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Does There Exist a Need for a 'New' Educational Ideal of Rationality? The Crossroads between Transhumanism and Israel Scheffler's Conception of Critical Thinking

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Esiste la necessità di un "nuovo" ideale educativo di razionalità? L'incrocio tra il transumanesimo e la concezione del pensiero critico di Israel Scheffler

This article reflects on whether today, there is a need for a 'new' educational ideal of rationality. To articulate that objective, a critical analysis is made of the pedagogical ideas underlying two conflicting trends: transhumanism and critical thinking. First, the distinctive identity of the transhumanist philosophical movement is examined in terms of its partial ascription to, and, given its attempts to overcome it, its renunciation of Humanism. In the face of the apparent promises and pitfalls that techno-science portends for pedagogical discourse, a distrust of reason is imminent. Contrary to such an assumption, critical thinking, as the embodiment of rationality in Israel Scheffler's conception, illuminates the inconsistencies of scientific imperialism that conceal the moral-rational aspects of teaching. In view of the above, the discussion focuses on the relationship between theory and practice, justification and commitment, fallibility and wisdom; in short, between the moral and the rational of any educational ideal to be proposed.

Questo articolo riflette sulla necessità di un "nuovo" ideale educativo di razionalità. Per articolare tale obiettivo, viene effettuata un'analisi critica delle idee pedagogiche alla base di due tendenze in conflitto: il transumanesimo e il pensiero critico. In primo luogo, si esamina l'identità distintiva del movimento filosofico transumanista in termini di parziale ascrizione e, visti i suoi tentativi di superamento, di rinuncia all'Umanesimo. Di fronte alle apparenti promesse e insidie che la tecno-scienza comporta per il discorso pedagogico, si profila una sfiducia nella ragione. Contrariamente a tale ipotesi, il pensiero critico, in quanto incarnazione della razionalità nella concezione di Israel Scheffler, illumina le incongruenze dell'imperialismo scientifico che nascondono gli aspetti morali-razionali dell'insegnamento. Alla luce di quanto detto, la discussione si concentra sul rapporto tra teoria e pratica, giustificazione e impegno, fallibilità e saggezza; in breve, tra morale e razionale di qualsiasi ideale educativo da proporre.

Keywords: Transhumanism; Critical thinking; Moral-rational; Educational aims; Analytical philosophy of education.

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1. Introduction

Who are more important, the wise or the masterful? "Sometimes we identify science with wisdom, but they are not the same thing" (Martínez Díez, 2021, p. 65). However, it is not easy to position the figure of the teacher in that dualism, as the teacher's job comprises part wisdom and part mastery. This concept underlies the educational framework that forges the heart of any life with flavour and meaning, but to wisely manage what we call 'progress,' we need to have a stronger grasp of reality and to solve theoretical and practical problems more efficiently.

Based on the above, this article aims to identify whether today, a 'new' educational ideal of rationality is needed, in which sages and teachers become one and the same, instead of two. In order to achieve that, first the distinctive identity of the Transhumanist movement will be analysed and some of its promises will be demystified by considering their impact on education. Thereafter, the urgent dialogue between science and wisdom that needs to be engaged in will be explored on the basis of Israel Scheffler's premise (1986): "thought is ineffective without technique, technique [is] impossible without thought" (Scheffler, 1986, p. 515). Some of the most relevant ambiguities concerning trust / mistrust in reason and techno-science will then be outlined by confronting transhumanist precepts with Israel Scheffler's ideal of rationality. Finally, given the epistemological path offered by this precursor of analytical philosophy of education, the nexus between critical thinking (as an embodiment of rationality) and transhumanism in education will be assessed. Thus, the analysis will culminate in a deliberation on some of the implications of the 'logic of techno-science' for moral-rational considerations in education.

2. Transhumanism: a renunciation of the humanist tradition that surpasses all knowledge?

Transhumanism bases its credibility on the exponential progress of techno-science (Cortina, 2022), although, "as a philosophy, transhumanism does not intrinsically commend specific technologies" (More, 2013, p. 4). In short, such an intellectual and cultural movement aims to provide a worldview of human totality. Consequently, it can be traced back to the struggle to transcend natural confines to which mankind has always been devoted (Bostrom, 2005). Thus, the historical and philosophical-scientific framework that circumscribes transhumanist thought comprises a backdrop that is too ample to be presented here. Broadly speaking, it emerges from the speculative boundaries between mysticism, literature, theology, philosophy and evolutionary biology (Vita-More, 2019). Some of the main precursors of transhumanism who have striven to analyse its roots include Bostrom (2005), Huxley (1957, chap. 1), Kurzweil (2005), More (1990, 2013) and Vita-More (2019). The philosophy of transhumanism was consolidated on the basis of postulates formulated by a number of the above authors along with others in the following documents: *The Transhumanist Manifesto* (Vita-More, 2020, version 4) (which was formalised in 1993 and is updated on the *Humanity+* website), *The Transhumanist FAQ*, (Bostrom, 2003b) and *The Transhumanist Declaration* (Bostrom *et al*., 2009) (these last two were drafted in 1998 and since 2009 the *Humanity+* organisation has been responsible for renewing them).

The distinctive identity of the movement, as well as the supposed promises it upholds, will be explored in greater detail hereunder in an attempt to outline some of its main implications for Education.

