



# The Future of Translator Training in the MT Era

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# Overview

- What will the future look like?
- What are we teaching now in relation to MT?
- What (else) should we teach and why?





# What will the future look like?

- We need to consider...
  - Improvements in translation technology over the past decades
  - What the Language Industry Survey (2019) tells us
  - Debates over General AI vs. Narrow AI and the Future of Work

# What will the future look like?

- We need to consider...
  - Improvements in translation technology over the past decades



# What will the future look like?

- We need to consider...
- What the Language Industry Survey (2019) tells us that:

But not yet a  
standard tool:  
less than 20%  
use frequently

MT is a clear  
priority for  
technology  
investment

A further 18%  
are ready to  
start with MT

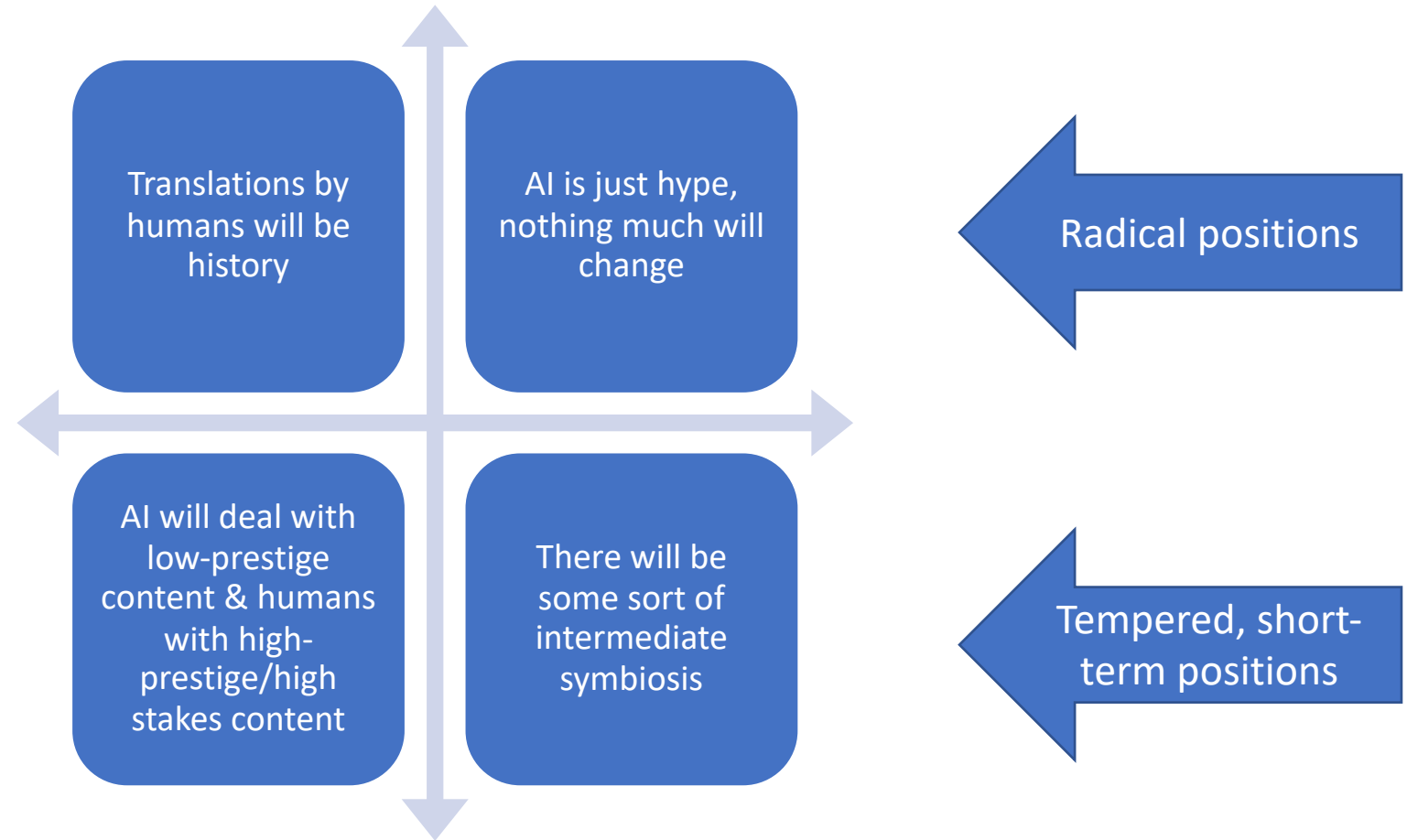
51% of  
companies want  
to increase use  
of MT

