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AI, NI AND NATIONAL LANGUAGES: INTERACTION POSSIBLE?

We always seem to live in interesting and exciting times, the times of change. This current junction is a rather unique one. It seems that never before in all of its history the humankind had to make a choice between AI/ robotization and human-bondage retainment scenarios. Even in the times of the First Industrial Revolution the newly-developed automatic machines exercised a lesser effect onto people's lives, minds, ways of life, and became indispensable at narrower territorial expanses.

Today, technology advancement has successfully penetrated all spheres of mundane life to assist, streamline, protect, and enhance our living. In the most rapid of paces technologies of all sorts, forms, and magnitudes, generally referred to as AI, aim to replace us and our natural intelligence (NI) at our work-stations and beyond.

Let us take the speed, the form and the means of transferring information. If we deliver a message by a word of mouth, or by an email, or any social media, it is done in a matter of seconds. Still, there is a huge difference between the human voice speaking in all its diversity and uniqueness of intonation and individual voice quality, and the machine-assisted speech recognition and (re)production.

These days we streamline virtually everything. In 1980s, the sitcom *Yes, Prime Minister* viewed the following situation as funny: I read him (the US President) my brief. He read me his. Then we decided it'd been quicker if we just swapped briefs. In today's hectic world of mosaic thinking we have already accomplished this leap: we exchange clipped information via modern communication channels in split seconds. It is faster, safer and even cheaper from the economic standpoint. But what about the human dimension? The question is whether it is worthwhile to delegate almost everything to machines to replace us. If "yes" is the answer then, in all probability, we may cease to

exist as humanity, even though preserve our physical form and continue to wobble like jellyfish. Perhaps, we shall live on, but definitely lose something immaterial and intangible, something alluded to as a soul, an internal invisible centerpiece that makes us human and humane.

We would like to emphasize some issues of automation increasingly expanding its presence (through national languages) in science in general, and in translation and interpretation (T&I) as a stand alone discipline in particular.

AI has already gained its firm footing in science, and ML, MT, and other tools are extensively used in all scientific research. At the same time, our projections as to the current state of affairs, and future developments need to be supported, or refuted by hands-on evidence of those directly engage in modern scientific pursuits. To register the present situation, and project the potential future trend, we conduct a rolling-on survey across several scientific institutes and think-tanks under the auspices of the NAS, Ukraine. Participants in the online-survey include students and post-graduates (some 230 participants in one academic year, and around 30-50 participants per annum remaining in the pool after their EFL year is over). The participants represent three groups: STEM fields, Natural Sciences, and Humanities. The survey purpose is to collect, describe, and analyze attitudes of aspiring researchers towards artificial intelligence (AI), machine-learning (ML) and machine-translation (MT) tools, and whether they augment or abate NI in modern scientific and everyday communication. Moreover, the attitudes expressed by the scientific community will be compared against those held or, rather, felt by, sometimes intuitively, the T&I in-house and free-lance community of the EU institutions.

Survey questions for students and Ph.D. researchers include: (i) how often AI/ MT/ ML are used in your research; (ii) what human communication qualities does AI demonstrate now, and will in the next 3-5 years; (iii) can human communication become totally robotized, and if yes, how soon.

It is already interesting to register some annual median results of STEM and Natural Sciences participants. To answer the (i) question, almost 78% of young researchers employed AI (search engines, translation platforms, big data mining) at early stages of their scientific endeavours (1-2 years of the 4-5 year Ph.D. programmes). At later stages,

when finalizing (editing and proof-reading) their thesis texts, the numbers of AI-users drop to 32 per cent. It is interesting to note that such a descending trend is not explained by the fact that all relevant materials have already been collected by the time, and only some human touch remains in need to “give the text a finishing touch”. Rather, at later stages of their research efforts, Ph.D. students and fellows become concerned with such notions as rules of proper quotations, citations, and more generally – avoiding plagiarism. As some survey participants remarked: human brain is unique, and if we make an effort and formulate our ideas ourselves, unassisted by AI, we really can make a difference. Does this mean that NI gains the upper hand here?

