

inclination sometimes amounting to an impelling force; influencing the trends





## terminology (1)

set of designations belonging to one special language (1087-1)

## terminology (2)

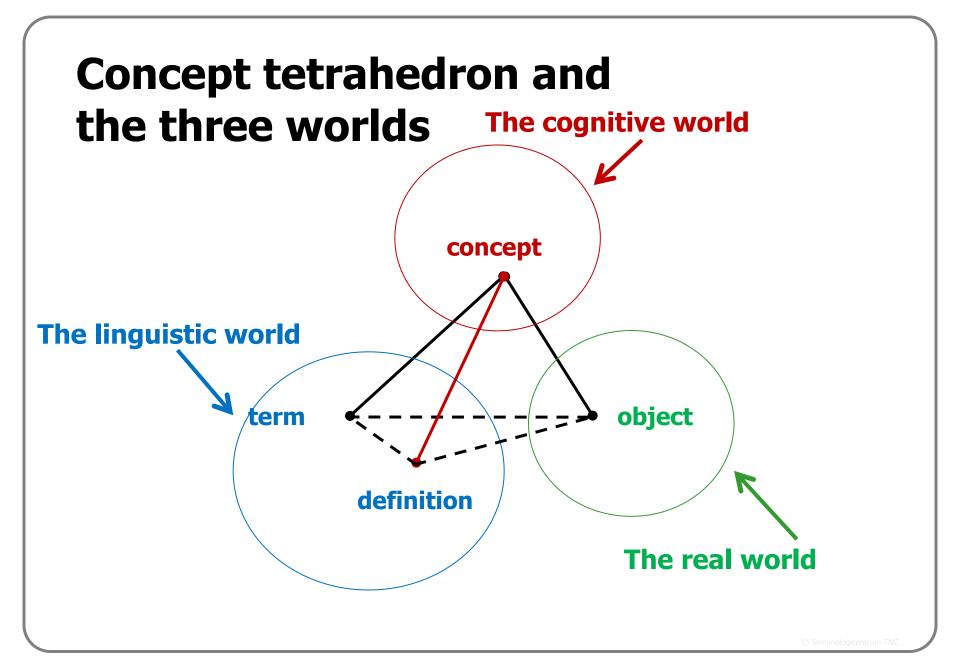
science studying the structure, formation, development, usage and management of **terminologies** [1] in various subject fields



		language system			
	lex	lexicon		grammar	
	spontaneous	normative	spontaneous	normative	
LGP					
LSP		terminolo			
		gy			











#### characteristic

abstraction of a property of an object or of a set of objects

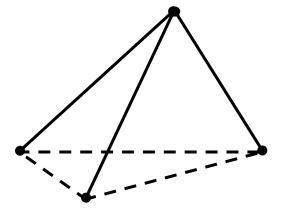


concept

unit of knowledge created by a unique combination of characteristics

term

verbal designation of a general concept in a specific subject field



object

anything perceivable or conceivable

#### definition

representation of a concept by a descriptive statement which serves to differentiate it from related concepts



## **Terminological analysis**

- concept analysis
  - find characteristics (analysis of characteristics)
  - structure concept relations
  - draw concept systems
- definition writing
- term analysis

[Nuopponen & Pilke]

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## terminology work

work concerned with the systematic collection, description, processing and presentation of concepts and their designations

Terminology work should preferably be carried out on the basis of established and methods. Terminology work term excerption, concept harmonization, term harmonization and terminography.

principles includes

[ISO 5127: Information and documentation – Vocabulary]





## terminology management

the conducting or supervising of the technical or special terms used in a business, art, science or special subject

[Kremer et al; Felber & Budin, 1989]

set of activities carried out to ensure that the correct terms are used consistently in all company materials, in support of end-to-end product development, communication, translation/localization, and distribution

systematic research, documentation, storage and distribution of concepts along with the terms that denote those concepts

[TerminOrgs, 2012]





"The information available in specialist information is constantly evolving. A specialized knowledge concept cannot be described in isolation, but is part of a dynamic process. Contextual and situational information is necessary in knowledge representation. Automatically, one is directed to corpus-based research when discussing and analysing concepts in a specialized domain.

Management of terminology (as an element of knowledge management) is part of the terminology work, which deals with the capturing, processing, updating and preparation of terminological data."

[Steurs et al, 2015, p. 224ff]

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## **Argument typology**

- time-related arguments
- economic arguments → CBA
- knowledge distribution arguments
- traning-related arguments
- language policy-related arguments
- · streamlining- and harmonization-related arguments
- · legal arguments
  - 12 §

Authorities have a special responsibility to make sure that Swedish terminology within their different domains is accessible, used and developed [Language Act (SFS 2009:600)]

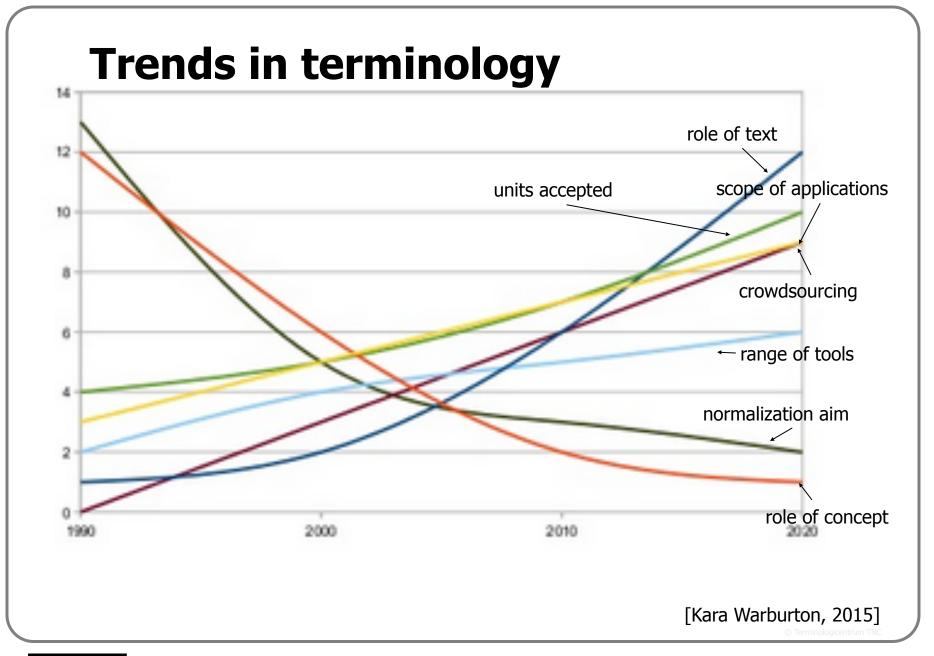


## **Developments** ...

- Increased text focus and use of corpora
- Recognition of semasiological approach
- Need for ad-hoc approach
- Rarely normative
- Rarely univocal
- Increasingly pragmatic: role of cognition, communication, application
- Increased applications for NLP and commercial settings
- Adoption of methods from lexicography where suitable

