PTOLEMY'S ALGORITHM: THE NEW AI PHYSIOGNOMIC

L'ALGORITMO DI TOLEMEO: LA NUOVA FISIOGNOMICA DELLA IA

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Double Blind Peer Review

Citazione
Nicolai, E. (2024). Ptolemy's algorithm: the new ai physiognomic. *Giornale Italiano di Educazione alla Salute, Sport e Didattica Inclusiva*, 8(2), Edizioni Universitarie Romane.

Doi:
https://doi.org/10.32043/gsd.v8i3.1121

gsdjournal.it
ISSN: 2532-3296
ISBN 978-88-7730-494-0

ABSTRACT
Ptolemy was *brave since he had a black and thick beard*. Physiognomic is the art, close to medicine, that would infer psychic traits from the physical features and from the behaviours. A way of *reading* people. Today, Ptolemy would be examined by an algorithm in interrelationship with the AI, and the results would be incorporated to Big Data. AI plays the role that once pertained to philosophy: *based on some information, the ability of deducing other information as a consequence*: our emotions.

Tolomeo era coraggioso perché *aveva la barba nera e folta*. La fisiognomica è l'arte, vicina alla medicina, di dedurre i tratti psichici dalle caratteristiche fisiche e dai comportamenti. Un modo per leggere le persone. Oggi, Tolomeo verrebbe esaminato da un algoritmo in interrelazione con l'IA, e i risultati verrebbero incorporati nei Big Data. L'IA svolge il ruolo che un tempo spettava alla filosofia: *sulla base di alcune informazioni, la capacità di dedurre altre informazioni come conseguenza*: le nostre emozioni.

KEYWORDS
AI, physiognomic, body, cognitive labour, EI
IA, fisiognomica, corpo, lavoro cognitivo, IE

Received 30/04/2024
Accepted 14/06/2024
Published 24/06/2024

Introduction

> «There is another way of practising physiognomy, but no one has experimented it yet. [...] But this method is suitable above all for those who already know philosophy: for we must assume that it is proper to philosophy to be able, on the basis of certain information, to deduce other information as a consequence» (Pseudo Aristotele, 2001:71-73).

Mentioning Ptolemy and the Almagest may ring a bell, but not many will know he was brave since *he had a black and thick beard*, or that *he had a scented breath and subtle feet*. We find his "physiognomic portrait" in an ancient Arabic manuscript and in the *cinquecentina* that preserves the Latin translation of Gerard of Cremona. Reading people: their bodies, their physical features and similarities with animals, astrological influxes, to infer their behavioural peculiarities; all this was the ancient science of physiognomic, that postulated the interdependence between people's personality and their external appearance and, therefore, the possibility to deduce psychological traits by observing physical and behavioural features.
In these modern times, with the irruption of the AI and the extensive use of internet and social media, we are at a turning point in capitalism: individualisation and data collection are progressively eroding the spheres of privacy and intimacy so to track down every action undertaken on the net and trace a broad personal profile. We are moving very quickly from consensus to surveillance, from observing and collecting digital data to manipulating emotions and directing choices.
We are to be given a new psychological digital identity formulated by an algorithm that observes our online behaviours to anticipate our thoughts, needs and desires in the real life. A new, *artificial physiognomic*.

1. Why reading people? Ptolemy's physiognomic legacy.

Physiognomic is the art, close to medicine, that would infer psychic traits from people's physical features and from their behaviours. A way of reading people: for example, we learn that *straight hair on the head indicate stupidity, or that big eyes indicate laziness*, etc.. Today, Ptolemy would be examined by an algorithm in interrelationship with the AI, and the results of its data collection would be incorporated to Big Data.
The AI changes the cognitive labour and erases body borders; it plays the role that once pertained to philosophy: *on the basis of some information, the ability of deducing other information as a consequence*. This essay analyses some aspects of this new artificial physiognomic.

We mentioned Ptolemy and his unexpected portrait: perhaps some will remember the Ptolemaic system, will sketch a reference to the Greek and Arabic astronomy, to the *Almagest*. But how many know, instead, that he was courageous because *he had a thick, black beard, his breath was perfumed and despite his thin feet*? (Nicolai, 2010; 2017).

