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Variation and the dynamics of understanding in context

Rita Temmerman – Vrije Universiteit Brussel

Workshop on Terminological Variation
Stiftung Universität Hildesheim
20 – 21 July 2017




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The **multilingual** perspective

PART 1: Terminological variation in multilingual culture-bound and embodied understanding
(Temmerman & Van Campenhoudt 2014; Temmerman & Dubois 2017)

PART 2: Terminological variation in source texts and translations
(Kerremans 2014)

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PART 1

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Semantic triangle

mind: concept

a static model
for terminology
studies

world: object

word: language

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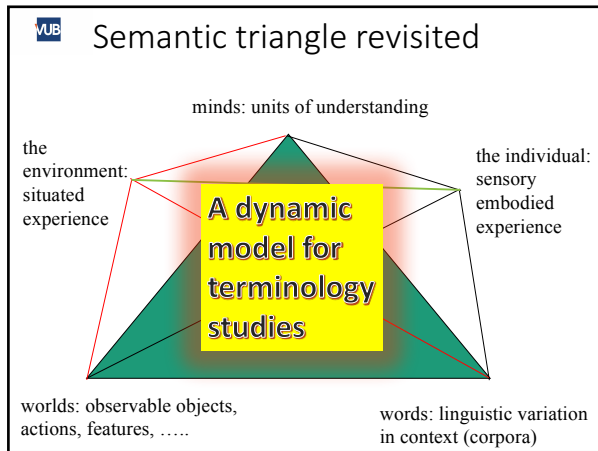
Semantic triangle + variation

minds: units of
understanding

static model
moves
towards
dynamic model

worlds: observable objects,
actions, features

words: linguistic variation



VUB Linguistic understanding

'You shall know a word by the company it keeps'
(Firth 1957:11)
(the syntagmatic aspect of understanding that can be studied in corpora)

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VUB Understanding via categorisation in the mind

Wittgenstein (1953) argued that the referents (exemplars) of a word need not have common elements to be understood and used in the normal functioning of language. A family resemblance might be what links the various referents of a word.

Each item has at least one, and probably several, elements (features) in common with one or more items, but no, or few, elements are common to all items (Rosch and Mervis 1975: 574-575)

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Understanding via observation
e.g. via sensory experience

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Visual perception





Definition of ???????

a creamy cold drink, which is made of blended fruit or berries together with fruit juice and possibly yoghurt or other dairy products or/and crushed ice cubes, that is, only natural ingredients. The texture is thicker than slush-drinks but may resemble that of milkshakes.



Definition of smoothie

Smoothie (from English smooth (tender, creamy) is a creamy cold drink, which is made of blended fruit or berries together with fruit juice and possibly yoghurt or other dairy products or/and crushed ice cubes, that is, only natural ingredients. The texture is thicker than slush-drinks but may resemble that of milkshakes.



A neologism: smoothie

Smith, Viktor, Ditte Green-Petersen, Peter Møgelvang-Hansen, Rune Haubo Bojesen Christensen, Françoise Qvistgaard, and Grethe Hyldig. "What's (in) a Real Smoothie. A Division of Linguistic Labour in Consumers' Acceptance of Name-Product Combinations?" *Appetite* 63 (April 2013): 129–40.

Putnam, H. (1975). The meaning of "meaning". In H. Putnam (Ed.). *Mind, language, and reality. Philosophical papers* (vol. 2, pp. 215–271). Cambridge: Cambridge University Press.



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Putnam (1975: 229) division of linguistic labor

Whenever a term is subject to the division of linguistic labor, the 'average' speaker who acquires it does not acquire anything that fixes its extension. In particular, his individual psychological state certainly does not fix its extension; it is only the sociolinguistic state of the collective linguistic body to which the speaker belongs that fixes the extension.

Cf. socially distributed understanding (Lindblom, 2015)



smoothie

Is a smoothie determined by what it looks and tastes like and how it feels in the mouth?

Is it a matter of which ingredients have been used and how they have been processed?

Can consumers rely on their own judgment or will they trust the judgment of experts?

Misleading product names?

Contested food names



experimental study: testing the limits for consumers' acceptance of *smoothie*

1. when tasting three samples (sensory descriptors),
2. when tasting samples in combination with ingredients lists and nutrition facts (adding factual information),
3. and both, in combination with authoritative definitions (adding experts' final judgments).