Of greater interest still is the following survey outcome. STEM fields researchers and those majoring in Natural Sciences show almost identical attitudes to survey questions (ii) and (iii) to those given by the Humanities team. The latter demonstrate very similar polling results and attitudes to the ones suggested by the EU institutions T&I teams about interaction of AI and NI. Perhaps it is natural that such sensitive and emotional individuals as those engaged in T&I get fidgety and extremely concerned when it comes to an often uninvited advent of all the technological novelties: Neural Machine Translations (NMTs), Artificial Intelligence (AI), etc. What is surprising though that “eager young minds” of STEM and Natural sciences side with the Humanities and T&I in their vision on items (ii) and (iii) of the survey.

Survey item (ii) results in the most detailed and substantiated answers. Due praise is given by the polled (79%) to progress that AI has made in drawing theme-based glossaries, automatic translation of big text chunks, predominantly formal ones (contracts, court rulings, legal documents of uniform layout/ structure) available in a number of languages. 86% of the surveyed acknowledge that with time and greater volumes of processed input information, such AI devices perform with better quality and style. Slightly over 50% of research fellows note the ever expanding use in tourism and travel industries of Machine Translation (MT) apps and AI, even though at the moment, such apps operate mainly for basic conversation. To reiterate, T&I informal answers to the same question results in very similar percentage points.

Machine-assisted translation is heartily welcomed by 94% of the surveyed Ph.D. researchers in written communication, even though such communication ought to be non-critical one. In matters of life and death, crime and punishment (medicine or judicial sector), it is of paramount importance to understand and faithfully reproduce not only what is explicitly articulated, but more importantly what is unsaid (unwritten), understated, or hidden but is implied. In this, the STEM, Humanities and T&I expert answers are almost identical. 79% of the T&I respondents believe that in the foreseeable future a translator's NI will be in need (1). As a side-answer to item (ii) a little over 45% of all the surveyed noted a tremendous progress in text-to-speech transformation. This is similarly acknowledged by the T&I teams, even though the advance in the opposite direction, speech-to-text transformation, is not yet as impressive.

Item (iii) on our online survey asks whether human communication can become fully robotized? In-house and free-lance interpreters of various European Institutes participating in the CIUTI Forum Short- and long-term impact of artificial intelligence on language professionals (CIUTI 2017) almost unanimously insisted that machines are not to overtake human interpretation duties because of several reasons. What is of importance to us in this respect is that STEM, Natural Sciences, and Humanities researchers gave the same reasons answering survey item (iii), and substantiating their opinions.

The first reason, supported by almost 70% of the polled, was that since national ("human") languages are subjective constructs invented by groups to communicate with each other, the rules of grammar or verb conjugation are constantly evolving and subject to change. AI and machines, by contrast, function best when they deal with clear-cut mathematic rules that mandatorily require to make a decision.

Over 75% of the respondents stated that "big data does not have a big sense of humor". They are certain that jokes, puns, and innuendos (as well as nuanced cultural references) are among the hardest information bits to get over the language barrier. So far, only humans can transfer such messages across audiences.

The third reason, supported by 81% of the surveyed, was that any new technology ought to be seen as an opportunity to improve and enhance one's own individual human skills and professional qualities. Other reasons include the following.

Dialects (46% of respondents). All national languages have dialects that are the product of geography, history, or come to life as a mixture of several factors. Moreover, every speaker of a language has its own idiolect. When addressing others, any speaker must know the target audience, and baseline (better still, fundamental) knowledge about its culture. AI cannot do this.

Abbreviations (84% of the surveyed). A term or an abbreviation in one sphere of knowledge may bear a different meaning in another. ER in economics and banking is exchange rate, but ER in military lingo is electronic reconnaissance, whereas ER for a regular Briton is Elizabeth Regina. Perhaps, AI will never have the ability to understand all of the context, or make value judgments.

Figurative language, irony, sarcasm, poetry (47% of STEM researchers, 51% of researchers in Natural Sciences, 71% of Humanities, and 80% of T&I), are still out of a machine's capability as they cannot feel what humans feel when using a "human" language.

Our results are of preliminary character, and as mentioned earlier, the survey rolls on. As time goes on, and new young scholars hopefully join in our survey effort, we can expand our question-list and get respective feedback on what national languages are more/ less subject to AI permeation, as well as receive more intellectual revelations about NI and AI general interaction.

REFERENCES

1. CIUTI Forum (2017). Short- and long-term impact of artificial intelligence on language professionals. Who is afraid of AI in language professionals? Retrieved from: <https://cls-communication.com>