2.1. The distinctive identity of transhumanist philosophy

Despite the extensive background to transhumanism, it was not until 1957 that Julian Huxley coined the concept in *New Bottles for New Wine*: The human species can, if it wishes, transcend itself not just sporadically, an individual here in one way, an individual there in another way, but in its entirety, as humanity [...]; 'I believe in transhumanism'" (Huxley, 1957, p. 17). This reputed eugenicist and earliest Director-General of the UNESCO came from a family with a distinguished intellectual pedigree, as he was the grandson of biologist and philosopher Thomas Henry Huxley, a friend of Charles Darwin's (and scholar of Darwin's work '*On the Origin of Species*'), and brother of Aldous Huxley, the author of the famous novel *Brave New World* (Bostrom, 2005). Prior to planting the first conceptual seed of the term, Julian Huxley projected a new vision of the urgent claim that humanity should be the master of its

own destiny. His combination of evolutionism and humanism in two of his works, *Essays of a Biologist* (Huxley, 1923) and *Religion Without Revelation* (Huxley, 1927/1957), consolidated the moral justification for control of biological evolution as proposed by Francis Galton. Thus Huxley's 'evolutionary humanism' (first called 'scientific humanism') aligned with different worldviews and perspectives that led to Transhumanism as a philosophy (*ibidem*). It was further consolidated by More (1990), the CEO of the *Alcor Life Extension Foundation*, in his essay *Transhumanism: Toward a Futurist Philosophy*. According to More, its distinctive identity would be based on the principle that human intelligence and the development of technology can extend our lives (*ibidem*). Even so, Bostrom pointed out that "transhumanism is a loosely defined movement" (Bostrom, 2003a, p. 493).

The goal of the early transhumanist philosophy was defined in *The Extropian Principles* (More, 1998), the first version of which was published in 1990. In it, the term 'extropy' was used as a metaphor for "the extent of a system's intelligence, information, order, vitality, and capacity for improvement" (*ibid*., par. 1). Consequently, the principles that shaped it did not intend to define specific technologies, beliefs or policies. Instead, they set out values and perspectives in order to "use current scientific understanding along with critical and creative thinking to define a small set of principles or values that could help make sense of the confusing but potentially liberating and existentially enriching capabilities opening up to humanity" (More, 2013, p. 5). Thus, the perpetual progress towards human perfection that transhumanism seeks deals with an 'extropian philosophy,' which "embodies an inspiring and uplifting view of life while remaining open to revision according to science, reason, and the boundless search for improvement" (More, 1998, para. 5). Precisely, the dark side of the transhumanist agenda comprises the speculative boundaries that arise between 'the neuro' and human flourishing. Ultimately, it advocates the use of converging technologies (nanotechnology, biotechnology, information technology and cognitive science (NBIC)) to seek more wisdom, intelligence, efficiency and thus amplify our capabilities or our emotional well-being, among other things (Hottois, 2013; Bostrom, 2003b). So where does that leave the promises made by transhumanism?

2.2. Demystifying transhumanist promises

The so-called promises of transhumanism concern the human values inherent in our *raison d'être*. Therefore, the movement does not side-step humanist tradition but rather attempts to go beyond it. To this end, its roots stem from the rationalist humanism of the 18th and 19th centuries (Bostrom, 2005) and its central content is the term coined by the secular humanist Kurtz (1989/1994) at the end of the title of his book *Living Without Religion: Eupraxophy*. The new faith in the modern world augured by transhumanism renounces the faith of religious life, but not the fullness of human life, which requires taking "the education of old faculties to new heights" (Huxley, 1923, p. viii). That is how education — the soul of democracy — plays a central role within the deep scepticism that fervent scientific-technological development generates. After all, educational and cultural refinement goes hand-in-hand with progress, so it would be a paramount risk either to renounce it or to go beyond the limits of what is desirable (Martínez Díez, 2021; More, 2013). Such a bifurcation could be unified from the following theory of knowledge *per se* expounded by Russell (1950):

> [...] the pursuit of knowledge may become harmful unless it is combined with wisdom; and wisdom in the sense of comprehensive vision is not necessarily present in specialists in the pursuit of knowledge. Comprehensiveness alone, however, is not enough to constitute wisdom. There must be, also, a certain awareness of the ends of human life (p. 174).

In this respect, transhumanism does not claim to offer a unified theory of the meaning of life (Sandberg, 2015). Indeed, that would run counter to transhuman and posthuman modes of existence, which conceive of the human being as a transit rather than a twilight in the wake of Nietzsche's superman (Nietzsche, 1883/2006). Likewise, the emphasis placed by this philosophy on the well-being of all and on individual autonomy calls for growth on a utilitarian basis in the sense given by Mill (1863/2001, chap. 2). The point is that, paradoxically, overcoming our humanity could liberate us from even our most genuine condition, that which makes us unique. Technological prosperity could chain our freedom for ever (Martínez Díez, 2021). Indeed, if the scales were to tip imminently towards exponential and unlimited

growth under the domination of reason, science and technology, what would become of the supposedly interdisciplinary vision required to assure the integration of physical, social and human sciences? Improvements that are ethically and pedagogically acceptable should not renounce the above domains, but nor should they be exclusively governed by them. Moreover, what we mean by enhancement and perfection is treacherous (Bostrom, 2003b). For example, the *Human Enhancement* report commissioned by the European Parliament through the STOA (Science and Technology Options Assessment) Unit defined human enhancement on the basis of scientific and technological interventions (Coenen *et al*., 2009). However, what is achievable is one thing; what is worth achieving is quite another, and pedagogical discourses play a key role in this controversial vision of improvement (Gil Cantero, 2022).