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Food and terminology

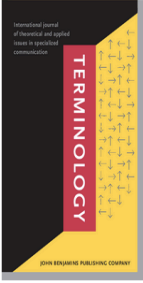
Expressing sensory experience in several languages

Special issue of *Terminology* 23:1 (2017)

Editors
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Danielle Dubois | CNRS Paris

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How can terminologists study the dynamics of understanding and variation?

What kind of information can we retrieve from what kind of method and conversely, what technique, or variant of a technique, is most appropriate for studying which semantic phenomenon?

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Is the corpus sufficient as a context?

Sinclair distinguishes between the possibility of words combining freely ('open choice') and the combinatorial restrictions that come with collocational behaviour.

Distributional corpus analysis provides sophisticated ways of studying the latter on an unprecedented scale—but would that take away the necessity of studying the former separately, with different kinds of methods?

Can all the relevant information that language users have about the reference of words be retrieved from a corpus?

(Geeraerts 2009: 178)

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(Geeraerts 2009: 178)

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Example: furniture terms

Visual and functional information in Gipper's (1958) analysis of furniture terms.

Could we get the same insights into the structure of the field if we only considered textual data?

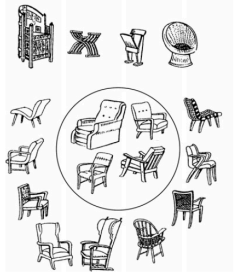
Would it still be necessary to combine corpus methods with methods exploring other modes of cognition, like **referential description** or **psychological experimentation**?

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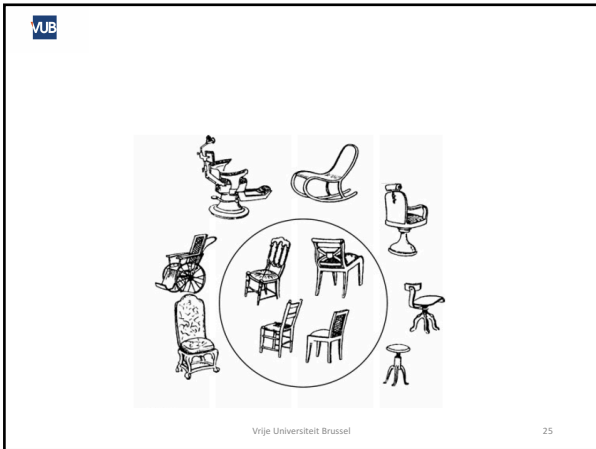


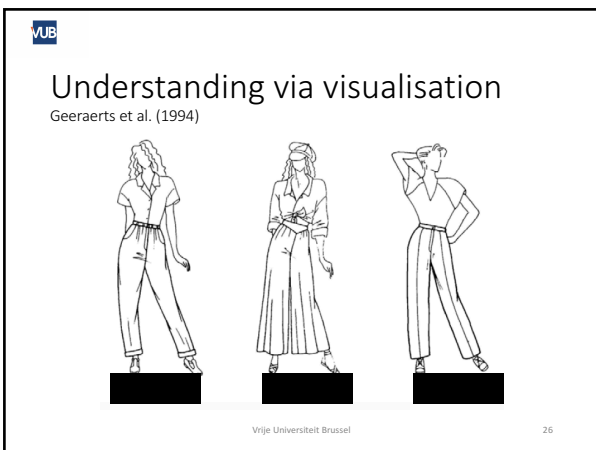
Sessel? Stuhl? (Gippel, Helmut (1959) (EN: armchair? easy chair?)