Not many, probably; those who had a chance to read the Arabic manuscript of the Almagest translation of al-Ḥaǧǧāǧ ibn Yūsuf ibn Maṭar and the sixteenth-century Arabic-Latin translation by Gerard of Cremona (*cinquecentina*). Gerard's translation, as we find in Kunitzsch's survey, is preserved in 43 manuscripts and, equally important, in the venetian *editio princeps* of 1515 (Nicolai, 2010).

Also, some might remember this ancient art, physiognomy, which flourished long before Lombroso. Ancient physiognomic is the art, the 'quasi-science' that, postulating a direct link between character and outward appearance, believes it can infer the psychological characteristics of an individual by observing physical data and behaviour, often incorporating a matrix of astrological determinism. While in classical Greek culture it was often considered close to medicine, among the Arabs in the Middle Ages it enjoyed autonomous and widespread popularity (Gersetti 1994, 1999a, 1999b).

On the wake of Greek and Hellenistic culture, in fact, from Hippocrates to Aristotle and the Anonymous Latin, characterological physiognomy, *'ilm al-firāsa* in Arabic, was widely diffused in the Arab world: placed among the natural sciences, inferred from individual somatic features and physical conformation the disposition and humoral inclinations.

There is also an interference, a stringent point of intersection, between physiognomy and astrology: the inference of the planets in the determination of someone's character and destiny means that their appearance is also modelled and informed by the influences of the planets and the signs of the zodiac, and therefore responds to strict laws, to defined and catalogued types.

Some ancient texts provide, even for those unfamiliar with philosophy, interesting and suggestive lists whereby we discover that "hair standing on end" indicates stupidity, or that "large eyes indicate laziness" (Ghersetti A., 1994, pp. 40-41) or that «Those who advance with long strides are generous and capable of obtaining the desired results; on the other hand, small and short strides indicate the ability to complete an undertaking, thriftiness, meanness, scheming deceit and a tortuous mind» (Anonymous Latin 2001:213).

Let's consider now the above-mentioned ancient Arabic-Latin Ptolemy's portrait, noting that both the ancient texts provide the same description: positive aspects alternate with negative ones, for example the average stature, the pale complexion

that was considered, like the dark one, a sign of cowardice but that, when interpreted as simply *white*, is to be considered positive; the broad gait (the long stride indicates efficiency), while the small feet are characteristic of a weak soul. He bears marks on his right cheek in the Latin version, on the left in the Arabic: according to the science that studied moles and skin blemishes (*'ilm al-šāmāt wa-l-ḫaylān*) their presence changed the right-positive, left-negative polarity, and this relationship in the two versions is therefore reversed. As we have seen, the thick, black beard is a positive sign (the shaggy hair indicates courage), while the teeth and the small mouth seem to lead to a negative sign. The way of speaking is defined by the Latin adjectives *bonus* and *dulcis* and their specular synonyms in Arabic, which have a positive sign (the grave sounds, and the loose tone, are typical of a calm disposition), and in fact define the opposite type to the irascible (*fortis, ire tarde se dabatur*). The stylised physical portrait ends here, and more purely character-related aspects are now presented, indicative of his healthy and exemplary lifestyle: dedicated to constant physical activity, moderate in food and frequently fasting, Ptolemy had fragrant breath (indicative of good health) and clean clothes.

For those who would like to read his portrait, I present here the related original passages both in Latin and Arabic:

Hic autem in statu moderatus fuit, colore albus, incessu largus, subtiles habens pedes, in maxilla dextram signum habens rubeum, barba eius spissa et nigra, dentes anteriores habens discoopertos et apertos, os eius parvum, loquele bone et dulcis, fortis, ire tarde se dabatur. Multum spaciabatur et equitabat, parum comedebat, multum ieiunabat, redolentem habens anhelitum et indumenta nitida. Mortuus est anno vite sue septuagesimooctavo.

وكان معتدل القامة أبيض اللون تالم الباع لطيف القدم على خدّه الأيسر شامة حمرا اللحية اسودها مفلّج لثنايا صغير الفم حسن الفظ حلو المنطق شديد الغضب بطيء الرضا كثير التنزّه والركوب قليل الأكل كثير الصيام طيب الراحة نظيف الثياب. مات وله ثمان وسبعون سنة.

(كتبه أمير كاتب بن أمير عمر العميد من كتاب أخبار بطلميوس.)

