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EDUCATION AND THE FUTURE. RELATIONS BETWEEN NEW TECHNOLOGIES AND THE WORLD OF TEACHING IN TWENTY YEARS OF THE *SCUOLA ITALIANA MODERNA* JOURNAL

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ABSTRACT

This contribution aims to chart how the future looked to the Italian world of education in the 1960s and 1970s, by analyzing articles published in *Scuola Italiana Moderna*, a specialist journal for teachers with Catholic leanings. We examine studies and opinions regarding new technologies and AI (Artificial Intelligence) in relation to the concepts of school, education and teaching. Our aim is to focus on perceptions of how technology, computer science and the idea of AI might change the experience of education and teaching in the future. We also look at the utopian-projective aspect of a line of reasoning that tried to imagine the impact of AI: how it might affect people's lives; whether it would be useful in training courses and institutions; and how it would shape the children of the future. The concerns of a moral order that accompanied such considerations are also examined.

KEYWORDS: Artificial Intelligence, future, history of education, Scuola Italiana Moderna

1. INTRODUCTION

The *Scuola Italiana Moderna* (*SIM*) journal was established in 1893 with the aim of promoting the professional expertise of primary-school teachers from a Christian perspective, and offering a first alternative to the main publications for teachers at the time, which tended to be more secular. The journal rapidly became more successful after a group of lay writers and priests (including Luigi Bazoli, Giorgio Montini and mons. Angelo Zammarchi – all well-known names in 20th-century Italy's Catholic world) founded the

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Editrice La Scuola in Brescia in 1904, in the conviction that the journal would benefit from the support of a proper publisher (Chiosso, 2019).

Scuola Italiana Moderna became a well-established and very widely-read publication for teachers. Its large readership consisted of men and women who were mainly, but not only, teachers, headmasters and headmistresses, and school inspectors. Its authors were usually education theorists and teachers with Catholic leanings, many of them already or on the way to becoming well-known names on Italy's school education scene. The journal was issued fortnightly, with articles about school life and important personalities, comments on teaching programs and the topics covered in lessons. The contributions also refer to the activities of professional associations of school workers, and confirm the strategic role of teaching institutions – after World War II, and with the establishment of Italy's Republican government – in the construction and protection of democratic ideals and values.

After examining the contents of the *Scuola Italiana Moderna* journal, we have chosen to focus here on the issues published in the 1960s and 1970s. This period was chosen for several reasons. For a start, these were years of profound change in Italian society, in the country's welfare system and legislation, and also in its approach to education. The country's schooling system was the object of major changes, like the creation of a unified Middle School in 1963 and the "Decreti Delegati" of 1973-1974, which introduced structural and policy changes that remain to this day. These were also the years of Italy's economic boom, with foreign investments in new technologies, the space industry, computer science and digital media orienting the life and thinking of the Western world's populations towards the future and – in the case in point – towards the dream and prospects of a school for the new millennium.

The 1980s would then go on to confirm the rapid rise of Information Technology (IT) as computers began to enter Italian homes and schools. In 1985, for instance, an experimental "National Plan" was developed to introduce computer science in upper secondary schools. The first issue of the international journal *Computers in the Schools* was published in 1984. In the same year, Henry J. Becker at Johns Hopkins University wrote in the *American Journal of Education*: "there may be no topic in education today that gets the attention of so many people as computers" (Becker, 1984, p. 22). Within a few years, the whole industry expanded rapidly, and computers were soon used in schools everywhere. But the idea of including computers in school life had first been conceived and was circulating, accompanied by increasingly widespread doubts and expectations, two decades earlier in the years examined here.

The new technologies already seemed to be growing and spreading rapidly, leaving little time for theorizing and empirical reasoning on their educa-

tional value. Much of the teaching world was consequently wondering aloud about the opportunities they could offer, their efficacy for learning purposes, and how their introduction would affect and change teaching practices and methods in the years to come.

The present contribution specifically concerns studies and comments that focused on the future of the new technologies and AI in relation to the authors' idea of school, education and teaching. By examining the content of articles published in *Scuola Italiana Moderna* in the 1960s and 1970s, we can see how these technologies – computer science, robotics, and the hypothesis of AI – were changing people's views on the future of learning and teaching. We also take a look at the utopian-projective aspect of a way of thinking that tried to imagine the impact that forms of AI would have on people's lives, their potential use in training programs and teaching institutions, and their effect on the children of the future.