[Kara Warburton, 2015]







## Some more trends

- collection of terminology into large national terminology resources (national/regional termbanks)
- development of custom-made terminology management tools
- renewed discussion of quality assessment
  - o criteria, methodology
  - o translation, resources, texts (?)
- increased need for terminologists
- increased professionalization, but ...
- ... less education in terminology (Denmark, Hungary)



### Trend: role of text

- more corpus-based terminology work
- "textual terminology using a corpus for terminological ends, that is for analyzing terminology and highlighting terms" (Cabré, 2017)
- better tools for term extraction → simpler to chart used terms and term usage
- widened term concept
- but:
- few LSP corpora
- difficult to handle in practice → traditional work with fewer concept in clusters still valid



## The role of terminology

"Terminology plays a crucial role wherever and whenever domain-specific information and knowledge is:

- generated (e.g. in research and development);
- used (e.g. in specialized texts);
- recorded and processed (e.g. in databases);
- passed on (via training and teaching);
- implemented (e.g. in technology and knowledge transfer); or
- translated and interpreted."

[UNESCOs Guidelines for terminology policies (2005) http://unesdoc.unesco.org/images/0014/001407/140765e.pdf]





## Corpus ...

#### corpus

collection of language data brought together for analysis

[ISO 1087-1:2000]

#### text corpus

systematic collection of machine-readable texts or parts of text prepared, coded and stored according to predefined rules

[ISO 1087-2, 2000]

Cf.

#### corpus

set of documents or data that has a scientific meaning

A corpus can be produced by an individual researcher's activity (including its archival materials), or from a laboratory research, field campaign or science and culture heritage project, a survey, etc. [SOURCE: http://smw-rda.esc.rzg.mpg.de/index.php/Corpus]

[ISO 5127:2017]





## **Corpus and terminology**

"There was a time when the linguistic corps regarded a corpus as a corpse. [...] Nowadays corpus work is clearly gaining ground."

[Allén, 1991]

"The use of corpora in terminology management has been accepted both theoretically and practically much more slowly than in lexicography, largely as a result of its generally more prescriptive orientation and onomasiological, i.e., concept-based approach, but also owing to some more practical limitations"

[Ahmad & Rogers, 1997]





## **Differing starting points**

#### **TERMINOLOGY**

onomasiological starting point

starts from the contents (the concept) and moves towards the linguistic expression (the term)

term

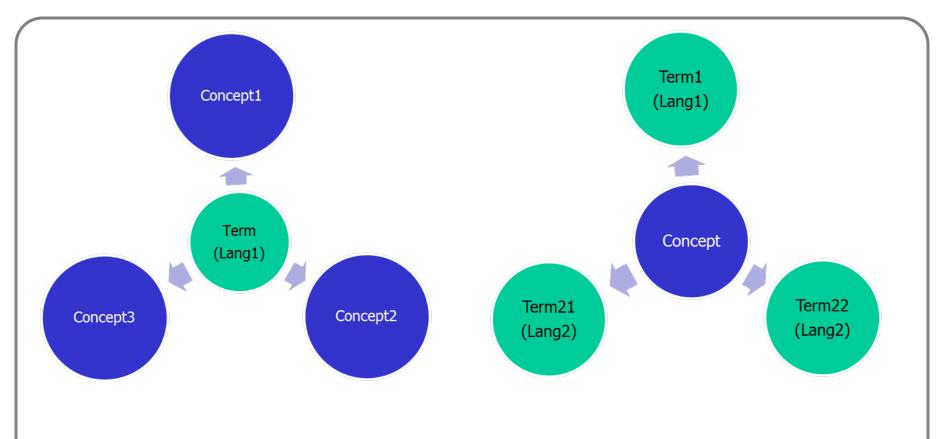
**→**concept

**LEXICOGRAPHY** semasiological starting point

starts from the linguistic expression and determines its meaning







lexicographical approach

concept oriented approach

[A. Vasiljevs, EuroTermBank, 2006]

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## Corpus and terminology (cont.)

Comparatively few LSP corpora, but ...

"It can be argued that, like lexicographers and others interested in language, terminologists should also look for an unbiased sample of texts, size being one indication of this. Empirical studies suggest that the vocabulary used in special-language texts is much smaller than the vocabulary in general-language texts."

[Ahmad & Rogers, 1997]

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## Corpus and terminology (cont.)

Smaller corpora are justified in terminology management because:

- •"The status of special-language "items" (including terms) may be referred to more or less authoritative sources (e.g., domain experts), whereas in general language the notion of authority is more problematic
- •There tends to be less lexical and grammatical variation ion speciallanguage texts, so that patterns of language may emerge more clearly from smaller samples in these semantically-restricted "sublanguages"
- •The notion of the "subject field" or domain, while not well defined, is more constrained than the rather ill-defined notion of, say, "modern British English" [...]
- •Special-language texts tend to be lexically denser than generallanguage texts [...]
- •Terminologists are not concerned with all the words in special-language texts, only those that are domain-specific [...]
- •The specific purpose of the terminology that is being compiled may naturally restrict the text type or even the genre selected for the corpus.





## Corpus and terminology (cont.)

"The relationship between corpus linguistics and terminology is less pronounced in the literature compared to lexicography. [...]

"corpus terminography" terminographers require corpus evidence about the full range of terms used (including variants and synonyms), with usage contexts to elucidate their conditions of use.

"One can say that the use of corpora has dominated terminology for at least the past decade."

[Warburton, 2014]

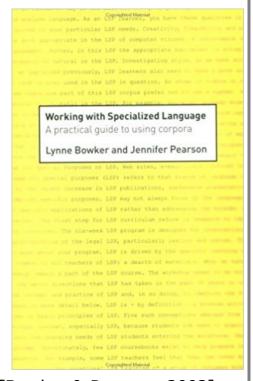
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## **Corpus and terminology**

"a large collection of authentic texts that have been gathered in electronic form according to a specific set of criteria"

"More recently, however, teachers and students of language of special purposes (LSP) have begun to wonder whether corpora could also be used for LSP investigation. The answer is a resounding 'yes'! Corpora have a lot to offer to you as an LSP user, but sometimes it is hard to know where to begin. There are very few publications avilable that provide guidance on using corpora to study LSP"



[Bowker & Pearson, 2002]





# Corpus and terminology (cont.)

"Uvedená analýza definícii termínu/pojmu marketing svedčí o tom, že špecializovaný korpus môže pomočť pri tvorbe terminologických záznamov STD."

[Levická, 2014]





# Trend: units accepted 7

- term → TU (terminological unit)
- termhood?
- difference term segment in translation memory?



