

THE TRANSHUMANISTIC APPROACH TO THE IDEA OF SUBJECT: IMPLICATIONS FOR PEDAGOGIC EPISTEMOLOGY

LA APROXIMACIÓN TRANSHUMANISTA A LA IDEA DE SUJETO: IMPLICACIONES PARA UNA EPISTEMOLOGÍA PEDAGÓGICA

ANITA GRAMIGNA
Università di Ferrara
grt@unife.it

RECIBIDO: 26/04/2013

ACEPTADO: 6/06/2013

Abstract: These brief considerations are meant to reflect on the significance that the idea of Subject has acquired in the present day, so as to shed some light onto what it implies for pedagogic epistemology. This investigative hypothesis defines the subject in terms of the way in which it interrelates with the world. Presently, subjectivity has to face technoscientific approaches, since the latter define contemporary society. Thence rises the contrast with the idea of subject rooting in complex transhumanistic cogitations.

To this end, this paper will attempt to unravel the various meanings attributed to the concept of subject, in relation to the changes the world is facing in our days. Finally, it will try to determine the extent to which subject and technology intertwine, through processes of reciprocal determination.

Keywords: transhumanism, subject, pedagogic epistemology.

Resumen: Este artículo trata del significado que la idea de sujeto ha adquirido actualmente y de sus implicaciones para una epistemología pedagógica. La hipótesis inicial define al sujeto según el modo de su interrelación con el mundo. En el momento presente, la noción de subjetividad se enfrenta con ciertas aproximaciones de carácter tecnológico, dado que esto último define a la sociedad contemporánea, estableciéndose un contraste con la idea de sujeto enraizada en la compleja visión transhumanista. A tal fin, se intentará desentrañar los diversos significados atribuidos al concepto de sujeto en relación a los cambios con los que el mundo actual se confronta. Finalmente, se tratará de mostrar hasta qué punto se entrecruzan sujeto y tecnología, a través de sus procesos de determinación recíproca.

Palabras claves: transhumanismo, sujeto, epistemología pedagógica.

Introductory considerations

When reflecting about the Subject through the language of knowledge epistemology, a procedure of differentiation takes place. This topic requires thought to be a process of patient discernment. This is because the spectrum of meaning concerning this *topos* is wide and highly varied. A possible framework for the variety of definitions of Subject is Conscience, as Decartes teaches us. There is, in fact, no other form of thought than the distinct, self-evident, and

conscious one that Decartes suggests. Thence, the *Cogito ergo sum* establishes a relation between thought and thinker. In this perspective, the Subject corresponds to Conscience, and thus to thought.

Nonetheless, Conscience is conceived of as a vigilant need for cognitive action, or, in Whitehead's (1945) words, as "perceiving itself as percipient". This Conscience, which justifies the Subject, is a process. A relational process. A creative creation. In fact, when we reflect on the Subject we immediately feel a need for stable grounds, and in this very need roots the Subject's history, as Greek ontology teaches us. However, the Conscience's wavering dynamism instantly obstructs this process, together with the groundlessness of the world in which it flourishes. The latter is determined and constituted by change and difference. As a matter of fact, we only know the world through our own perception, which is translated into symbols by the Conscience (1929).

When searching for an effective synthesis of Cartesian rationalism and English empiricism, Kant reached the "Copernican revolution" that places the subject at the basis of knowledge. Here, human faculties (*a priori* forms of sensitivity and intellect) come to determine the object in its "phenomenality". Knowledge is justifiable according to logic only within this limit. In reality, the extra-phenomenal is out of the reach of our specific detection processes. By applying its own formal instruments to experience, science provides the subject with a central role. This is then reinforced both in the ethical and aesthetic domain. In relation to the former, the German philosopher claims that man is "a rule to himself", since his will is *self-legislative*. Therefore, his morals cannot be externally influenced, either by religion or politics, whereas in relation to the latter, he asserts that beauty is not an objective or ontological element of things, but rather the meeting point between them and our spirit. Consequently, nature's beauty may only be rendered formally harmonic by our own mind, through artistic expression.

The contribution of Kant's genius to scientific, ethical and aesthetic knowledge seems sufficiently obvious. Moreover, he recognizes the constant stimulus, provided by metaphysics – which he himself so lucidly critiques –, to proceed and explore the possibilities beyond what is known.