Fig. 1: Ptolemy's phisiognomical portrait (Nicolai 2010 p. 150)

Transl.: *He was moderately tall, white in colour, with a nicely shaped foot, with a red mole on his left* (in Lt. right) *cheek, a black beard, a small mouth, well-spoken,*

sweet-tempered, vigorous, not irascible, much walking and riding, little eating, much fasting, fragrant breath, and cleanly dressed. He died at the age of seventy-eight.

This example, briefly depicted here, highlights how relevant and important it was for ancient scholars of different cultures and epochs (in classical Greek, medieval Arabic and Latin) to draw a psychological and inner character profile from the external data, so that the author's physiognomic portrait even precedes, like in these cases, the contents of the books and treatises. There is a reason why we find Ptolemy's portrait preceding his astronomical study: his description would give a better understanding of his intellectual stature and would add value to his dissertation.
Prominent scholars and philosophers, in particular, would deserve this description: Aristotle, in one documented case when dialoguing with al-Maʾmūn, is even reported to have blue eyes.
Psychological features and emotional implications are still as fundamental as they were for the ancient scholars, but someone else is now observing us and paying attention to a diverse set of information and data. Moreover, there is a different approach to personality, emotions, and psychological features.

2. Consciousness and intentionality: borders between human and artificial intelligence.

Modernity has created a new physiognomy, that of the AI: an algorithm is silently observing all users on the internet, the *netizers*, and collects all the data of our online behaviour: what would be the modern portrait of Ptolemy when studied and analised by an algorithm?
The process AI follows differs from the ancient philosophy and science and is reverse to the one briefly described so far: from (online) behaviour to character, from a different set of external data to emotional intelligence and unconscious needs. AI does not care much of our appearance but is extremely eager to know how we perceive ourselves and what we might like and dislike, our interests.
It represents a new, inexorable physiognomy that silently accumulates information with the aim of profiling online users, that become purely and solely consumers.
It is useful for the individualisation of desires and emotions to induce new needs that private companies can anticipate and manipulate, making them a new source of potentially unlimited profit. Individualisation must not be confused with

individualism: «Individualisation is the result of a long process of modernisation that has led towards a second modernity composed of psychological individuality» and «the human signature of the modern era» (Zuboff 2019: 35-37; 33).
If Fordism and mass consumption are the emblem of the first modernity, individualisation is the more consistent sign of second modernity: «What began as a modern migration from traditional lifeways bloomed into a new society of people born to a sense of psychological individuality, with its double-edged birthright of liberation and necessity» (Zuboff 2019:35).
Its application to all goods and products suddenly appeared materialised on the global market and revealed to the vast community of consumers in 2011 in occasion of the launch of the Apple iPod.
Second modernity lays on a deep and crucial contradiction between individuality and its related demand for freedom of choice and the growing misuse of personal data by economics and politics.
We are now living in an era that Zuboff (2020:46) calls *third modernity*, that of surveillance.
While «The neoliberal ideology of individualism shifts all responsibility for success of failure to a mythical, atomized, isolated individual, doomed to a life of perpetual competition and disconnected from relationships, community, and society» (Zuboff 2019: 33), the use of AI by the hand of big corporations like Google seems to be targeting more and more personal data and online behaviours, responding to the market urgent need to find *means of behavioral modification* to force us to an *onlife* dimension (Floridi 2014). As per Floridi's neologism, *onlife* is a new dimension where the distinction between being online and offline is erased and floating: reality and digital are fluid and this also generates a new relationship between human beings and the machines.
If, as Harari (2021:77 et seq.) says, feelings are "calculations", "biochemical processes" that shape desires and choices, biological science on the one hand, and the algorithm and the AI on the other, analyse them remaining unperceived in order to manipulate them, anticipate them to the extent that it becomes impossible to make a choice independently and without it to be noticed and reported.
What Zuboff (2019:68,74) calls *behavioural surplus* is created: AI becomes a learning review system and a broad sensor of human behaviour and all the data are used beyond the service, become profitable, changing the *behavioral data reinvestment cycle*:

«Users provided the raw material in the form of behavioral data, and those data were harvested to improve speed, accuracy, and relevance and to help build

ancillary products such as translation. I call this the *behavioral value reinvestment cycle*, in which all behavioral data are reinvested in the improvement of the product or service» (Zuboff, 2019:69)

