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Modelling interlingual relationships on the basis of predicate-argument structures

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Intralingual Relationship

The Parliament supported the plenary motion.

SUPPORT   ENT_SUPPORTING   ENT_SUPPORTED

|passivisation | |

SUPPORT   ENT_SUPPORTING   ENT_SUPPORTED

The plenary motion was supported by the Parliament.

Interlingual Relationship

I refer to item 11 on the order of business.

REFER	ENT_REFERRING	ENT_REFERRED_TO
|	|	|
SICH_BEZIEHEN	SICH_BEZIEHENDES	SICH_BEZIEHEN_AUF

Ich beziehe mich auf Punkt 11 des Arbeitsplans.

(1)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 4.2]

Overview

- Translation Shifts

- Data

- Monolingual Annotation: Predicate-Argument Structure

- Interlingual Relationships: Alignment and Shift Annotation

- Conclusion

Overview

- **Translation Shifts**

- Data

- Monolingual Annotation: Predicate-Argument Structure

- Interlingual Relationships: Alignment and Shift Annotation

- Conclusion

Translation Shifts

- J.-P. Vinay and J. Darbelnet: *Stylistique Comparée du Français et de l'Anglais*. Paris: Didier, 1958.

- J. C. Catford: *A Linguistic Theory of Translation*. Oxford: Oxford University Press, 1965.

- K. van Leuven-Zwart: *Translation and Original: Similarities and Dissimilarities, I*. Target 1:2, pp. 151–181, 1989.

Overview

- Translation Shifts

- Data

- Monolingual Annotation: Predicate-Argument Structure

- Interlingual Relationships: Alignment and Shift Annotation

- Conclusion

Data

- Opus/Europarl Corpus (proceedings of the European Parliament in 11 languages)

- Sentence-aligned parallel corpora of language pairs

- Problem: source language?

Data – Determining the Source Language

▸ **Language attribute:**

```
<SPEAKER ID="2" LANGUAGE="EN" NAME="Cox">
```

▸ **No language attribute for original:**

```
<SPEAKER ID="2" NAME="Cox">
```

▸ **No language attribute for non-members:**

```
<SPEAKER ID="1" NAME="President">
```

▸ **Use alignment info to add language attribute for originals:**

```
<SPEAKER ID="2" LANGUAGE="EN" NAME="Cox">
```

Data – Excluding Non-Native Originals

- Problem: non-native originals

  ```
  <SPEAKER ID="157" NAME="Verheugen">
  ```

- Match name attribute with speaker list to exclude non-natives

- Result: Native English originals, German translations

Overview

Predicates

- Represented by their citation form (e.g. `EXPECT`)

- Assigned a class based on their syntactic form (`v, c, n, a, l`)

- Disambiguation of homonymous predicates

- Common predicate group for related predicates (shared argument types)

- Predicate tags: `inf, imp, pv, pvp`

Arguments

- › Short intuitive role names (e.g. `ENT_EXPECTING`)

- › No semantic generalisations

- › Relative pronoun antecedents

- › Argument tags (`sc, oc`)

- › Inferred arguments (`ia`)

Overview

- Translation Shifts

- Data

- Monolingual Annotation: Predicate-Argument Structure

- **Interlingual Relationships: Alignment and Shift Annotation**

- Conclusion

Shift Annotation

- Choose corresponding predicate-argument structures

- Align corresponding predicates and corresponding arguments

- Whenever there is a shift: explicit tag
  - Grammatical shifts
  - Semantic shifts
  - Structural shifts

Grammatical Shifts

▸ Category change

Category Change

... misapprehension as to what was expected ...

EXPECT

| category change

ERWARTUNG

... Mißverständnis in bezug auf unsere gegenseitigen
Erwartungen ...

(2)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 8.3]

Grammatical Shifts

- Category change
- Number change

Number Change

... accompanied not just by a presentation and elucidation by the President of the Commission ...

ELUCIDATION

| number change

ERLÄUTERUNG

... die sich nicht nur auf eine Präsentation und Erläuterungen seitens des Präsidenten der Kommission beschränkt ...

(3)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 6.2]

Grammatical Shifts

- Category change

- Number change

- Definiteness change

Definiteness Change

... to speak on behalf of my group on a matter referred to in the Minutes.

```
ENT_REFERRED_TO

|definiteness change

GENANNTES
```

... zu der im Protokoll genannten Angelegenheit Stellung zu nehmen.

(4)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 4.1]

Grammatical Shifts

❯ Category change

❯ Number change

❯ Definiteness change

❯ Passivisation/De-passivisation

De-passivisation

It should not be dramatised into something more than that.

DRAMATISE

| de-passivisation

AUFBAUSCHEN

Wir sollten die ganze Sache nicht weiter aufbauschen.

(5)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 8.4]

Passivisation (Passive Paraphrase)

I should like to make it clear that we have the greatest confidence in and respect for Commissioner Monti.

```
HAVE_RESPECT

| passivisation

RESPEKT_GENIESSEN
```

Ich möchte klarstellen, daß wir größtes Vertrauen zu Herrn Monti haben, der unseren tiefsten Respekt genießt.

(6)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 137.1]

Grammatical Shifts

› Category change

› Number change

› Definiteness change

› Passivisation/De-passivisation

› Pronominalisation/De-pronominalisation

De-pronominalisation

It should not be dramatised into something more than that.

ENT_DRAMATISED

| de-pronominalisation

AUFGEBAUSCHTES

Wir sollten die ganze Sache nicht weiter aufbauschen.

(5)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 8.4]

Semantic Shifts

> Semantic Modification

Semantic Modification

... to have the Bourlanges report on today's agenda.