"The field of terminology has witnessed a shift in the notion of termhood from a representation of an objectivist, language-independent concept to a contextually-dependent expression fulfilling a given communicative purpose."

[Kara Warburton, 2015]

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### What is a term?

#### term

verbal designation of a general concept in a specific subject field

A term may contain symbols and can have variants, e.g., different forms of spelling.

term [ISO 1087-1:2000]

lexical item [...] used in a particular domain of expertise

term [Meyer & Mackintosh:2000]

name of a concept in the concept system of a particular scientific, technical, economic or other field

term [ASSČ]

name of a concept that is delimited by the concept's definition and by its position within conceptual system of a given scientific field

[Horecký]

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### The looks of terms

### **Terminologized general language words:**

(terminologization: the process by which a generallanguage word or expression is transformed into a term in a special language.)

Example: mouse

### **Determinologized terms:**

(de-terminologization: process when specialized terms are incorporated into general language as widely known words)

Example: tsunami



### **Terms – names**

#### general concept

concept which corresponds to two or more objects which form a group by reason of common properties

Examples: 'planet', 'tower'

#### individual concept

concept which corresponds to only one object appellation

Examples of individual concepts are: 'Saturn', 'the Eiffel Tower'. Individual concepts are usually represented by appellations.

[ISO 1087-1:2000]

term

name,



# The looks of terms (cont.)

#### **Simple words:**

kolv, pyrolys, object

#### **Compounds:**

knäckkraft, toidutehnoloogia, normalisatie-instituut Flach-Links-Links-Maschine

#### **Multiword terms:**

lång samt, roche éolisée en pyramide, descenso de capa freática, bezpieczeństwo żywności, goede hoedanigheid van eet- en drinkwaren,

hin wara x-xoghol





# **Term? Terminological unit (TU)**

#### heat soaked thermally toughened soda lime silicate safety glass

glass within which a permanent surface compressive stress has been induced in order to give it greatly increased resistance to mechanical and thermal stress and prescribed fragmentation characteristics and which has a known level of residual risk of spontaneous breakage due to the presence of critical nickel sulphide (NiS) inclusions

### flat heat soaked thermally toughened soda lime silicate safety glass heat soaked thermally toughened soda lime silicate safety glass that has not been

deliberately given a specific profile during manufacture

#### heat soaked enamelled thermally toughened soda lime silicate safety glass

heat soaked thermally toughened soda lime silicate safety glass which has a ceramic frit fired into the surface during the toughening process. After toughening the ceramic frit becomes an integral part of the glass

NOTE In the UK, this glass is also known as <u>heat soaked opaque thermally toughened soda</u> <u>lime silicate safety glass</u>.

- · verre de silicate sodo-calcique de sécurité trempé et traité Heat Soak
- · vidrio de seguridad de silicato sodocálcico templado en caliente





### "Termness/termhood"

#### unithood

degree of stability of syntagmatic combinations in a given corpus

#### termhood

degree of stability of the units demonstrating unithood in a semantic dimension delimited by the corpus

the degree that a linguistic unit is related to domain-specific concepts

[Kageura, 1999 | 1996]

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### "Termness": criteria

### Classical notions of termhood are being challenged

- Classical definition of a term:
  - the designation of a concept in a structured concept system of a field of special knowledge (subject field).
- Now guided by two factors\*\*:
  - relevance to the corpus lexical structures that are "stable" and "salient" in a given corpus
  - relevance to the intended application purposeful, productive, economical, efficient, internally coherent

\*\* Bourigault, D., and Jacquemin, C. 2000. Construction de ressources terminologiques. In J-M. Pierrel, editor, Ingénierie des langues. Hermès, Paris.

[Kara Warburton, 2015]





### Notions of "termhood" challenged (?)

#### term

construct that takes shape through an analysis which gives consideration to corpus evidence, validation by subject-matter experts, and the purpose of the terminographical product

- Classical definition of a term:
  - the designation of a concept in a structured concept system of a field of special knowledge (subject field).
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# Trend: role of concept

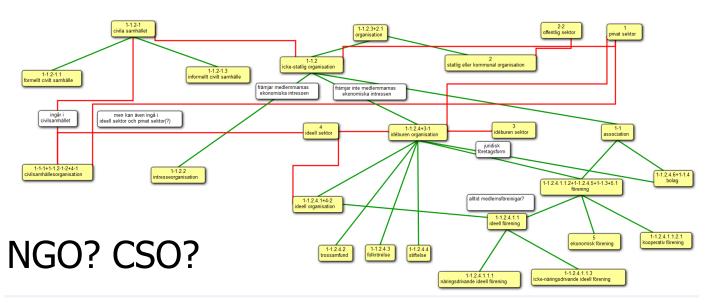
theoretically and practically?



### Concept ...

"Terminology is therefore becoming increasingly textoriented and less governed by the desire to construct separate conceptual systems."

[Warburton, 2014]





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# Trend: role of concept >

#### But:

- 'concept orientation = still the basis of the method and the
  work
- time consuming
- 'better tools for concept structuring and illustration → easier
- 'pedagogical



#### II.

Theoretical Principles

As the ISO 1087:2000, the ISO 1087 Revision relies on the classical theory of knowledge. The Revision will take into account results coming from knowledge engineering and logic in order to guarantee consistent definitions and to enable computational representation (e.g. for IT applications).

#### 3.2.6 (new)

#### common knowledge

unit of knowledge about a plurality of objects

NOTE the plurality of objects can be one, several
or none (i.e. an idea without exemplification). A
common knowledge always refers to a set of objects (a set reduced to one object
must not be confused with the object itself).

#### 3.2.7 (modified)

#### concept

<u>common knowledge</u> represented by a unique combination of characteristics NOTE The objects coming under the same concept share the same combination of characteristics.

[Roche et al, 2015]

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# **Terminology and KO**

"Terminologists nowadays rely heavily on machine-readable corpora and software tools which are capable of processing those corpora to extract terminological data used in terminology research and terminographic projects. The activity of gathering and ordering such data is getting more knowledge-oriented due to the increasing need of translators and other users of terminology services for knowledge-based mono- or multilingual information sources in a knowledge-based global economy. This tendency has resulted in developing large-scale terminology projects involving research teams of terminologists, ontologists and subject specialists for designing rich terminological knowledge bases."

[Alexiev, 2011]



### Trend: normalization aim >

- new place for dynamics and indeterminacy
- in line with language planning in general
- Be boring!
- normalization → savings
- many terminology projects still interdisciplinary
- still need for terminology work within standardization
- re-use



"All this variation, all this concern about redefining what terminology is, is a response to reality, to what really happens. After an initial Wüsterian phase linked to international communication with an emphasis on normalization — which basically created standards and the normalization of terms — terminological practices that expressed different needs began to emerge. [...] In this way, terminology serves to endorse a language as well as a specialist language."

