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The communicative-linguistic modes of artificial intelligence with a focus on justice

Abstract

The paper defines the technical and colloquial concept of Artificial Intelligence. It describes the changes in the technology of speech and writing from primary forms through secondary forms to tertiary forms in the present under the influence of AI. Several examples of tertiary forms are given, such as the rewriting of Imre Madách's drama *The Tragedy of Man*. Other examples include the emergence and role of AI in the judiciary and experiments in the Hungarian judiciary. The authors raise the question of the impact of tertiary communication on evolution (planned evolution).

Keywords: artificial intelligence, speech and writing technology, "third" (tertiary) orality and literacy, planned evolution, AI and justice

1. Conceptual delimitation of artificial intelligence

János Neumann, the mathematician who developed the theoretical foundations of the computer, and his colleagues early on raised the question of whether the concept of thought and reason could be extended to machines. Elemér Lábos (1979) also asked the fundamental questions: what intelligence is and if artificial intelligence exists, etc.

Strictly adhering to the original dictionary meaning of intelligence, artificial intelligence probably does not exist. (1) "The highest degree of cognitive activity, the faculty of reasoning." It is the activity that is bound up with man. However, in a broader or figurative sense, it is still possible to find meaning in nonhuman phenomena, e.g. (2) "The logical coherence that can be discovered in things and events. The meaningful purpose of something". Example: There is no sense in the wire (Éksz. 2003: 322). And further meanings are conceivable. In other words, although we may be reluctant to deny the human aspects of reason, the objectification of reason has already taken place, so that linguistically we can speak not only of (human) reason, but also of other, and therefore artificial, reason. As we have already talked about externalised memory (Szűts 2020), externalised intelligence, artificial, electronic brains (McLuhan 2001: 46).

Every technology (technical possibility) affects man in some way, what we call, following McLuhan, technological determinism. Techniques (technical possibilities) are man-made, social products and have already had an impact on human processes. The most important of these is that they have altered human perception, in McLuhan's words, 'if the new technology extends one or more of our senses into the world of society outside us, then in that culture new proportions between our senses will emerge' (McLuhan 2001: 55). To give just one example: pictography, printing and reproduction have transformed the auditory-tactile space into a visual one, and 'affect thinking by their sequentiality and linearity' (Benczik 2001: 321).

Cultural (technical) change therefore changes (expands or recedes) perception and with it the content of human reason. Obviously, it is important to make some restrictions. If reason as the highest intellectual faculty includes (and we believe it does) the world of emotions, then it is precisely in this area, i.e. in the field of spiritual life, emotions and social relations, that we can hardly speak of 'artificial' reason. We are thinking of basic human characteristics such as empathy, love, devotion, sacrifice, self-sacrifice, commitment, the joy found in activity, passion, individual and communal goals, which cannot be 'mechanised' (algorithmised).

Two concepts from the distinctly human world of emotions are worth highlighting. Altruism, or unselfishness, which is a form of behaviour ranging from helping others to self-sacrifice, which benefits the community but may be detrimental to the individual. The evolutionary advantage of homo sapiens was provided by the self-sacrificers, the parochial altruists; its intergroup continuators are the extended altruists (heroes, role models) (Csepeli 2023: 198–200). The other is enthusiasm, which is the self-indulgent delight, enthusiasm, adoration resulting from emotional identification, high spiritual enjoyment; it includes phenomena such as epiphany (shock, rapture, specifically love or enchanting spectacle), catharsis or cathartic experience (experience of experience, purification), and flow (the immersive experience of an action or event). Moreover, they are interconnected, as Márton Szabó (2022: 153) writes:

> "it is not only the experiential, cathartic experience of works of art that has an epiphanic character, since such events also happen in everyday life... And it is through such epiphanic experiences that people gain in experience, for example, they become wiser" (people).

To illustrate how complex these phenomena are, I quote Béla Hamvas' (1997: III/102) reflections on enthusiasm:

> "What a strange intoxication this is! We can somehow understand that one becomes intoxicated, say, by power and blood and wealth and, say, beauty, if one falls into enthusiasm and goes mad with power or bloodshed or villainy, say, music or poetry or thought, we can even understand if one becomes ascetic and fasts and prays and goes into the wilderness or teaches".

