7th Biennial AMTA Conference
Association for Machine Translation in the Americas

User Program Track
Wednesday, 9 August 2006

The Added Value of Free Online MT Services: Confidence Boosters for Linguistically-challenged Internet Users, a Case Study for the Language Pair Italian-English

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Overview of the Talk

- Introduction: background and rationale + aims

- Experiment design and setup

- Results and discussion

- Conclusions and future work

- Discussion: questions & answers + feedback

Introduction

- Background and rationale

  - free online MT is a well-established resource

  - used by research community (multilingual NLP)

- Aims of the study

  - users' level of confidence in free online MT?

  - users' perception, confidence and trust?

Experiment Design and Setup

- Preliminary decisions regarding monol. websites

- Selection of candidate websites in Italian

- Pilot study to remove any bias (17 people)

- Keywords (max. 3) in English to describe content

Monolingual Italian Websites

http://www.marconionline.it

Keyword: **school**

Monolingual Italian Websites

http://www.rmf.it

Keyword: **radio station**

Monolingual Italian Websites

http://www.siriogatto.it

Keyword: **collectors' items**

Experiment Design and Setup

- Participants in the experiment

  - 101 English-speaking students (250 in total)

  - 77 main experimental group (used online MT)

  - 24 control group (only browsed Italian sites)

  - 3:1 ration experimental/control group

Experiment Design and Setup

- Free online MT services used for translation from Italian into English

  - Babelfish (27 users)

  - FreeTranslation (15 users)

  - Google Language Tools (26 users)

  - Voila (9 users)

- Evaluation method: questionnaire

  - in English

  - collected personal details + MT experience

  - focused on basic info. in the 3 monoling. sites

  - same questionnaire for exp. and contr. groups

- Evaluation method: questionnaire *(cont'd)*

  - best description of each website (15 options):

    tourist information - political party - city council - sports centre
    ethnic food - oriental art - astronomy & astrophysics - school
    radio station - photo club - collectors' items - online newspaper
    pets & animals - company/corporate – scientist's profile

  - identify contact telephone number (2nd level)

  - rate confidence in correctness of answers (7)

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- Finding basic information correctly
  - keyword-based description of website

School's site www.marconionline.it			
Guessed correctly		Guessed incorrectly	
MT	Control	MT	Control
N = 73	N = 18	N = 4	N = 6
94.8%	75%	5.2%	25%
+19.8% accuracy when using free online MT			

Radio station's site www.rmf.it			
Guessed correctly		Guessed incorrectly	
MT	Control	MT	Control
N = 75	N = 20	N = 2	N = 4
97.4%	83.3%	2.6%	16.7%
+14.1% accuracy when using free online MT			

Collectors' items' site www.siriogatto.it			
Guessed correctly		Guessed incorrectly	
MT	Control	MT	Control
N = 68	N = 21	N = 9	N = 3
88.3%	87.5%	11.7%	12.5%
+0.8% accuracy when using free online MT			

- Finding basic information correctly
  - contact telephone number

School's site: contact phone number					
Correct		Incorrect		Don't know	
MT	Contr.	MT	Contr.	MT	Contr.
N=62	N=19	N=0	N=1	N=15	N=4
80.5%	79.2%	0%	4.2%	19.5%	16.7%
+ 1.3% accuracy when using free online MT					

Radio station's site: contact phone number					
Correct		Incorrect		Don't know	
MT	Contr.	MT	Contr.	MT	Contr.
N=70	N=20	N=1	N=0	N=6	N=4
90.9%	83.3%	1.3%	0%	7.8%	16.7%
+ 7.6% accuracy when using free online MT					

Collectors' items' site: contact phone number					
Correct		Incorrect		Don't know	
MT	Contr.	MT	Contr.	MT	Contr.
N=48	N=14	N=0	N=0	N=29	N=10
62.3%	58.3%	0%	0%	37.7%	41.7%
+ 4% accuracy when using free online MT					