# What will the future look like?

- We need to consider...
- Debates over general AI vs. Narrow AI
  - “Currently, machines are able to process data faster than we can. But as human beings, we have the ability to think abstractly, strategize, and tap into our thoughts and memories to make informed decisions or come up with creative ideas.”

(Jajal, 2018, Medium.com - <https://medium.com/@tjajal/distinguishing-between-narrow-ai-general-ai-and-super-ai-a4bc44172e22>)

# Imagining several possible futures

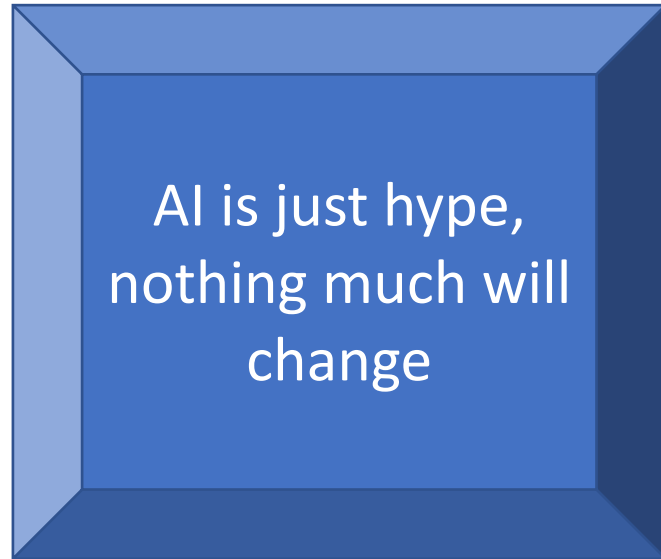


# Imagining several possible futures




- Difficult to fathom
- Pessimistic outlook of AI says “no way!”
- Optimistic outlook of AI says “yes, probably”

# Imagining several possible futures



- Look at how much change we've seen in 30 years!
- Can we risk adopting this position?

# Imagining several possible futures



AI will deal with low-prestige content & humans with high-prestige/high stakes content

When machine translation becomes a ubiquitous commodity product, human language skills (plus translation?) will command a premium. The person who has a language in their head will always have the advantage over somebody who relies on a device...

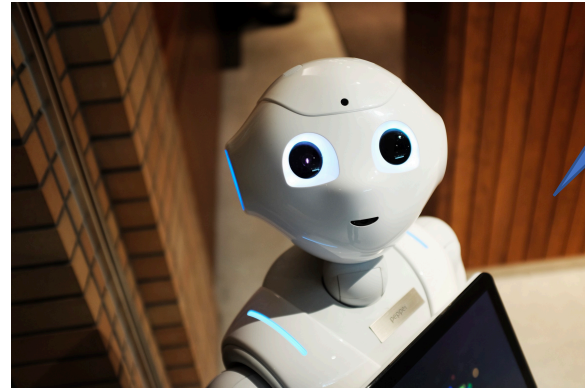
Automated translation will deliver a commodity product: basic, practical, low-prestige information that helps people buy things or find their way around.