2. MACHINES AND AUTOMATION: THE "MODERN MECHANICAL SLAVES"

In the 1960s the journal's column "*Scienza e tecnica*" ["Science and Technology"] very often carried not only comments but also teaching tips and other information about the new technologies. The term "AI"[1] was first mentioned (by Domenico E. Ravalico) in 1968, but "electronic brains" had previously quite often been used to mean much the same thing. For instance, Dario Morelli wrote in 1960 that: "Thanks to transistors, electronic brains that would occupy several rooms can now be reduced to the size of a cupboard" (p. 17).

In the early stages at least, the column seems to have focused largely on explaining the huge advances and discoveries being made in the fields of physics, space engineering, robotics, and computer science. These were certainly rapidly-changing times and there was a perception that the arrival of new materials and devices would revolutionize people's way of life and day-to-day experiences. Technological innovations were seen with a fascination for their novelty and admiration for what had once seemed impossible or inconceivable. But concern was also being voiced – largely of an ethical nature – about the need to somehow contain their pervasiveness, as it was already becoming clear that these technologies would see an exponential growth over the years:

> Technology is transforming the structure of the world, but few grasp the ex-

[1] The English term "AI" began to circulate in the summer of 1956, when John McCarthy mentioned it for the first time as a field of research during a conference in Dartmouth, now considered the event where the concept was born (Benko and Sik-Lány, 2008).

> tent and depth of these changes. It has become the protagonist No. 2, with which mankind – the protagonist No. 1 – will be obliged to come to terms.
> What will people do?
> Maybe they will succeed in dominating the machine, making use of it for their own and society's well-being, keeping it within its limits, while developing all their own human faculties, and preserving their love for spiritual things. Or they will be enslaved to the machine, incapable of doing anything without it, too much in love with its convenience to be able to still have ideals, selfish and emptied of all those human faculties they have refused to exercise, and have ceded to the machine. Or else […] they will fail to comprehend the transformation that has taken place. They will despise a society that they do not understand, and they will become displaced, isolated, people on the margins of life and history (Volpi, 1960, p. 82).

There are numerous pieces called "Man-machine relations" containing several of the articles we identified. The dominant idea they express is that human beings control machines, while the opposite hypothesis remains largely within the unrealistic realms of science fiction. An interesting example comes from how machines and automation are described in a short article of 1961: they are called "modern mechanical slaves," impersonal and lacking in individuality, unlike "servants of the past." The peculiarity of these "modern mechanical slaves" would lie in their ability to overcome people's practical problems, facilitating their lives. What is astonishing is the disarming simplicity of their use set against the complexity of their design and construction (Volpi, 1961, p. 6).

In the 1960s, the prevailing view in the journal was that machines and automation could serve as substitutes for muscle power (Giunti, 1960). There are references to other more "futuristic" uses too, especially in the sphere of transportation, which, however, seem to be based on mere speculation for sensationalist purposes rather than the application of rigorous predictive methodologies. For example, take the case of motor vehicles that can drive themselves, nowadays actually existing – they would be driven by a sort of "radar," or an artificial brain that does not risk being distracted with potentially fatal consequences. A more cautious prediction concerned the use of autopilots on motorways, where vehicles could be driven remotely, via radio waves, by human drivers not physically inside the car (Volpi, 1961, p. 15).

Still strongly dominant was the conviction that it was impossible for a machine to have mental faculties. Machines do not think. They have no creative spirit. They just process information and instructions they have received[2]. A fitting example comes from the first automated language transla-

[2] As Romanini put it, a machine "speaks, but *does not reveal*; it shows, but *does not explain*"

tors, which were already being developed. Initially, there was talk of systems capable of providing a simple correspondence between single words in different languages – like acqua/water. Then came reports that Prof. Silvio Ceccato (an academic in Milan) was already trying to develop a translator that took action on the analytical and formative roots of languages. Ceccato himself said, however, that a machine would never be able to produce a perfect translation because, in order to do, it would need to have a "culture" (Lugaro, 1962). Maybe it seemed genuinely unthinkable that there might, in the future, be programs capable of analyzing a whole network of globally connected data within a handful of milliseconds, providing solutions that really do come close to perfection, and testing all sorts of manners of speaking, the persistence of different terms and phrases, common and informal usage, slang and so on, all at an amazing speed.