The processes of learning and determining subjectivity obey profound pedagogic semantics, as well as the meaning and sense of the sciences that study them. This paper aims at reflecting on this profound semantics, by means of the "theoretical place" called Subject.

The Subject in crisis

During the 20th century, Husserl's phenomenology highlighted rather effectively the grounds of the Western world's "crisis". This crisis rooted in the loss of importance of the cognitive model of objectivism. The latter, ever since Galileo, symbolized reality according to a physic-mathematic construction. Hence, it neglected the *Lebenswelt*, in other words the world consisting of human beings' concrete existence. Husserl (1968) is not an epistemologist aiming at challenging the scientific base of sciences applied in their naturalistic model. He is strongly convinced of their explanatory power, yet innovatively and radically affirms that this science has lost sight of its real objective: man as a subject of free will, able to apply his rational right to modify the world. In other words, the pivotal role of the human subject, which must be re-established.

Therefore, sciences present a sort of extraneousness towards existence, which produces distrust or even hostility. They do not seem able to grasp the necessities or questions that men have in relation to their destiny. Consequently, they fail to guide towards the debates between the meaning and non-meaning of human existence in its entirety. Might this perhaps depend on the fact that they have exhausted the potential applicability, productivity, progress, and wellbeing that they can provide? Husserl maintains this categorically. Moreover, he specifically believes that they are missing the pre-scientific, pre-logic grounds of the existing life-world, defined as a reign of original evidence. Hence, the need for a new science: phenomenology, which must aim at steering subjectivity towards the meaning of existence. It is a philosophical science that can "reveal" humanity to itself as a "phenomenon". Its role is specifically challenging, as it must bring back to the surface what has been hidden, and render it comprehensible: man as a subject, which cannot be understood by any other science due to their reciprocal seclusion. Not even psychology can achieve this goal, since it has also established itself as a science of facts. Phenomenology intends to be an *eidetic* science of structures, requiring the discontinuing of the usual scientific acceptance of reality. Indeed, it intends to focus our attention on conscience and its intentional acts, as well as the manners in which it takes over reality. The phenomenological researcher becomes disinterested in facts, but rather learns to capture the essences revealed by reason. The latter is a privileged philosophical tool, and can explain the various ways in which the being manifests itself.

Subsequently, scientific rationality does not belong to any specific science or method of research, in that it "must be about man and man's history in its entirety" (E. Paci, 1970, p. 332). In that sense, it can be affirmed that life does not find its meaning in science, but rather science recognizes its own grounds in

life. Phenomenological conscience can never be as absolute as progressive reconstruction in Hegel's renowned *Phenomenology*. Indeed, the former is always conscience "of something", thus presenting a clear relativistic matrix. This "philosophical root" imprinted by Husserl turns out to be particularly fertile in psychological and sociological studies during the second half of the 20th century. From a critical need for knowledge emerged a perspective dense with meanings: a wisdom that has become approximate, relativistic, and lacking definition in its confrontation with the phenomenal reality (that which appears). So-called "existential psychology", for example, does not even believe it can interpret the world of subjective experiences. It chooses to limit itself to the search for traces of experiences, emotions, symbols, etc., by means of an empathetic method. The researcher must enter the other's world with a constant participatory tension, as Maslow and Rogers show us.

The prominence of scholars quoted in today's adult educational practices demonstrates a specific link between phenomenology and pedagogy; yet this relation is even further highlighted by Paulo Freire's theoretical and practical work, which recovers, from phenomenology, the pivotal role of conscience's intentionality. For Husserl, the subject is always conscience, experience, or perception of something; it is a *cogito*, and the *cogitata* are the produce of subjective intention. In relation with intentional modality, the *cogitata* may appear as real, imaginary, possible, etc. However, especially when the subject intentionally approaches the other, it produces inter-subjectivity. This should be considered as teleological, in that its purpose is the creation of a *society of subjects*. Moreover, intentionality is not only inspired by the present, but also reconnects with the past and prefigures the future: it is conscience of the flow of experience through time (*Erlebnisstrom*). According to Freire, the conscience is "method" and "journey" towards an intentionally identified beyond. It is an ideal, and at the same time a concrete project which grows in relation to profound maieutic connotations. This process is represented by the *culture circle*, which is not a place, but rather an educational occasion. An occasion where no-one is at the center, but rather everyone equally participates in the definition of learning processes to be pursued. These words bring to mind the urgency of the *Exodus*, which Ernst Bloch (1972) considered to be the peculiar and inescapable nature of all humanization: freedom from the domination that Freire so passionately proclaimed, placing at the center of the emancipation of the oppressed the explosive power of dialogue. The latter represents not only a tool for awareness-raising, but also an operation of transformation of the world, since there is no authentic word that is not also practice.