2.3. Synthetic ideas on transhumanism in education

Transhumanism in education has been accompanied by the crisis in postmodernity, following the loss of the references that gave it meaning. On the one hand, there are increasing signs that educational theory is moving towards the 'post-' of posthumanism. A clear exponent in this regard is pedagogical knowledge marked by accelerated performance, excessive efficiency, fluidity of information and, in short, by the loss of considerations of value (Bauman, 2009; Scheffler, 1986). On the other hand, also noteworthy is "the possibility of falling into a scientific colonialism by neuroscience towards education" (Pallarés-Domínguez, 2021, p. 101). This would lead to limits in discourses between the brain and education that confront 'having' against 'being' (Vidal & Ortega, 2017). The problem lies in the fact that the empirical and experimental study of education and its practices cannot establish the ends that should guide it. In such an event, we would fall into the false transhumanist promises that, far from giving meaning to action, undermine its *raison d'être*.

In short, the epistemology of education needs to be approached from philosophical, scientific and technological knowledge (Jover, Gozálvez, & Prieto, 2017, chap. 1). In this regard, it seems that the *Human Enhancement Revolution* distinguished by Allhoff, Lin, Moor, & Weckert (2010) is still far from consensus. It may be that some of the threats for freedom, especially those conceived since *The Transhumanist Declaration* (Bostrom *et al*., 2009), were embodied in the form of pressing bioethical issues. But bioethics cannot solve most human and educational concerns, as it merely embosses "the scientistic and experimentalist stamp of current pedagogy" (Jover, Gozálvez, & Prieto, 2017, p. 16). Therefore, without questioning the importance of the scientific and technological view of the phenomenon of education, we cannot rediscover pedagogy if stripped of the philosophical complexity that it entails. To do so, we need to deliberate on the place philosophy holds in relation to science and switch from their irreconcilable opposition to their mutual collaboration. In this, the educational ideal of rationality distinguished by Scheffler could play a key role.

3. Ambiguities concerning trust / mistrust in reason and techno-science

Our incessant mistrust of reason as a means of understanding human life has led to us placing our hopes in techno-science. The following sections look at some of the limits of both assumptions.

3.1. Empiricist scepticism and rationalist dogmatism: where does critique stand?

As is well known, human reason and experience have confronted each other over the centuries given the challenge of constructing a rigorous knowledge of reality. However, the attempt to give primacy to one over the other has led to different epistemological crises. Ever since Socrates undertook his research into truth, concern with the concept of 'reason' has become central to the development of Philosophy in the Western World. However, neither the crass relativism of the Sophists, nor the innate ideas of medieval and modern philosophy, nor the force of Newton's scientific advances that gave birth to modern science have managed to bury in the sand the following assumption: "that rationality is a central part of any

human life worth living" (Neiman & Siegel, 1993, p. 55). Traditionally, reason has been regarded as objective, universal and necessary. However, that idea encompasses certain dangers, both in regard to abstract reason and in regard to particular reasons. Thus, the dawn of Modernity was marked by the limits of the confrontation between Rationalism and Empiricism. Although the ideas encompassed by each of the currents are disparate, they spurred a questioning of the legitimacy of Philosophy in relation to Science. In this respect, Descartes (1644/1982) noted the following in his *Principles of Philosophy*:

Philosophy as a whole is like a tree; of which the roots are Metaphysics, the trunk is Physics, and the branches emerging from this trunk are all the other branches of knowledge. These branches can be reduced to three principal ones, namely, Medicine, Mechanics, and Ethics (by which I mean the highest and most perfect Ethics, which presupposes a complete knowledge of the other branches of knowledge and is the final stage of Wisdom). Now, just as it is not from the roots or from the trunk of trees that one gathers fruit, but only from the extremities of their branches, so the principal usefulness of Philosophy depends upon those parts of it which can only be learned last (p. xxiv).

It was precisely against rationalist dogmatism and empiricist scepticism that Kant conceived his own Critical Philosophy in his *Critique of Pure Reason,* (1781/1998) as a way of overcoming both dogmatism and scepticism. His "Copernican turn" in Metaphysics, comparable to Copernicus' turn in Astronomy, rejected the traditional view of knowledge and cognition. This paper does not intend to analyse Kantian transcendental idealism, which considers the subject's knowledge of general principles prior to the objects being given to him. It would also be too ambitious to detail the problems that confronted reason with itself, such as those of antinomies (contradictions that do not touch experience but refer to "space, time, the opposition between determinism and freedom, and the problem of deciding whether the world has a cause" (Cortina, 2022, p. 471). Furthermore, one should not overlook the dilemmas of practical laws or moral norms being 'mandates' of reason, as Kant predicts when he points out that "pure reason is practical of itself alone and gives (to the human being) a universal law which we call the moral law" (Kant, 1788/2015, p. 29). Taken together, all of the above show that the formal criteria that rational beings assume in order to act autonomously and to put themselves in the point of view of others by sharing rationality, among other things, circumscribe other issues apart from purely scientific ones. Therefore, in the transcendental dialectic, Kant (1781/1998) concluded that metaphysics could not be classified as science. Nevertheless, he claimed that its value was indisputable for dealing with the great questions facing humanity as part of the Enlightenment's motto: "*sapere aude*! Have courage to make use of your own understanding" (Kant, 1784/1996, p. 17). Kant's writings nourish our ability to conceive ideas as if it were something divine in our soul, so to speak, and in that regard, education is a great adventure by which "man can only become man [...]" (Kant, 1803/1900, p. 6).