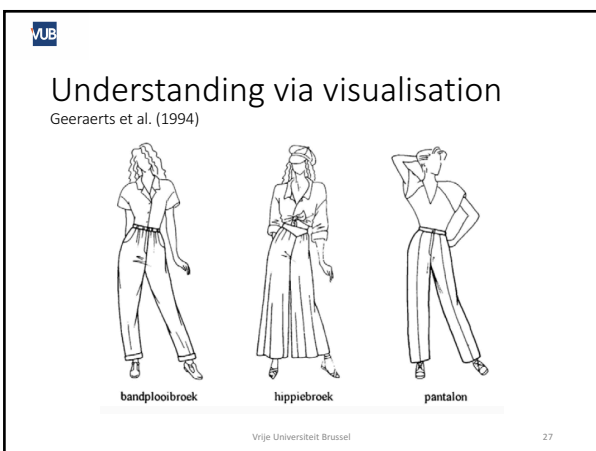


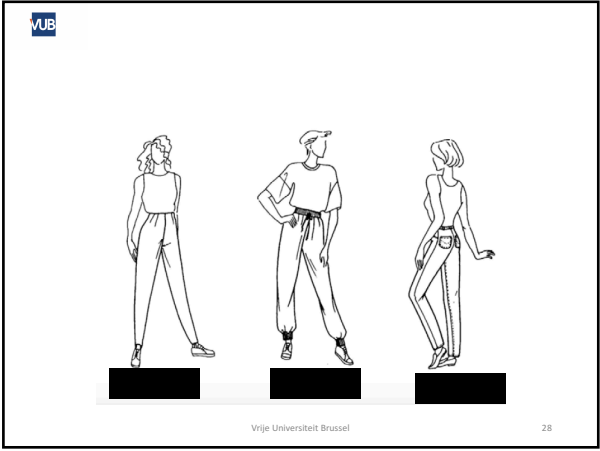
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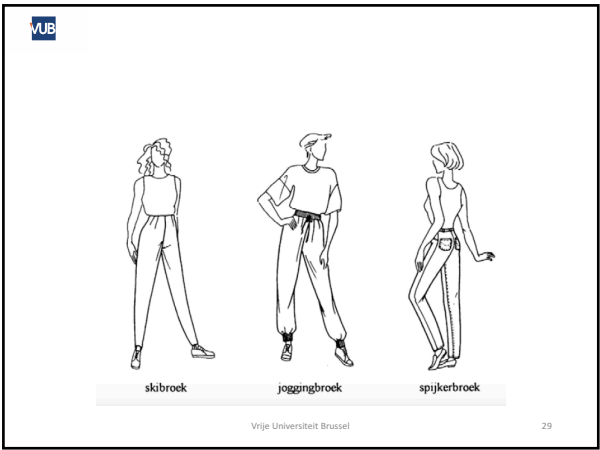
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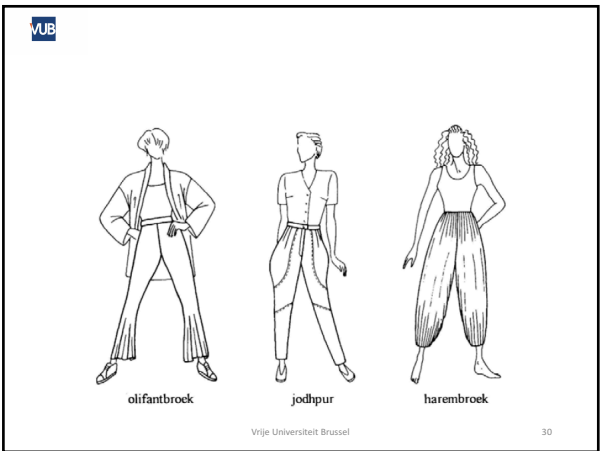