<https://www.theguardian.com/technology/2019/feb/17/is-the-era-of-artificial-speech-translation-upon-us>



# Imagining several possible futures

There will be  
some sort of  
intermediate  
symbiosis

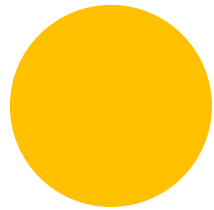
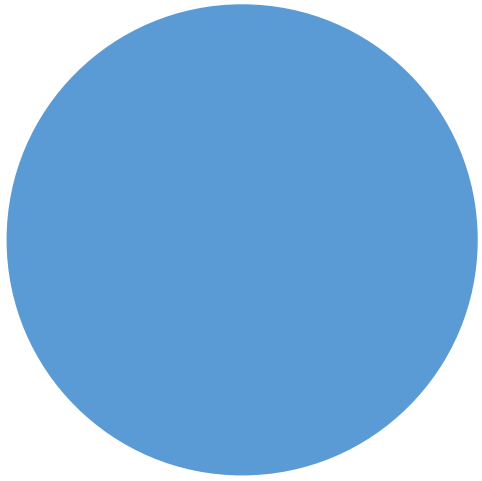


Can we  
collaborate?



# Symbiosis

Does this simply mean that we keep doing what we are doing and teach more “post-editing”?  
What we teach for the future really depends on what that future looks like, but can we predict it?



Keep doing what we  
are doing?

Well, what are we  
currently teaching?



# Competency Models

Translator training is currently informed by translator competence models

# European Masters in Translation (EMT) Competence Model (2017)



# And what does the EMT CM have to say about technology and MT?

1

Use the most relevant IT applications, including the full range of office software, and become familiar with new IT resources.

2

Make use of search engines, corpus-based tools and CAT tools as well as CATA (computer aided text analysis) tools.

3

Pre-process, process and manage files and other media/sources as part of the translation.

4

Master the basics of MT and its impact on the translation process.

5

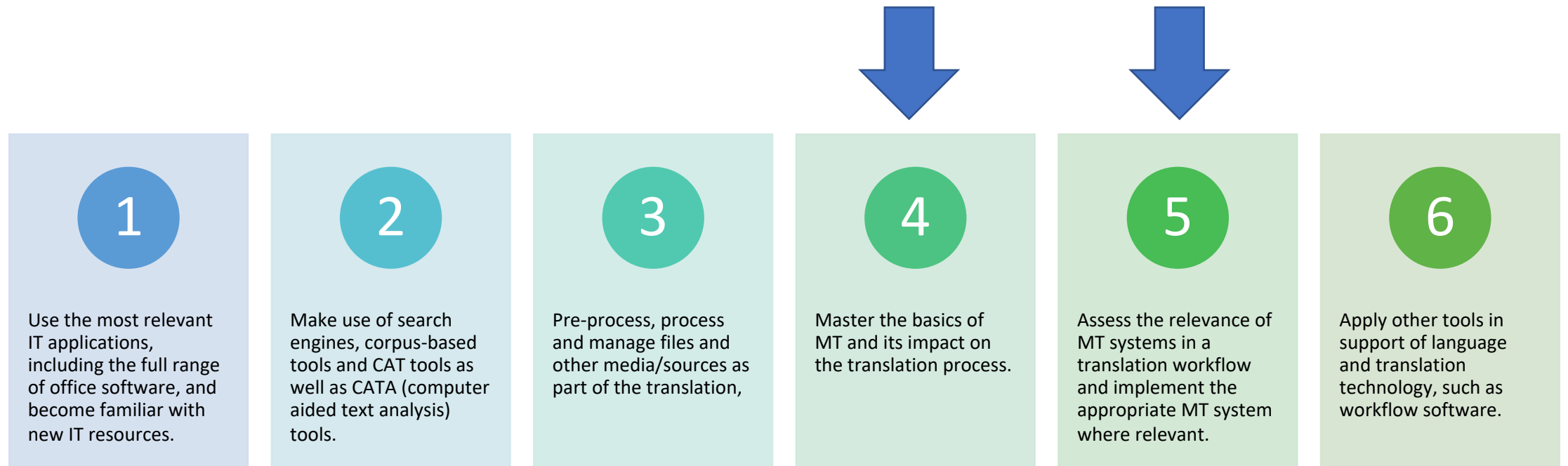
Assess the relevance of MT systems in a translation workflow and implement the appropriate MT system where relevant.