In addition to this, with the discovery of the *behavioural surplus*, data are used to create sources of income and profit, beyond the purpose of improving a service and machines take control over human behaviour and emotional intelligence.
Moreover, it must be pointed out the new technologies are not socially neutral. The fact that an increasing number of habitual actions and social interactions forcibly need a computer or the Internet to be performed generates a continuous flow of data that companies are eager to use to determine trends and intercept the potential personal needs of future consumers.
Algorithms do not interpret what *we think* but what and *how* and *what we feel*; they may manipulate the biochemical processes that shape our emotions, including those involved in our learning processes.
It is useful here to highlight that there is a sharp separation and distinction between intelligence and consciousness: machine might be *intelligent* but so far only sentient beings have consciousness. Nevertheless, there is a clear understanding that this is where machines and their developers are heading (Harari 2018:107-110). Machines and artificial intelligence are now increasingly improving their abilities to *read* human emotions through affective computing: some of them can actually have human-line reaction to specific impulses interacting with the environment, becoming Emotion AI.
Will machines and AI emulate emotions or even develop a sort of artificial consciousness, and how could this affect our emotional intelligence, the ways we experience real life and real relationships?
Modernity and AI seem to proceed at the same pace and, since the ’80 when it was first developed, AI has undergone diverse transformation and evolutions that mark different eras: it became more and more “intelligent”, from GOFAI, *Good Old Fashioned Artificial Intelligence*, as John Haugeland called it (Sloman, Fernbach 2018:86), incapable of common sense and merely calculating options to perform a pre-ordinated action, to “embodied intelligence” of today’s robot and devices that can react effectively to the environment and “learn” from its stimuli.
AI doesn’t have awareness and does not have (yet) an essential ability that defines the human critical thinking and reasoning process: it cannot share *intentionality,* «machines without the basic human ability to share attention and goals will never be able to read our minds and outsmart us because they won’t even be able to understand us» (Sloman, Fernbach 2018:146).

That is why self-awareness and sharing *intentionality*, id est consciously interacting in a collaborative community, might represent the best option we have for learning and overcome AI progressive achievements.
Facing this accelerating and arising challenge, pedagogy is increasingly questioning the potentials and risks of AI when applied in real life actions and dimensions or in the virtual net. Also, new technologies and AI find larger and larger application in the process of learning individualisation and in developing learning tools, especially after the pandemic event. Pedagogist are examining how these new devices and technologies are affecting the ways our brain functions and the way we feel and learn. During the pandemic the global scenario hosted many firsthand and on field experimentations:

«Experiential learning (Tarantino, 2018), the role of emotions in growing up and in the learning process, and the direct exposure to 'others' in the school/classroom community play a fundamental role in the definition of the self and in the self's growth in the social frame of reference but, with the closure and suspension of school activities in presence, these necessary interactions have been missing, imposing an urgent pedagogical reflection on the teaching methods and the real potentials of learning at a distance» (Nicolai 2020:40).

Experience and experiential learning are a fundamental in education (Romeo 2022), and experience and imagination in education are reflecting the opposite ends of our daily life dimension: we live in a real world and, also, in an online imaginative and imagined community where the images of the world can be easily *created*. These two dimensions often overlap.
Appadurai identifies two imagined world that reflect the *landscape of image*, the *mediascapes* and the *ideoscapes*:

«*mediascapes* refer both to the distribution of the electronic capabilities to produce and disseminate information. […] Mediascapes, whether produced by private or state interests, tend to be image-centered, narrative-based accounts of strips of reality, and what they offer to those who experience and transform them is a series of elements (such as characters, plot, and textual forms) out of which scripts can be formed of imagined lives, their own as well as those of others living in other places» (Appadurai, 1996[2010]:35).

From these strips protonarratives and narratives are created of *possible lives*.

