Linguateca@Porto

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What is Linguateca

- Improve Portuguese processing
  - Dissemination
  - Resource creation
  - Evaluation
- A virtual organization with four nodes
  - Oslo, Braga, Lisboa, Porto, … 5 full-time, 3 part-time workers
  - Collaboration partners in more locations: Odense, Lisbon, São Carlos, Porto Alegre, ...
- A follow-up of the *Computational Processing of Portuguese* project, created in 1998, by the then Ministry of Science and Technology

Linguateca activities: the IRE model

- Dissemination of **i**nformation and resources on Portuguese processing
  - Web catalogue with a dedicated search engine
  - Forum and a contact service
- Creation of publically available language **r**esources
  - Making the available resources more available: Web services
  - Creating new ones: both Web and physical access
- Promotion of joint **e**valuation using the evaluation contest or evaluation campaign model
  - Web site and discussion list [avalia]
  - Organization of a workshop (June 2002) and a conference (AVALON'2003)
  - Organization of the first evaluation contest for Portuguese: *Morfolimpíadas* and several other evaluation initiatives (MT, IR, NER,...)

The Porto node of Linguateca

- Initiated by Belinda Maia
- Started October 2002
- Embedded in the Arts Faculty of Porto, Linguistics Centre
- Closely related to the Masters and PhD studies in *Translation and Terminology Studies*
- Contacts with several other subject areas (Engineering, Geography, Medicine, Arts History…)
- Already around 25 different local users of the Linguateca reality

The Porto and Oslo nodes compared

Porto

- RE
- Primarily concerned with language of specific domains
- Therefore, specialized corpora
- Therefore, parallel corpora: comparable corpora
- Evaluation of machine translation systems

Oslo

- IRE
- Primarily concerned with general language
- Therefore, general corpora
- Therefore, parallel corpora: translation corpora
- Evaluation of morphological analysers and other simpler systems

The Porto node of Linguateca: activities

- R Creation of a "corpus manager"
  - to facilitate specific corpus creation and terminology extraction
  - to provide a comparable corpus environment
- E Activities in MT evaluation (ATA)
- R Support to other resource building projects
  - CHAT corpus
  - BNC in CQP format
  - Grammar teaching using corpora

Porto's activities - background

- Contrastive linguistics (CA) - using literary corpora:
  - e.g. Doctoral thesis (PT/EN) Maia (1994)
- Translation theory (TT) – using literary corpora:
  - e.g. Doctoral thesis (PT/DE) Husgen (1999)
- Translation teaching
  - Same teachers teach CA, TT and Translation – and computer technology applied to translation
- Therefore teaching and research tend to blend

Moving the goalposts in translation teaching methodology

- From 'general' and literary translation > special domain translation because 95% of translation internationally is NON-literary
- From 'Word Processing' > translation software and the Internet
- From (often non-existent or outdated) 'specialized dictionaries > online databases and specialized corpora building

- Realization of need for change often better understood by teachers whose research involved corpora, contrastive linguistics, use of IT and research into IT e.g. LETRAC report, CULT conferences etc
- ➢ Development of new teaching and research methodologies

Changes in teaching methodology

- Student projects begin to include construction of mini 'do-it-yourself' / 'disposable' corpora
- Corpora work associated with term extraction and glossary building
- Resulting awareness of wide varieties and different levels of text types as well as different functions of texts
- Increased comprehension of importance of observing terminology in context
- The Internet as essential source of information
- Connection between corpora and terminology database building with commercial translation software – e.g. TRADOS, STAR, SDLX, Deja Vu etc

Teaching > Research

- Master's in Translation Studies included:
  - 1. Translation and Linguistics – 45 hours
  - 2. Translation and Information Technology

- ➢ Master's in Terminology and Translation
  - ➢ Emphasis on NON-literary translation
  - ➢ Terminology project work
  - ➢ Corpora building
  - ➢ Etc

Master's in Terminology and Translation - Projects

- 2001-3
  - Geography Department – multilingual dictionary 'Population Geography'
  - Several small projects with cooperation of Faculty of Engineering – Mechanical Engineerin
  - Others: Vinho Verde, History of Wool textiles, Metaphors in Football corpora