Csaba Gaál (2020: 33), a medical doctor, in a linguistic treatise, considers the term artificial intelligence to be misleading in several ways. On the basis of medical examples, he believes that what is today called high-tech is best described in Hungarian as smart. It would be sufficient to call the most technically advanced solution a smart computer (smart computer), along the lines of the smartphone. Csaba Gaál, as a doctor, also raises serious moral questions about artificial intelligence:

> "who ultimately decides to what extent the machine is responsible for its decisions, what the doctor should accept, and if he is wrong, can he rely on the computer? What if the machine is right? What does the machine know better than the human being who gives the instructions? Is its role supportive, auxiliary or autonomous, replacing the doctor? Is the legal background regulated?"

The questions raised in medicine resonate across all fields.

2. Technological changes in speech and writing

The anthropological evolution of human language has entered a new era. At some point – perhaps 1 million years ago or 500,000 years ago, nobody knows exactly – articulate human speech began to emerge from basic needs, from pointing, from primordial sounds, from musical expressions, and its main characteristic is abstraction, the ability to convey meaning. At least a million years of evolution, perhaps 100 to 50 thousand years ago, led to articulate speech comparable to what we have today. Not so long ago, perhaps 5-7 thousand years ago, the possibility of recording language, of writing, arose in connection with memory and the preservation of tradition. First, objects and concepts were drawn, this was pictography, and then, through a process of abstraction, we arrived at syllabic and alphabetic writing. The spread of literacy took thousands of years and was given a huge boost by what McLuhan called the Gutenberg Galaxy. And although the fight against illiteracy has been an almost universal agenda since the Enlightenment, even today 20–30% of the world's population is illiterate, i.e. actually or functionally illiterate.

Let us not forget: the process of writing down speech was a thousands-of-years old one.

In the second half of the 19th century, it became possible to transmit speech (telephone) and record it (gramophone); but it was only in the 20th century that these techniques were refined and massively disseminated. Transmitted and recorded speech is no longer natural speech, as defined by Walter Ong (1982), but so-called secondary verbalism. This is because it does not require presence (telephone) and the same time (recorded speech); it is also characterised by a different speech strategy.

Following the example of secondary literacy, I have called the new literacy that emerges spontaneously during the informatics turn and develops as a result of the new literacy. This created a system that seemed complete. But even as I looked at it, I could already foresee that other forms of linguistic-communicative existence might emerge. With the impact of artificial intelligence, the manipulation of speech and writing, i.e. speech and writing created by machines, represents a completely new quality. The name for this has not yet been coined; for reasons of systematicity, I have previously suggested the term tertiary speech and tertiary writing (Balázs 2023: 85, 102, 129). This is how the whole system looks like:

(primary) BESZÉD	(primary) WRITING
secondary (transmitted, recorded) speech	secondary (new, spontaneous) writing
tertiary (artificial) speech	tertiary (artificial) writing

Before defining this tertiary speech and literacy, which is our subject, let us look at the secondary verbal and secondary literacy that precedes it and which we all already experience.

Secondary verbality

Walter Ong calls the verbalisation of the telephone, radio and television secondary verbalisation. This is a new phase in the history of communication technologies, i.e. it follows primary orality, literacy and thus secondary orality (Ong 1982: 136). Primary orality is the use of spoken language, which is lived and spoken, and which takes place here and now, either perceptually or between present partners, and is characterised by monologue and dialogue. Secondary orality is dialogue with the interposition of technical devices. Its first forms were the telephone, the phonograph (recorder and player), the gramophone (record player), then the tape recorder and the cassette recorder, and, in the field of broadcasting, the telephone announcer, radio, television

and, later, their digital versions, mobile communication. Secondary orality can be entirely spoken (telephone), but it can also be the reading, 'reciting' or 'retelling' of written (or digitally recorded) text. The 'voicing' of written text, i.e. reading it aloud, is a technique that needs to be learnt. In secondary literacy, the technical device used influences – limits or extends – the possibilities of communication. The communicative-linguistic problems of secondary literacy: unnatural pronunciation due to reading, mispronunciation. Whereas primary speech is natural and spontaneous, secondary speech is often planned and contrived. This includes the use of spoken language in the media, where the problems of pronunciation and phrasing of text are many and varied and different from those of spoken language, which is spontaneous.

