Overview

• Relevance of machine translation
• Post-editing: Competence
• Settings and integration of machine translation into teaching
• Learning outcomes
• Approaches to teaching machine translation and post-editing
• Typical content
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• Case study
• Conclusion: Re-focusing at the crossroads
Relevance of machine translation (MT)

- Ubiquity of MT (DePalma et al. 2016; Way 2018)
  - Vertical distribution (industries: technical, medical, legal...)
  - Horizontal distribution (language pairs, professional vs. private contexts)

- Increase in demand for MT post-editing (MTPE) services (Koponen 2016)

- Students are using MT (Koletnik-Korošec 2010; Heinisch & Lušicky 2019)
Neural machine translation (NMT)

- NMT quality evaluation:
  - Good results (Bojar et al. 2016; Burchardt et al. 2017; Sennrich et al. 2016)

- Post-editing effort:
  - Lower overall effort, but conservative results (Bentivogli et al. 2016; Castilho et al. 2017; Popović 2017; Toral et al. 2018)
Post-editing: Competence

- ISO 18587:2017 Translation services -- Post-editing of machine translation output -- Requirements
  - translation competence,
  - linguistic and textual competence,
  - competence in research/information mining,
  - cultural competence,
  - technical competence,
  - and domain competence (ISO 18587 2017: 7)

  - “a general knowledge of Machine Translation technology and a basic understanding of common errors that an MT system makes” (ibid)
NMT+PE: Competence

- MTPE vs. translation vs. revision (O’Brien 2002)
- Similarity in error distribution between NMT and humans (Yamada 2019)

- When to include MT and MTPE?
  - Translation training as prerequisite for MTPE (Yamada 2019)
  - Revision experience as prerequisite for MTPE (Guerberof Arenas & Moorkens 2019)
  - MT as language learning tool (Niño 2009; Briggs 2018)
Settings and integration of MT into teaching

- Part of technology course/module or project management/quality management course/module
- Stand-alone course: MT+MTPE or stand-alone course: MT project management
- Part of revision/translation or other course targeting specific language pair
- Industry programmes (e.g. TAUS)

- Adequate organisational and technological framework
  - Generic MT vs. customized MT, SaaS
  - Other tools (e.g. CAT, QA)
Development of learning outcomes

- O’Brien 2002:
  - Theoretical component: knowledge of MT, terminology management, pre-editing and controlled language, and programming skills
  - Practical component: PE practice with at least two MT engines, terminology management and coding, controlled language, corpus analysis, and programming (macros).
Development of learning outcomes

- MT evaluation using human and automatic metrics, roles of humans in workflows (Doherty et al. 2012)
- “Conceptualise a translation role that encompasses new tasks such as post-editing and working with MT” (Doherty & Moorkens 2013:123)
- Ethics, payment, collaboration (Doherty & Kenny 2014)
- Risk and quality management in LT/MT process (Canfora & Ottmann 2015; Pym 2015)
- Developing metacognitive capacity: reflecting the deployment of language technologies (Massey & Ehrensberger-Dow 2017)
- MT project management (Guerberof Arenas & Moorkens 2019)
Approaches to teaching MT and MTPE

- Transmissionalist approach vs. transformational approach, learner-oriented activity (Kiraly 2000)

- Situated learning (Kiraly 2000, 2005, 2016)
  - Project-based learning MTPE (Guerberof Arenas & Moorkens 2019)
Typical content: MT

- The basic principles of MT technology
- The types of engines on the market
- Integration between CAT tools and MT systems
- MT output and frequently-occurring errors
- MT evaluation: types, scoring, ranking, error categorisation
- MT engine training and implementation in the localisation/translation workflow (Guerberof Arenas & Moorkens 2019)
Typical content: MTPE

- Basic concepts (MTPE vs. revision, post-editor profile)
- Controlled language, terminology
- Quality (raw MT output, expected quality, quality of post-edited material)
- MTPE strategies and guidelines (light, full MTPE)
- MTPE effort and productivity (technical, temporal, cognitive)
- MTPE and pricing
- MTPE tools
- Practical MTPE exercises in the language pair
- Monolingual MTPE
Challenges

- Mixed language combinations
- Limited revision or editing experience
- Limited translation experience
- Lack of interest in technology
- Different quality expectations
- Relationship between humans and technology
- Perceived post-editing effort vs. actual post-editing effort (Moorkens et al. 2015)

- Insufficient organisational and technological framework
Case study

- EU Council Presidency Translator
  - A machine translation system that was developed especially for the Presidency of the Council of the European Union
  - Part of European Commission’s Connecting Europe Facility eTranslation infrastructure
  - Combines the CEF eTranslation with custom neural machine translation (NMT) engines
Case study

- Training data for customizing MT engines
  - Domain adaptation
  - Text type
  - Parallel data
  - Data corruption
  - Data preparation (sentence splitting, alignment etc.)
  - Data quality
Case study

- Quality estimation
- Evaluation
  - Domain adaptation, text types
- MT error analysis
  - Quality metrics
- Integration with CAT tools
- Post-editing
  - Effort
  - Strategies

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Case study: Opportunities

- MT as a process
  - MT customization service (cf. Gaspari et al. 2015)
- Quality management
  - Data management
- Risk management (cf. Nitzke et al. 2019)
  - PE risks (under-, over-editing)
- Legal aspects
At the crossroads

• Predictions:
  ◦ “technical, low-risk, low ambiguity translating and interpreting can be safely delivered with minimum human intervention” (Katan 2016:377)
  ◦ In eight years: “perform translation about as good as a human who is fluent in both languages but unskilled at translation, for most types of text, and for most popular languages” (Grace et al. 2018:743)
  ◦ In two decades: “fully automatic useful translation” (Massardo et al. 2016:11)

• Polarisation: low skill vs. high skill professions (Goos et al. 2014)
Intervention and expertise

- Translators’ self-concept and identity
  - Current industry: Low autonomy profession (Katan 2011, 2016)
  - Intervention in didactics

- Adaptive expertise (Massey & Ehrensberger-Dow 2017)

- Translation as a strategic, co-creative activity
Re-focusing

- Content
- Routines, automaticity
- Low degree of autonomy

- Inquiry, innovation
- Creative problem solving
- High degree of autonomy
- Self-empowerment
- Conceptualisation of the translator’s role
Thank you!

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References


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References


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References


Figures

• Slide 1: Flowchart of part of the dictionary lookup procedures (Hutchins 2005, based on Sheridan 1955).

• Slide 4: Press clippings

• Slides 14–16: Logo (EU Council Presidency Translator 2018).