The impact of using TM software vs post-editing MT output on the translation process of trainee translators:

An analysis of perceived difficulty and time effectiveness

Alessandra Rossetti
alessandra.rossetti8@gmail.com

Federico Gaspari
fgaspari@sslmit.unibo.it

University of Bologna at Forlì, Italy
January 30th, 2015
Outline

• Related work
• Aim of the study
• Experimental set-up
• Data collection methodologies
• Objects of study (TM use vs. MT PE)
  - translation solutions
  - perceived difficulty of translation strategies
  - time effectiveness
• Conclusions
• Future work
Related work: translation process

• Different objects of study, e.g.
  – Translation strategies (Asadi & Séguinot, 2005)
  – Subject profiling (Muñoz Martín, 2010)
  – Effort in translation (Alves et al., 2012)

• Various methodologies – often combined, e.g.
  – Think-aloud Protocols (TAPs) (Jääskeläinen, 2000)
  – Retrospective interviews, keystroke logging
    (Alves & Liparini Campos, 2009)
  – Eye tracking (O’Brien, 2010)
Related work: PE process

• Different issues, e.g.
  – Cognitive effort (O’Brien, 2006)
  – Temporal effort (Koponen et al., 2012)
  – Technical effort (Tatsumi & Roturier, 2010; Koponen, 2012)

• Various methodologies and techniques, e.g.
  – Translog (Lacruz & Shreve, 2014)
  – Choice Network Analysis (O’Brien, 2005)
  – Subjective quality assessment (Popović et al., 2014)
Aim of the study

Using translation memory vs Post-editing MT output
TM use vs MT PE

• Comparison in terms of

  a) perceived difficulty of translation strategies

  b) duration of the tasks
Research questions

• Which of the two working scenarios...

- … reduces the perception of difficulty to a greater extent?

- … is more time-effective?
Experimental set-up

- 6 Italian MA-level translation students divided into 3 pairs

- 3 similar English excerpts from financial press releases (about 100 words each) to be translated into Italian (i.e. the students’ L1)

- 1 passage to each pair: one student used TM with SDL Trados Studio 2011, the other post-edited Google Translate’s raw MT output
One of the passages

**UPS Board Boosts Dividend by 11 Percent to $0.52 Per Share**

**Directors Cite Strong Earnings Outlook**

The UPS (NYSE: UPS) Board of Directors today increased the **regular quarterly dividend** by 11% to $0.52 per share from $0.47 on all outstanding **Class A and Class B shares**. The dividend is payable March 2, 2011, to **shareholders of record** on Feb. 14, 2011.

“We believe that 2011 is going to be a great year for UPS and we’re committed to significantly increasing distributions to shareowners,” said UPS Chairman and CEO Scott Davis. “**Cash flow** is expected to be strong and clearly today's decision by the Board reflects that projection.”

*Source: http://goo.gl/kS1xMI*
Experimental protocol

• Produce high-quality Italian target texts

• Verbalise:
  – **Translation problems** encountered
  
  – **Translation solutions** (when present) provided by the TM database (through the Concordance Search facility) or the raw MT output

  – Webpages consulted to check translation hypotheses or to find equivalents (**translation strategies**)
Data collection methodologies

- **Think-aloud Protocols (TAPs):** verbalisation of translation problems, translation solutions and translation strategies

- **Retrospective interviews:** rankings of perceived difficulty for the 4 most frequent translation strategies

  +

- **Measurement of the time** taken by each participant to complete the task
Objects of study (TM use vs. MT PE)

- Number of correct translation solutions provided by TM database vs. raw MT output
- Perceived difficulty of translation strategies
- Task duration
<table>
<thead>
<tr>
<th></th>
<th>TM database</th>
<th>Raw MT output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; pair of participants</td>
<td>14%  &lt;</td>
<td>58%</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; pair of participants</td>
<td>66%  &lt;</td>
<td>83%</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; pair of participants</td>
<td>100%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Translation strategies considered

• Equivalent retrieval *(search for a translation)*
• Equivalent monitoring *(check a translation)*
• Contextualisation *(reproduce stylistic features)*
• Comprehension of source-language term
• Comprehension of target-language term
• Reduction
• Reformulation

*(Mainly based on Chesterman, 1997; Gerloff, 1986; Krings, 1986)*
# TM use: translation solutions and perceived difficulty

<table>
<thead>
<tr>
<th>Sessions with TM users</th>
<th>% correct translation solutions in the TM</th>
<th>Most frequently adopted strategy</th>
<th>Ranking (1=easiest; 4=most difficult)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(^{st}) session</td>
<td>14%</td>
<td>Equivalent retrieval</td>
<td>4</td>
</tr>
<tr>
<td>2(^{nd}) session</td>
<td>66%</td>
<td>Equivalent monitoring</td>
<td>3</td>
</tr>
<tr>
<td>3(^{rd}) session</td>
<td>100%</td>
<td>Equivalent monitoring</td>
<td>3</td>
</tr>
</tbody>
</table>
PE of raw MT output: translation solutions and perceived difficulty

<table>
<thead>
<tr>
<th>Sessions with participants post-editing</th>
<th>% correct translation solutions in the raw output</th>
<th>Most frequently adopted strategy</th>
<th>Ranking (1=easiest; 4=most difficult)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; session</td>
<td>58%</td>
<td>Contextualisation</td>
<td>4</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; session</td>
<td>83%</td>
<td>Contextualisation</td>
<td>4</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; session</td>
<td>50%</td>
<td>Contextualisation</td>
<td>4</td>
</tr>
</tbody>
</table>
Task duration

Duration (in minutes) of the translation and the PE tasks

1st pair  2nd pair  3rd pair

TM use

Full MT PE
Conclusions (1)

- In some cases, the number of correct translation solutions influences:

  a) *the perception of difficulty* (e.g. TM users of the 2nd and 3rd pairs perceive less difficulty as solutions increase)

  b) *duration* (e.g. the larger number of solutions available to the post-editor of the 1st pair leads to time savings)
Conclusions (2)

• In other cases, when looking at the PE process, the number of correct translation solutions does not influence:

  a) the perception of difficulty (e.g. the larger number of solutions does not lead the post-editor of the 1st pair to perceive less difficulty)

  b) duration (e.g. the larger number of solutions available to the post-editor of the 2nd pair does not lead to time gains)
Conclusions (3)

Further factors influencing the subjects’ performance: attitude towards the tool being used

Students show less trust in the raw MT output

Longer and more in-depth searches
Future work

• Different sample of participants (e.g. professional translators), other text types, language pairs and translation directions (into the L2, not only into the L1)

• Additional data gathering methods (e.g. keystroke logging, eye tracking)

• Qualitative analysis of the final target texts (e.g. to see whether a particular scenario or faster task completion time results in lower quality)
The impact of using TM software vs post-editing MT output on the translation process of trainee translators: An analysis of perceived difficulty and time effectiveness

Alessandra Rossetti
alessandra.rossetti8@gmail.com

Federico Gaspari
fgaspari@sslmit.unibo.it

University of Bologna at Forlì
Italy
References (1)


References (2)