Secondary literacy

Digitisation (the IT revolution) at the end of the 20th century gave rise to secondary literacy. It has its origins in the typewriter and its derivative, the typewriter, but it is really the computer literacy of the information age that is included here: written 'language' used primarily in private or in social media, using a computer and word processing software, or on mobile phones and smartphones. A specific and dominant technology between 1995 and 2015 was the sending of short text messages (SMS) via mobile phones. I have called this literacy, based on Walter Ong's (1982) system, secondary literacy (Balázs 2005: 38–9). Secondary literacy developed independently of the official, accepted, standard (in our case: academic) literacy. It first appeared in children's short text messages (SMS) on the phone, and one might have thought that the technological limitation (160 characters in SMS, 140 and then 280 characters on Twitter) was the reason for the development of this abbreviated language. But later it appeared in almost every private and sometimes more public genre of the Internet: chat, msn, blog, post, comment, reel, snap ('disappearing images', a briefly visible image or text), tick-tock (short, mostly humorous comedy, dance, dubbing and talent videos), Internet meme. Today, in communities and subcultures large and small (e.g. internal corporate mailing lists), it is the only form of writing used by generations of adults in the IT world. As it becomes more widespread, it is gaining ground and in many cases competing with official (academic, school) spelling and orthography, in effect trying to replace it.

Secondary literacy is not simply bad, broken literacy. If it were bad, badly written, it would not serve understanding. It is possible that the quoted texts are not understood by everyone, but in the community, they can serve communication without hindrance, i.e. they can lead to mutual understanding.

If this is the case, it also means that this writing system, this system of signs, is governed by community rules (let us call it a kind of grammar, not a formal, non-written rule). In other words, simplified, distorted forms of language are created according to linguistic rules agreed upon by the community, and these rules are known to the communicating parties. Otherwise it is not possible for them to understand each other. Secondary literacy is multi-layered: some texts are close to traditional literacy, while others are completely different, using unusual punctuation and abbreviations. The essence of secondary literacy is therefore: a new functional literacy that develops spontaneously through rules. What is interesting is that today's children acquire it faster and more quickly than so-called first (school) literacy. Secondary literacy is now the literacy learnt as first literacy, and for many it is the only literacy, because primary (regular) literacy is not acquired.

3. Towards tertiary verbality

The basic idea and prototype for tertiary speech was the talking machine created by Farkas Kempelen in 1791 (URL1). But the real talking machine would not appear for almost another two centuries, until the information revolution (1990s). After the experiments, the first public trial was the digiton (digital loudspeaker), which could be heard in railway stations. This was followed by chatbots and other speech-generating programs.

The chatbot, or talking (chatting) computer, is a step towards independent text generation, and its literary predecessor may be the part about the Bulgarian guide in Dezső Kosztolányi's novel Esti Kornél. The protagonist does not speak Bulgarian, but he has a long (machine-like) "conversation" with the Bulgarian guide.

The possibility of computer-generated speech (speech synthesis) is now considered the third form of verbal expression. There are two versions of this: one uses an existing set of input, the other "interprets" and composes the text itself. Synthesised speech, i.e. speech read out by a machine, suffered from 'teething problems': the prosodic (musical) properties of the text were generally not valid, the stress and pronunciation relations were not adapted to the message, a given sentence always sounded the same, there was no discernible variety. A well-known and typical example is MÁV's so-called digiton (digital voice-over) system, in which the computer assembles separate, isolated accent elements, making the text jumpy and interrupted. (When a particular piece of text is no longer in the set, the live voice is always heard). However, these errors are now eliminated by more sophisticated

programmes. Automated text reading systems can be used for a variety of purposes: telephone customer service, reading news, reading PDFs, reading on-screen or audio (accessibility for the blind and partially sighted, but audio book functionality for everyone), talking clocks, kitchen scales, maps, and even newer cars can give drivers voice guidance. The latest online multi-voice text reader, which can read text in Hungarian and other languages, is an artificial intelligence voice synthesiser that uses natural-sounding voice generators to convert text to speech and can even add narration to video material URL2).