This paper also argues that the Subject, far from once and for all creating its identity and immutability, is a dynamic and creative system. It is the *sub-jectum* basis: the grounds for both knowledge and ethics. This is because it carries the object of knowledge, and, consequently, its related behavioural choices, through its own cognitive forms. The forms of “formalized” knowledge, i.e. translated into a coherent set of symbols, attend to language. Meanings are configured within the game of language. In this sense, it can be asserted that thought is narrative, in that it tries to harness reality into linguistic forms that translate into functional interpretative schemes. Ergo, since its cognitive action on the world has a notably linguistic approach, the Subject’s creativity is of an eminently hermeneutic nature. Reality is a text to be interpreted. “It is the very same discourse practices”, writes Salvatore Natoli (2010, p.11), “that trace, time after time, their own boundaries. And yet always trespass them. Reason takes and gives shape, in fact depicts what happens in discourse. Whilst discerning, it inevitably demarcates. Whilst demarcating, it interprets”. Nonetheless, as *sub-jectum* – in other words, as an element that sustains, founds and is subjected, through its own interpretative forms, to knowledge –, its hermeneutics paradoxically roots in its ontology.

This ontology does not only concern the observable epistemic fact that has been pointed out – in other words, its essentiality in processes of construction of a knowledge that can only exist in relation to the Subject. On the contrary, it also concerns the procedural and relational nature of the creation of subjectivity. Indeed, the Relation is the ontological principle of the Subject, existence, knowledge, and life itself. The Relation is the total matrix, since without Relation existence, reality and life cannot be read, interpreted or understood. Without this conceptualization, we cannot effectively explain either the nature of conscience, or the meaning of our existence in the world. To sum up, without the Relation as explanatory principle of things, we are not able to orient ourselves in the symbolic *multiversum* in which we live. Thence, the multiple dimensions of the Subject and its varied affiliations; and, consequently, the pivotal role of another present-day icon: interculturality. From this, its anthropological implication: when thinking of the subject, we automatically think of each single individual. In this way, this *topos* brings to the same level the principle of identity and that of diversity. Just as any conceptualization whose nature condensates meanings into an *unicum*, which nonetheless implies, according to Derrida (1967; 1972), the refutation of its many differences and dissemination of its many contents. The process of identification of the subject decentralizes itself in the world, with infinite historical-material differences. In those determinations the subject identifies itself with the individual. In short, this paper argues that the

subject is determined in an educational, multirelational and multidirectional process, which favors knowledge in its linguistic representations. Despite both Subject and language being self-defining, technology nowadays assumes a crucial role in this game.

All of this has many consequences in the field of educational epistemology. Indeed, a determined conception of subject defines the idea of its constructive processes, just as a determined conception of reality defines a determined theory of knowledge. Finally, knowledge itself is related to the idea of *logos*, a dominant conception in our cognitive traditions since Plato, thus dictating the most consolidated educational practices.

The dissolution

With his *Metaphysics*, Aristotle delivered to us the Subject as foundation. The “first philosophy” is, in fact, a science that investigates, postulates and sets the “foundation”, despite the fact that such incontrovertible truth may never be fully acquired. The *sub-jectum* is the structure of reality, a base that sustains what would otherwise collapse. According to Heidegger (1984), the entity, as entity, is a *sub-jectum*. Something that pre-exists in terms of itself, and as such is also at the basis of its constant properties and changing states. It is a uniform and permanent element, principle and fact, paradigm of logic around which the notion which has reached modern times constituted itself, and with which we are still dealing nowadays. Aristotle and Descartes have carved this idea of Subject into our epistemologic tradition. Nonetheless, this idea of subject as foundation implies the existence of a foundation. Therefore, the existence of a reality with founding structures. Ergo, it implies the existence of an ultimate, incontrovertible truth. In this context, knowledge is none other than the uncovering of a truth-reality, whose profound signification nodes are its own foundation. Consequently, what is needed is to find the correct method and exact procedure to apply the very laws of this “discovered” reality. Reality consists in what is rationally argued about it. As Bateson (1979) would say, the map blends into the landscape. Hence, education is the teaching of the *logos*, and knowledge is in the foundation. The Subject must not build it, but only look for it. Why? Because it is. The Subject is, reality is. They are both permanent, universal facts. Knowing is to render reality comprehensible. Thus, knowledge is adherent to the world, rather than its description, interpretation, set of explanations, or construction. Subject and world are uniform paradigms, inside which all their differences vibrate. They may be applied to each individual declination, but can never be