Years ago, the process of the enlightenment of humanity, strongly advocated by Kant, rose to prominence. The roots of the Enlightenment are said to have emerged with the publication in 1620 of Francis Bacon's *Novum Organum*, a project to improve living conditions using scientific methodology rather than *a priori* reasoning. Later, the Renaissance heritage was combined with the influence of authors such as Thomas Hobbes, Isaac Newton, Immanuel Kant, John Locke and the Marquis of Condorcet "[to emphasize] empirical science and critical reason - rather than revelation and religious authority - as ways of learning about the natural world and our place within it, and of providing a grounding for morality" (Bostrom, 2005, p. 2). With the same intention as Bacon of effecting all things possible by the hand of science, and given the foundations of rational humanism, transhumanism subsequently sought to approach life without the burden of dogmas of any kind. In this respect, it is worth remembering that the end of the Enlightenment came as a consequence of the excesses against the rule of instrumental reason. Since then, the Kantian belief that "scientists would play a decisive role, [...] provided they were aware of the limits of science [...] and did not fall into the temptation of making totality statements about which very diverse opinions can be formulated [...]" (Cortina, 2022, p. 472) has increasingly come to the fore.

At the beginning of the 20th century, the linguistic turn in Philosophy took place. The revival of English empiricism with Bertrand A. W. Russell (and his logical atomism), George E. Moore and Ludwig Wittgenstein (and his *Tractatus Logico-Philosophicus*), among others, led to the birth of two schools: logical positivism (the Vienna Circle) and logical empiricism (with exponents from the Cambridge School together with George E. Moore and Antony G. N. Flew). Broadly speaking, both were notable for their relevance in regard to the problem of objectivity, with the logical positivists being more restrictive than

the logical empiricists. By providing the principle of verifiability and the theory of meaning, they offered a possible answer vis-à-vis the pitfalls of common sense. However, their dogmatic adherence to the philosophy of language brought a scientistic excess to the table that reached philosophical perversion. At this point, the idea that led to the transition between the 'first' and the 'second' Wittgenstein is particularly interesting: that life and philosophy go hand-in-hand in the search for meaning and truth. After all, as Ayer (1936/1971) criticised, not everything can be expressed by empirical hypotheses or tautological statements (see pp. 27–28). However, contrary to that author's own positivist assumptions, the criteria of truth and falsity would not necessarily serve human ends. This is one of the claims that, in addition to Scheffler, Richard S. Peters made to the analytical philosophy of education, whereby there could be no room in education for the "cosmic impiety" that Bertrand Russell had already predicted in reference to pragmatism (Peters, 1974/2015, p. 68).

It was at this point that metaphysical and scientistic questions gradually gave way to epistemological ones. During the 1930s and 1950s, the rejection of the dogmatic and instrumental use of reason was linked to the procedural and contingent use of knowledge, rather than to the utilitarian nature of acquiring knowledge (Vila Merino, 2011). Earlier, Georg W. F. Hegel demonstrated the social and historical character of the formation of consciousness, an idea projected by Karl H. Marx in Marxism and Jürgen Habermas in the Critical Theory developed by the Frankfurt School. This paper does not intend to delve into Habermas's epistemological concepts or his three interests (approaches) that form the foundation of a critical social theory developed in his 1968 book *Knowledge and Human Interests*: the 'technical,' the 'practical,' and the 'emancipatory.' Suffice to note that, of these, Giroux (1983/2001, pp. 176–185) distinguished three models of rationality for the education of citizenship which, in turn, led to three paradigms according to Jover, Gozálvez, & Prieto (2017, pp. 35–44): "technical rationality" (the empirically verifiable and objective, the basis of the "scientific-technological paradigm"), "hermeneutic rationality" (the intentional and inter-subjective world based on the technocratic liberation of objectivity, the ground base of the "practical-hermeneutic paradigm"), and "emancipatory rationality" (the reflexive based on criticism and action, the basis of the "emancipatory-critical paradigm"). In line with this concept, "we call a person rational who, [...] expresses reasonable opinions, [...] acts efficiently [and] [...] [...] learns from mistakes [...]" (Habermas, 1981/1984, p. 18).

The outcome of abandoning infallibility and systematic cognitive pretensions was the intended destination point. Much less attempt has been made to analyse the vast trajectory of the deep-rooted concern for objectivity, nor to concede any victory on the battlefield of metaphysics that led Kant to eleven years of silence. Nor has there been any attempt to deliberate on what we are or are not capable of knowing. Instead, a double critique has been articulated in the spectacles we wear to perceive reality with the intention of highlighting the following assumption: that our ability to think is limited, especially from an instrumental point of view, but without it, the contributions of experience would lack meaning and purpose. To this end, this analysis has circumscribed some of the precedents of transhumanism before the term was coined in 1957 by Julian Huxley and of the analytical revolution in the philosophy of education prior to its inception in the 1960s by Israel Scheffler. The following sections will reflect on the possible exit routes from this crossroads proffered by both trends.

3.2. Pitfalls of transhumanism in its attempt to provide a unitary discourse on the world: a false way out from the crossroads?

"Humanity is in the early stages of a period of explosive expansion in knowledge, freedom, intelligence, lifespan, and wisdom" (More, 1990, p. 6). Since the last decade of the 20th century, which was dubbed the 'Decade of the Brain' by the US government, the globalised effervescence of neuroscientific advances has taken centre stage (Álvarez-Díaz, 2013). In line with the above, we increasingly turn to the neurobiological basis of human activity. However, this could lead to a subversive and inordinate approach to science that overlooks human values (Mora, 2015). Indeed, such a scenario emerged from the crises of experimental science predicted mainly by Husserl and Kuhn, among others. With such precedents, modes of knowledge and scientific methods had to broaden their gaze towards their relationship with human beings and society. Similarly, the 'braincentric' discourse that has been so entrenched since

the 1990s shifted from 'biologisation' to social and anthropological perspectives of the human being (Straehle Porras, 2013).