6

Apply other tools in support of language and translation technology, such as workflow software.



# And what does the EMT CM have to say about technology and MT?



# Competence Models



**Thus, translation graduates  
need to know about MT  
(this is a given!)**

How to implement it in workflows

How to fix it

How to assess its quality, including  
acceptability and usability



**Therefore, continue to teach  
MT/Post-Editing/MT  
Evaluation**



**But, do we need to go  
beyond this...?**

Some criticism that such models are  
“training” and not “education”  
oriented...

“The EMT’s competence models are  
sometimes cited as examples of the  
negative side of translator training,  
because of their emphasis on  
technology and routine activity.”  
(Massey and Kiraly, 2020)

# What we (at DCU) currently teach about MT

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## History of MT

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## Current MT paradigms (SMT -> NMT)

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## MT Evaluation

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## Post-editing (traditional & interactive)

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## Socio-ethical issues linked with MT

# What we (at DCU) currently teach about MT

- Current and Future Challenges:
  - Separating TM and MT in the “convergence era”
  - Separating MT (and CAT in general) from translation practice
  - MT Evaluation – tools and interfaces
  - Multiple languages in the classroom & tool support for them
  - Very varied levels of technical ability



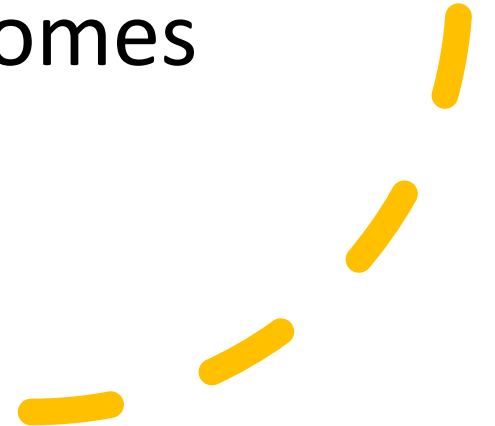
But do we  
need to do  
more or  
change?

- Yes!
- Data collation for MT
  - Finding and collating corpora that could be used for specific client domains



But do we  
need to do  
more or  
change?

- Annotation and rendering data 'fit for purpose'
  - This could entail assessing quality of training data and implementing changes to ensure better MT outcomes







But do we  
need to do  
more or  
change?

- Identifying and managing data bias
  - Vanmassenhove, Eva, Christian Hardmeier, Andy Way (2019), “Getting Gender Right in Neural Machine Translation”
  - Available at:
    - arXiv preprint arXiv:1909.05088



# Example

English ▾

I am beautiful.

I am a surgeon.



I am a beautiful surgeon.

I am good-looking.

I am a teacher.

I am a good-looking teacher. [Edit](#)

Spanish ▾

Soy hermoso.

Soy cirujano

Soy una hermosa cirujana.

Soy guapo

Yo soy un profesor.

Soy una profesora guapa.

[Open in Google Translate](#)

[Feedback](#)

Soy hermosa.  
Soy cirujano  
Soy un bello cirujano.  
Soy guapo  
Yo soy un profesor.  
Soy una maestra guapa.



# Example

English ▾



I am smart.

I am beautiful.

I am beautiful but not smart.

Edit

French ▾



Je suis intelligent.

Je suis beau.

Je suis belle mais pas intelligente.

Je suis intelligente.

Je suis beau.

Je suis belle mais pas intelligente.



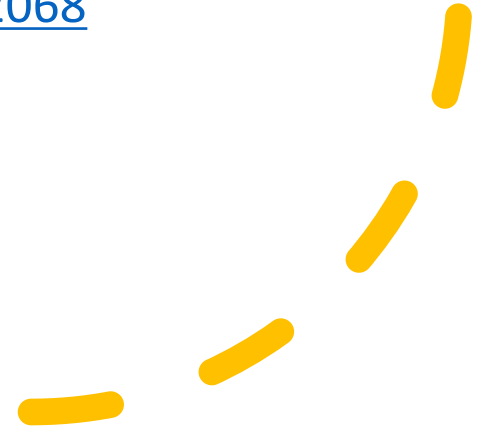
But do we  
need to do  
more or  
change?