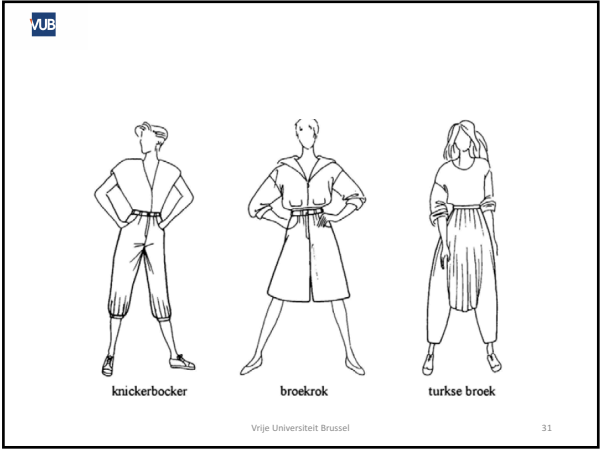


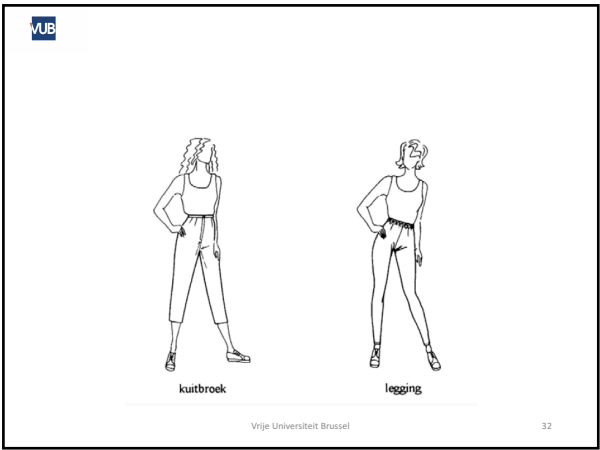


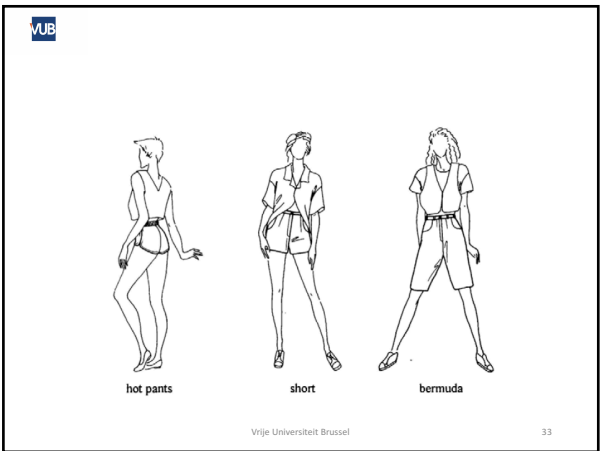














The process of understanding

Knowledge is the result of a continuous dynamics of understanding, misunderstanding, more profound understanding.

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HOW TO STUDY THIS PHENOMENON?

by studying the cognitive potential and the development of natural language(s) and more particularly of lexical items, i.e. terminology, in specialized domains.

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A SHIFT IN PERSPECTIVE IN TERMINOLOGY STUDIES

Renewed interest in both the dynamics of cognition and the creative potential of language has shifted the perspectives of terminology studies to:

- the creation of neologisms in special languages, ,
- the study of variation (Cabr  (1998), Freixa (2002 & 2005), Daille (2005), Bowker and Hawkins (2006), Kerremans (2014))
- research concerning ambiguity, synonymy, metaphor, phraseology
- the role of diversity, variation, polysemy, vagueness and indeterminacy, tentativeness in human understanding (e.g. Pecman 2012)

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PART 2

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Terminological variation in multilingual Europe

The case of English environmental terminology translated into Dutch and French
PhD research of Koen Kerremans

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Terminological variation in multilingual Europe

For translators, it is important to know:

- What **options (variants)** exist for translating a given term.
- Which **options are more likely to be used** in which contexts.

The case of English environmental terminology translated into Dutch and French

aardopwarming
 opwarming van de aarde
 wereldwijde opwarming
 ...

global warming
 warming of the planet
 warming of the Earth
 ...

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**Research context:
information about terms**

Domain: ENVIRONMENT, ENERGY

en

Definition
a rise in the Earth's temperature, often used with respect to the observed increase since the early 20th century

Definition Ref.
UK Met Office <http://www.metoffice.gov.uk/>, # (10.06.2009)

Term
global warming

Relationship
→ (very related)

Term Ref.
Communication from the Commission to the European Parliament and the Council - The European Union and the arctic region [52008DC0763](http://ec.europa.eu/energy/energy_efficiency/energy_efficiency_en.htm)

Date
10/06/2009

nl

Term
aardopwarming

Relationship
→ (related)

Term Ref.
- Besluit nr. 1639/2006/EG van het Europees Parlement en de Raad van 24 oktober 2006 tot vaststelling van een kaderprogramma voor concurrentievermogen en innovatie (2007-2013), overweging 46 [32006D1639/11](http://eur-lex.europa.eu/legal-content/EN/LEGISLATION/2006_1639/1/1/1/)
- Organisatie voor Duurzame Energie (ODE), "Doelstellingen Europese Unie" <http://www.duurzameenergie.o...> (12.06.2009)

Date
12/06/2009

Term
opwarming van de aarde

Why is it important to record terms and definitions in databases?