When the term "Artificial Intelligence" first appeared in an article by Ravalico in *Scuola Italiana Moderna*, the Author provocatively asked what this might mean, given that humans are intelligent because they have a soul, which is something that machines certainly cannot possess. Ravalico presented AI as an electronic device that empowers the human mind. He used a curious simile to make his point: just like a jukebox choosing a disc and playing the music, machines can only function and make choices based on instructions that must have already been input according to a system of codes (1968, p. 12).

In short, articles published in several major daily newspapers at the time that sought to impress readers by speaking of "thinking machines," or machines capable of making judgements after considering a set of examples, habits, and customs relating to a given situation, were dismissed out of hand. The journal tended to carry fairly cutting opinions that strongly denied the feasibility of machines ever coming to express their own thoughts or judgements.

Despite doubts concerning their applications and uses, contributors to the journal clearly already took for granted that computers would be the main protagonists of the last decades of the 20th century. With equal certainty, however, they expressed the idea that machines could never have a soul, or freedom of choice beyond the boundaries assigned to them during their construction. They could never have the intelligence to distinguish themselves or cope with the unexpected, nor could they express moral needs or "the thirst for infinity" that is the principal driver of human intellectual and moral actions: "There will therefore never be robots that can completely substitute the work of human beings, but only increasingly surprising combinations of mechanisms!" (Beer, 1964, p. 19).

(1964a, p. 21).

3. WHAT KIND OF SCIENCE FOR WHAT KIND OF SOCIETY?

During the 1960s, one of the *Scuola Italiana Moderna* journal's main interests seemed to be the relationship between the new technologies and society, and how automation could occupy a place in schoolchildren's process of social maturation.

First of all, it was important to understand the possible ideological use of science: "Science is neutral in relation to the social and political problems of the world today. The issue of its possible morality lies not with the scientists but with those who use their research and discoveries" (Segala, 1970, p. 24). Since it is not science that may be moral or immoral, but how it is applied, there was concern that future scientists would be substantially indifferent to the idea of a moral (and consequently also social and political) education, and that this might give rise to an alarming divergence between morals and science.

With the economic, industrial and social revolutions it was engendering, science was becoming a political issue, and therefore could not be ignored by the world of education and schooling. This raised the question of how to help children gain an understanding of these issues, how to lay the foundations for teaching them an awareness and sense of political responsibility that might affect the choices made by science in their future (Segala, 1970; Mencarelli, 1973). Schools could have a crucial role in this process, enabling the horizons of human culture to expand through an education in science and technology combined with the teaching of a critical and scrupulous attitude thereto.

It was in the years examined here that the term "futurology" first appeared in the journal (N. 14 of 1970, p. 13), in a section called "*SIM Internazionale*" containing a collection of various authors' contributions to the *Revue Internationale des Sciences Sociales* (N. 4 of 1969), published by UNESCO. It was said that "*futurology* proposes to project the current state of the world onto the future, i.e. to predict its evolution, distinguishing what is already inescapable from what can still be influenced" (Pigamol, 1970, p. 13). Based on such a definition of alternately possible futures, and of the consequences of civilization's evolution, it became necessary to consider the "human factor" and the educational, civil and social values held at the time as well as in the future.

Between 1977 and 1980, the topic was scarcely discussed on the pages of the *SIM*, which focused more often on science in relation to the political and economic powers of the time, rather than on any debate on the relationship between science and education.

4. THE SCHOOL OF THE FUTURE

Being intended for primary- and secondary-school teachers, *Scuola Italiana Moderna* was bound to contain numerous references to the "school of the future" (Scotti, 1964; Ravalico, 1967; Scurati, 1970). At the New York World's Fair in April 1964, the school of the future was imagined in a totally different way from that of 1960s Italy. There were to be no more desks or maps on the walls, no janitors on the door. Instead there would be computers and "teaching machines" (Scotti, 1964, p. 28). It would be the realm of the audiovisual: "human" teachers would still be there, but serving as facilitators of their pupils' use of the machines for their lessons. It was assumed that everything could be done with a few buttons that teachers or students could press to start the lessons – which would no longer be called lessons, but "programs" – to ask and answer questions.

The idea of teachers being replaced by machines, and becoming mere "program uploaders" was not met with enthusiasm, nor even seen as genuinely plausible (Scotti, 1964; Ravalico, 1967). The objection was that the role of educator cannot be reduced – not even in the future – to that of organizer and programmer. In the image proposed in the US for the school of the future, one had to wonder who would teach young people to think. There was a risk of schools instructing but not forming. They would fail to support schoolchildren in their journey along a path of growth, which is not just about learning notions, but also a social, emotional and relational experience, a path towards self-awareness and a capacity for critical thinking.