fully identifiable with any one of them. The foundation is a stable principle, an essence and not a process, and thus it exists independently of the Relation. In this context, our educational traditions have taught us to think by identifying and separating phenomena, and concentrating on things rather than on relations. The Galilean application of a science which creates separations is born precisely of the perfecting of the classic epistemologic model. In epistemology, as in scientific research, the disjunctive analytical method, specialistic separation, knowledge dichotomy, and the abstract model have been favoured.

At the heart of this cognitive approach, and of the educational theories that derive from it, is the idea of Subject as uniform and permanent foundation. It is on these *fundamenta* that modernity has been built; and it is with the crumbling of these *fundamenta* that modernity flakes, as Lyotard (1979) would say, into many small and singular narrations.

The postmodern or late modernity, liquid modernity, is none other than the shattering of Bauman's concept of foundation (1992). With the dissolution of modernity, the unit of epistemology and educational theorizing is no longer the Subject-foundation, but rather the interactive and dynamic relationality that binds the Subject to its environment. From reality's groundlessness, we reach the notion of Subject as a small ecosystem, at the same time included into and englobing a wider set of interrelations. Uniqueness is dissolved into relation, stability into dynamism.

Nevertheless, some further thought-provoking dissolutions exist: the subject is not only a relational dance that transforms it, while it interconnects it to the world. The subject is not only the entity that perceives to be perceiving, in other words, conscience and consciousness: it is also technical self-renovation and self-transformation. According to Peter Soloterdijk (2009), education itself is a "transformative" technique of the human being whose purpose is the optimization of his/her potentials. It is an anthropo-technique which aims at exceeding oneself, in the sense that one tries to overtake one's own starting limits, by highlighting one's initial abilities and influencing their positive evolution. Education could thus strengthen the human's intellectual activity and physical performance, allowing him/her to acquire new abilities and new powers for intervening on the world. In light of these considerations, which can largely be generalized to Transhumanist thought, it can be stated that the subject defines itself according to the extent to which it has exceeded itself. Its relation to the world is defined in terms of its power over the world. In this sense, it can be argued that Soloterdijk's transhuman subject is definable in its being in transition, and that its world is the object of its "transformations". As previously mentioned, Soloterdijk is but one of the outstanding representatives of this

movement. Above all, he theorizes about “a humanity radically transformed by future technology”, as claimed by the first principle of Transhumanistic texts of the Association of Italian Transhumanists. What does this statement concretely mean? And which consequences does it imply for the general idea of subject and body? Asking ourselves these questions is not at all a mere academic exercise. In fact, the answers that will be elaborated will directly give roots to the educational, political and existential choices that will be made.

The possibility, or rather, the certainty that technology will forge a new humanity, implies the taking on of the responsibility to “re-design the human condition”. The purposes of this design are to “avoid the inevitable ageing process, and the limitations of human intellect”. The ethical background of these presuppositions is related to “the individual right to expand one’s own intellectual and physical capacities, and to increase one’s control over one’s own life”, in other words: “a personal growth beyond the biological limitations by which we are bound”. Finally, the seventh principle states that “transhumanism provides wellbeing to all sentient beings (be they human, artificial intelligence, animal, or even extraterrestrial)”. The human subject is, therefore, a sentient being, which has been thoroughly consolidated. However, in this framework, also artificial intelligence, (all?) animals, and (humanoid or belonging to a different fauna) extraterrestrials would be sentient. How then would the sentient human being be differentiated from other non-human sentient beings, since they all have the right to their own technological perfection? Probably in the desire for perfection that technological intelligence would mostly satisfy. It can be deduced that animals and artificial intelligence would not thus far have this decision-making autonomy, but would benefit from it thanks to the intervention of human subjects. Ergo, the subject is he who chooses to apply the procedures and products of technoscience to exceed himself.

