Ergonomics of translation: methodological, practical and educational implications

Maureen Ehrensberger-Dow
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Winterthur, 31 May 2017

Ergonomics of translation: methodological considerations

Theoretical framework of ZHAW research group:

• Situated cognition
  – human cognition extends beyond internal processes to individuals’ physical and social situation (cf. Hutchins 1995; Clark & Chalmers 1998/2010)

• Situated activity of professional translation
  – from an ergonomic perspective
  – physical, cognitive, organizational factors

• Pragmatic approach
  – mixed methods
  – qualitative and quantitative
  – action research
Ergonomics of translation: definitions

- Greek (ergon=work; nomos=laws) on analogy to economics (Jastrzebowski 1857/2006)
- synonymous with “human factors”
  That field which is involved in conducting research regarding human psychological, social, physical, and biological characteristics, maintaining the information obtained from that research, and working to apply that information with respect to the design, operation, or use of products or systems for optimizing human performance, health, safety, and/or habitability. (Stramler 1993: 148)
- human side of usability, with a focus on the user rather than on machines or tools (ISO 9241-210; Norros & Savioja 2007)
Translation as a cognitive act

Ergonomics of translation: relevance to professional practice

Physical aspects

Translation quality

Organizational

Health & job satisfaction

Ergonomics of translation: practical considerations for workplace research

Ethical issues:
- translator/employee anonymity
- truly informed consent
- employer anonymity / reputational risks
- client confidentiality

Logistical issues:
- time, space, availability, accessibility
- infrastructure (IT, software downloads, compatibility)
- remuneration / loss of income
- disruption of routines / reactivity
- research team flexibility (e.g. on-site supervision)
## Physical aspects of translation

**ErgoTrans survey (n=1,850)**

<table>
<thead>
<tr>
<th>Good practice indications</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>desktop for most translation work</td>
<td>61%</td>
</tr>
<tr>
<td>keyboard flat on desk</td>
<td>66%</td>
</tr>
<tr>
<td>keyboard shortcuts used at least sometimes</td>
<td>90%</td>
</tr>
<tr>
<td>two screens used for translation work</td>
<td>30%*</td>
</tr>
<tr>
<td>at least one screen directly in front</td>
<td>92%</td>
</tr>
<tr>
<td>screen about an arm’s length away</td>
<td>68%</td>
</tr>
<tr>
<td>top of monitor slightly below eye level</td>
<td>37%</td>
</tr>
<tr>
<td>screen larger than A4 (&gt;20x30 cm)</td>
<td>81%*</td>
</tr>
<tr>
<td>magnification of screen adjusted</td>
<td>41%</td>
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* Significant difference between freelance, commercial, institutional translators (Ehrensberger-Dow et al. 2016)
Cognitive aspects of translation

_ErgoTrans_ workplace study (n=31)

(Ehrensberger-Dow & Hunziker Heeb 2016)
Cognitive aspects of translation

ErgoTrans survey (n=1,850)

Good practice indications:

- CAT tool(s) used for translation: 73%*
- CAT tool(s) helpful at least sometimes: 97%
- customize aspects of CAT tool(s): 46%
  (layout, tag visibility, font type, colors, other)
- CAT tools not irritating: 41%*
- no comments about CAT irritations:
  (user interface, specific CAT features, technical performance, text appearance, compatibility, organizational aspects)

* Significant difference between freelance, commercial, institutional translators (Ehrensberger-Dow et al. 2016)

Organizational aspects of translation

(Ehrensberger-Dow et al. 2016)
Organizational aspects of translation

ErgoTrans survey (n=1,850)

Good practice indications: Results

- internet connection mostly or always good 96%
- communication mostly or always adequate 97%
- workflow software used at least sometimes 31%*
- resources provided at least sometimes 65%*
- feedback about work at least sometimes 74%
- deadlines for tasks mostly or always clear 95%
- time pressure, but not mostly or always 51%*
- timing of breaks at least sometimes 98%
- hourly breaks at least sometimes 68%*

* Significant difference between freelance, commercial, institutional translators (Ehrensberger-Dow et al. 2016)

Ergonomics of translation: some recommendations from workplace research

✓ reflect and act on own feedback mechanisms during the translation process (e.g. physical discomfort, fatigue)
✓ increase frequency of (mini) breaks (e.g. stretch between tasks and then check e-mail)
✓ recognize warning signs of reduced attention (e.g. typos, mistakes, regressions)
✓ only use e-mail notice function when completely necessary
✓ take ownership of technology
✓ reduce mouse activity by using shortcut keys and arrows
✓ adjust default settings of frequently-used software

→ include ergonomic awareness in translator education
Does it matter whether students are taught ergonomics?
Does it matter when ergonomics is taught?
Does it matter who teaches ergonomics?
Does it matter how ergonomics is taught?
Can instruction about ergonomics be extra-curricular?

Examples: Laptop ergonomics, Office health
### Ergonomics of translation: educational implications for our BA curriculum

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Semester 5</th>
<th>Semester 6</th>
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<tbody>
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<td>Languages (L1, L2, L3)</td>
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<td>CAT tools</td>
<td>AVT</td>
<td>Web trans.</td>
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<td>Multimodality</td>
<td>Respeaking</td>
<td>Usability</td>
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<td>Multilingual contexts</td>
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<td>Science &amp; technology</td>
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<td>Translation courses</td>
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<tr>
<td>Theory + practice</td>
<td>Accessibility</td>
<td>Revision / internship</td>
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<td>Complementary skills</td>
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<tr>
<td>MT, pre- + post-editing</td>
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<td>Writing competence</td>
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Gary Massey, Catherine Badras

References

Health and Safety.

Extended Mind. Cambridge, MA: MIT Press. 27-42

Ehrensberger-Dow, Maureen & Andrea Hunziker Heeb (2016). Investigating the ergonomics of a
technologized translation workplace. In: Ricardo Muñoz Martín (ed), Reembedding Translation

Ehrensberger-Dow, Maureen, Andrea Hunziker Heeb, Gary Massey, Ursula Meidert, Silke
Neumann, & Heidrun Becker (2016). An international survey of the ergonomics of professional


Jastrzebowski, W. (1857/2006). An outline of ergonomics, or the science of work based upon the
truths drawn from the science of nature. In: W. Karwowski (Ed.), International encyclopedia of

human-technology systems. Activités. 4(2), 143-150.

Press.