Tertiary verbosity includes live word translators. Programmes are already available (e.g. built into mobile phones) that can translate from one language to another instantly, online; that is, between two people who do not speak each other's language, each can interpret what the other is saying in his or her native (or best known, preferred) language. One of our earlier predictions seems to be coming true: online translation tools can replace language learning – which can save a lot of time and convenience, but can also lead to a loss of exposure to 'other' ways of thinking, worldviews and (perhaps) people.

4. Towards tertiary literacy

A text generator uses artificial intelligence and complex algorithms to create written text. The text generator focuses on the key concepts and words in the text. The essence of text generation is that the initiator starts a text and then allows the natural language processing model to generate the rest of the text, of any length, in the spirit of the initial input. Another option is to transcribe live speech. Today's commercially available text generation programs can transcribe live speech and even read it out later. So they write and speak (tertiary literacy and verbalism in one).

Computer-generated text is a new form of literacy, tertiary literacy. In 2023, chatGPT (or chatgpt in Hungarian), which can generate text in response to given questions and instructions, bursts into the public consciousness. The first attempts are sometimes amusing, but more often deeply thought-provoking. Sometimes the chatGPT produces only clichéd, sketchy, misleading or meaningless text due to some incorrect data or search; it may even politely inform you that its knowledge is limited to certain things and time periods. At other times, however, it is quite accurate and to the point. Some people believe that text generation will become more widespread in practical genres. The programme can easily extract the gist of a long text, making it suitable

for drafting and excerpting (memos and minutes may be in high demand). A text generator works best when the genre is as general as possible. You're said to have written an opening speech for an exhibition for a minister (and the people attending the opening didn't find out). Everywhere you go, you hear that a number of school and university seminar papers (perhaps even theses and dissertations) are suspected. Of course, text-generating programs include translation programs, which have long been developed separately.

The program can write in the style of a given author: for example: prose in the style of Paul Graham, drama in the style of Shakespeare, Wikipedia article in the style of a given author (URL3). The creativity of the programs is shown by the fact that they have written the XIIth and the half of Madách's Tragedy. (Note that Frigyes Karinthy has also written the 16th colour in the traditional, i.e. primary, writing style URL4). The roles are Adam the engineer, Eve the kindergarten teacher, Lucifer the marketing consultant. The conversation is about sceptical people being persuaded by Lucifer about the omnipotence of artificial intelligence, but they refuse to be seduced. Eventually, the Lord sorts out the chaos, assigns tasks, and the humans continue to seek the right path. The 12th and eleventh colours indicate a future which may lead to a time when man will not be needed as much as he was in the Phalanx, since the machine will do all the useful work for him.

Adam:
Mark my words, artificial intelligence,
How many areas it can help.
Machine learning in medicine,
It helps diagnose rare diseases these days.

But it's not just in health that we can see the benefits,
We can also make progress on energy efficiency.
Resource use optimised by MI[1] ,
It can help protect our environment, oh great treasure. [...]

Lucifer:
Adam, can you hear what I'm saying?
Energy, medicine are just icebergs,
Put the machines in complete control.

[1] AI – artificial intelligence

Just think of the transport, how wonderful it would be,
If our leadership could be entrusted to artificial intelligence.
It would filter out human errors, accidents,
We would sacrifice for the safety of our lives (URL5).

5. Partial summary

The evolution and stratification of human communicative life forms is illustrated in the following table. Speech developed first, followed by writing to record it. Speech is primary, writing is always secondary to speech. Both language and writing are stratified. Speech was spontaneous, colloquial and rhetorical; writing was the same, but the process was rather reversed. In the 20th century, communication technologies led to the emergence of secondary orality and secondary literacy; in the 21st century, today, artificial intelligence is leading to the emergence of tertiary orality and tertiary literacy.