BUT – Lack of IT support – appeal for help to Linguateca

Master's in Terminology and Translation + Linguateca

- 2002-4
  - Geography department – Natural Hazards > corpora + database-
  - Localization – translation of Esselink (2000 – John Benjamins) + creation of database with cooperation of Computer Engineering
  - Translation Terminology – translation into Portuguese of terminology in Deslisle, Lee-Jahnke et al (1998 – John Benjamins)
  - Other projects in Civil Engineering, Genetics, Medicine
- 2003-5
  - Continuation and development of existing projects
  - Addition of possible History of Art project

Parallel Corpora in terminology and translation research

- Parallel corpora in specialized domains
  - Advantages IF translations are GOOD and LINEAR
    - E.g. EC documentation, Canadian Hansard, multinational companies' webpages
  - Disadvantages are:
    - Bad translations
    - Specialized domain texts - and especially webpages – are often ADAPTED or LOCALIZED
    - Difficult to find
- Uses of GOOD Parallel corpora for research:
  - Automatic term extraction
  - Observation on linguistic phenomena in translation

Comparable Corpora in terminology and translation research

- Problem > What are comparable corpora? – see Maia (2002)
- Degrees of comparablility:
  - In 'general' and literary texts – date, genre, individual style, male/female authors ETC
  - In special domain texts – everything from general information texts – encyclopedia articles – pedagogical textbooks - specialist-to-specialist communication.
- BUT most work so far on comparable corpora is in specialized domain corpora

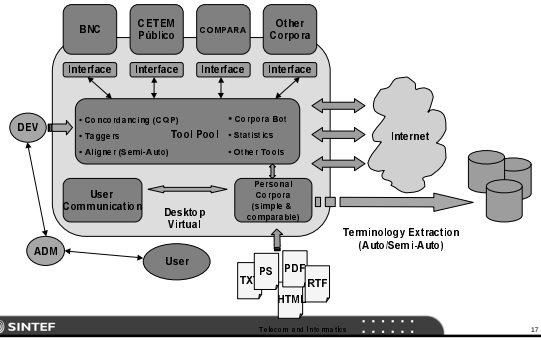
Choosing texts for Comparable Corpora

- Select your project and define your ends
  - E.g. ISO standards or Instruction manuals
- Take what you can find!
- Not always easy to find balanced corpora in an English dominated world – especially at academic levels

Research with Comparable Corpora

- IMMEDIATE
  - Text analysis > contrastive work on text and sentence structure, observation of syntax and use of general lexicon in special domain
  - Terminology extraction based on actual usage
  - ➢ Corpora used for a specific project > Disposable as limited 'shelf life' and applications
- ❑ LONG-TERM
  - ❑ IF Good Comparable Corpora are constructed they can become official corpora approved + copyright clearance etc > can be used for testing
    - ❑ For testing information retrieval, ontology and thesauri creation tools ETC
    - ❑ For projects coordinating corpora with Machine Translation

Our "Corpus Manager" - GC



Live demonstration of the "corpus manager"...

A future comparable corpus manager

- Modules for
  - automatic discovery of terminology candidates
  - automatic discovery of definitions and semantic relations
  - automatic "putting in correspondence" of terms in two languages
  - automatic harvesting of similar texts
- A user-friendly environment for
  - a terminologist to study and create terminologies
  - a translator to learn about cultural conventions in different registers
  - a linguist to study specialized languages
  - an MT researcher to train MT systems in specialized domains
  - a NLP researcher to get lexicon, grammatical and stylistic resources

Evaluation of Machine Translations

- Two motivations:
  - Evaluation of NLP Systems
  - Pedagogical Implications
- Demonstration of the first initiatives

Evaluation contests for Portuguese

- Model: agree on what should be compared, on the criteria, on the measures and on the workflow.One of the most difficult things is specify an agreement platform where there is consensus
- Translation is probably the most difficult (human) activity that has to do with language…
- But conversely a layman can (and does) produce quality judgements on translation (subtitles, books, news, TV interviews...)
- No way to start comparing systems in their entirety...
- Let us start to gather a set of specific problems where (machine) translation is considered to fail, and see whether there is some consensus

Pedagogical uses

- To demonstrate the state-of-the-art in order to:
  - Remove fear of MT
  - Show possibilities of using MT as tool for professional translator
- To study the lexicon, syntax and semantics of two languages in a special situation and raise the students' awareness of the difficulties involved
- To train future translators to work in MT environments – i.e. To:
  - Create and improve specialized lexicons for MT
  - Edit text input and output
  - Understand and study technical writing and controlled writing
- To create interest in research in this area

Live demonstration of TrAva and CORTA...