When talking about the *ideoscapes,* instead, they «are also a concatenation of images, but they are often directly political and frequently have to do with the ideologies of states and the counterideologies» (Appadurai, 1996[2010]:36).
While the real experience is situated, the landscapes of images are fluctuating and volatile. *Possible lives* are taking over the sense of reality and gain credibility and credit from their capabilities of spreading widely and quickly, receiving large consensus, more than for being true or desirable.
Now, the virtual community with its fluidity is a new interlocutor that, after the pandemic, has increased its numbers and its participation into the education sector, especially thanks to the irruption of the mobile phones and tablets in the school environment and the use of online resources and ICTs.
It is not just the use of those tools that might change our behavioral and reasoning processes, modifying the concept of *affordance* (Gibson 2014): if the sole scope is obtaining data from them, humans are turned into tools by the AI and its devices.
In fact, AI can be considered a resource in learning processes in many ways, but the space of concrete experience is essential: «if with virtuality we can increase the range of possibilities, with experiential learning we introduce opportunities for qualitative growth and participatory emancipation for the benefit of inclusive procedures» (Paparella 2020: 21)

3. Pedagogy face to the dictatorship of the algorithm.

Assuming as axiomatic that the algorithms do not interpretate what *we think* but what *we feel* about things, we argue that hypothetically they could also manipulate the biochemical processes that shape *our desires and choices*, id est our emotions, including those involved in our learning processes (Harari 2019).
On the other hand, AI and new technological devices are increasingly being used in schools, in social interactions, in learning paths at all levels and considered a unique resource in teaching and learning. As all inventions and technological changes, there are connected risks that must be enucleated and properly addressed.
On one hand, there is a threat that the extensive use of the net and AI may diminish human memory and the ability of independent reasoning and thinking; delegating to the machines the exercise of computing, storing information, creating interconnections and links between experience and knowledge, the human brain might not be just liberated by having to store and process an overflow of information, but also reduce its operations and capability.
On the other hand, the same recognition of the truth and the ability of placing scattered information and disseminated phenomena in a wider theoretical and

synthetic framework might be compromised by the “group thinking” strategies of the algorithm as enacted in the social media: we are more and more exposed to the Dunning – Kruger effect (EDK, a cognitive distortion for which who knows the less thinks he knows the most) since the algorithm would choose for us information that consolidate our believes, and on the other side the comments and interaction in virtual groups that share the same position will generate a polarization effect: even without a real expertise, the sense of understanding will be reinforced (Sloman, Fernbach 2018: 173).
Although these envisaged problems also lead to an arising *technophobia*, narratives on AI are multiple and deserve to be analysed and understood in their variety and claimed values (Cave, Dihal, & Dillon 2020).
In addition to this, the EI (emotional intelligence) must redefine its space of action and its terms of reference in a virtual, interconnected *onlife* dimension that embeds the body and concrete interactions in a hybrid space, concrete and virtual.
While «individuals find themselves acting as split nervous systems, deprived of the more corporeal and 'intrusive' senses (taste and smell)», AI seems to increase its agency and independence from the users and gain more abilities: «technologies are less and less subject to the agency of the individual, independent of a possible control of the relationship between actions and results of actions» (Murri 2023:134).
Many argue that this shift from more traditional means of communication and learning to the new technologies is not without risk, especially when underlining the strong link between the education industry and the digitalisation:

«From a brief overview of the development trends in the 4.0 education industry, from which the central role of the market and edtech companies emerges, it is clear that the process is not student-centered, despite the dominant rhetoric - including institutional rhetoric - automatically associating the digitisalition of education with improvements in learning (Gui, 2019). At the same time, it is also not teacher centered. The urge towards widespread digitisalition of education models is fueled and shaped by private companies » (Gjergji, 2021:216).

Moreover, relying on AI might interfere and diminish our reasoning abilities: «When relying more and more frequently on Google for the answers, our autonomous ability to search for information diminishes. Today, 'truth' is already defined by the first Google search result». (Harari, 2018:89)
Just as the ancient Arabic physiognomic would do, the algorithm aims at inferring our natural dispositions and inclinations: when emotions are intercepted, then the

decision-making process and the learning processes can easily be guided and inducted.
Another fundamental risk related to education strategies and tools is to be identified in the macrosystemic capitalist social and economic strategies.
The capitalist paradigm envisages differential learning sectors linked to the needs of the market, corresponding to the labour pyramid: a sector of excellence of the technical-scientific elites, a middle one composed of *savoirs jetables*, trashable knowledge destined for premature obsolescence whereby workers cease to be operational as soon as the context overtakes them (Michéa, 2006: 43 ff.). For the class with middle skills, multimedia distance learning sold on the life-long learning market will be enough; finally for the majority, for those destined for unemployment or flexible jobs, for this excluded majority «ignorance will have to be taught in every possible way» (Michéa 2006:45-47). A new form of capitalism is born, *cognitive capitalism* (Antunes 2015), while the social dimension of learning and working is at risk of being definitively lost.
In addition to the criticalities mentioned so far, another crucial difficulty can be identified in the *illusion of explanatory depth*:

«Because we live in a community that shares knowledge, each of us individually can fail to distinguish whether knowledge is stored in our own head or in someone else's. this leads to the illusion of explanatory depth: I think I understand things better than I do because I incorporate other people's understanding into my assessment of my own understanding». (Sloman, Fernbach 2018:136).