[Cabré, 2017]





# "Terminology"

- Distributional analysis applied to terminology extraction
- The cognitive and rhetorical role of term variation and its contribution to knowledge construction in research articles
- Measuring the degree of specialisation of sub-technical legal terms through corpus comparison
- The underpinnings of a composite measure for automatic term extraction: The case of SRC
- Nested term recognition driven by word connection strength
- The Sociopolitical Thesaurus as a resource for automatic document processing in Russian
- Compositional translation of single-word complex terms using multilingual splitting
- An ontological framework for modeling the contents of definitions
- Lexical semantic approaches to terminology: An introduction
- Semantic characterization of terms as a trace of terminological dependency
- Hunting for a linguistic phantom: A corpus-linguistic study of knowledge-rich contexts
- Clustering for semantic purposes: Exploration of semantic similarity in a technical corpus
- Variation as a cognitive device: How scientists construct knowledge through term formation
- Creating a test corpus for term extractors through term annotation



# **Terminology standardization**

# terminology standardization (1)

elaboration of normative terminologies



standardization of the principles and methods of terminology work



terminology standards



standards about terminology work

section "Terms and definitions" in all standards





## **Trend: crowdsourcing** 7

- by experts for experts → not useful?
- might be useful for some activities/phases, e.g. term creation
- rather "nichesourcing"

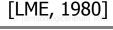
#### but:

- increased "terminologization" of every-day language
- wiki-usage in terminology contexts



# Terminology work in organizations

- all terminology-related measures must be economically motivated
- before any work is started, needs should be demonstrated and prioritized
- choice of terms and definitions should, as far as possible, be managed by those technical instances who have the need and the knowledge
- existing terminology, internal and external, shall naturally be used, but methods to make it known and accessible need to be improved





# **Terminology work – by whom?**

- SME (subject matter expert)
- terminologist-generalists
- SME-terminologists (terminologist with domain competence

translators

- interpreters
- concept modellers
- knowledge managers
- ...

 $\longrightarrow$ 

- training terminologists (more) in subject matters
- training of subject matter experts in terminology
- both (in parallel)?

[Karsch, 2014]





# **Everyone's = expert?**

#### expert

a person who, through knowledge or experience, has competence to give an opinion in the fields about which he/she is consulted

[ISO 13302:2003]

- undermine professionalization of language professions?
- cf. human translator machine translation + post-editing
- user adaptation user education [cf. Antti K]



## crowdsourcing

method of outsourcing a function originally undertaken by employees to a group ("crowd") of external contributors either as an open call or in a more restricted way

collaborating with an indeterminate group to carry outlines, 2013] development in research

the practice of obtaining needed services, ideas, or content by soliciting contributions from a large group of people and especially from the online community rather than from traditional employees or suppliers

[Merriam-Webster]



"The advantage of crowdsourcing approaches against the expert-based approaches is [a] much greater scale of discovered semantics. First, the quantity of potential lay (non-expert) contributors is larger (even when they are used redundantly). On the other hand, experts are sometimes unavailable. Second, lay contributors are much cheaper or even free"

[Šimko & Beliková, 2014]

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### **Critics**

"Crowdsourcing killed indie rock ... 'cause crowds have terrible taste."

[Weingarten in Keats, 2011]

"government needs smart-sourcing, not crowdsourcing."

[Peterson in Keats, 2011]

"Collectively based lexicography is often regarded with scepticism by professional lexicographers since anyone can contribute anything and there's no possibility to keep the quality level of the contributions under control. This way of working has even been described as a potential danger to all serious lexicography since these dictionaries risk disturbing the trust in the two qualities that users generally associate with professionally produced dictionaries: quality and reliability.

[Doherty in Svensén, 2004]





## nichesourcing

crowdsourcing where tasks are distributed amongst a small crowd of citizen scientists (communities)

[Jussi-Pekka Hakkarainen, <a href="http://blogs.helsinki.fi/natlibfi-bulletin/?page\_id=206">http://blogs.helsinki.fi/natlibfi-bulletin/?page\_id=206</a>]

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### ... or bottom?

experts

- too many, irrelevant comments
- limited understanding of terminological method and concept analysis
- loss of intension depth (determinologization)
- not enough concept orientation (unsuitable starting point)
- no overview of domain
- "fake" representativity

- + joint effort, more resources, quicker, cheaper
- + suitable for descriptive work (and possibly for term creation, QA)
- better chance of implementation of created terms
- + can possible generate new, creative ideas
- + no responsibility, i.e. nothing to lose
- + democratic (?)

crowd





### **Top** ...

experts

- no guarantee that experts understand terminological method ("wrong" experts)
- not enough concept orientation
- risk of non-consensus (in normative work)
- risk of own interest, variation for career purposes
- not enough coverage (not all experts participate)
- limited resources and efforts, vulnerability
- too much experts?
- reputation on the line ...

- + needed to identify problem
- + expert competence includes knowledge of subject field terminology
- + guarantee of terminology usage (with broad participation)
- + terminology = well-adapted to target group (= experts, not always crowd)
- + for specialized areas which normally don't affect the general public
- + better overview of domain →
   easier to create concept systems
   etc.

crowd





### terminology management

systematic research, documentation, storage and distribution of concepts along with the terms that denote those concepts

[TerminOrgs, 2012]

#### 9 stages

- 1. Objectives and planning
- 2.Term collection
- 3. Concept-based structuring
- 4.Linguistic assessment and revision
- 5.Creation of new terms
- 6.Terminology administration
- 7. Terminology provision and distribution
- 8. Terminology maintenance
- 9. Control of terminology usage

[Drewer in Großjean, 2009]



