Term choice in an interdisciplinary domain: from cognitive variability to terminological variation

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Outline

1. Introduction: variation in Terminology research

2. Theoretical considerations: categorisation and expression of specialised knowledge

3. Methodology: corpus-based study of synonymy in interdisciplinary domain

4. Results: domain of specialisation and term choice

5. Concluding remarks
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5. Concluding remarks
Variation in Terminology Research

• **Prescriptive perspective** (Wüster 1979; Felber 1984)
  – Standardization of terminology in international context
  – Variation hampers specialised communication

  “Variation is a perturbation of the terminological unit” (Wüster, 1979/1998:150)

• **Descriptive perspective** (Cabré 1999; Temmerman 2000; Gaudin 2003; Diki-Kidiri 2008)
  – Description of special language in a diversity of contexts
  – Variation exists and can be functional
Term variation is the manifestation of the dynamicity of categorisation and structuring of specialised knowledge.

“we believe that variation is not a random act of defiance or carelessness, but rather one which is well-motivated and useful in expert discourse” (Bowker 1998: 487)

The sender’s domain of specialisation imposes a perspective on categorisation and term choice.
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Conceptual categorisation and structuring

• **Categorisation is a complex and dynamic process** (*Lakoff 1987; Temmerman 2000*)
  - Diversity of cognitive operations, concepts, concept systems
  - Concepts and conceptual structures are flexible and multidimensional
  - Domains of knowledge are interdisciplinary

• **Categorisation is situated in a socio-temporal context** (*Gaudin 2003; Diki-Kidiri 2008*)
  - Special knowledge is a social construction
  - Differences among language communities, social groups, schools of thought, etc.

• **Language and cognition are interrelated** (*Temmerman 2000; Cabré 2008*)
  - Language plays a role in concept formation and structuring
Expression of specialised concepts

- Terms are **natural language units** *(Cabré 1999)*
  - Cognitive, linguistic and communicative component

- Term formation is **motivated** *(Kocourek 1991; Radden & Panther 2004)*
  - Conscious activity, aiming at identifying the concept
  - Mechanisms of term formation *(mariscador, criée, dominio público marítimo-terrestre)*
Cognitive motivations of term variation

• Term variation: result of multiple motivations
  – Variability of cognitive processes → the same reality may be perceived differently
  – Variety of contexts → essential characteristics may vary according to the situation

Place where several physicochemical parameters of water are measured to monitor qualitative variations in time (GDT)

point pérenne  point de suivi  point de prélèvement
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Methodology: Corpus compilation and analysis

<table>
<thead>
<tr>
<th>Textual corpus (288054 words)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Domain: Fishing and aquaculture</td>
</tr>
<tr>
<td>• Languages: Galician, French</td>
</tr>
<tr>
<td>• Disciplines: Biology, Economics, Law</td>
</tr>
</tbody>
</table>

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<tr>
<th>Terminological corpus (95 concepts, 946 terms, 8148 contexts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Importance in the conceptual structure</td>
</tr>
<tr>
<td>• Denominative diversity (9.9 terms/concept)</td>
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<tr>
<th>Analysis</th>
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<tr>
<td>• Cognitive-semantic analysis of denominations</td>
</tr>
<tr>
<td>• Distribution among subcorpora</td>
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Results: domain of specialisation and term choice

- Terminological overlapping
- Conceptually-motivated patterns of term variation
Terminological overlapping

- **subcorpus BIO**
  - (62 co, 253 ter)
  - Ratio: 28% BIO, 34% BIO/ECO, 7% BIO/LEX, 31% BIO/ECO/LEX

- **subcorpus ECO**
  - (62 co, 495 ter)
  - Ratio: 14% ECO, 13% BIO/ECO, 16% ECO/LEX, 57% BIO/ECO/LEX

- **subcorpus LEX**
  - (62 co, 220 ter)
  - Ratio: 32% LEX, 31% BIO/LEX, 8% ECO/LEX, 29% BIO/ECO/LEX
Terminological overlapping

subcorpus BIO
(62 co, 253 ter)

subcorpus ECO
(62 co, 495 ter)

subcorpus LEX
(62 co, 220 ter)
Subset of terms shared by three corpora

- **Short** (61.5% simple, 37% two-morpheme)
- **More frequent** (41.46 oc/term)
- **Central** to fishing terminology (*pesca, port, lonxa*)
- **Basic-level** terms (*pescador, mariscador*)
- **Perspectively neutral**

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<th>SUBJECT FIELD</th>
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<th>CONTEXTS</th>
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<tr>
<td><strong>BIOLOGY</strong></td>
<td><em>banco</em></td>
<td>&quot;Paralelamente recóllense unha mostra de sedimento en cada banco para a realización da análise granulométrico estrutural do tipo de fondo e contido total en materia orgánica.&quot; (10G)</td>
</tr>
<tr>
<td><strong>ECONOMICS</strong></td>
<td><em>banco</em></td>
<td>&quot;Captura máxima permitida ó titular dun permiso de explotación (persoa ou embarcación) duna especie ou especies mariñas determinadas nunha zona ou banco en particular e por un período determinado de tempo.&quot; (1GI)</td>
</tr>
<tr>
<td><strong>LAW</strong></td>
<td><em>banco</em></td>
<td>&quot;Sen embargo, poderían terse obtido cifras máis elevadas xa que determinados bancos foron explotados antes da realización das mostraxes&quot; (1GII)</td>
</tr>
</tbody>
</table>
Subset of terms exclusive to each corpora