The approach was not always presented as inhuman, however. There were also comments on how technology and artificial brains could facilitate learning by adapting to individual students' different speeds and abilities (Scotti, 1964; Ravalico, 1967). In short, it could be a more democratic way to provide an education, to fully develop each child's aptitudes, and respond to individual needs. For instance, if a machine being used by a given pupil did not record a sufficient proportion of correct answers during the course of a "lesson-program," another "self-tutoring" machine could help the pupil correct their mistakes and reach a satisfactory level of learning.

In actual fact, the way these machines are described draws less on any idea of futurist innovation and more on programmed instruction proposals advanced by Burrhus F. Skinner – a behavioral psychologist in the States – already in the 1940s. Skinner had suggested using sequentially-presented lessons of increasing complexity, and only reinforcing pupils' positive results, enabling them to check their own answers and use a self-correction process up until they got things right.

By enabling learners to move on only after they had demonstrated that they had properly assimilated the previous lessons, the machines could im-

plement the principle of graduality in the learning process. Going along with the ideas being advanced by the journal in the 1960s, we can here again see machines as tools and instruments at the service of educators and students.

The perceived divergence with respect to the North American approach was cultural, however, and related to the very concept of schooling. Two tendencies and attitudes at the time clearly distinguished Italy and other neo-Latin and Catholic countries from the English-speaking and northern countries (especially the United States, but also Russia). The former countries traditionally saw schools as shaping children's personality, and the institution was entrusted with the task of educating. The latter saw schools as providers of information to feed the mind, and teachers in the role of instructors. In the former case, schooling focused on forming a *homo sapiens* who would, through the acquisition of knowledge, become a *homo bonus*; in the latter, the goal was to obtain a *homo sapiens* who, through the acquisition of knowledge, would develop into a *homo faber*. So the difference would be between a more humanist approach and a more strictly technical one. This interpretation, advanced by Sergio Beer in an article of 1964, helps to explain the fears of a shift towards a certain type of technology and innovation, and how much the abrupt cultural changes that science would unavoidably prompt might lead to an almost ontological deviation from Italian tradition.

Be that as it may, the necessary condition for an education of the future seemed to lie in a clear sense of the limits of science, which should serve as a cornerstone of the teacher's work without running the risk of science becoming a substitute for conscience in the moral order (Romanini, 1964b).

It was clear that school education had to be brought up to date, and respond to the needs of a rapidly-changing society, but also of a working world that was undergoing a major renewal and would require new and different types of professional expertise. Giovanni Gozzer – a well-known education theorist from the Alto Adige region of northern Italy – emphasized that changes were urgently needed because "there is a considerable chronological gap between the completion of a school career and the socio-economic framework identifiable when the school results are put to use" (1968, p. 232).

There was a perceived risk of schools educating and training young people to join the working world based on parameters that, already in the course of a decade, would prove unsuitable in the production system. Gozzer (1968) made the point that the crisis of the Italian school system at the time could be attributed precisely to this divergence, rather than to a lack of worthy pedagogical inspiration. He drew up a list of the "innovative equipment" that schools would need to acquire:

- an inrush of images capable of creating new languages, new content and a different way of approaching reality;

- a "parallel school," in the sense of social schemes and leisure-time activities that could contribute to young people's education (including cinema, television, associations like the Scouts, etc.);
- new laboratories, also for language learning, equipped with the new technologies;
- "programmed lessons," especially on vocational training courses, based on the related technologies;
- systems for assimilating notions, and for monitoring pupils' learning;
- the teaching of single disciplines using "genetic" teaching methods (developed in the context of historical and scientific research in each discipline) according to a heuristic approach;
- professional training: the traditional practical approach would need to be replaced with a training that focuses on the possession of more scientific and technical knowledge, and the ability to use it in a flexible and adaptable manner.

Cesare Scurati – another household name among Italian experts on education – also wrote in the *SIM* column that teaching technologies were "the most remarkable pedagogical innovation" of the 20th century (1970, p. 12). He saw the opportunities for automation in teaching as going well beyond those of programmed lessons, though he acknowledged B.F. Skinner as the person who had aroused interest in researching how technology could be used for teaching purposes.