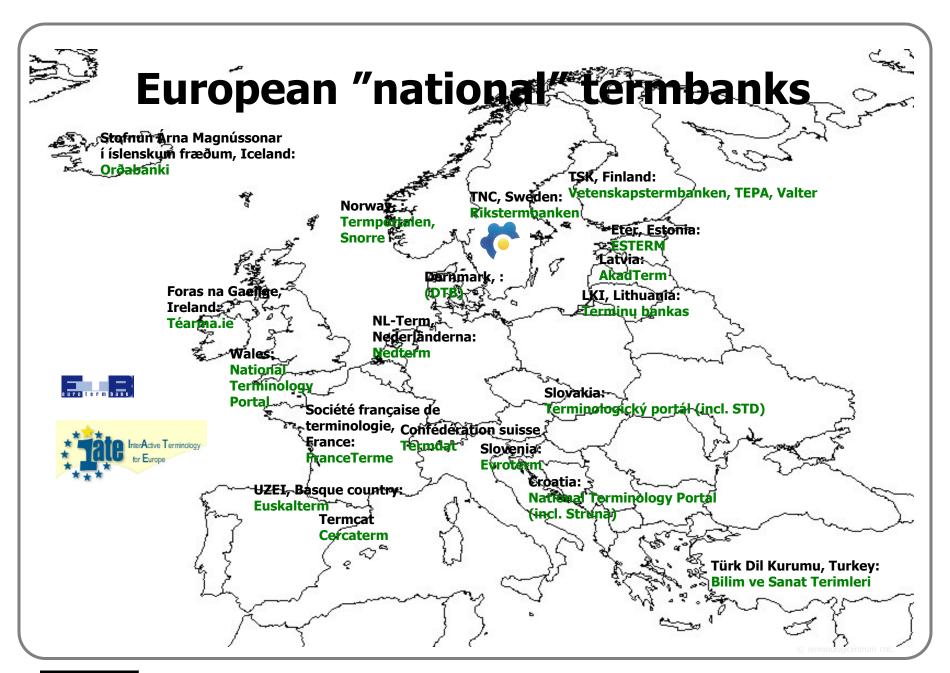
# Term creation: "popular" term

- EN: mansplain(ing) ('to explain something to someone, typically a man to woman, in a manner regarded as condescending or patronizing')
- FR: mecsplication, viralogisme
- CAT: homexplanació
- DE: männerklären
- SV: förkarla (förklara = explain, karl = man)











### "National"

- a certain **coverage** (as to contents)
- status (recognized by professionals and a language or terminology institution)
- accessibility (open and freed of copyright claims)
- large and varied target group



### national terminology database database containing mono- or multilingual terminological data [...] established at country level

[Guidelines for Terminology Policies, Unesco]

"the **national termbank**, which attempts to serve a general purpose role in coordinating the creation and use of terminologies within a country, and hence is theoretically multifunctional, multilingual and **exploited by widely differing kinds of users**"

[McNaught, 1987]





# Some methodological aspects of creating a (national) termbank

#### **Contents**

- 1. Overall selection governing principles?
- 2. Swedish starting point (equivalents → monodirectional?)
- 3. Redundancy
  - 1. Synonyms
  - 2. Several definitions/concept harmonization?
- Definition vs. explanation, definition types
  - Legal definitions ...
- Updating and actuality

#### **Users**

- Interactivity, crowdsourcing in terminology?
- User adaptation?

#### **Technology**

- Data categories revised (ISO, DK)
- Non-verbal information



## **Starting point?**

- text (corpus)
  - 1. document genuine term usage
  - 2. show variation
  - 3. human intervention necessary (?)
- pre-existing glossaries
  - easy management
  - existing macro and micro structures to manage and represent (data categories)





# Background : Overview of the project and its subprojects

HANDELSHØJSKOLEN Input DanTermBank Project Overview Domain Text experts 1) Knowledge acquisition groups Terminologists a. Automatic knowledge extraction Term data b. Automatic merging and Existing term bases PRODUCT and glossaries validation of data Automatically produced 2) Knowledge validation draft ontology 3) Knowledge dissemination Automatically Domain group validated ontology [X:a] [X:b] User group-oriented knowledge profiles DanTermBank Terminology and knowledge database

Output



# **Technology**

- What technical solutions are in use today, and are some more appropriate than others?
- Should a national term bank be based on a
- distributed solution or not? Or, rather, constitute a kind of portal? Pros and cons?
- What standards should be the basis for national terminology databases (storage and exchange formats, etc.)?
- Are the current terminology management systems suitable for the demands which could be made on a national term bank? To what extent are today's national terminology banks based on proprietary software (use of open source or not)?





"the longer established term banks tend to use purpose built software, partly because nothing generally available at the time was found to be suitable, and partly because each is aimed at providing a range of services not found elsewhere, using terminological records and searching methods which are more or less unique. [...] all systems should attempt to maintain the greatest flexibility in their approach. However, this is difficult to achieve where specially created software is concerned; there is an inevitable tendency to provide what is definitely required at the time of program specification, perhaps giving little thought to what services might be required, or facilities demanded, at some indeterminate time in the future."

[Negus, **1979**]



"As to the technological aspects of national termbanks, it became clear during the presentations and discussions that most of the represented termbanks had developed their own technical solution (which, however, in many cases relied on international standards). The exception was the Finnish termbank using Wiki-technology and open source software."

[Proceedings, TERMINTRA I, 2013]





Tämä sivu sisältää muutoksia, joita ei ole merkitty käännettäväksi.

Muut kielet: English ■ • suomi ■ • svenska ■

Tämä on Tieteen kansallinen termipankki -hankkeen pilottiwiki.

Tieteen kansallinen termipankki (TTP) rakentaa kaikkien Suomessa harjoitettavien tieteenalojen yhteisen, avoimen ja jatkuvasti päivitettävän termitietokannan tiedeyhteisön ja kansalaisten käyttöön. Hanke toteutetaan talkooperiaatteella yhteistyössä koko maan tutkijoiden kanssa.

Tieteen termipankkia kehitetään kolmen pilottihankkeen puitteissa. Pilottihankkeiden tieteenalat ovat kasvitiede, kielitiede oikeustiede.

Muutkin tieteenalat voivat aloittaa termityön. Haluatko perustaa erikoisalasi asiantuntijaryhmän? Ohjeet asiantuntijaryhmän perustamiseen.

Haluatko osallistua termitalkoisiin asiantuntijana? Ohjeet asiantuntijajäsenelle.

#### Aihealueet

Aihealueet

Lähdeluettelo Tuoreet muutokset

Termipankki

Yhteystiedot

Tapahtumat

Hanke

Blogi

Työkalut

Satunnainen sivu

Yhteistyökumppanit

- Kasvitiede (3 047 sivua)
- Kielitiede (4 282 sivua)

# STD (Slovenská terminologická databáza (SK)

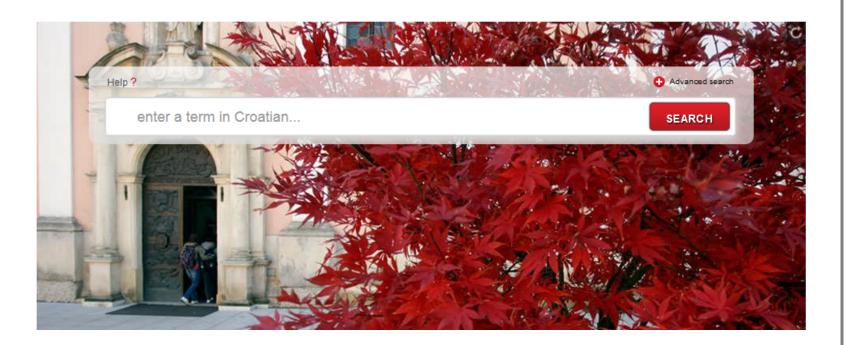




# Struna (HR)

#### struna search engine

Projects About Events Links Contact



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### Trend: re-use 7

- terminological data have new uses (SEO)
  - → new structure demands
- new ways of making terminological data available (LOD, linked open data)



### Challenges: re-use

- linked open data (LOD) etc.
  - APIs, URIs
- 1. search engine optimization (SEO)
- 2. web tracking
- 3. version management?
- 4. integration, plug-ins
  - 1. CAT, Word etc.
- 5. (© issues)



### **Different worlds**

#### **World of semantic web**

Vocabularies, ontologies

Terms, hierarchies, relations, seldom definitions

### World of terminology:

Concepts, concept systems, terms

Often definitioner.