**Research context:
descriptive approach**

Terminological variation is a **common phenomenon** in special language and can be **motivated** on different grounds.

- e.g. *adapting a message to the recipient*:
 - bovine spongiform encephalopathy *mad cow disease*
- e.g. *communicative intentions* (to inform, to persuade,... a recipient):
 - biodiversity **reduction** / biodiversity **loss** / biodiversity **destruction**
- e.g. *stylistic conventions* (to avoid repetition):
 - the **killer slug** attacks herbs and vegetables. This **slug** can spread very quickly.

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**Research context:
challenge for translators**

Terminological variation should be limited for the sake of **precision and consistency**

finding a balance?

Terminological variation is often **motivated** and should therefore not be **ignored** (language choices are conditioned by linguistic, situational and cognitive factors)

I) To study how terminological variation is accounted for in **translations**

II) To study how terminological variation is accounted for in the EU's **multilingual termbase IATE**

III) To propose a **new type of translation resource** covering term and translation choices

RESEARCH AIMS?

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I) Variation in source and target texts

- Research assumptions:**
 - Variation occurring in source texts will also be reflected in the target texts
 - Several parameters or contextual factors can have an impact on the translation of terms, causing interlingual variation
- Research material:**
A parallel corpus of 43 English source texts and their translations into Dutch and French (about 359.000 words)

Text sources

Text sources	Text types
EC	• 1 Booklet • 8 Communications • 3 Fact sheets • 1 Green paper • 2 Staff working documents
EEA	• 5 Briefings • 13 Chapters from 'Signals'
EESC + COR	• 4 COR opinions • 2 EESC opinions
GRE	• 4 Summaries

Text topics

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I) Variation in source and target texts

- Research method (an example):** (Total: 241 units of understanding)
 - Finding the different expressions of **INVASIVE_ALIEN_SPECIES** in the English text
 - Finding the **translations** of the selected English terms in the target texts

Co-referential analysis

"Invasive Alien Species" are alien species whose introduction and/or spread threaten biological diversity [...]. The Millennium Ecosystem Assessment revealed that **IAS** impact on all ecosystems [...]. The problem of biological invasions is growing rapidly as a result of increased trade activities. **Invasive species (IS)** negatively affect biodiversity [...]."
(Commission of the European Communities 2008, 2)

"L'expression «**espèce exotique envahissante**» s'entend d'une espèce exotique dont l'introduction et/ou la propagation menace la diversité biologique [...]. Comme en atteste l'évaluation des écosystèmes pour le Millénaire, les **espèces exotiques envahissantes** ont des effets sur tous les écosystèmes [...]. Le problème des invasions biologiques se développe rapidement du fait de l'intensification des activités commerciales. Les **espèces envahissantes (EE)** appauvrissent la diversité biologique [...]."
(Commission of the European Communities 2008, 2)

(Total: 1034 co-referential chains) Vrije Universiteit Brussel 44

I) Variation in source and target texts

- Research method (an example):**
 - Finding the different expressions of **INVASIVE_ALIEN_SPECIES** in the English text
 - Finding the **translations** of the selected English terms in the target texts
 - Adding the extracted terms, translations and additional info into a **database**

Contextual data **Semantic data** **Translation units**

Contextual data	Semantic data	Translation units
TEXT_1	INVASIVE_ALIEN_SPECIES	invasive alien species espèce exotique envahissante
TEXT_1	INVASIVE_ALIEN_SPECIES	IAS espèce exotique envahissante
TEXT_1	INVASIVE_ALIEN_SPECIES	invasive species espèce envahissante
TEXT_1	INVASIVE_ALIEN_SPECIES	IS EE

(± 18.600 contextually and semantically-structured translation units)

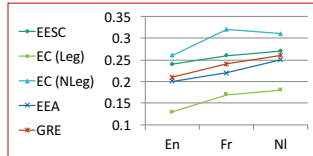
Perl Creation of several automated routines for supporting the manual tasks

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I) Variation in source and target texts

Quantitative observations:

- 1) More variation in Dutch and French co-referential clusters (unique number of lemmatised forms)
- 2) The number of variants in English clusters tends to correlate with the number of variants in translations
- 3) Patterns of change and consistency in English co-referential chains tend to be reflected in the translations



Variation in the source texts tends to be reflected in the target texts.