Thinking *with* the machine, incorporating its knowledge, might ingenerate a perilous confusion about what we know and what Internet stores and chooses for us.
Thus, several studies and in deep examinations of relevant surveys and pedagogical studies have been taking place in the last decade, to analyse and evaluate the role of AI and the new technologies in the learning process, their benefits, and limits (Menichetti 2017; Del Gottardo, De Martino 2020a, 2020b; Bearzi et alii 2020, 2021; Williamson B., Eynon R. 2020).
This field of studies has become central during the pandemic and in the experimentations that have taken place in the last years; in fact, there is a growing attention on AI and students in school and their homes are using laptops and tablets as it has never been before: a phenomenon that Williamson (Williamson B., Eynon R. e Potter J., 2020:111) calls *Bring Your Own School Home* (BYOSH).

Individualisation in the learning processes seem to be an asset, benefiting from a process that was a great success in marketing strategies and that really is a suitable and consentaneous approach to individualism and the need to a tailored shift from pre-modernity collective and communitarian values to a full-optional neoliberal individualism.
Considering all this, we see how three different actors are playing a consistent role in changing the way teaching methodologies and educational tools are designed: individualisation, new technologies and the AI substitute cognitive labour.
Technological means are more and more implied in learning strategies and in the broader "cultural market":

«In terms of the reformulation of the paradigms of cultural fruition, the *digital disruption* that occurred thanks to the affirmation of the Smartphone (and to the detriment of the personal computer) as the main means of individual interfacing with the Net (from which also derives the affirmation of the communicative model imposed by the Social Media), is the typical example of how products coming from the bottom of a market (think of the growth since the 2010s of Facebook or Twitter as sources considered 'authoritative' for journalism and business media), inexorably move to the cultural market, until they occupy a pre-eminent position therein, ending up moreover by conforming to the 'short' and 'fast' expressive and communicative dictates of online communication (but also of superficiality and formal carelessness) the old consolidated players in the various fields…» (Murri 2023:133).

It seems clear that AI does not want to play an ancillary role and pedagogists must overcome a big challenge: while benefiting from the information on the net, or while using new technological devices, they must preserve the learner's free will and emotions from the algorithm exploitation and manipulation.
When considering the learning and teaching areas where AI is to be applied the most, they are expected to be in language learning and assessment. The promise and the aim of adopting standardized computering scoring systems reveal important information regarding expectations and probable effects of its adoption: when it's claimed to being *time saving* for teachers and *standard*, when thinking causally, what consequences and effects will it have?