These worlds rarely meet, how can this be facilitated?



# linked open data (LOD)

#### linked open data

(on the web:) linked data which are also open data

#### linked data

(on the web:) structured data which follow RDF-rules and which are made available through the HTTP-protocol

### open data

data which are publicly available via internet and which can be used, re-used and distributed freely and without cost

[Öppna företagsdata – Skatteverket 2012]





# **Terminology as LOD?**

- Terminology is not lists with names, addresses, geographical data, etc.
- Terminology needs standardzing and who should be doing that? Acceptance?
- What is the best technology?



# **Terminology & IR**

"The traditional aim of terminologies such as glossaries and termbases is to improve the clarity of communication in spoken or written discourse. [...] Unlike thesauri and most other types of vocabulary described in this part of ISO 25964, **information retrieval is therefore not the prime motivation**. Nonetheless, the terms in a terminology can be useful in searching full text [...]

It is important to remember that the entries in a terminology have generally been chosen to reflect the needs of a particular subject field. When the terms are applied in a different context, adjustments may be necessary."

[ISO 25964-2]

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### Trend: tools 7

- more, more complex tools (termbans, TMS's)
  - 1. "In this constant evolving era of technology, new tools and programs are released every day. [...] At present, many tools with various functionalities are available for different purposes."

[Steurs et al, 2015, p. 224ff]

- development of data models, etc. (TBX, ISO)
- increased use of terminological method in other contexts → new tools
- increased integration (with TM's, etc.)
- semantic web, wiki
- but still no (good) tool for voting etc.



### terminology product

a product that supports special language use or the field of terminology

### terminographical product

a product consisting of terminology and terminological and/or linguistic information to support special language use

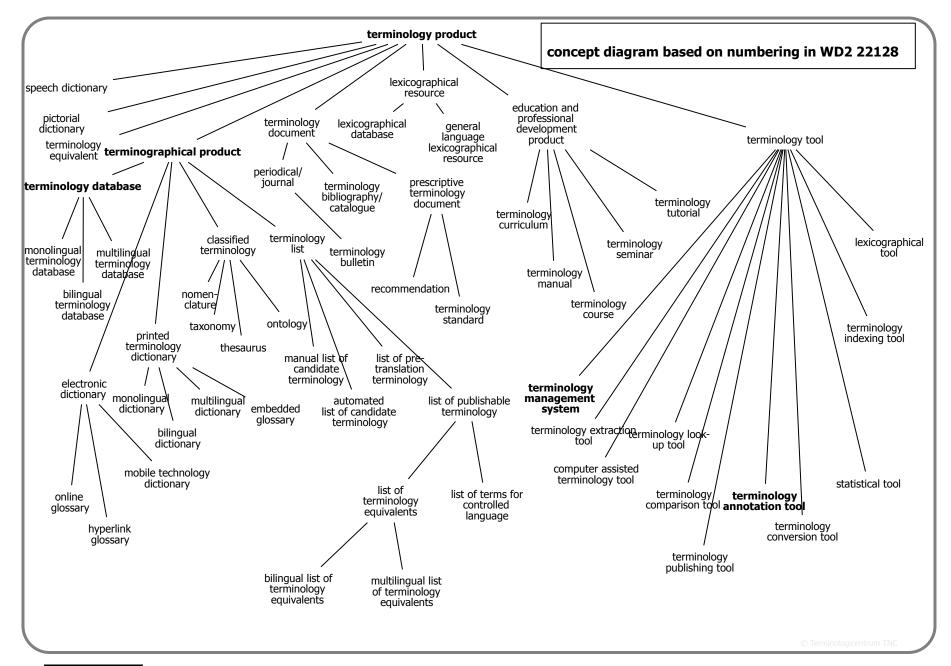
### terminology tool

computer application that assists a terminologist in the production and delivery of terminology products and services

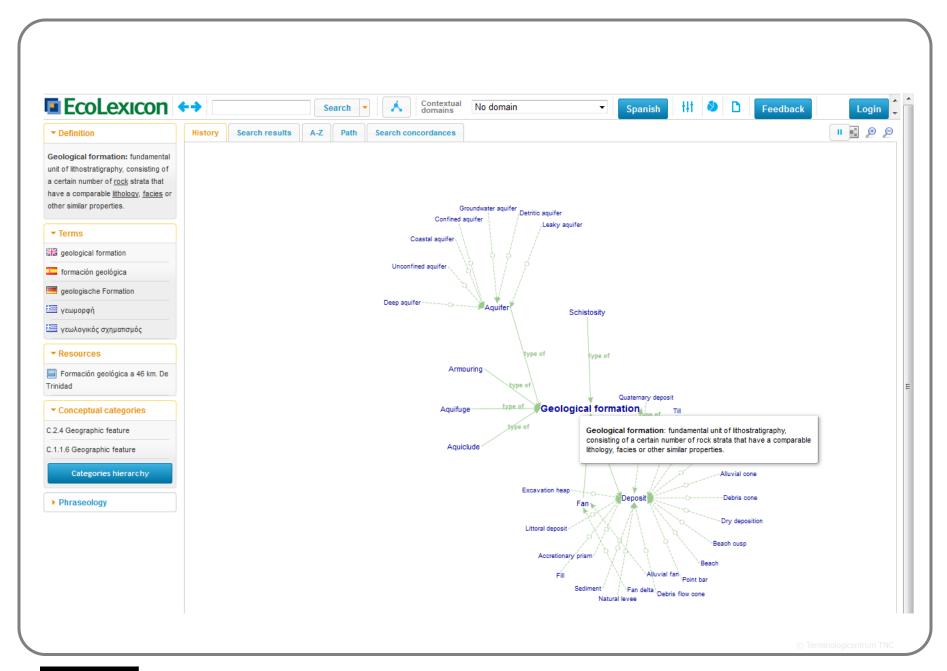
[ISO TC 37/SC 2/N324: PWI 22128]

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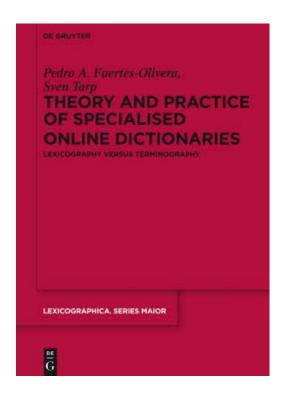






### **Assessment/evaluation...**

"To the best of our knowledge [...] the translation of terminological theories into real and working terminographical products, has so far a lot left to be desired."