The Subject in transition

This self-renewing act of perfecting defines a new status for the human being. It is this very decision-making ability that differentiates it from animals and artificial intelligence; on the other hand, we cannot express an opinion on extraterrestrials. The idea of subject seems to be recovering its old uniformity, now guaranteed by this decisional right to “reprogram itself”, both at the physical and psychological level. It is a subject that creates itself, or, better still, re-creates itself, because it does not like the way it was born. It is a subject that beats ageing, and perhaps even death. It continuously improves itself, no longer

in order to reach its own *arete*, moral virtue *par excellence*, but to exceed all limits imposed by nature. Its own self-improvement obeys mainly a physical sphere which, thanks to new technologies, regenerates itself. This means that the space for educational intervention which we were accustomed to radically changes. Education would have dilated its own technical potential through effective technological intervention. Transformation is no longer the result of long, patient educational processes, but rather the technical manipulation of body, mind, and psyche. This self-renewing decisionality is the most recent produce of technological rationality. The subject is a technological rational being (R. Queraltó, 2008), which limitlessly operates on itself and on humanity. Ergo, it can legitimately intervene in the very structure of life, and bring about epochal changes over the course of a few years.

Nonetheless, if rationality hereby finds its defining, almost ontological, empire, corporeality recovers a renewed protagonism. It becomes the very matter on which technical reason acts in order to optimize performance, beyond the boundaries of age and life itself, as it has been conceived up to the present day. The body becomes a technological object, thus losing its original and individual uniqueness. Then we all can become strong, attractive and immortal, regardless of our genetics and talents, according to such schemes as contemporary science develops for our happiness. Indeed, Max Moore claims that “death is an imposition on race that can no longer be tolerated, while Kevin Davis goes so far as stating that “we must rewrite God’s language”¹.

In this context, education seems to lose importance due to its lengthiness and hazard of subjectivity that always escapes determinisms. Why study, cultivate one’s own spirituality or refine one’s sensitivity? Why train to improve, and to cultivate a *mens sana in corpore sano*, when technology intervenes to correct and define a sentient being into a being capable of beating even nature’s absurd imposition to die? Genetic engineering can be made responsible for manufacturing beautiful, intelligent, strong and psychologically well-oriented offspring. Yet, who evaluates the degree of beauty, intelligence, and psychological sanity? The parents or some elected experts? Scientists? Or the “sentient” subject when it acquires the ability to make decisions? Perhaps the perfectly programmed fetus, with its maximum transhuman potentials, will have a different conception of beauty, intelligence and psychological sanity to that of its programmers. Ergo, it will be able to intervene, and reprogram itself with the aid of the right technology and the adequate procedures.

1 Cfr. “Estinzione degli sciocchi e figli forti, attraenti. Ecco il transumanismo”, Edited by Il Foglio, March 2005

Teaching good manners and the *abc* becomes redundant. The body is the testing field of technical reason. The self-renewing decision goes through the body, manipulable matter and host to a psyche that can and must be technically programmed. Technology, and no longer education, is now the contemporary Prometheus' forge. Technology also arrogantly enters the definition of Subject designed by the transhumanist school of thought. The body becomes the dynamic structure of the subject, as the latter intervenes on the former to perfect it. While before the Subjects procedurality and pluralism were determined by the Relation, as ontological principle, now, said procedurality is determined by the Subject's technological will to self-constitute. Is it more free? This paper argues that it is "differently" free, on the condition of understanding the meaning, nature and direction of technoscientific dynamism. Even once this condition is fulfilled, the subject will be free to make decisions regarding its improvement through technique – finance permitting –, but will nonetheless be "delivered" into the hands of technocratic officials, specialists who will operate on him/her with the right technologies, and to whom he/she will hand over his/her body, mind, and psyche. The procedural relationality that determines the transhumanist Subject depend, above all else, on the technical control of specialists. Technical reason, the mature product of the latest technoscience, turns the body into its field of action to forge the man and woman of the future. The transhuman Subject agrees to its self-determination through the technological acting of a rationality which turns the body and the psyche – which it reaches by acting on the body itself – into a battlefield of its self-experimenting. The Subject-foundation that postmodernism has dissolved into procedural relationality and complexity dynamics, can now be defined as the ability to continuously self-create. The new criteria are those of technical rationality that delivers the decision-making of the self-creating Subject into the hands of the technology official, he who carries out suitable procedures with appropriate instruments, and the corresponding finances. New, previously inconceivable opportunities arise. As well as new risks. New freedoms and new captivities evoke the hazard of the ancient *hýbris* (ἄβρις).