- Vanmassenhove et al. 2019:
  - “Our experiments show that adding a gender feature to an NMT system significantly improves the translation quality for some language pairs.”



But do we  
need to do  
more or  
change?

- Linked to this bias challenge:
  - Dealing with issues of lexical diversity
  - Vanmassenhove, E., D. Shterionov, A. Way (2019) Lost in Translation: Loss and Decay of Linguistic Richness in Machine Translation
  - Available at: <https://arxiv.org/abs/1906.12068>



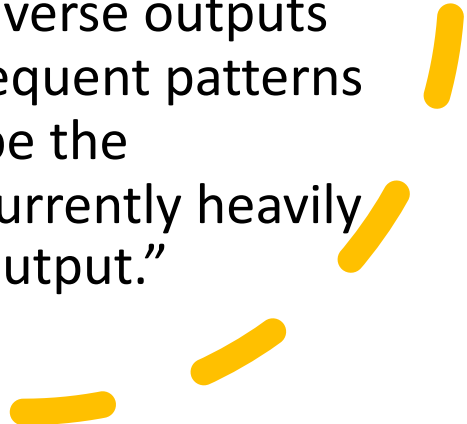
But do we  
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- Linked to this bias challenge:
  - Dealing with issues of lexical diversity
- Evidence of lexical loss in human translation (Kruger 2012)
- If MT is trained on human translation AND works on statistical probabilities using this data then...

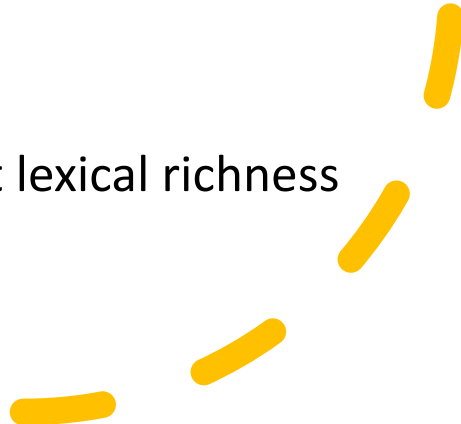




But do we  
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- Dealing with issues of lexical diversity
  - Vanmassenhove et al.:
  - “This work presents an empirical approach to quantifying the loss of lexical richness in Machine Translation (MT) systems compared to Human Translation (HT).
  - Our experiments show how current MT systems indeed fail to render the lexical diversity of human generated or translated text.
  - The inability of MT systems to generate diverse outputs and its tendency to exacerbate already frequent patterns while ignoring less frequent ones, might be the underlying cause for, among others, the currently heavily debated issues related to gender biased output.”
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But do we  
need to do  
more or  
change?

- Dealing with issues of lexical diversity
  - However, there is also pushback on these claims (see recent blogpost from Marcin Junczys-Dowmunt at <https://marian-nmt.github.io/2020/01/22/lexical-diversity.html>)
  - “There seems to be no meaningful correlation between the lexical richness of MT and its human-judged quality, whether in source-based or reference-based human-eval scenarios.”
  - i.e. no correlation and also no agreement that lexical richness means better quality
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But do we  
need to do  
more or  
change?

- MT literacy in general





# Taking stock

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- We can continue doing what we are doing...
- We can add to the MT skills and competences so graduates have richer roles to play than just post-editing
- But, we are still potentially faced with a challenge...



# Language and intercultural mediation?

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- “I feel that one of my jobs as an educator is to educate people to think differently, is to educate the translators of the future to actually take on an active role of language **mediation**, consultancy and risk management. ”
- “I wonder, though, whether the future might not be one closer to an **intercultural mediator’s role** of negotiating between stakeholders who represent different cultures, in various modes and media, synchronously and or asynchronously. We would then have to trim our teaching programmes accordingly. We are training people for the markets and needs of now and the future. How can we feed the current market and anticipate future ones, melding what has been with what might be? ” (Gary Massey in Massey and Kiraly, 2020).



