

Álvaro Vieira Pinto on the concept of technology: an introductory discussion

Álvaro Vieira Pinto sobre o conceito de tecnologia: uma discussão introdutória

Abstract

This paper aims to discuss the concept of technology as provided by the Brazilian philosopher Álvaro Vieira Pinto. First, the philosopher's life and work are presented, his book "O conceito de tecnologia" [The concept of technology] and his methodological foundations are briefly examined and, finally, we discuss his conceptualization of technology. From the four meanings of the term unravelled by the author, we highlight technology as the "logos of technique", as the philosopher proposes it as a unitary field of study on this matter. We conclude pointing the richness of his reflections to the liberation of underdeveloped countries.

Keywords: Álvaro Vieira Pinto; Philosophy of technology; Decoloniality.

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Resumo

Esse artigo tem o objetivo de discutir o conceito de tecnologia provido pelo filósofo brasileiro Álvaro Vieira Pinto. Primeiramente, vida e obra do filósofo são apresentadas, seu livro “O conceito de tecnologia” e seus fundamentos metodológicos são brevemente examinados e, finalmente, discute-se sua conceituação de tecnologia. Dos quatros significados do termo desvelados pelo autor, destaca-se tecnologia como sendo o “logos da técnica”, já que é ela proposta como um campo unitário de estudo do tema em questão. Na conclusão, aponta-se a riqueza de suas reflexões para a libertação dos países subdesenvolvidos.

Palavras-chave: Álvaro Vieira Pinto; Filosofia da tecnologia; Decolonialidade.

Introduction

This paper aims to discuss the concept of technology as provided by the Brazilian philosopher Álvaro Vieira Pinto. After the posthumous publication of his book “O conceito de tecnologia” [The concept of technology] in 2005 and “A sociologia dos países subdesenvolvidos” [The sociology of the underdeveloped countries] in 2008, the academic debate on his ideas has increased. Academics underline how his reflections can contribute in different fields, such as Education and Technology¹.

Born in the city of Campos dos Goytacazes, Rio de Janeiro, in 1909, Vieira Pinto’s primary academic background was in Medical Studies. Following his experiences as a scientific researcher, he later attended Physics and Mathematics courses while also studying Philosophy. In the 40’s he was nominated by the writer Alceu Amoroso Lima to be assistant professor at the Faculdade Nacional de Filosofia, which was later incorporated into the Universidade Federal do Rio de Janeiro. In 1951, after a year of studies in Sorbonne, France, Vieira Pinto became professor of History of Philosophy with a thesis entitled

1 Gonzatto, R. & Merkle, L. *Vida e obra de Álvaro Vieira Pinto: um levantamento biobibliográfico*, 2016; Grohman, R. *Humanist and Materialist Perspectives on Communication: The Work of Álvaro Vieira Pinto*, 2016

“Ensaio Sobre a Dinâmica na Cosmologia de Platão”² [Essay on Dynamics in Plato’s Cosmology]. At that time, considering his published work, consisted mainly of papers on science communication and ancient Greek philosophy, he was considered a great Hellenist. However, in 1955 he received an invitation and became one of the founding fathers of the Instituto Superior de Estudos Brasileiros (ISEB) [Superior Institute of Brazilian Studies], which changed drastically his writing and thinking profile³.

ISEB held the responsibility of using the social sciences categories and concepts to provide an authentic comprehension of the Brazilian reality and to promote the ideological foundation for the process of national development. As the head of the philosophy department, Vieira Pinto soon acquired prominence, lecturing at the inaugural conference of the Institute, entitled “Ideologia e desenvolvimento nacional”⁴ [Ideology and National Development]. In 1960 he published “Consciência e realidade nacional”⁵ [Consciousness and National Reality], one of his most quoted works. He also published other works approaching Brazilian development-related themes⁶, but right after the 1964 Brazilian *coup d’état*, he was obliged to leave Brazil, living first in Yugoslavia in exile, then, invited by Paulo Freire, in Chile. There he worked in educational matters and studied Demography, returning to Brazil in 1968. From this moment until his death he kept reclusive in his apartment, away from public activities, but working on the translation of books by authors such as Piaget, Chomsky, Toynbee and Bertalanffy among others, using pseudonyms however⁷.