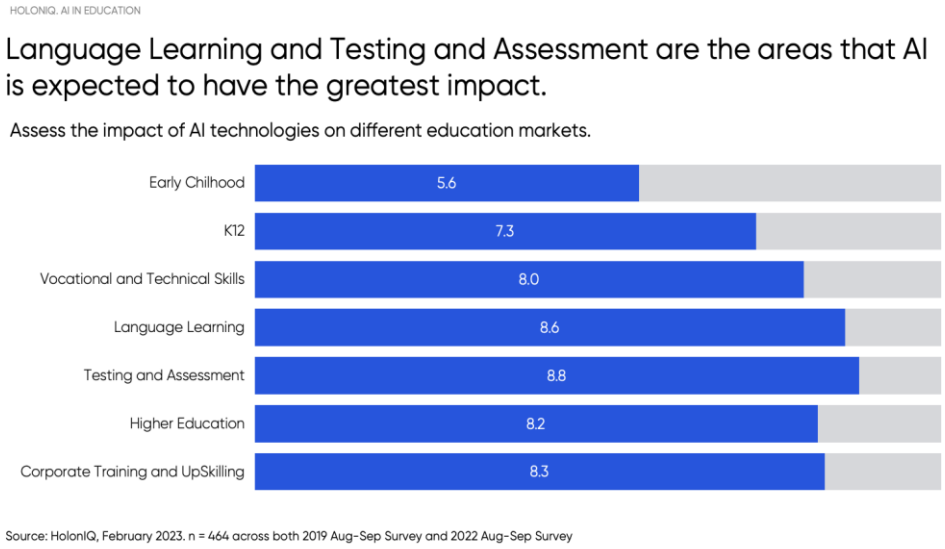

Fig. 2: Language Learning and Testing and assessment, OECD Education Working Papers No. 90 https://www.oecd-ilibrary.org/education/review-of-the-italian-strategy-for-digital-schools_5k487ntdbr44-en

Bob Broad (2006), in his interesting essay *More work for teachers?*, noted that new technologies often disattended or mislead the benefits that were initially supposed to generate, like in the case of modern household technology (Cowan 1983). They carried a time-saving promise but, in reality, they increased expectations for women's household. When considering new technologies in the education field, Broad suggests that «technological advances must be analyzed and acted upon with careful attention to the social, cultural, and political systems within which they will play out in people's lives» (2006:222).

Computering scoring systems applied to writing examinations, in particular, were presented as a desirable solution to the teachers' time starvation and for reaching a standardised and objective evaluation pattern. Nevertheless, some considerations might mitigate the validity of their adoption: to begin with, *assessment drives instruction*, which means that it directly affects the way of teaching and its contents. Furthermore, if it is true that if a machine carries out the evaluation this will save time, there is no evidence that this will actually make teachers work less: they might be assigned more classes or more teaching hours to compensate the time saved by adopting a coputering scoring system.

In fact, as Antunes (2015) describes very well, AI has not lightened the workload or reduced the working hours: on the contrary, it has intensified the working rhythm along with causing the proliferation of unregulated living labour.
As Broad suggests, «The point, following Feenbarg, is that understanding what artificial intelligence can do should and will shape our conception of what human intelligence can do» (2006:228).
Therefore, we must consider that commodification of AI and new technologies might have some shadows.

Conclusions

There are several questions that pedagogists and educators are called to answer in the next years: will AI anticipate and manipulate emotions in such a way that individuals may not be able to mature and sediment a free experiential knowledge and emotional intelligence? How can the democratic information of the internet and AI be preserved and used, without being detrimental to the personal sphere and relational connection? And, since an algorithm might be deciding for us, based on our behaviour when we surf the internet: are we really in front of a new form of artificial physiognomic?
How can all this reverberate on the educational paths and processes?
A pillar of any further discussion may be considering the AI inability to *feel* and have real emotions: even if machines should *learn* better how to compute and make calculations that resemble human emotions and instinctive reactions, to extent of connecting to biological techniques and hybridization experiments, still they won't be able to have self-awareness and share intentionality like human beings do, they would act *human-like* but without reaching the depth of a mind. There might be an increasing machine-human reshaped net of interactions and a hybrid reality virtual-concrete, some borders might be erased and rewritten in a fluid dimension, but tools are not (yet) sentient beings.
That fact the AI aims at imitating our functioning models and learn not only how to be *intelligent*, but also how to *feel* by affective computing: collecting, analysing and imitating our behaviours and emotions, explains how important the EI is also as a bulwark against it overcoming us.
All this leads to the consideration that EI and real interpersonal relationships and interactions can represent the most solid dam against the impoverishment of social life and the risks related to artificial intelligence.
A pedagogical strategy that can be envisaged is to enhance the collaborative learning and the cognitive labour division among "human actors" in a real, concrete

environment, so that machine will continue to serve as useful tools when expressively needed and not as substitute cognitive extension of our brain that takes control over our functions.
Moreover, there is an ethical concern that must be brought up especially when referring to educational programs and activities for children and young people ad might represent a turning point in the debate over AI: a limit should be set as soon as possible to the private sector exploitation of new technologies in education. Profit should not interfere with education and learning so that the behavioural surplus is not generated while students are in school or are studying home.
Indeed, children and teenagers need to be shielded, protected from the algorithm exploitation and manipulation of their inner emotions by receiving an effective and comprehensive affective education and gaining self-awareness when surfing the net or using AI tools for learning.

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