# LANGUAGE SERVICE PROVISION IN THE 21ST CENTURY: CHALLENGES, OPPORTUNITIES AND EDUCATIONAL PERSPECTIVES FOR TRANSLATION STUDIES

**Silvia Bernardini <sup>a</sup>, Pierrette Bouillon<sup>b|</sup>, Dragos Ciobanu <sup>c</sup>, Josef van Genabith <sup>d</sup>, Silvia Hansen-Schirra <sup>e</sup>, Sharon O'Brien <sup>f</sup>, Erich Steiner <sup>g</sup>, Elke Teich <sup>h</sup>**

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**Abstract:** *Translators have contributed significantly to the evolution of culture and to ever-increasing globalization. With advances in AI, notably in Machine Translation, new opportunities and challenges have emerged. Increased recognition of language as a human right and not-for-profit translation have added to opportunities and challenges within the global translation sector. This in turn creates opportunities and challenges for training of translators in the higher education sector. Translation Studies as an academic discipline has sought to agree on competence models that guide teaching practice. However, with the speed of change in AI especially, the discipline needs to assess how competence requirements will change and what the translator of the future will need to do. We propose to expand the types of skills currently taught and to do this through collaborative programs across EU universities.*

**Keywords:** *Artificial Intelligence; Higher Education; Language Service Provision; Machine Translation; Translation Competence.*

Joint paper:  
Bernardini  
et al. (in  
press)

- “This means that the role of the language professional of the future will have to be different from what it was before: we expect that s/he becomes an advocate for multilingualism as a globalization tool, and possesses the know-how to manage large-scale commercial, as well as not-for-profit, global initiatives that require translation and transcreation.”

Bernardini et al. (in press)

Is there  
anything  
else?

- SATT 2019 (Milan): Summer School in Advanced Translation Technology
- Impromptu survey of attendees – mostly professional translators
- What should we teach our students for the future?





# Recent impromptu survey

- Answers from translators in SATT 2019:
  - Content creation
  - Entrepreneurship
  - Specialisation: Elite translators/transcreators, e. g. video and game localisers
    - Teach voice, style, register, how to know your audience
  - Translators as collaborative researchers (in particular in relation to MT creation and Evaluation).





## The future of translator training in the MT era?

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- Know about MT, how to post-edit, its integration etc.
- Yes, but also:
  - Translators as evaluators, data curators and annotators
  - Translators as MT literacy specialists
  - Translators as “premium” content producers?
    - “Creative” content/Transcreation
    - Highly specialized/high stakes content
  - Translators as advocates and implementers of multilingualism and multiculturalism, language and intercultural mediators?
  - All of the above and more besides...?



The End.

# References

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- Bowker, Lynne and Jairo Buitrago Ciro (2019) *Machine Translation and Global Research*, Bingley, UK: Emerald Publishing.
- Bernardini, Silvia, P. Bouillon, D. Ciobanu, J. van Genabith, S. Hansen-Schirra, S. O'Brien, E. Steiner, E. Teich (in press), "Language Service Provision in the 21<sup>st</sup> Century: Challenges, Opportunities, and Educational Perspectives for Translation Studies".
- Kruger, Haidee (2012) A Corpus-Based Study of the Mediation Effect in Translated and Edited Language. *Target*, Volume 24:2, pp. 355–388. John Benjamins.
- Massey, Gary and Don Kiraly (2019) "The Future of Translator Education: A Dialogue". *Cultus: The Intercultural Journal of Mediation and Communication*, 2019: 12, pp. 15-34.
- Vanmassenhove, Eva, C. Hardmeier, A. Way (2019) "Getting Gender Right in Neural Machine Translation", Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing (EMNLP), October-November, 2018. Brussels, Belgium, pages 3003-3008, DOI: 10.18653/v1/D18-1334.
- Vanmassenhove, Eva, D. Shterionov, A. Way (2019) "Lost in translation: loss and decay of linguistic richness in machine translation", In: MT Summit XVII, 19-23 Aug 2019, Dublin, Ireland.