While almost touching on the object of ethical or aesthetic norms, there can be no doubt that "what is most useful for the human being is not always a technical question but a humanistic one" (Pallarés-Domínguez, 2021, p. 91). One question that is relevant to this analysis and which underlies the empirical and philosophical bases of transhumanism could be the following: what would the implications be if the task of science were to create a religion for humanity? (Huxley, 1927/1957). Transhumanism is seen to attempt to break down the pitfalls of instrumental reason, as well as of applying genetics and technology to overcome the physical and cognitive limitations of our species (Bostrom, 2005; Lipowicz, 2019). The fact is that limits need to be set even for limits. Otherwise, such expectations would paradoxically lead to the production of calculable results about the empirical world that lead us towards dehumanisation. This idea revolves around Horkheimer's *Critique of Instrumental Reason*, which sustained that certain forms of rationality erected in favour of progress would destroy reason itself (Horkheimer, 1967/2012). In short, the 'how' that transhumanism embraces would be quite disturbing if the answer to the following question is affirmative: would a unitary discourse on the world enable a scientific, philosophical, cultural and social transformation?

3.3. Israel Scheffler's ideal of rationality: a way out from the crossroads?

An analytical revolution in the philosophy of education began in the 1960s with Israel Scheffler in the United States, following the publication of his work *The Language of Education* in 1960 and, five years later, *Conditions of Knowledge: An Introduction to Epistemology and Education*. Drawing from his influence, on the other side of the ocean, the British nucleus emerged, chaired by Richard S. Peters along with Paul H. Hirst. Without going into the details of the origins of the British moral-rational line that had the greatest influence in Europe, it is sufficient to note that Scheffler was the one who dealt with the centrality of reason in Education, drawing fundamentally from the philosophy of Science, the philosophy of Language, the philosophy of Education and Epistemology. To this end, the author developed an approach of free and critical search for reasons based on the interaction between cognition and emotion. Scheffler's philosophical-educational conception is of particular value to this article because of the idea drawn from the preceding analysis, namely that we run the risk of losing humanism if we refer to aseptic and instrumental mechanisms of reasoning, which elude the input of emotions or the contingency of the actual act of reasoning.

Briefly, Scheffler claimed that "the human sciences are not to be thought of as somehow above and beyond their own subject matter, human action" (Scheffler, 1985/2010, p. 40). Consequently, for him, the idea of conceiving science as a panacea or world culture should be abandoned, although it "is [...] regarded as a common human effort to understand the circumstances in which we all, across the globe, find ourselves" (*ibid*., p. 39). In his attempt to disentangle the relationship between objectivity and truth, Scheffler distinguished a middle path between foundationalism and relativism (Elgin, 1993; Neiman & Siegel, 1993). The intellectual idea that was central in this regard was that of 'plurealism.' This stemmed from the double negative of Charles S. Peirce's realist monism and the non-realist pluralism of his teacher Nelson Goodman. The author defended "the existence of objects independent of our making and accessible to inquiry, but [denied] that inquiry into such objects [converged] toward a unique world-version" (Scheffler, 1999, p. 425). Consequently, 'plurealism' was not opposed to realism but to monism, which had to be rejected essentially for two reasons: 1) because it was reductionist (materialistic and monopolising towards Physics); and 2), because it provided scientific progress based on the convergent direction of the sciences, which is therefore unjustified, given the changes occurring in them.

In summary, the general notion of 'rationality,' which is central to Scheffler's thought and embodied in critical thinking, recognised the principle of control (objectivity) in terms of methods rather than results (Scheffler, 1966/1982). Moreover, given its conception, the demand for reasons would require a conjunction between the cognitive and the moral spheres, which would result in objectivity not being exclusive to science. This has to do with the conditions of knowledge, in which the role of tests and reasons are essential for the transmission of beliefs (Scheffler, 1965). It would seem, therefore, that Scheffler's view offers a way out of the crossroads between empiricist scepticism and rationalist dogmatism.

Consequently, if some of the premises of transhumanism are accompanied by the educational ideal of rationality for which Scheffler advocated, some light could be shed on "[an] educational reflection that would [...] prevent the enclosure of the individual within the network of techno-science" (Lipowicz, 2019, p. 1).

4. Transhumanism and critical thinking in education: Israel Scheffler's re-readings of 'old purposes' in a 'new world'

Together, transhumanism and the educational ideal of Scheffler's rationality (which embodies critical thinking) might comprise 'old purposes' in a world that is not as new as it seems. Precisely, the analysis carried out so far leads to two major axes of reflection inherent to the field of education which are further discussed in the following sections.

4.1. What are the implications of seeking infallibility and effortlessness in the teaching-learning process?

One of the most promising aspects of techno-optimism is hope. We hope that human creativity will reach unimaginable frontiers, that our choices will become ever greater, that wisdom will be available at the click of a button, or that we will be infallible. But the crisis of desires that Ortega y Gasset detected in the 1930s led to what the philosopher called the 'hypertrophy of technology.' A desire to control everything has led us to lose control in many ways (Martínez Díez, 2021). One of the reasons for this is that "more than acquiring knowledge, human beings become what they know and, above all, while they know" (Gil Cantero, 2022, p. 26). Thus, if we try to avoid the efforts involved in justification and commitment, neither the enterprise of rationality nor of education could be sustained (Scheffler, 1954).

