Human Translation Evaluation

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Topics

1. Evaluation of human translation - Human evaluation of machine translation
2. Overview of manual evaluation methods
3. Example of an error analysis

Evaluation of Human and Machine translation

Human translation

- quantitative microtextual
  - Sical, ATA, MeLLANGE
- qualitative macrotextual
  - functional-pragmatic (House)
  - skopos-oriented (Nord)

Machine translation

- evaluation scales
- ranking
- error analysis
- reading comprehension
- post-editing

Evaluation scales

- fluency: How fluent is the candidate sentence?

This Green Paper seeks to bring all interested parties on the key issues that affect the formulation of future regulation.

5 flawless 4 good 3 non-native 2 disfluent 1 incomprehensible

- adequacy: How much of the information is present?

The purpose of this Green Paper is therefore to seek the views of all interested parties on the key issues that will shape the future Regulation.

This Green Paper seeks to bring all interested parties on the key issues that affect the formulation of future regulation.

5 all 4 most 3 much 2 little 1 none

(LDC 2005)

Evaluation scales (cont'd)

- utility: How effectively is the information conveyed?

Tällä vihreällä kirjalla pyritään saamaan kaikkien asianomaisten osapuolten näkemykset keskeisistä kysymyksistä, jotka vaikuttavat tulevan asetuksen muotoiluun.

This Green Paper seeks to bring all interested parties on the key issues that affect the formulation of future regulation.

4 complete 3 useful 2 marginal 1 poor

(TAUS 2006)

- clarity: How clear is the meaning of the sentence?

This Green Paper seeks to bring all interested parties on the key issues that affect the formulation of future regulation.

3 perfectly clear 2 1 0 not decipherable

(Miller and Vanni 2005)

Ranking

- pair-wise: Which is better?

This Green Paper seeks to bring all interested parties on the key issues that affect the formulation of future regulation.

With this Green Paper is designed to help views of interested parties of the key issues that affect future regulation wording.

(Vilar et al 2007)

- multiple: Rank from best to worst

With this Green Paper is designed to help views of interested parties of the key issues that affect future regulation wording.

This Green Paper seeks to bring all interested parties on the key issues that affect the formulation of future regulation.

Tällä green written pyritään indolent everybody asianomaisten side näkemykset keskeisistä kysymyksistä , which spectacular future asetuksen design.

(Callison-Burch et al 2007)

Post-editing

- Edit to publication quality

Kitchen furniture offer customers had asked the store in invoice design work. Client had received a decrease inappropriate, since the bid was not Charge told.

- Edit as necessary for understanding

Kitchen furniture offer customers had asked the store in invoice design work. Client had received a decrease inappropriate, since the bid was not Charge told.

- candidate

(Doyon et al 2008, Callison-Burch et al 2010)

Error analysis

- Subjective Sentence Error Rate SSER (Niessen et al 2000)

Kitchen furniture offer customers had asked the store in invoice design work.

- rate from 0 (nonsense) to 10 (perfect)
- divide into segments (information items)
- mark each information item as
- ok – missing – syntax – meaning – other

Reading comprehension

Kitchen furniture offer customers had asked the store in invoice design work. Client had received a decrease inappropriate, since the bid was not Charge told.

The customer

a) considered the invoice unnecessary

b) checked the price

c) did not want to use the plan

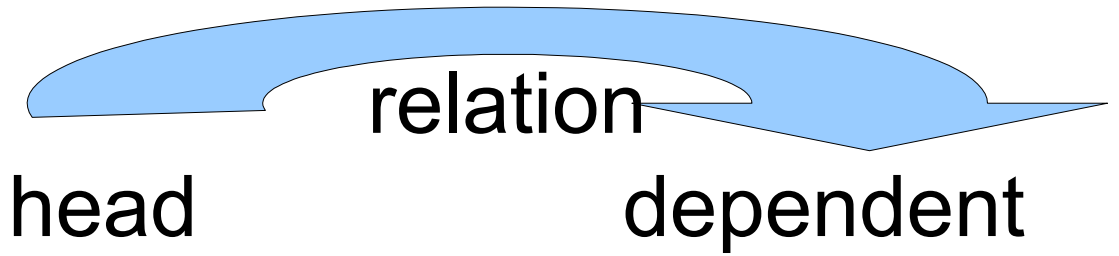
- percentage of correct answers between 55% … 76% (Tomita 1993, Fuji 1999)
- test subjects understand more than they expect (Fuji 1999)

Example of error analysis

- material:
  - European Commission Green Paper
  - Antivirus software installation guide
  - ~ 400 word passage analyzed
- statistical translation systems
  - statistical: Google, Bing
  - rule-based: Sunda, SDL Trados