Results and Discussion

- **Confidence ratings in the answers**
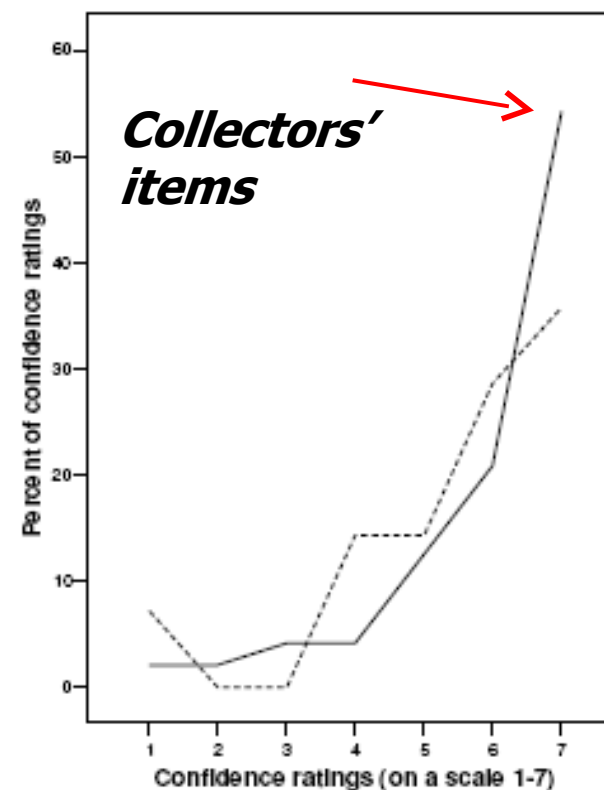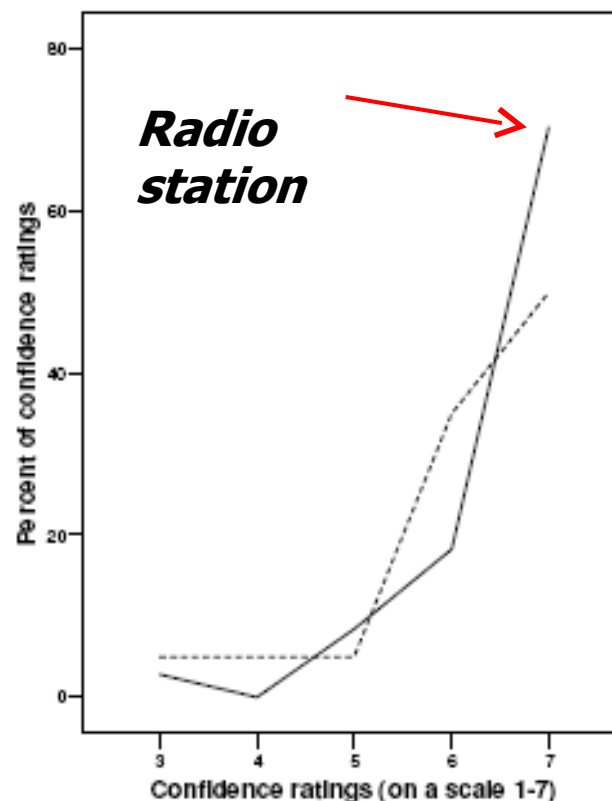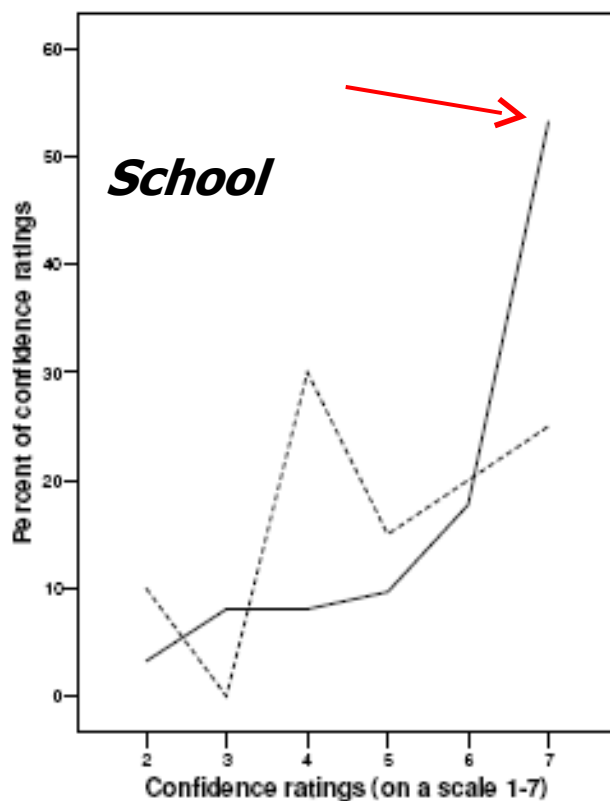 - **perceived reliability of the information**

Confidence ratings school's phone no.				
Group	N	Mean confidence rating	Std. deviation	Std. Error Mean
MT	62	5.90	1.490	.189
Control	20	5.10	1.586	.355
+ .80 (i.e. +11%) mean confidence using MT				

Confidence ratings radio station's phone no.				
Group	N	Mean confidence rating	Std. deviation	Std. Error Mean
MT	71	6.54	.876	.104
Control	20	6.20	1.105	.247
+ .34 (i.e. +5%) mean confidence using MT				

Confidence ratings collectors' items phone no.				
Group	N	Mean confidence rating	Std. deviation	Std. Error Mean
MT	48	6.02	1.451	.209
Control	14	5.57	1.697	.453
+ .45 (i.e. +6%) mean confidence using MT				

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- Confidence ratings in the answers
  - perceived reliability of the information

School

Radio station

Collectors' items

Experimental group using free online MT

Control group

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Conclusions

- Added value of free online MT

- 1) helps users find information more accurately

- 2) boosts users' confidence in reliability of info.

- Users have positive perception of free online MT

- But... is it the website design or free online MT?

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Future Work

- More empirical research is needed

- Other language combinations and OLMT services

- Involve users with knowledge of source language

- Users' confidence in online MT for dissemination?

- Users' confidence in online MT to make decisions?

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Thank you!

Questions?

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