Ultimately, "why should I (or anyone) be rational? (or, alternatively, Why should I value rationality?" (Siegel, 1989, p. 4). Both Scheffler and his disciple, Harvey Siegel, projected this supposedly classical philosophical problem. The many historical connotations about reason should not mislead us. The reasons justifying a commitment to rationality could be accused of being circular and of not being radically answerable (Scheffler, 1973/2014, chap. 6). In this respect, undoubtedly, we all think, but do we always do so critically? If the demand for critical thinking in education is legitimate, it is because the demand for rationality is also legitimate. The irrational faith in reason noted by Karl Popper, among others, fails to recognise that reasons have force, that rational scrutiny is open-ended and requires effort. Hence, 'the rational justification of rationality' does not suggest a specific faculty that pits the cognitive against the moral, any more than it can be interpreted as a process of making logical deductions. In Scheffler's terms, the educational ideal of rationality is based on "the autonomy of the student's judgment, his right to seek reasons in support of claims upon his credibilities and loyalties, and his correlative obligation to deal with such reasons in a principled manner" (*ibid*., p. 141). Thus, principles, reasons and coherence grow with knowledge and constitute a living tradition in which ignorance or what we do not know plays a key role (Scheffler, 1989).

In conclusion, the subject of Education is not available in advance, any more than that of Rationality or of Science. Fallibilism is present at every corner of error, ignorance, negative thinking... Vice is a virtue in our efforts to understand the meaning of knowledge and its guarantees. The real opportunity for innovation requires directing our efforts beyond the available truths (*ibidem*), i.e., to critically teach somebody something. From this also stems the idea that "inquiry is a matter of our efforts to attain knowledge, whereas knowledge requires the satisfaction of independent conditions holding as a matter of fact" (Scheffler, 1973/2014, p. 173). 'Knowing what' is not an activity, as the philosopher Gilbert Ryle pointed out in his distinction between task verbs and achievement verbs. Thus, just as there is no reason to assume that a medical strategy never fails, even if doctors cannot cure without success, there would be no reason to assume that an infallible research procedure exists (*ibid*., chap. 15). Consequently, we cannot be concerned with success in teaching because teaching is not a set of executable moves based on what scientific theories prescribe. Infallibility is a dangerous ambition that impedes the growth of our scholarship, of what we teach and of what our students can discover. After all, "the honest admission of

ignorance and the simultaneous affirmation of the importance of questioning, no matter where it may lead, [is what] gives us [...] the impetus to learn" (Scheffler, 1994, p. 48).

4.2. Is such technological frenzy compatible with moral-rational considerations in education?

If one attempts to skate on thin ice, one has to move so quickly as not to risk testing its strength. With this idea from philosopher and poet Ralph Waldo Emerson, Zygmunt Bauman's 'liquid-modern' reaches its splendour. "The world is full of seductive and promising chances but, like the will [of] the wisp, its promises of empowerment are fleeting" (Bauman, 2009, p. 157). The art of educating and living tries to satiate the appetites of a world oversaturated in many ways, in which "culture is turning now into one of the departments in the 'all you need and might dream of' [...]" (*ibid*., p. 158). The whirlwind of change, transience and instantaneity that governs the exponential growth of new technologies may distort what makes us truly unique: our erratic nature, the most genuine freedom, and any oath of loyalty (Martínez Díez, 2021; Scheffler, 1989). Such 'must-do' and 'must-have' drain any true passion from our world in favour of 'only once' (Bauman, 2009).

To measure the pace of such prevailing technological freneticism, epistemic and moral sensitivity has to challenge false notions of efficiency. If we cannot expect a scientist or teacher to know everything, it is because knowledge is not generated by routine (Scheffler, 1982). In fact, a "scientist's passion for her pet theory is entirely compatible with that theory's objectivity" (Elgin, 1993, p. 9). A teacher's vocation is also compatible with his methods for channelling criticism. It is the effort to acknowledge that our particular beliefs may be wrong under continuous examination that generate the expanded experience of critically holding something. To that end, we require dialogue or rational discussion, respect for the other, silence, thoroughness... That is the basis of science and education. Both the scientist and the teacher require mutual understanding of their divergent goals. It is true that education is not a science but an art, but it draws on scientific theories to provide the holistic character of practical theory that justifies it from a moral-rational commitment (Scheffler, 1973/2014, chap. 8, 16). Thus, attention to its multiple meanings requires overcoming the boundaries between the scientific, the practical and the moral.

Therefore, our fears are misdirected. Educational theory cannot be left to scientific theorists; and teaching cannot be measured in the terms that transhumanism augurs, as in the number of answers that may be offered by students or by the teacher himself. In fact, "the learner does not ask for an answer but for recognition of the problem by the teacher and a genuine commitment to finding a solution" (Scheffler, 1994, p. 48). Moreover, "it is important to emphasize that, even in its full-blooded human sense, the concept of information is far from capable of adequately expressing our educational aims" (Scheffler, 1986, p. 524). In the end, the mere fact of saying something does not truly imply either learning or knowing it. Instead of magnitude in our thinking, we need depth; and instead of speed, we need slowness in order to ask ourselves about the human notion of all content, about the importance of each problem and its meaning.

5. Conclusions: can we speak of a 'new' educational ideal of rationality?

In the light of the above studies, the fervent scientific-technological development that underpins transhumanism does not require a 'new' educational ideal of rationality different from that augured by Scheffler. The novelty lies in the fact that the prosperity of techno-science seems to conceal the most important aspects of the ideal. Thus, paradoxically, transhumanist promises concerning the pursuit of our plenitude enable us to take a chicken-like flight through educational theory and philosophy that succumbs to its own shadow.