Error analysis

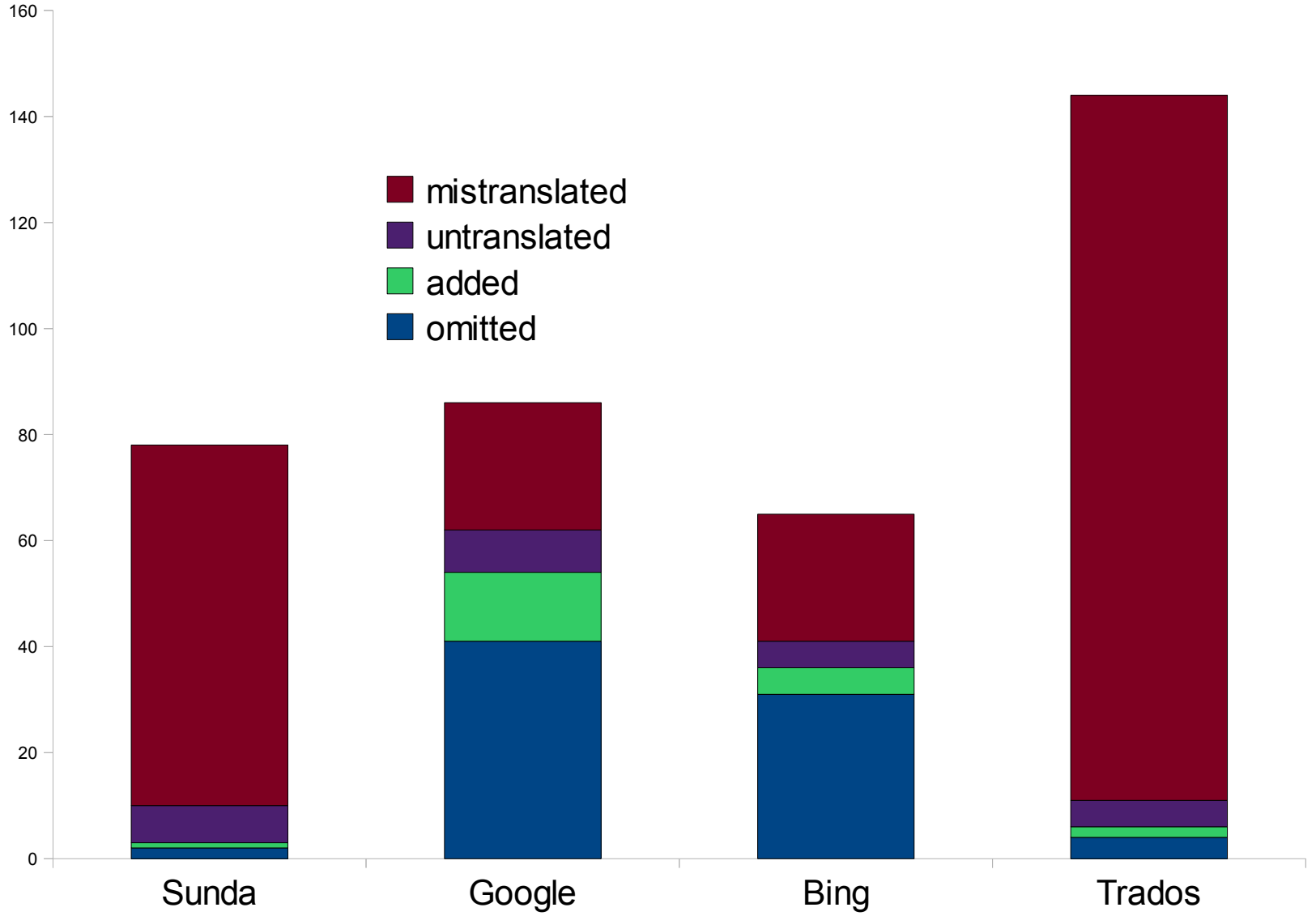
- language error vs. translation error
- definition of translation error:
  - semantic component not shared by ST and TT
  - concepts
  - relations



