

Education Day Dedication Theme:

AI And EDUCATION: Preserving Human Agency in a World of Automation

Dr. Serpil Tunçer

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INTEGRATING AIs to EDUCATION, or INTEGRATING ETHICAL CODES to AIs?

Margaret Atwood highlighted: “War is what happens when language fails.”

“A word after a word after a word is power.”

Dr. Serpil Tunçer

A child’s education begins with the language of the community into which s/he is born. Beginning with the acquired language in childhood, till adulthood, the individual is enclosed with a defined reality within which individuals in a community are placed. All the key points of establishing a system of equal rights of participation, democracy, and pluralisation (cultural diversity) are embodied in this culture of a community. People live by really hopeful stories (narratives), which are subject to distortions and irreconcilable

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interpretations because “ethics” is, in its essence, ambiguous and solving humanity’s problems can frequently cause conflicts between communities or nations.

For these reasons, the focus should be on the reality represented by our language, our culture. And, naturally, the question is, “What are the underlying socio-linguistic systems (the language, metaphors, discourses of modernity) which function as upbuilders of social-hierarchies among people?” “Is the education system consciously employing this socio-linguistic system?” In this context, what is education for? If education is for constituting responsibility and persuasion of the common good throughout ethical rules and practices, education requires to employ technology, - the AI and other digital processes – based on this ethics of responsibility, common good and respect to the rights of other living entities (animals, plants, as well as humans). The problem is not about integrating AIs to education; the problem is about the proper AI coding technology to meet the needs of a pluralist, democratic, responsible and ethically grounded society.

The language used in programming an AI is as much important as the language acquired by a child in the sense of human beings’ creating the right and inclusive values for the common good and a sustainable life on Earth. However, are academicians of philosophy, sociology, psychology consulted in order to programme an AI about social problems of humanity? AIs are mostly coded for bureaucratic procedures by technical intellectual workers and computer programmers. If, for example, the language coded in an AI seems to be unaware of an anthropocentric world-view, this AI or let’s say, robot can cause the death of animals – cats, dogs, birds – out in the streets. Another example is that if participation is indispensable for democracy and if AIs are to replace almost to fifty percent of the employee at workplaces, then, how will participation be realized if people stay home instead of work

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offices? AIs shouldn't be allowed to hinder social participation and solidarity, since man is ontologically, a social being.

So, there is a strong connection between the language (culture) of a speech community and the computer linguistics that will be created as derived from that natural language. If the natural language has been constituted as the ground for a sustainable culture, the so said culture is then, expected to view the world as an organism with complex kinship relationships, suggesting that all living things constitute the different parts that are part of a larger life system. Sustainable cultures are prone to seeing things through the lenses of family and community rather than the individual. The benefits of the community is considered over or equal to the benefits of the individual. In contrast to the anthropocentrism of modernity, sustainable cultures are ecocentric. That is, nature is seen as the larger whole involving all living entities, all deserving equal respect. This ecocentric-sustainable view is inevitably maintained within the language, thought, and culture.

So, in Western or American schools, regarding the language employed in education, teachers need to develop awareness about how the language contributes to the degradation of some human communities and how an ecocentric system could contribute to preventing these prejudices. Teachers can foster students to comprehend the hidden meanings in metaphors or connotative discourses. If teachers keep a close eye on the language used in class, with discourses of “logic of domination” and “value hierarchized thinking” based on anthropocentrism, individualism, and racial, and gender-discrimination, which involve the “taken-for-granted” world view, they can disclose the students’ unfair – value-hierarchized language use in classroom materials, and the everyday interaction in schools, manipulating the students to identify what is hidden in various metaphors. Teachers can also ask students

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pay attention to the negative words used to degrade some other cultures and ask them to make a list of them to Show how they are interconnected. Even those well-intentioned teachers need to have self-control about the obscured ways causing them to unconsciously treat boys and girls differently in classrooms based on differing expectations for each. Such unconscious treatments might have a hidden impact on classroom dynamics. As a result of researchers' close observation of long times, many "taken-for-granted" ways of gender discrimination among teachers and students, were disclosed. A "syntax of sexism" about the weight of which most teachers and students were unaware, was discovered.