Heidegger (1983) claims that what is truly worrying is not that the world may turn into the sole domain of technique, but rather that man is not prepared for this radical mutation of the world. In other words: what is more disturbing is that we are not yet capable of reaching, through a mediating thought, an appropriate confrontation with what is actually emerging in our era.

Considerations for the immediate future

The subject of the world of the future will have to be highly technology-literate, will need to know the technoscientific languages and logics that have forged his/her world, and, perhaps, his/her humanity. Why is that, if there will be technocrats who will intervene on his/her psyche, mind, genes, etc., according to their specialization? To understand what is happening around him/her, to be able to orient him/herself in the world he/she lives in, and to make cognitive choices. The Subject of the future will have to be a supracompetent hermeneutic in order to “reveal” the hidden *suasione* of scientific rethoric, and undo the technoscientific and sci-fi tales that fill his/her imagination. Why? To be more free. Or, in other words, to rule his/her own mind. To decide what to do of him/herself after having understood what he/she is and what that wonderful adventure we call technology is. Because answering the immediate question “what is technology for?” is useless if one ignores its nature, does not know what it is and how we conceive it. And to ask oneself such questions, one needs a philosophical mind. Free and plural thought. An education that can trace significance processes among the various domains of knowledge. Technocratic literacy, so widely praised by Western educational practices, is not in itself enough to understand the meaning of science and technology. Nor to understand their contemporary purpose, and existential significance they hold before our eyes. Technocratic training eludes the lengthy times of profound comprehension of phenomena. Therefore, a useful scientific education cannot forego a solid humanistic basis: “I do not call technique, but simple practice, the activity which cannot rationally explain the nature of its object nor of its instrument, and, incapable of making sense of facts, is absolutely unfitted to connect them to their cause” (Plato, *Gorgias*, 465a). Because: “*Tèchne* derives from *héxis nou*, which means: owning and disposing of one’s own mind” (Plato, *Cratylus*, 414b-c).

Bibliography

- AA. VV., *Il Transumanismo. Cronaca di una rivoluzione annunciata*, Milano, Lampi di Stampa, 2008.
- Buchanan A.; Brock D. W.; Daniels N.; Wikler D., *From Chance to Choice: Genetics and Justice*, Cambridge & New York, Cambridge University Press, 2000.
- Bateson G., *Mind and Nature: A Necessary Unity*, New York, Dutton, 1979.
- Bauman Z., *Intimations of postmodernity*, London, Routledge, 1992.

- Bloch E., *Atheismus im Christentum*, Frankfurt am Main, Suhrkamp, 1968.
- Campa R., *Mutare o perire. La sfida del transumanesimo*, Bergamo, Il Sestante, 2010.
- Derrida J., *La disseminazione*, Paris, Éditions du Seuil, 1972;
- Id., *L'écriture et la différence*, Paris, Éditions du Seuil, 1967.
- Freire P., *La pedagogia degli oppressi*, Milano, Mondadori, 1972.
- Heidegger M., *Holzwege*, Frankfurt, Klostermann, 1950;
- Id., *Gelassenheit*, Frankfurt, Klostermann, 1959.
- Husserl E., „Die Krisis der europäischen Wissenschaften und die transzendente Phänomenologie. Eine Einleitung in die phänomenologische Philosophie“, *Philosophia*, Belgrad, 1 (1936): 77-176.
- Liotard J. F., *La condition postmoderne*, Paris, Les Editions de Minuit, 1979.
- Maslow A., *Motivation and personality*, New York, Harper and Row, 1954.
- Natoli S., *Soggetto e fondamento*, Milano, Feltrinelli, 2010.
- Paci E., *Funzione delle scienze e significato dell'uomo*, Milano, Il Saggiatore, 1970.
- Rogers C., *On becoming a person: A therapist's view of psychotherapy*. London, Constable, 1961.
- Sloterdijk P., *Du mußt dein Leben ändern: Über Anthropotechnik*, Frankfurt am Main, Suhrkamp, 2009.
- Vattimo G., *Il Transumanesimo. Una nuova filosofia per l'Uomo del XXI secolo*, Roma, Armando Editore, 2001.
- Queraltó R., *La estrategia de Ulises o ética para una sociedad tecnológica*, Sevilla, Doss Ediciones, 2008.
- Whitehead A. N., *Science and the Modern World*, New York, Macmillan, 1945;
- Id., *Symbolism. Its Meaning and Effect*, London, Cambridge University Press, 1929.
- www.transumanisti.it/