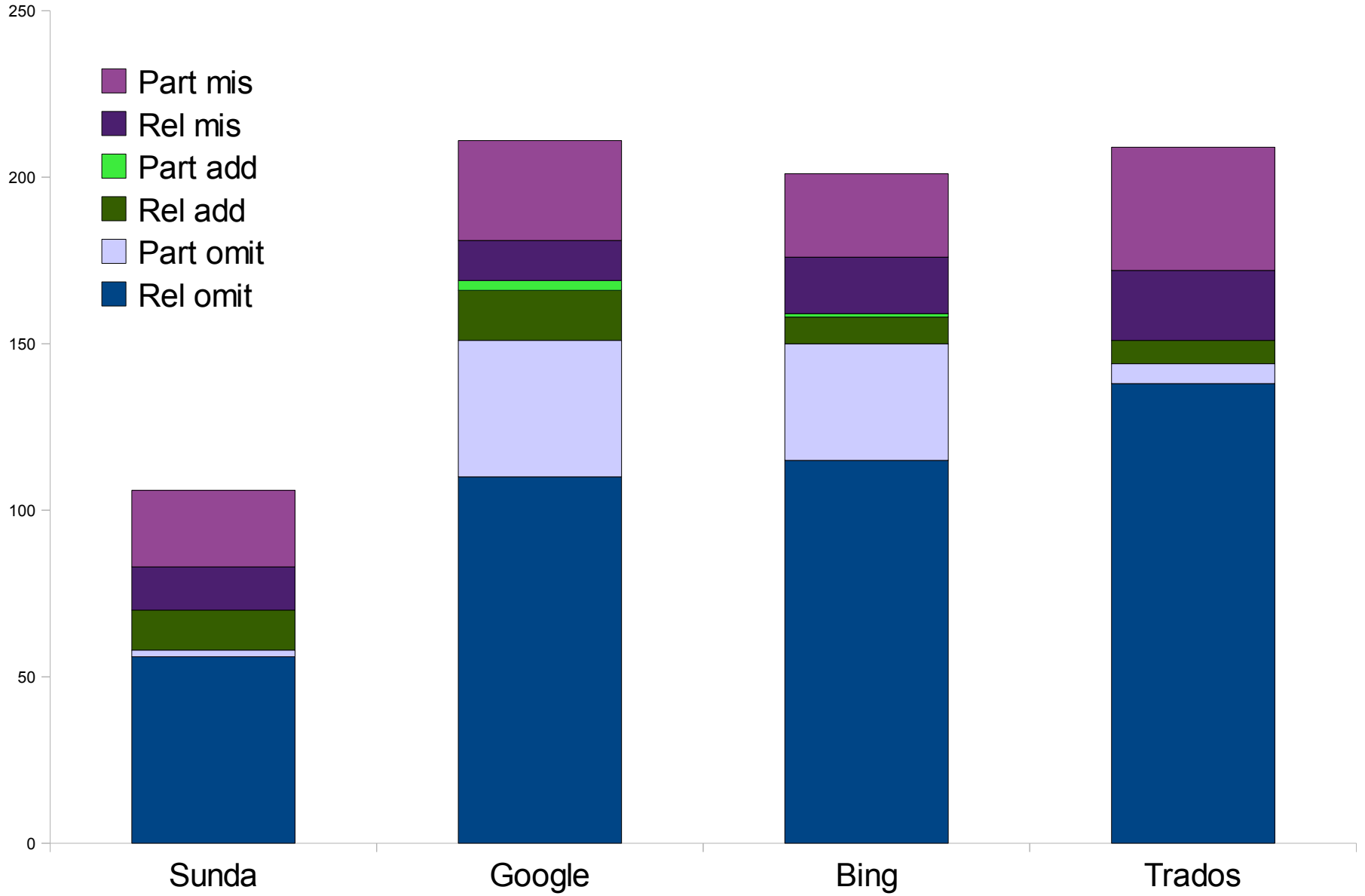
Error types

- concepts
  - omitted,
  - added
  - mistranslated
  - untranslated
- relations
  - omitted (relation/participant)
  - added (relation/participant)
  - mistaken (relation/participant)

Concept errors



Relation errors



Error rates vs. BLEU scores

	Concepts			**BLEU-1**		**Relations**			**BLEU-4**	
	Prec.	Rec.	F2	plain	tagged	Prec.	Rec.	F2	plain	tagged
Sunda EU	0.8686	0.8718	0.8712	0.3500	0.4901	0.8393	0.7550	0.7705	0.0950	0.1919
Sunda NAV	0.8475	0.8475	0.8475	0.3962	0.5317	0.8934	0.8289	0.8410	0.0787	0.2084
Sunda total	**0.8581**	**0.8597**	**0.8593**	**0.3731**	**0.5109**	**0.8664**	**0.7920**	**0.8058**	**0.0869**	**0.2002**
Google EU	0.8962	0.8535	0.8617	0.4985	0.6209	0.7487	0.5622	0.5917	0.1851	0.3127
Google NAV	0.8676	0.8369	0.8429	0.5642	0.6920	0.8385	0.6122	0.6471	0.2176	0.4184
Google total	**0.8819**	**0.8452**	**0.8523**	**0.5314**	**0.6565**	**0.7936**	**0.5872**	**0.6194**	**0.2013**	**0.3656**
Bing EU	0.9288	0.9084	0.9124	0.4753	0.5871	0.8383	0.5622	0.6019	0.1472	0.2575
Bing NAV	0.9132	0.8582	0.8686	0.5623	0.6841	0.8794	0.6654	0.6994	0.2422	0.4189
Bing total	**0.9210**	**0.8833**	**0.8905**	**0.5188**	**0.6356**	**0.8589**	**0.6138**	**0.6507**	**0.1947**	**0.3382**
Trados EU	0.6937	0.6886	0.6897	0.2959	0.4131	0.7865	0.5622	0.5963	0.0421	0.1148
Trados NAV	0.7908	0.7908	0.7908	0.4181	0.5637	0.8274	0.6198	0.6525	0.0732	0.2365
Trados total	**0.7423**	**0.7397**	**0.7402**	**0.3570**	**0.4884**	**0.8070**	**0.5910**	**0.6244**	**0.0577**	**0.1757**

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