Scurati's stance on the new technologies was certainly more optimistic. He felt that technology applied to teaching could become one of the most promising fields for an encounter and co-penetration between the human sciences and the natural sciences. "Many believe that mankind might 'lose his way' in a technological alienation, but he can also make technology the means of his salvation" (p. 13). New technologies and automation were seen as having the potential to help us make a qualitative leap, to create teaching and educational opportunities everywhere in the world, and to make teaching more personalized to cater for different needs. The teacher's role would therefore remain fundamental and indispensable, but the teacher would be seen as a relational agent, an authority on education and learning processes, an "expert in teaching communication" (p. 17).

Certainly all the authors contributing to the journal agreed that the way the teacher's work was organized, the classroom environment, and the teacher's role would have to change for ever. This expectation partly came true, especially if we think of today's teaching aids: totally new languages and instruments (like the computer) are now in daily use and have become virtually indispensable. But these aids have probably changed life at school to a far lesser degree than in the working world, for instance, and possibly

rather less than the authors of the articles analyzed here might have predicted.

Even the use of programmed lessons remained limited to a few experiments because it was still impossible – for economic reasons, but also due to the production numbers involved – to equip all schools with computers and "self-tutoring" machines.

5. TECHNOCRACY, HUMANISM AND RELIGION

As the *Scuola Italiana Moderna* journal was founded on ideals and values of Christian religion, questions and concerns emerged on several occasions regarding how relations between the world of religion and spirituality and the world of the future might presumably be increasingly dominated by science and automation. Humans might use their machines and applied scientific knowledge to seek answers to the great questions of the universe and life itself, creating the myth of an "all-powerful science" that emulates, or even comes to replace "the creative work of God" (Volpi, 1960, p. 83).

The preoccupation over a "declining sense of God," and the perception of the "intoxicating" and "limitless power" of science and humanity were attributed to a growing risk of society falling victim to materialism and utilitarianism. The danger lay in the use of machines capable of reasoning and working, in the astonishment and admiration that their discovery prompted. This made them turn from being tools of convenience and wellbeing into emblems of technical hedonism, of a "religion of comfort". They could induce people to experience an excess of life, in the sense of living and wanting to have as many experiences as possible, while no longer looking at the value and sense of life (Volpi, 1960; Cotta, 1976). There was also a fear that the progress of science could make us abandon what is really important, which is the "human spirit" (Romanini, 1964a).

It is worth noting that some of the risks envisaged in the 1960s and 1970s actually materialized in the society of the new millennium. On the one hand, our authors feared a loss of real and physical contact between humans and nature with the advent of a new type of society dominated by machines and screens (Volpi, 1960; Cotta, 1976). They also hypothesized that we would live our lives at a faster pace, focused on the present, less dedicated to spirituality, to the value of patience or prayer, and ever more interested in material things and in rapidly experiencing as much as possible (Volpi, 1960, pp. 82-83).

The idea of being on the verge of momentous change in the relationship between nature and human beings deserves a brief further comment. There was a sense of the danger of people's knowledge and experience of the

world of nature changing completely. It was clear that machines would facilitate a new way of knowing based on naming, seeing and describing things even before having actually seen and experienced them in real life. This was a characteristic of traditional teaching too[3], of course, but machines and screens certainly further widened the gap forming between the world of nature and the human world, tending towards the elimination of any real contact.

The stated objective of writers in the journal was not to demonize the new technologies and science of the future in the same way as some international journals with Catholic leanings tended to do. To give an example, the French journal *Dieu Vivant. Perspectives religieuses et philosophiques*, published between 1945 and 1955 (Éditions du Seuil, Paris), took an eschatological view of Christian doctrine: in issue N. 7 (1946) a parallel was drawn between modern science and the tree in the garden of Eden, the fruits of which had already led the progenitors of humanity astray.

In *Scuola Italiana Moderna* the authors stepped away from any excessive demonization of modern science. They suggested instead that, even in a technocratic society, humans can and must be taught to keep listening to their "inner mystery," to remember the sense of human communion, the value of denying oneself something in order to cope with a society that reinforces the concepts of utility and ownership. What emerges is the need to convey the idea that progress comes from God, that every invention is a step towards the discovery of the creation, and leads to Him. In other words, science must help humans to broaden their spiritual horizons and reach their eternal goal.

Science and automation were therefore welcome for the purpose of improving human lives, working conditions and health, for producing and disseminating knowledge, and for reducing ignorance by providing information. On the other hand, as Gauthy put it, "reality demands that we fully understand it, without fears or illusions," but with a "realism worthy of Christian educators," and in a dialogue that takes the shape of "a 'European' exchange of theories and opinions on education" (1961, p. 6). This could be achieved, providing humans continued to govern their machines, and did not become enslaved to them.