HAVE

| semantic modification

SETZEN

... den Bericht Bourlanges auf die Tagesordnung zu setzen.

(7)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 11.1]

Semantic Shifts

- Semantic Modification

- Explicitation/Generalisation

Generalisation

I do not want to drag up the issue of this building endlessly ...

```
ENT_DRAGGED_UP

| generalisation

HERUMREITEN_AUF
```

Ich will nicht endlos auf diesem Thema herumreiten ...

(8)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 13.3]

Explicitation

Mr von Wogau said ∅ we can look to the European Court.

ENT_SAID

| explicitation

GESAGTES

Herr von Wogau sagte daß wir uns an den Europäischen Gerichtshof wenden können.

(9)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 138.6]

Semantic Shifts

- Semantic Modification

- Explicitation/Generalisation

- Addition/Deletion

Addition

That is something for which I have a deep appreciation.

$\emptyset$

| addition

DANKEN_WEM

Dafür bin ich Ihnen zutiefst dankbar.

(10)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 8.2]

Addition/Deletion

It should not be dramatised into something more than that.

ENT_DRAMATISED_INTO   ∅

| deletion | addition

∅   AUFBAUSCHENDES

Wir sollten die ganze Sache nicht weiter aufbauschen.

(5)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 8.4]

Semantic Shifts

› Semantic Modification

› Explicitation/Generalisation

› Addition/Deletion

› Mutation

Mutation

I hope that we will not repeat this unnecessary exercise ...

REPEAT   ENT_REPEATING   ENT_REPEATED   ∅

| mutation | | | addition

ERSPAREN   ERSPARENDES   ERSPARTES   ERSPAREN_WEM

Ich hoffe, daß wir ... uns diese überflüssige Übung künftig ersparen ...

(11)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 8.3]

Mutation

Whose responsibility is it when you are dealing with a body that crosses so many frontiers?

CROSS	ENT_CROSSED	ENT_CROSSING
|mutation	|mutation	|
UMFASSEN	UMFASSTES	UMFASSENDES

Wer ist zuständig in einem Gremium, das zahlreiche Länder umfaßt?

(12)

Structural Shifts

> predicate-argument-structure element corresponds to non-predicate-argument-structure element (`non-pas`)

Non-pas

The first is the potential for renationalisation of competition policy.

ENTITY
| non-pas

Erstens besteht die Gefahr einer Renationalisierung der Wettbewerbspolitik.

(13)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 138.1]

Structural Shifts

- predicate-argument-structure element corresponds to non-predicate-argument-structure element (`non-pas`)

- Predicate split/predicate-argument merge

Predicate Split

... this Parliament ... can only really have an effect if...

HAVE_AN_EFFECT

| predicate split

ERREICHEN ERREICHTES

... dieses Parlament, das ... nur dann wirklich etwas erreichen kann, wenn...

(14)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 6.1]

Structural Shifts

- predicate-argument-structure element corresponds to non-predicate-argument-structure element (`non-pas`)

- Predicate split/predicate-argument merge

- Problem: major structural divergences

Problem: Major Structural Divergences I

...that Irish companies ... still have to cross two sea masses to reach the mainland European marketplace.

CROSS   ENT_CROSSING   ENT_CROSSED

|mutation/passiv. (?) | |cat. change |cross-pas

TRENNEN   GETRENNTES   TRENNENDES   TRENNEN_VON

...daß irische Unternehmen ... vom kontinentaleuropäischen Markt immerhin durch zwei größere Meere getrennt sind.

(15)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 158.2]

Problem: Major Structural Divergences I

...that Irish companies ... still have to cross two sea masses to reach the mainland European marketplace.

REACH   ENT_REACHING   ENT_REACHED

```
│mutation/passiv. (?)  │             │cat. change  │cross-pas
```

TRENNEN   GETRENNTES   TRENNEN_VON   TRENNENDES

...daß irische Unternehmen ... vom kontinentaleuropäischen Markt immerhin durch zwei größere Meere getrennt sind.

(15)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 158.2]

Problem: Major Structural Divergences II

... a strategic debate accompanied not just by a presentation and elucidation by the President... , but also by a five-year programme ,...

ACCOMPANY   ENT_ACCOMPANIED   ENT_ACCOMPANYING

|mutation/de-pass. | |??

SICH_BESCHRÄNKEN   SICH_BESCHRÄNKENDES   BESCHRÄNKT_AUF

...eine strategische Debatte ..., die sich nicht nur auf eine Präsentation und Erläuterungen seitens des Präsidenten ... beschränkt, sondern in der auch ein Fünfjahresprogramm vorgelegt wird.

(16)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 6.2]

Problem: Major Structural Divergences II

... a strategic debate accompanied not just by a presentation and elucidation by the President... , but also by a five-year programme ,...

ACCOMPANY   ENT_ACCOMPANIED   ENT_ACCOMPANYING

|mutation |cross-pas (non-pas) |??

VORLEGEN   ∅   VORGELEGTES

...eine strategische Debatte ..., die sich nicht nur auf eine Präsentation und Erläuterungen seitens des Präsidenten ... beschränkt, sondern in der auch ein Fünfjahresprogramm vorgelegt wird.

(16)   [Opus/Europarl (en): file ep-00-01-18.xml, sentence id 6.2]

Overview

Conclusion

- Qualitative annotation project
    - monolingual annotation: predicate-argument structures
    - bilingual alignment of corresponding predicates and arguments
    - explicit annotation of shifts

- Works quite well for grammatical and most semantic shifts

- Problem: translation is creative process
  $\rightarrow$ structural shifts

Thank you very much for your attention!