More variation is observed in the translations (interlingual variation).

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I) Variation in source and target texts

Qualitative observations:

- 1) Survey of different types of variants encountered in English, French and Dutch
- 2) Interlingual variation is partly caused by deviations from literal translations

reduced forms, full forms, abbreviations, cognitively motivated variants, etc.

Are such language options covered by the EU's multilingual termbase IATE?

- ✓ Change in part of speech:
e.g. ecosystem restoration > restaurer un écosystème (Fr)
- ✓ Plural vs. singular:
e.g. base-year levels > referentieniveau (NI)
- ✓ Term vs. description:
e.g. hull-fouling organisms > organismes qui s' accrochent (Fr)
- ✓ Full form vs. reduced form:
e.g. ballast water > ballast (Fr)
- ✓ Conceptual change:
e.g. garden plants > jardinage (Fr)
e.g. biodiversity > biodiversiteitsaspecten (NI)

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II) Variation in IATE

Aims:

- to examine to what extent it is possible in IATE to account for the different types of intra- and interlingual variants encountered in the parallel corpus
- To examine to what extent the intra- and interlingual variation encountered in the parallel corpus is also reflected in the IATE database

Reason:

to reflect on how IATE can be enriched with variants derived from parallel texts

- Research material:**
1138 term records (manually retrieved)

Search criteria

Search term: []

Source language: bg: Bulgarian

Target language: en: English

Optional criteria

Choose the domain associated with your query: Any domain

Type of search: Term Abbreviation All

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II) Variation in IATE

Observations:

- 1) **Many possibilities** are offered for structuring or representing different types of variants
- 2) Fields providing information on the specific use of terms in discourse (i.e. **pragmatic info**) are very often left unspecified
- 3) **Not all language options** (variants) found in the parallel corpus are covered
- 4) **No conceptually-related variants** on the same term record (due to concept-oriented structure)

781392 (en)
Term: biodiversity
Lookup form: biological diversity

2245706 (en)
Term: EU Action Plan to 2010 and Beyond

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espèce exotique (freq. 9) **yes**
 SEC(2008) 2887: « L'expression «espèce exotique envahissante» s'entend d'une espèce exotique dont l'introduction et/ou la propagation menace la diversité biologique. »

espèce non-indigène (freq. 7) **no**
 COM(2008) 789 final: « Dans bien des cas, ces espèces non-indigènes s'adaptent mal à leur nouvel environnement et disparaissent rapidement. »

Translators do **not necessarily get to see a solution** in the target language that is directly applicable to the specific text that they are translating.

Inconsistencies in treatment of variants

III) New type of resource

Contextual filtering

A (multilingual) resource of semantically and contextually-structured translation units

Visualisation

Bilingual view

(add SL search term or ClusterID) Search

Text options	Framework	Legal status	Source	Intertextual ref.	Texts
<input checked="" type="checkbox"/> E1 <input checked="" type="checkbox"/> Non-EU	<input checked="" type="checkbox"/> Leg <input checked="" type="checkbox"/> Non-Leg	<input checked="" type="checkbox"/> CoR <input checked="" type="checkbox"/> EC <input checked="" type="checkbox"/> EEA <input checked="" type="checkbox"/> EESC <input checked="" type="checkbox"/> GRE	<input checked="" type="checkbox"/> 1 (e.g. PreLex.ref.) <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> ...	<input checked="" type="checkbox"/> TextID 1 <input checked="" type="checkbox"/> TextID 2 <input checked="" type="checkbox"/> ...	

Cluster option(s) ☒ GHG_EMISSION_REDUCTION

Source language options (En)	Target language options	
	Fr	Nl
IATE options	<input checked="" type="checkbox"/> IATE terms in SL <input checked="" type="checkbox"/> IATE terms in TL	
Lemma option(s)	<input checked="" type="checkbox"/> emission reduction <input checked="" type="checkbox"/> afname van emissie <input checked="" type="checkbox"/> broeikasgasemissie verminderen	
POS option(s)	<input checked="" type="checkbox"/> noun <input checked="" type="checkbox"/> noun noun <input checked="" type="checkbox"/> ...	<input checked="" type="checkbox"/> adjective <input checked="" type="checkbox"/> noun <input checked="" type="checkbox"/> noun verb <input checked="" type="checkbox"/> noun prep noun <input checked="" type="checkbox"/> ...