In conclusion, we need to defend ourselves from untested ideas but without corrupting 'the mystery' of human events. To achieve that, the inconsistencies of scientific imperialism would not be clarifying even for science itself. However, we cannot give the floor to the humanistic side alone if Education

is to be justified rationally. After all, the sceptic's attitude is too reductive to determine educational designs for acquiring knowledge. This is because, in order to determine what is humanising and what is dehumanising, we require justification and commitment. But this is a maximal and not a minimal interpretation of the teacher's job, in which the quality of the teacher's effort and role is reinforced. Without it, one may succeed in teaching but one would not succeed in teaching critically. Therefore, if it were not for the above, the possible uses we could make of technology would never work in our favour.

References

Allhoff, F., Lin, P., Moor, J., & Weckert, J. (2010). Ethics of Human Enhancement: 25 Questions & Answers. *Studies in Ethics, Law, and Technology*, *4*(1), 1–39. https://doi.org/10.2202/1941-6008.1110

Álvarez-Díaz, J. A. (2013). Neuroética como neurociencia de la ética [Neuroethics as the neuroscience of ethics]. *Revista de Neurología*, *57*(8), 374–382. https://doi.org/10.33588/rn.5708.2013246

Ayer, A. J. (1971). *Language, Truth and Logic*. London: Penguin Books. (Original work published 1936).

Bauman, Z. (2009). Education in the Liquid-Modern Setting. *Power and Education*, *1*(2), 157–166. https://doi.org/10.2304/power.2009.1.2.157

Bostrom, N. (2003a). Human Genetic Enhancements: A Transhumanist Perspective. *The Journal of Value Inquiry*, *37*, 493–506. https://doi.org/10.1023/B:INQU.0000019037.67783.d5

Bostrom, N. (2003b). *The Transhumanist FAQ: A General Introduction*. Retrieved July 6, 2022 from https://www.nickbostrom.com/views/transhumanist.pdf

Bostrom, N. (2005). A History of Transhumanist Thought. *Journal of Evolution and Technology*, *14*(1), 1–25. https://jetpress.org/volume14/bostrom.pdf

Bostrom, N., Baily D., Sandberg, A., Alves, G., More, M., Wagner, H., Vita-More, N., Leitl, E., Staring, B, Pearce D., Fantegrossi, B., Den, O., Fletcher, R., Morrow, T., Chislenko A., Crocker Lee, D., Reynolds, D., Elis, K., Quinn, T., ... Spaulding S. (2009). *The Transhumanist Declaration*. Retrieved March 29, 2022 from https://www.humanityplus.org/the-transhumanist-declaration

Coenen, C., Schuijff, M., Smits, M., Klaassen, P., Hennen, L., Rader, M., & Wolbring, G. (2009). *Human Enhancement: Study* (KITopen-ID: 1000125180). Science and Technology Option Assessment (European Parliament). https://publikationen.bibliothek.kit.edu/1000125180

Cortina, A. (2022). Los desafíos éticos del transhumanismo [The ethical challenges of transhumanism]. *Pensamiento. Revista de Investigación e Información Filosófica*, *78*(298), 471–483. https://doi.org/10.14422/pen.v78.i298.y2022.009

Descartes, R. (1982). *Principles of Philosophy* (V. Rodger Miller & R. P. Miller , Trans.). Kluwer Academic Publishers. (Original work published 1644).

Elgin, C. Z. (1993). Scheffler's Symbols. *Synthese*, *94*(1), 3–12. https://doi.org/10.1007/BF01064568

Gil Cantero, F. (2022). La Pedagogía ante el desfase prometeico del transhumanismo [Pedagogy in the face of the Promethean gap in transhumanism]. *Revista de Educación*, (396), 11–33. https://doi.org/10.4438/1988-592X-RE-2022-396-528

Giroux, H. A. (with P. Freire). (2001). *Theory and Resistance in Education: Towards a Pedagogy for the Opposition*. Westport: Bergin & Garvey. (Original work published 1983).

Habermas, J. (1984). *The Theory of Communicative Action: Reason and the Rationalization of Society* (Vol. 1) (T. McCarthy, Trans.). Boston: Beacon Press. (Original work published 1981).

Horkheimer, M. (2012). *Critique of Instrumental Reason* (M. J. O'Connell, Trans.). London: Verso. (Original work published 1967).

Hottois, G. (2013). Humanismo, Transhumanismo, Posthumanismo [Humanism, Transhumanism, Posthumanism]. *Revista Colombiana de Bioética*, *8*(2), p. 167–192. https://doi.org/10.18270/rcb.v8i2.797

Huxley, J. (1923). *Essays of a Biologist*. New York: Alfred A. Knopf.

Huxley, J. (1957). *New Bottles for New Wine*. London: Chatto & Windus.

Huxley, J. (1957). *Religion Without Revelation* (rev. ed.). New York and London: Harper. (Original work published 1927).

Jover, G., Gozálvez, V., & Prieto, M. (2017). *Una filosofía de la educación del siglo XXI* [A philosophy of education in the 21st century]. Madrid: Síntesis.

Kant, I. (1900). *Kant on Education* (A. Churton, Trans.). Boston: Heath & Co. Publishers. (Original work published 1803).

Kant, I. (1996). An answer to the question: What is enlightenment? (1784). In M. J. Gregor (Ed.), *Practical Philosophy: The Cambridge Edition of the Works of Immanuel Kant* (pp. 11–22). Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511813306.005

Kant, I. (1998). *Critique of Pure Reason* (P. Guyer & A. W. Wood, Trans.). Cambridge: Cambridge University Press. (Original work published 1781).

Kant, I. (2015). *Critique of Practical Reason* (M. Gregor, Trans.). Cambridge: Cambridge University Press. (Original work published 1788).

Kurtz, P. (1994). *Living Without Religion: Eupraxophy*. New York: Prometheus Books. (Original work published 1989).