1 M –100 E year	SPEECH (primer)	
5000-500 years		WRITING (secondary)
	1. spontaneous, natural ways of speaking	1. elevated, artistic writing
	2. colloquial speech	2. colloquial writing
	3. elevated, artistic, rhetorical speech	3. lower case scripts
	technological change/digitalisation/information technology	
20th c.	secondary verbosity	secondary literacy
21st c.	artificial intelligence	
	tertiary verbosity	tertiary literacy

6. Artificial intelligence in the justice system

In the light of the above, it is worth taking a brief look at the state of AI in the justice sector. This study can be very instructive because of the central role of text processing in this area, which affects a wide range of society.

Currently, one of the most controversial issues related to the use of AI in the legal field is whether AI can be used in court proceedings. One of the main arguments of opponents is that the use of AI violates the right to a fair trial (Dymitruk 2019: 27). Opponents' arguments are often motivated by fear and lack of knowledge, and their arguments remain at the level of generalities, which shows that the majority is not aware of the actual

principles of operation of AI systems currently used in the justice system. Uncritical proponents of the use of MI in the courts focus on the efficiency gains that it can bring and argue that in order to achieve efficiency gains, at least initially, the risk of violating a fundamental right, such as the right of access to justice, must be taken (Roth 2016: 1–48).

6.1. Current AI software used in the justice system. The work of the judiciary consists of well-defined subtasks. In the courts, the allocation of cases is organised by type of case, i.e. a given judge usually hears the same type of cases and thus follows a well-established procedural protocol (seeking answers to the same questions) for a large part of the cases. The most time-consuming part of judicial work is searching through previous decisions, finding and processing case law. These are essentially tasks of text analysis and processing, for which AI can be of considerable assistance to all actors in the judiciary.

The AI software currently used in courts can be divided into three groups (Kálmán–Kiss–Szentgáli 2022):

1. AI software to support certain aspects of judicial work,
2. AI software that makes suggestions for a judge's decision, but does so under human control, and the presiding judge can easily disregard its suggestions,
3. AI software that only makes procedural decisions autonomously, but does not decide on the merits of the case (e.g. in constitutional court cases, human rights court cases, admissibility is decided autonomously according to criteria previously defined by judges).

ExpertUS, used in Mexico, is one of the oldest pieces of AI software used in the justice system. The software is used in family law cases to determine whether a person is entitled to alimony and, if so, how much. To do this, the software uses previous family law case law, i.e. it compares the facts of the application in the case with the facts of cases that have already been decided and, based on the results of previous applications, suggests whether the circumstances that justified the award of maintenance in previous cases are present in the current case. In determining the amount, it will also take account of previous case law and compare it with the submissions made by the parties in the proceedings and in the application in the case (URL6).

The Colombian Constitutional Court receives around four thousand applications for guardianship each year. The Constitutional Court is overwhelmed with the task of reviewing these cases, making preliminary recommendations on admissibility and whether the legal requirements for

guardianship are met. To address this situation, an AI system called PretorIA has been developed. Based on previous court decisions in guardianship cases, a set of 33 criteria has been developed, as many as possible of which are necessary for admissibility and for the court to grant the application. The tool interprets the texts of previous judgments and compares how many of the 33 pre-defined criteria are met in the pending case and can categorise them.

The Brazilian justice system uses an AI called Radar. Although a detailed description of the software is not available, it is known that Radar, like PertorIA, interprets the text of the pleadings received by the courts and deduces the type of case and the applicable law based on the terms used in the pleading (URL7). The tool analyses the previous case law and makes a recommendation to the judge in charge of the case, which the judge can accept or ignore at his discretion.

Malaysia has recently been at the forefront of the use of AI in judicial decision-making. Extensive development has been undertaken to use AI to carry out certain parts of the judiciary's functions. The tool made its debut in February 2020, but at that time it was only used in cases involving drug possession and sexual offences (Juriah–Shurkriah 2020).