[Tarp & Fuertes-Oliveira, 2014]



# **Typology**

#### 1. Copycats

works that have been either photocopied or directly copied from a text file and then placed on an electronic platform, frequently as PDF files

#### 2. Faster horses

[works] where the lexicographers do make use of the new technologies, but only in a very restricted way [IATE]

#### 3. Stray bullets

[works that] use new technology, but often "in the wrong direction" ("lexicotainment") [EcoLexicon]

#### 4. Model T Fords

works [which] have gone beyond the traditional boundaries and have not only made use of the existing technology in order to provide quicker data access, but also to adapt the dictionary articles to the various functions displayed by the dictionary

#### 5. Rolls Royces

e-tools which permit individualized solutions for specific and individual users in concrete situations, and which might also combine access to selected data in a prepared database





### **Evaluation**

"When a terminological resource is being used, the content pertinence, structural conformity and formalistic quality of the terminological data are the greatest concerns for users. [...] The word "quality" here refers to the content quality of terminological data that a terminological resource holds. Two aspects are concerned: its level of quality from the standpoint of linguistics/language and its level of quality from the standpoint of specialized knowledge."

[ISO 23185]



# **Trends – nationally (TNC)**

- 1. System architecture, business analysis and modelling is increasing in public and private sectors ->
- 2. Increased need for structured information management with digitalization, e-services, semantic interoperability
- 3. Public authorities need terminological support in fulfilling the Swedish Language Act
- 4. New terms keep appearing and constitute the biggest part of the growth in vocabulary
- 5. Increased need for terminological support in standardization work
- Increased need for terminology and professional language in combination with language training for immigrants
- 7. Continued discussion on domain loss





# Some more (Nordic?) trends

- 1. terminology work less translation-oriented, more "ontological" (and monolingual)
- 2. fewer separate terminology organizations -> closer to (LGP) organizations
- 3. increased need for terminologists in other types of projects knowledge management
- 4. ... terminology work performed by other professional groups: system/business architects, demand analysts, informatics specialists
- 5. increased need for professional language for immigrants
- 6. sociology of terminology (?): renewed (academic) interest in actors and processes, self-reflection, professional profiles
- 7. terminology in higher education (domain loss etc.)



# English influence in the Nordic countries RAPPORTER FRÂN SPRÂKRÂDET 1.

- 1. loan words
- 2. code switching
- 3. domain loss

Lots of discussion.





DET ENDA SOM
SKILJER DIN TEXT
FRÅN SHAKESPEARES
HAMLET" ÄR TITELN

JAG TYCKTE

HUR VILL DU



#### domain

group of language situations that share certain crucial features: the place, subject and aim of the linguistic exchange, the relationship of the speakers

Typical domains are school, court, the working life, the family, sport etc.

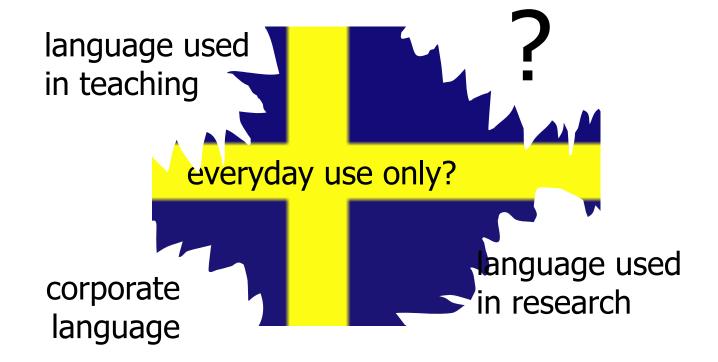
#### domain loss

loss of ability to communicate in a language on all levels of an LSP field because of deficient further development of the necessary LSP resources





### **Domain loss**







# Language in higher education

- 1. English = heavy influece, but depends on discipline
- 2. Sometimes parallel languages
- 3. common views:
  - 1. "The English language is clear and stable and the English people have their own terminology under full control."
  - 2. "There are no Swedish terms and we can't create terms in Swedish."
  - 3. "We teach in English so we don't have to bother about Swedish."





### What can be done?

- 1. Maintenance and development of terminology in national language
- 2. Language training
- 3. More resources for language checks and translation
- 4. Higher demands on knowledge of national language
- 5. Training material in several languages
- 6.Language policy
- 7. Lobbying
- 8. Co-operation nationally and internationally





# Sociology of terminology (?)

- 1. Cf. sociology of translation: "translation as a social practice";
- actors [who?]
  - 1.expert
  - 2. terminologist (self-reflection)
    - roles
    - skills
    - profiles
- processes [how?]
- terminology usage and acceptance (terminometry)



# The roles of the terminologist

- 1. "concept analyst"
- 2. terminographer
- 3. technician
- 4. standardizer
- 5. LSP planner
- 6. documentalist
- 7. editor
- 8. translator
- 9. researcher
- 10.project manager
- 11.consultant
- 12.psychologist
- 13.teacher
- 14.marketer?





### **Working with experts**

"the terminologist must establish the method that is more effective depending on the types of data that will be submitted to confirmation by the experts. Additionally, the terminologist must integrate the experts and make them become an active part in most of the stages of [the] terminological process."

Process	Parties
domain understanding	terminologist
identification of sources	terminologist with expert validation
collect specialised texts	terminologist
construction of a textual typology	terminologist with expert validation
extraction of terminology	terminologist
selection of candidate terms	terminologist with expert validation
maps of concepts	terminologist with expert validation
writing definitions	terminologist with expert validation
terminology management	terminologist [Costa, Silva, Barros & Soar





## Using experts for

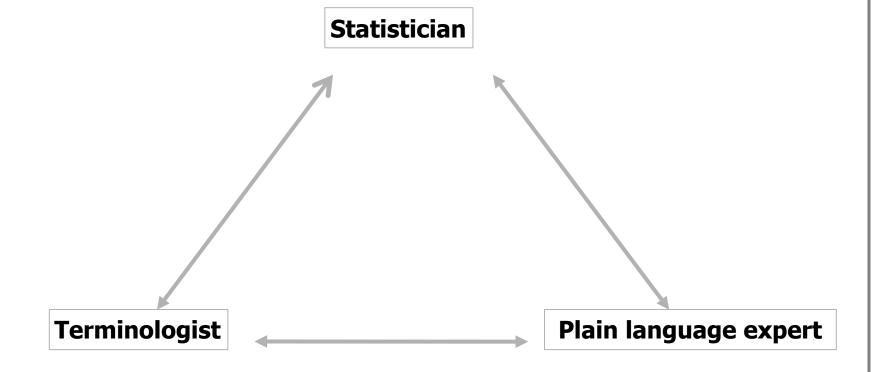
- 1.learning more about concepts
- 2.learning more about terms (in SL)
- 3.validating terms
- 4.creating new terms
- 5.finding equivalents (in TL)
- 6.finding "false" synonyms
- 7.discovering varying term usage (if you ask > 1!)
- 8."testing" definitions
- 9.finding new ways forward
- 10.
- 11.