- **Longer** (8.6% simple, 58% two-morpheme…)
- **Less frequent** (3.49 oc/term)
- **Generic terms** (producteur, professionnel)
- **Lexically unstable, context-dependent** (unité, lonxa de contratación)
- **Uncommon conceptual patterns** (explotación directa de productos do mar)

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<td>&quot;La zone peut n'être exploitée qu'une partie de l'année (cas notamment des gisements naturels classés&quot; (14F)</td>
</tr>
<tr>
<td></td>
<td><em>gisement naturel</em></td>
<td></td>
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<td>ECONOMICS</td>
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</tr>
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<td><em>banco de marisqueo</em></td>
<td></td>
</tr>
<tr>
<td>LAW</td>
<td><em>banco</em></td>
<td>&quot;Toute partie de territoire maritime, lagunaire ou d'estuaire où se trouvent soit des bancs naturels de mollusques bivalves soit des sites employés pour la culture&quot; (2F)</td>
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Results: domain of specialisation and term choice

• Terminological overlapping

• Conceptually-motivated patterns of term variation
Analysis of conceptually motivated patterns of terms

Describe conceptual information displayed by term variants

$\text{Term}^1 = \text{concept 1}$

$\text{Term}^2 = \text{concept 1} \xrightarrow{\text{relation}} \text{concept 2}$

$\text{Term}^n = \text{concept 1} \xrightarrow{\text{relation}} \text{concept 2} \xrightarrow{\text{rel.}} \text{concept n}$

material entities

- animate
  - humans
  - animals
- inanimate
  - places
  - objects
  - substances

- biological persp.
- neutral persp.
- functional persp.

organisme vivant
ostra rizada
semente [seed]
produit de la pêche
Analysis of conceptually motivated patterns of terms

Describe conceptual information displayed by term variants

Term\(^1\) = \text{concept 1}

Term\(^2\) = \text{concept 1} \quad \text{MODIFIER relation} \quad \text{concept 2}

Term\(^n\) = \text{concept 1} \quad \text{HEAD relation} \quad \text{concept 2} \quad \text{MODIFIER concept n}

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Describe conceptual information displayed by term variants

Term\(^1\) = concept 1

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Analysis of conceptually motivated patterns of terms

Describe conceptual information displayed by term variants

Term\(^1\) = \(\text{concept 1}\)

Term\(^2\) = \(\text{concept 1} \rightarrow \text{relation} \rightarrow \text{concept 2}\)

Term\(^n\) = \(\text{concept 1} \rightarrow \text{relation} \rightarrow \text{concept 2} \rightarrow \text{rel.} \rightarrow \text{concept n}\)

organisme vivant

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semente [seed]

produit de la pêche
Categorial choices (concepts in head position)

- **BIOLOGISTS**
  - organism vivant

- **ECONOMISTS**
  - producto da pesca

- **LEGISLATORS**
  - animal_bio: 29%, animal_func: 16%, an_neutr: 53%, objeto: 2%
Categorial choices (concepts in head position)

- **BIOLOGISTS**
  - larva (29% animal_bio, 53% animal_func)

- **ECONOMISTS**
  - naissain (45% animal_bio, 18% an_neutr)
  - semente (33% animal_bio, 4% objeto)

- **LEGISLATORS**
  - 39% animal_bio, 0% objeto
Distinctive dimensions (concepts in modifier position)

- **BIOLOGISTS**
  - anim. activity: 13%
  - humans: 7%
  - objects: 7%
  - 27%

- **ECONOMISTS**
  - hum. activity: 19%
  - psych. entity: 33%
  - places: 5%
  - objective prop.: 18%

- **LEGISLATORS**
  - anim. activity: 7%
  - humans: 31%
  - places: 14%
  - objective prop.: 0%

**recurso/animal mariño**
Distinctive dimensions (concepts in modifier position)

- **Anim. activity**: 13%, 19%, 31%
- **Humans**: 2%, 0%, 10%
- **Animals**: 7%, 15%, 0%
- **Objective prop.**: 27%, 7%, 0%
- **Places**: 4%, 3%, 0%
- **Psych. entity**: 17%, 33%, 38%
- **Functional prop.**: 13%, 0%, 0%

**Especie comercializábel**
Conceptually motivated patterns of terms

Terminological corpus

Textual corpus

1a) ANIM (*molusco*)
2) ANIM + ANIM (*huître Crassostrea Gigas*)
3) ANIM + PROPERTY (*molusco bivalvo*)
Conceptually motivated patterns of terms

Terminological corpus

Textual corpus

1b) OBJ (*ressource*)
4) OBJ + ACTIVITY (*recurso de pesca*)
5) OBJ + LOCATION (*alimento do mar*)
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Concluding remarks

• Differences in the choice of terminology among groups of experts
  
  - Common choices: perspectively neutral, basic-level
  - Differential choices: peripheral perspectives related to the expert’s domain of specialisation

• Particularities of each domain (eg. transversality of law subcorpus)
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