The tool is called the Artificial Intelligence Sentencing System (AISS). The first manual for courts on how to use the tool will be available in 2021, and work has begun to expand its scope to include crimes other than those mentioned above, such as theft, traffic offences, and others. The AISS can be used in criminal proceedings to calculate the sentence to be imposed. The developers of the tool have created a questionnaire to enter relevant information about the defendant (e.g. age, marital status, social background, housing, income, criminal/non-criminal record). The tool then calculates the sentence based on previous case law. The judge is not obliged to use the MI tool in the trial and, if it is used, is not bound by it in reaching a decision.

6.2. AI experiment in Hungary (Orosz–Csányi–Nagy 2021) In Hungary, the company Montana carried out a study in which they tried to classify almost 170,000 court decisions into legal categories, i.e. different types of cases. To do this, they first developed an index of 170 different categories of cases, on the basis of which the cases were classified. The complexity of the task was that a decision could have multiple labels and be classified in up to 3 or 4 case categories. A dockerised artificial intelligence application was used to solve the problem. Since a decision could be given multiple labels, this categorisation was part of the multi-label classification task. As a first step, the Montana researchers used binary classifiers, i.e. they created a separate label classifier for each label. They chose this simple approach because none

of the decisions had labels, so the first 'training set' had to be 'taught' by the researchers themselves using regular expressions and manual checking. A method based on term frequency (Term Frequency – Inverse Document Frequency [TFIDF]) was used to convert the texts into mathematical values. The method consists of counting the frequency of each term in the whole document (the number of times a term occurs in the whole text). This so-called Bag of Words method does not check whether a given word is a keyword, but only provides information about the relevance of a given term for the whole text based on its frequency of occurrence. The term frequency is a ratio that shows the proportion of occurrences of a given term in relation to the total number of terms in the document. So if a word or phrase occurs 15 times in the whole document and there are 500 different words/phrases in the document, then the frequency of the phrase is: 15/500=0.03. During the "teaching" process, 4 different machine learning algorithms were used and their results were compared in the research. The performance of these algorithms was compared for the "dismissal" case documents by examining word combinations, word pairs and combinations of these. Based on these results, the researchers concluded that the best performing AI system was the Support Vector Machine AI system with a linear kernel.

The lesson learned from the research was that a sufficient number of student data is needed to develop a case categorisation software that works effectively.

Overall, it can be concluded that the current state of the art is far from a so-called robotic justice system. Instead, AI systems are being developed and deployed that participate in the work of the judiciary under constant and strict human control, i.e. they do not replace humans or take over their role (Scherer 2016). Therefore, the current presence of AI systems supporting the work of the courts in various ways is typical of the judiciary (Ződi 2018). All AI tools essentially perform text analysis based on previous case law, evaluating the text of the pleading and the statements made in the proceedings according to a set of predefined criteria in a given case type. They can categorise the terms used in the pleading by case type, infer the law applicable to the proceedings from the previous case law, extract the most relevant previous decisions in the case and use them to suggest the decision to be taken.

7. Possible consequences

Technological innovations have always had an impact on man; and in all probability they have influenced evolution. We speak of biological evolution,

then of cultural (linguistic) evolution, which is only a stepping stone for man; and some believe that a third level is taking shape, with unpredictable consequences: planned evolution. "Planned evolution is not intelligent evolution by creation, but evolution manipulated, controlled, etc. by man-made artificial intelligence," I wrote earlier (Balázs 2023: 22–30).

Levels of evolution:

planned?
cultural
biological

Makind has not only used the inventions and techniques it has created, it has also abused them. Therefore, there is good reason to believe that the current phase of history is the most dramatic change humanity has ever experienced. As György Csepeli (2023: 14) cautiously puts it, "If humanity fails to recognize the evolutionary opportunity in the artificial intelligence applications made possible by the new info-communication technology, then undesirable changes in social and natural reality will add up, and if the interactions are very unfortunate, then relapse is inevitable." Örs Szathmáry (2023; URL8) is more pessimistic. The total collapse of humanity is imminent, and if this happens "the world we have created around us will cease to function, and the world we are sinking back into will be some strange mixture of the Stone Age and the Middle Ages" (URL7).