Boys in elementary, middle and high school easily acquire the false notion of that aggressive behaviour as considered by society, normal for them, while girls have to keep silent or pay for speaking out about those behaviours. The curriculums, class-school materials convey the very hierarchized value system throughout the language involving various invitations for race, gender and class domination, which turn students into the performers and reproducers of these power relations. Girls, as the fragile side in gender-discriminated relations, turn into quiet, passive figures who adopt an "other-than-intellectual definition" of themselves. This, might be called a "pedagogy of shame".

HOW ARE COMPUTER SCIENCE AND LINGUISTICS RELATED?

Linguistics and computer science both deal with the recognition and generation of languages. They have underlying structural, mathematical similarities to justify the common term "language". Linguistics is about the study of human languages. Computer science includes the study of formal languages which can be used to model natural languages, and that is done in computational linguistics, a branch of linguistics. Computer science also has a part called practical computer science that focuses on mostly non-ambiguous (programming)

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languages. Programming languages are languages for the communication between humans and machines, and they are designed (rather than having evolved) to avoid ambiguity. Computational linguistics is the interdisciplinary field concerned with the statistical or rule-based modeling of natural language from a computational perspective. Linguists that are not computational linguists also use computers for storing, indexing and retrieving examples from corpora, large collections of written or spoken human language. These are used by lexicographers to write dictionaries and by syntax/language teaching experts to write grammar books (both for learners, for general reference and for linguistic study/research).

Humans would like it if computers could comprehend and act on commands given in native human languages. Figuring out how to accomplish this requires a combination of CS research in machines learning algorithms and NLP and linguistics research into semantics, sociolinguistics, and cognition.

Natural languages are generally considered a poor choice for programming computers for several reasons:

Ambiguity: Natural languages are often ambiguous, meaning that a single sentence can have multiple interpretations. For example, the phrase "I saw the man with the telescope" can imply different scenarios. In programming, ambiguity can lead to errors and unpredictable behavior.

Complex Syntax and Grammar: Natural languages have complex and varied syntax and grammatical rules that can change based on context, culture, and region. Programming languages, on the other hand, have strict and clear syntax that must be followed to avoid errors.

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Context Dependence: The meaning of words in natural languages often depends on context, which can be challenging for computers to interpret consistently. In contrast, programming languages are designed to be context-free, with clear definitions for functions, variables, and operations.

To add more to computers' difficult interaction with natural languages, it is a clarifying fact that a child is perpetually dependent on an emotionally affirming, communicative other (an adult) for the maturation of its neural and linguistic development (Lüdtke, 2012a). Therefore, the acquisition of linguistic meaning requires an emotionally supportive, didactic context (Lüdtke, 2012b). Hence, peer interactions where children are in emotionally meaningful relationships, play a significant role in language acquisition. However, poor computers and AIs; they do not have a childhood phase. They are expected to adopt the natural languages semantically and pragmatically, all at once... Still, we might see models that can better understand the context and intent behind language use, enabling more accurate and context-aware responses. We might also see models that can generate more natural and human-like text, enabling more engaging and immersive interactions with AI systems. As our ability to understand and generate human language improves, we can expect to see AI systems that can interact with humans in more natural and efficient ways. Linguistically based retrieval methods, taking into account the meaning of sentences as encoded in the syntactic structure of natural language, promise to be a way out of the ambiguities AIs are facing. The majority of the problems are awaiting hard work: How to make computers understand or create new metaphors, metonymies or other figures of language? Is it possible to develop natural language systems capable of producing lyrics or

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poetry on the same level as humans? Can we produce systems capable of assigning new meanings to syntactic elements that are immediately perceived as coherent by humans?

To conclude, the above mentioned facts show that there is a corresponding relation between the processes, a child acquires its native language and an AI is coded by a human language. It is really a hard work for parents and teachers to provide children with the discourses of respect and tolerance to diversity, beginning with man's relation to nature and the equality of all entities as a part of the nature. And encoding the algorithms of a human language to an AI involves specific risks of being unable to distinguish various meanings of a word, meanings of metaphors used by members of a speech community, in social life. There are still many more efforts required for improvement to allow humans to interact with computational devices, through natural language, in the same way that humans interact with native speakers of the same language. AIs provide potentially rapid and creative production processes in industry, health service areas, as well as education, but one thing is clear: AIs do not flourish "wisdom, morality and virtue" in students. Linguists need to make detailed studies on what sort of a linguistic system- a language should be coded within AIs, for personal self-regulation and also legal regulation.

SOURCES

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