Kurzweil, R. (2005). *The Singularity Is Near: When Humans Transcend Biology*. London: Penguin Group.

Lipowicz, M. (2019). Overcoming Transhumanism: Education or Enhancement Towards the Overhuman? *Journal of Philosophy of Education*, *53*(1), 200–213. https://doi.org/10.1111/1467-9752.12320

Martínez Díez, F. (2021). *Humanos, sencillamente humanos: Desafíos del transhumanismo* [Humans, simply humans: Challenges of transhumanism]. Madrid: San Pablo.

Mill, J. S. (2001). *Utilitarianism*. Canada: Batoche Books. (Original work published 1863).

Mora, F, (2015). Neuroculture: A New Cultural Revolution?. In J. P. Huston, M. Nadal, F. Mora, L. F. Agnati, & C. J. Cela-Conde (Eds.), *Art, Aesthetics, and the Brain* (pp. 3–18). New York: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199670000.003.0001

More, M. (1990). Transhumanism: Towards a Futurist Philosophy. *Extropy*, *6*, 6–12. http://fennetic.net/irc/extropy/ext6.pdf

More, M. (1998). *The Extropian Principles* (version 3.0). Retrieved April 29, 2022 from http://mrob.com/pub/religion/extro_prin.html

More, M. (2013). The Philosophy of Transhumanism. In M. More & N. Vita-More (Eds.), *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future* (pp. 3–17). United Kingdom: John Wiley & Sons. https://doi.org/10.1002/9781118555927.ch1

Neiman, A., & Siegel, H. (1993). Objectivity and Rationality in Epistemology and Education: Scheffler's Middle Road. *Synthese*, *94*(1), 55–83. https://doi.org/10.1007/BF01064572

Nietzsche, F. (2006). *Thus Spoke Zarathustra* (A. Del Caro, Trans.). New York: Cambridge University Press. (Original work published in 1883).

Pallarés-Domínguez, D. (2021). La reflexión crítica sobre los neuromitos en la educación [The Critical Reflection of Neuromyths in Education]. *Teoría de la Educación. Revista Interuniversitaria*, *33*(2), 87–106. https://doi.org/10.14201/teri.25288

Peters, R. S. (2015). *Psychology and Ethical Development: A Collection of Articles on Psychological Theories, Ethical Development and Human*. New York: Routledge Revivals. (Original work published 1974).

Russell, B. (1956). *Portraits From Memory: And Other Essays*. New York: Simon and Schuster.

Sandberg, A. (2015). Transhumanism and the Meaning of Life. In C. Mercer, & T. J. Trothen, (Eds.), *Religion and Transhumanism: The Unknown Future of Human Enhancement* (pp. 3–22). California: Praeger.

Scheffler, I. (1954). On Justification and Commitment. *The Journal of Philosophy*, *51*(6), 180–190. https://doi.org/10.2307/2021776

Scheffler, I. (1965). *Conditions of Knowledge: An Introduction to Epistemology and Education*. Illinois: Scott, Foresman and Company.

Scheffler, I. (1982). *Science and Subjectivity* (2nd ed.). Indiana: Hackett Publishing Company. (Original work published 1966).

Scheffler, I. (1986). Computers at school? *Teachers College Record*, *87*(4), 513–528. https://doi.org/10.1177/016146818608700403

Scheffler, I. (1989). Vice into Virtue, or Seven Deadly Sins of Education Redeemed. *Teachers College Record*, *91*(2), 177–189. https://doi.org/10.1177/016146818909100020

Scheffler, I. (1994). La educación judía: tareas y perspectivas [Jewish Education: Tasks and Perspectives] (Trad. C. Soriano). *Maj'Shavot / Pensamientos*, *33*(1), 43–48. https://majshavot.org/includes/uploads/articulos/d2c5c-la-educacion-judia.pdf

Scheffler, I. (1999). A Plea for Plurealism. *Transactions of the Charles S. Peirce Society*, *35*(3), 425–436. http://www.jstor.org/stable/40320774

Scheffler, I. (2010). *Of Human Potential: An Essay in the Philosophy of Education*. New York: Routledge Revivals. (Original work published 1985).

Scheffler, I. (2014). *Reason and Teaching*. New York: Routledge Revivals. (Original work published 1973).

Siegel, H. (1989). *Why be Rational? On Thinking Critically about Critical Thinking*. Institute for Critical Thinking. Retrieved July 29, 2022 from https://files.eric.ed.gov/fulltext/ED352333.pdf

Straehle Porras, E. (2013). En busca de un fundamento crítico y social de la moral desde una perspectiva neurocientífica [In search of a critical and social foundation of moral from a neuroscientific approach]. *Recerca: Revista de Pensament i Anàlisi*, (13), 103–120. https://doi.org/10.6035/Recerca.2013.13.7

Vidal, F., & Ortega, F. (2017). *Being Brains: Making the Cerebral Subject*. New York: Fordham University Press.

Vila Merino, E. S. (2011). Racionalidad, diálogo y acción: Habermas y la pedagogía crítica [Rationality, dialogue and action: Habermas and critical pedagogy]. *Revista Iberoamericana de Educación*, *56*(3), 1–15. https://rieoei.org/RIE/article/view/1507/2568

Vita-More, N. (2019). History of Transhumanism. In N. Lee (Ed.), *The Transhumanism Handbook* (pp. 49–62). Los Angeles: Springer. https://doi.org/10.1007/978-3-030-16920-6_2

Vita-More, N. (2020). *Transhuman Manifesto*. Retrieved July 18, 2022 from https://humanityplus.org/transhumanism/transhumanist-manifesto/

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