The new language and literacy (possible synonyms: generated linguistic, smart linguistic?) can create a new situation in text production, text learning, text transmission; its legal consequences (unforeseeable), but it raises, for example, the question of authorship, which can lead to dozens of other questions (by the way, there were and still are "authorless", i.e. community authors in culture). The problem of original and non-original writing extends to all pedagogy, from primary school to university and adult education. The new linguistic generation raises the question of the disappearance of certain professions. There will be no need for secretaries and many administrative tasks, which may not be a problem, but journalists, even writers, poets and dramaturgs will be in trouble, and the cultivation of many artistic disciplines (visual arts, music) may also be called into question. The first book of Hungarian poetry created by artificial intelligence has already been published. Will AI write literature? And if we, as modern intellectuals, accept machine-generated documents, writings, even works of art, will we not be overcome by our human nature's tendency to superficiality, evasion and thoughtlessness?

Since text production is part of the human thinking mechanism, it can have serious (tragic) consequences for thinking itself. Are we losing our minds? How many non-writing, non-reading people take in texts on some level, but only superficially, and cannot produce them. The consequences are as follows: a loss of understanding, difficulty in expressing emotions, an inability to deal verbally with conflict, perhaps a surrender of our very humanity, a return to a kind of pretextual world, perhaps prehistoric...

It is important to emphasise what must remain human. To quote the Nobel Prize-winning biologist Salvador Edward Luria, Elemér Hankiss (2014: 420–21) says: "It is as if evolution had written into the human brain a basic program that opens up to man the most intimate sources of optimism: the arts, pleasure, hope, comradeship, the self-confidence of the spirit and the noble arrogance with which he throws himself into this unprecedented human adventure". György Csepeli (2023: 21) also stresses that what remains for man is creativity, imagination, self-expression, art and, as Hankiss says, "the belief that human life is what has and will have meaning".

> "To create something out of nothing, to build constellations out of symbols, perhaps out of nothing, to build a world of freedom, reason and dignity in a silent and empty universe: that, I believe, was a work worthy of man. All this is closely connected with language, and not only with language, but also with the so-called non-verbalisable tacit knowledge" (Mihály Szívós 2017, following Mihály Polányi, Balázs 2018a, b)

which, according to our current knowledge, cannot be the domain of artificial intelligence (since it cannot be verbalised, cannot be algorithmised). In conclusion, the world of emotions, fantasy, creativity, creation, joy, happiness, faith and the arts remain the world of man.

And if we consider that language, even according to traditional, mechanical theory of communication, has at least three main and three secondary functions, it is hard to imagine that artificial intelligence can take over all of them. Among these functions, artificial intelligence is only limited in its ability to perform the referential (reality description), conative (calling) and fatic (contact) functions. For example, it can greet more politely than a human, it can obviously inquire, infer and react to certain states of mind from the answers, but in the absence of human empathy and sensitivity it remains artificial (even if the human party "believes" that the relationship is real; just as it believes the "realities" of the virtual world). The question for me is to what extent artificial intelligence is capable of performing the emotive (expression of emotion), the poetic or aesthetic, and the meta-

linguistic (code-referencing) functions. And then we have not yet mentioned such basic functions introduced by anthropological linguistics as: reflective, heuristic, imaginative, creative (play), sacral, velative (concealing) (Balázs 2022: 63–68). This is because language is not just the communication of information, but (human) behaviour, with its complexity, unpredictability and never perfect comprehensibility. It is rarely heard from a linguist, but it should often be said that language is not just a means of communicating ideas, and that linguistic meanings are so complex and variable that perfect understanding is not even possible; it is a human miracle that we somehow understand each other through imperfect communication. That is, if we do.

It is worth recalling McLuhan's earlier warning that 'it can only be a disaster if we fail to recognise the causal links and effects of the technologies we create' (Benczik 2001: 331).

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