Projects

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Computational Morphology and Electronic Dictionaries
SoSe 2016
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Outline

1. Course Requirements

2. How Projects Work

3. Project Topics

4. Forming Groups

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Course Requirements

- To pass this course ...
  - Exercises and assignments
  - Regular attendance
  - Course project: implementation of a small project including extensive documentation; presentation
    - Roughly last 5-6 weeks of semester
    - Programming and data analysis intensive
    - Short presentation

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Projects in Computational Morphology and Electronic Dictionaries

- Projects will be done in groups of about 3 people
- Procedure will be to send Fraser a ranking of possible projects and teams (we will come back to this later)
- Please send the email at 19:00 this evening; emails sent earlier (even 1 minute earlier) will be looked at last

Evaluation

- Project code/analysis
- Write a project abstract, which includes what was done and who did what
- Project presentation
- Questions to individual group members

Schedule

- Today: presentation of topics (and later, your ranking)
- Wednesday: Project topics/groups announced, work starts (in class!)
- Three exercises over the next weeks: report on work in progress, interaction with Fraser, Guillou and Berlanda

⇒ this is a chance to ask questions and indicate problems, but also to meet with your group (you'll need to meet outside as well)

⇒ will also allow us to adjust topics (particularly if too hard or too easy)

- More information on polishing abstract and on presentation in an exercise at the end of June
- Abstract due July 6th at 8pm
- Presentations/questions on July 11th and July 13th (both in class in L155)

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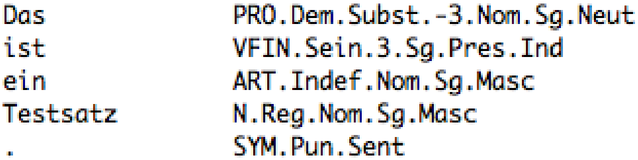
Introduction

Topics defined in terms of:

- Summary of what needs to be done
- Resources
- Programming Language (if applicable)
- Outcome
- Details of abstract (including whether German or English)
- What will be covered in the presentation

Problem: German Tagging and Lemmatization Difficult

- Summary: run German Marmot/Lemming (CIS Tagger/Lemmatizer) on two German corpora, provide a semi-automatic error analysis



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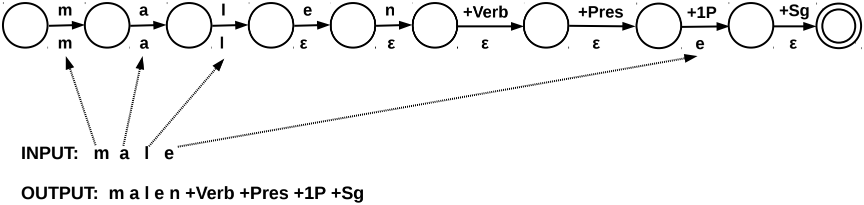
(example from RFTagger homepage, Schmid)

Project: Running German Tagger/Lemmatizer

- Summary: run German Marmot/Lemming (CIS Tagger/Lemmatizer) on two German corpora, provide a semi-automatic error analysis
- Resources: Two German corpora, SMOR (for manual disambiguation), Marmot/Lemming (see Thomas Mueller's web page)
- Programming Language: Perl (for the semi-automatic analysis)
- Outcome: Error analysis pointing to strengths and weaknesses of Marmot/Lemming in two domains, perl scripts for error analysis
- Abstract and Presentation: German or English, brief presentation on tagging/lemmatization, quantitative and qualitative discussion of results

Problem: German Verbs Have Complex Morphology

- Summary: Create SFST transducers which can be composed to analyze and generate German verbs (regular and irregular)



Project: German Verbs in SFST

- Summary: Create SFST transducers which can be composed to analyze and generate German verbs (regular and irregular)
- Resources: List of German verbs and their inflected forms, SFST
- Programming Language: SFST
- Outcome: Working transducers for analyzing and generating a large list of German verbs including both regulars and irregulars
- Abstract and Presentation: German or English, presentation of basic design of transducers including two examples (both regular and irregular verbs)

Problem: Rule-Based Machine Translation Highly Dependent on Morphology

- "Apertium is a shallow-transfer machine translation system, which uses finite state transducers for all of its lexical transformations, and hidden Markov models for part-of-speech tagging or word category disambiguation." (source: Apertium Project)
- Summary: look at extending the system, probably the morphologies in the English/German pair

Project: Apertium Rule-Based Machine Translation

- Summary: look at extending the rule-based transfer Apertium system (open source), probably the morphologies in the English/German pair
- Resources: open-source Apertium software, Apertium manual, possibly German/English parallel data provided later
- Programming Language: Perl (for checking coverage on corpus, possibly for error analysis, maybe for working with parallel data)
- Outcome: Extension of Apertium data in the English/German language pair
- Abstract and Presentation: English or German, basic presentation of how Apertium works, English and German morphologies, extensions carried out by the group

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Initial Group Discussions

- People discuss three times what to do in groups, grouped left-to-right and forwards-backwards and one move (front- row left, back-row right, forwards-backwards)
  - Please introduce yourselves, and then decide on a topic you could do together
- Email at 19:00 should contain TWO PARTS!:
  - PART ONE: Three teams (with team members!) and topics, in sorted order (preferred to least preferred)
  - PART TWO: Ranking of all 5 topics as an individual (preferred to least preferred)
- I reserve the right to completely ignore your preferences and just assign people however I want, sorry in advance

All Projects

- MT Error Analysis
- Compound Splitting
- Tagging/Lemmatization
- SFST German verbs
- Apertium English-German

Thank you for your attention.