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### The "troika model"







# **Terminological challenges**

- 1. Content-related
  - 1. synonym abundance
  - 2. usability vs terminological precision
- Administrative
  - consensus → "dictator model"



# **Joint Groups for Terminology**

- 1. Joint Group for Swedish Computer Terminology (JOGSCOT) (1996)
- 1. Joint Group for Swedish Life Sciences Terminology (1999)
- 2. Joint Group for Terminology in Optics (1996)







### Some professional profiles



- "Formation de terminologues" (Quirion , Caignon & Mareschal, 2004)
- 2. European union
- 3. "Grilles de compétence" (OTTIAQ)
- 4. Internal training programme (BTL, Canada)
- 5. Berufsprofil (RaDT)
- 6. Termcoord (2017):

http://termcoord.eu/ why-terminology/ 31318-2/





### **Professionalization**

- 1.still not recognized profession everywhere
- 2.people with other professional titles do similar work: demands analysts, system architects, informatics experts etc. -> competition + cooperation possibilities (joined forces)
- 3.not many independent educations
  - 1. IULA (on-line master)
- certification introduced:
  - ECQA: Terminology Manager Basic/Advanced



# **ECQA:** modules

#### UNIT 1: UNDERSTANDING TERMINOLOGY MANAGEMENT

- 1. What is terminology
- 2. Why terminology management
- 3. How terminology work is embedded in my organisation and
- 4.work environment

#### **UNIT 2: TERMINOLOGY MANAGEMENT SKILLS**

- 1. How to search and collect terminology
- 2. How to store and retrieve
- 3. How to coin terms
- 4. How to manage monolingual and multilingual terminology
- 5. How to manage terminology projects

#### UNIT 3: TERMINOLOGY STRATEGIES FOR BUSINESS PROCESSES

- 1. How to present the business case for terminology
- 2. How to calculate and argue costs & return on investments
- 3. How to involve relevant stakeholders
- 4. How to collaborate with relevant organisational units



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## **ECQA:** modules

- UNIT 4: TEAM WORKING & COMMUNICATION SKILLS
- 1. How to organise team communication
- 2. How to manage distributed and diverse teams
- 3. Why Conflict Management
- 4. How to train and motivate your team
- **UNIT 5: APPLICATION SCENARIOS**
- 1. Presentation of own projects in the form of max. 10 slides
- **UNIT 6: STANDARDS AND LEGAL ISSUES**
- 1. Which standards are relevant
- 2. How to deal with copyright issues in terminology management
- 3. What about product liability



### **Trends?**

- 1. E-learning: TNC, TERMDIST, Online Postgraduate Programme in Terminology (IULA), Corso di perfezionamento (Zanola)
- 2. Closing of training programmes where terminology was a part (Hungary, Denmark)
- 1. "Self-learning" (Pavel, van Campenhoudt)?
- 2. Modular learning?
- 3. In-house training?
- 4. Training also in other programmes?
- 5. "Terminologization" of other professions?



### certification

recognition or validation by a professional organization (including a college or university) or agency that an individual possesses the qualification for engaging in a specific profession

### Presupposes:

- 1. a valid test
- 2. an agreed-upon body of knowledge
- 3. competent administration
- 4. a credible agency
- 5. a reasonable cost

[Turner & Rainey, 2004]





# **Terminologist?**



eierlegende Wollmilchsau?



### **Professional Swedish for**



#### Energiordlista

KRAFTVÄRMEVERK-VÄRMEVERK

SVENSKA	ENGELSKA	ARABISKA
askhalt	ash content	محتويات الرماد
asktratt	ash funnel	قمع الرماد
askutmatning	ash removal	إز الله المرماد
askuttag	ash outlet	مخرج الرماد
avgas	exhaust gas	غاز العادم
avgaspanna	exhaust gas boiler	مرجل العادم
avgasångpanna	exhaust gas steam boiler	مرجل البخار - العادم
brännbart bränsle	combustible fuel	وقود قابل للاحتراق
bränsleberedningsbyggnad	fuel preparation building	مبنى تحضير الوقود
bränsleinmatning	fuel feed	التغذية بالوقود
bränslemottagning	fuel reception	استقبال الوقود
ekonomiser	economiser	اكونوميسر
elutbyte	electricity exchange	تبديل الكهرباء
fastbränsle	solid fuel	الوقود الصلب
fjärrvärme	district heating	تدفئة المناطق مركزياً
fjärrvärmenät	district heating grid	شبكة تدفئة المناطق مركزيأ
fjärrvärmevatten	district heating water	مياه تدفئة المناطق مركزيأ
full produktion	full production	الإنتاج بالطاقة الكاملة
förbränningsugn	incinerator	فرن الاحتراق

4

The glossary is one of Kraftringen's contributions to the facilitation of the integration of immigrant workers.

I hope this glossary can be of help for all of you who speak
 Arabic, are learning Swedish and are entering the Swedish
 labour market."





# **Identity crisis for terminology ...?**

- 1. TC37 standards espouse the GTT and have not recognized any of the other theories and methodologies
- 2. Many of the pragmatic approaches are dismissed as invalid
- 3. There are no standards or best practices that address:
  - Use of corpora
  - Developing terminology resources for various applications

[Kara Warburton, 2015]

-> terminological corpus tagging?



## More reading

- 1. ISO 704, ISO 860, 1087-1, 2 (ISO/TC 37), ISO 12616; ISO 30042, ISO 23185, ISO 12200 (ISOCAT)
- 2. "Handbook of terminology management I–II"
- 3. "Guide to Terminology" (Nordterm 8)
- 4. "Terminología" (M.T. Cabré)
- 5. "Towards New Ways of Terminology Description" (R. Temmermann)
- 6. "Terminology: A Practical Apporach" (R. Dubuc)
- 7. "Handbook of Terminology" (S. Pavel & D. Nolet) ▶ "The Pavel Terminology Tutorial" (en/fr/es/pt): http://www.termium.gc.ca/didacticiel\_tutorial/english/lesson1/index\_e.html
- 8. "Entre langage et concept" (L. Depecker)
- 9. "Abrégé de terminologie multilingue" (fr): http://www.termisti.refer.org/theoweb1.htm>
- 10."Terminology" (magazine)





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