Visualisation: A complex network diagram showing relationships between various terms and clusters, including 'emission reduction', 'afname van emissie', and 'broeikasgasemissie verminderen'.

III) New type of resource

Contextual factors:

☒ **Linguistic**
☒ **Cognitive**
☒ **Situational**

Bilingual view

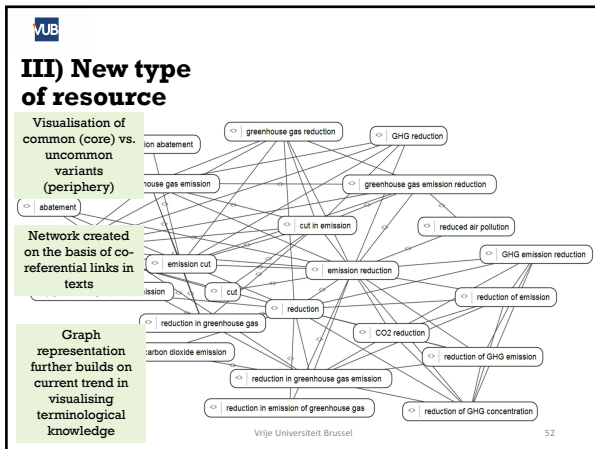
(add SL search term or ClusterID) Search

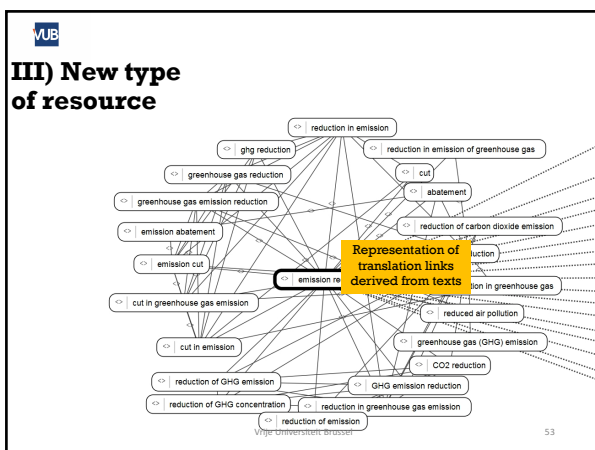
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<input checked="" type="checkbox"/> E1 <input checked="" type="checkbox"/> Non-EU	<input checked="" type="checkbox"/> Leg <input checked="" type="checkbox"/> Non-Leg	<input checked="" type="checkbox"/> CoR <input checked="" type="checkbox"/> EC <input checked="" type="checkbox"/> EEA <input checked="" type="checkbox"/> EESC <input checked="" type="checkbox"/> GRE	<input checked="" type="checkbox"/> 1 (e.g. PreLex.ref.) <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> ...	<input checked="" type="checkbox"/> TextID 1 <input checked="" type="checkbox"/> TextID 2 <input checked="" type="checkbox"/> ...	

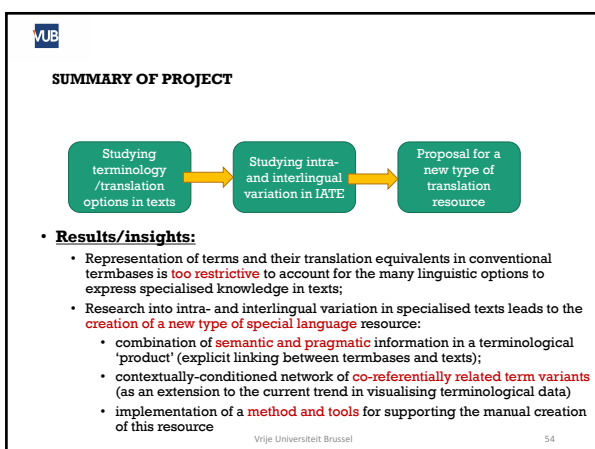
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We discussed ...

Variation and the dynamics of understanding in context. The multilingual perspective.

Terminological variation in multilingual culture-bound and embodied understanding

Terminological variation in EU source texts and translations