Faced with a perception of science as all-powerful, another risk that emerges is that it might trigger "antireligious" ideas and propaganda, creating consent in the public – starting from their awed reaction to the concept

[3] In an article published in 1964 about teaching the sciences, Mauro Laeng wrote of the need to avoid the risk of "a purely informative and transmitted knowledge replacing a frank/direct relationship with things, even in the teacher's culture, and sterilizing the spirit of research" (p. 10).

of AI. Ravalico took an extremely firm stance regarding concern that such ideas might spread. "It is the soul that is intelligent," he wrote. "Presenting electronic machines as being equipped with 'AI', and capable of thinking, would demonstrate that the soul is unnecessary" (1968, p. 13). So, in order to think, any "super machine of the future" would need to have not only a brain but also a soul. This would be not only impossible to achieve, because human beings cannot "manufacture" souls, but also somehow blasphemous, because it would imply an attempt on the part of mankind to take over a divine prerogative.

6. Conclusions

The issues of *Scuola Italiana Moderna* examined here clearly express the idea that the Western world was in the process of a momentous revolution characterized by intelligent machines and forms of automation that in some ways were still not entirely comprehensible or even imaginable.

The advent of technology seemed capable of affecting the industrial world most of all, thanks to profound changes in working methods, a greater productivity achieved by lowering the costs and rationalizing the production processes, and coordinating them in a unitary system. It was obvious that every sector of society would have to change and adapt, even to the point of reconsidering its methods and questioning its very foundations (Gozzer, 1968) – and this was bound to happen in the world of education too.

The articles in the *SIM* columns clearly mention the "explosion" described by W.K. Richmond (1967). Scurati (1970) used the same term to indicate a set of social phenomena distinctive of the Western world of the 1960s, and their fallout on the 1970s. The great "explosion" actually consisted of three types of explosion: in numbers; in the availability of information; and in the new social classes' access to a better and better education (Richmond, 1967). Schools were bound to feel the impact of all these explosions, so teaching conditions and relations with the new technologies and this "new world" were seen everywhere as a priority with a view to ensuring that an evolution in quantitative terms could correspond to a qualitative evolution as well.

In the sphere of education theory, the technological revolution would certainly lead to a tendency to submit educational and schooling phenomena to processes of description and interpretation typical of the empirical-experimental sciences, based on criteria such as the observability of certain types of behavior.

In the light of all the above considerations, it is easy to see that contributors to the *Scuola Italiana Moderna* journal saw technological innovation

and automation with suspicion or concern, and also with a good degree of optimism and utopian projection – the two stances very often alternating, very often overlapping, the one never ruling out the other.

In the former case, to cope with the hypothesized dangers and hazards, there was a call for a pedagogical and educational commitment that would focus mainly on four aspects: a greater attention to moral values; a renewal of the educational pathways and related widening of teaching activities; the reinstatement of a more humanist teaching culture; and a greater and more organic interaction between the world inside and outside school. It was hoped that human culture might advance in parallel with the culture of technology, but with the former taking the lead – thanks largely to an education that would be more humanistic than technocratic.

In the second case, the journal's authors looked at the technological innovations as real opportunities for a more democratic society, and a world that could relegate illiteracy and poverty to the past. Some of their expectations have come true, while other, more utopian hopes have not:

> Even if it attempts to extend its range of action beyond the frontiers of space, the world of tomorrow for human beings will still be a tiny planet with a population of 3½ billion people who, albeit with their disagreements, will feel like brothers. […] Already today we can travel from Rome to New York in just seven hours, and ten years from now this amount of time will be halved. When we leave house in the morning we will be able to have lunch on another continent, dinner on the other side of the world… […] The last racial differences and prejudices will disappear and peoples will deal with one another as equals. […] A world that technology will certainly make different, but that must also change […] so that a world that becomes richer will also be kinder, and a world that is stronger will also be fairer (Volpi, 1961, p. 10).

Certainly automation, technological innovation and mechanical brains no longer seemed like the fruits of the "futurist" authors' imaginations (Lugaro, 1962, p. 21). There was a perception that the future had already begun, and this implied the need to wonder – on a moral, social, pedagogical and also political level – how human beings would govern this future, or run the risk of succumbing to it.

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