From this period until his death in 1987, he published three more important works: the 1969 “Ciência e Existência” [Science and existence], the 1973 “El Pensamiento Crítico en Demografía” [The critical thinking in demography] and the 1982 “Sete Lições Sobre a Educação de Adultos” [Seven lessons on adult education]. Thus, Vieira Pinto was regarded as a thinker especially

2 Vieira Pinto, A. 1949.

3 Côrtes, N. *Esperança e democracia: as ideias de Álvaro Vieira Pinto*, 2003; Vieira Pinto, A. *Sete lições sobre a educação de adultos*, 1982.

4 Vieira Pinto, A. 1956.

5 Vieira Pinto, A. 1960.

6 Vieira Pinto, A. *Por que os ricos não fazem greve?*, 1962a; Vieira Pinto, A. *A questão da universidade*, 1962b; Vieira Pinto A. *Indicações metodológicas para a definição do subdesenvolvimento*, 1963.

7 Côrtes, N. op. cit.; Gonzatto, R. & Merkle, L. op. cit.

devoted to nationalism, national development, critical thinking, logic, ontology, human work, demography, scientific methodology, researchers' formation and popular education.

But at the same time the author worked on six other books that we can determine: "A Crítica da Existência" [The critique of existence], a book discussing existentialism; a book on "Filosofia Primeira" [First philosophy], probably discussing the Pre-Socratic Philosophy; "A Educação para um País Oprimido" [The education to an oppressed country]; and "Considerações Éticas para um Povo Oprimido" [Ethical considerations to an oppressed nation], which reflects upon a concrete ethic to the Brazilian context⁸. The whereabouts of these four books are still unknown, but, as we stated previously, "O conceito de tecnologia" in 2005 and "A sociologia dos países subdesenvolvidos", in 2008, were published, thus contributing to a re-evaluation of his work and thought.

Vieira Pinto suffered in his existence all the misfortunes a thinker devoted to national liberation is prone to face. As many Latin-American progressive thinkers at that time, his academic career, personal life and legacy were profoundly coined by the right-wing dictatorship. Hereafter we will present his reflections on technology and the bases of his discourse.

Álvaro Vieira Pinto's discussion on technology

The book "O conceito de tecnologia", our main source to the discussion of technology according to Álvaro Vieira Pinto, was probably written in the late 1960s or early 1970s, considering the author's statement that he finished the last revision in April 5th, 1973⁹. The two-volume book was divided in four parts: in the *first*, he proposes an analysis of some fundamental notions such as "technological age", the human faculty of project, the concept of production, the relation between machine and humans, ancient and contemporary conceptions of technique, technique and history, the author's comprehension of technique, and the various meanings of technology. The *second* part discusses the technical rationality, the use of technology in social domination, technology and work, ethics and work, technostructure, the authentic character

8 Vieira Pinto, A. *Sete lições sobre a educação de adultos*, 1982.

9 Vieira Pinto, A. *O conceito de tecnologia*, vol. II, p. 794

of the technical rationality, the dialectical categories of “ter” and “haver”¹⁰, the hominization process, the “Herod Complex”¹¹ and an examination of the concept of “restart of history”. The *third* discusses themes proposed by cybernetics, such as the historical and dialectical character of cybernetics, cybernetics and human beings, heuristics, different kinds of cybernetic systems, analogy, information, the question of truth, modelling, black box theory, logic and information, gnosiology, the social character of cybernetics, communication and intersubjectivity, self-regulation, the intelligence of human beings and “intelligence” of machines, second-degree feedback, learning and the notion of “destiny of men”. The *fourth* and final part of the book discusses technology and problems of existence, reflecting upon the ideology of cybernetics, cybernetics as a new version of *mathesis universalis*, the social bases of the future of technology, the technical progress and moral problems, the naivety of the notion of a “war between human nature and technology”, the technocatastrophism and technology and social classes.

Álvaro Vieira Pinto can be considered a critical thinker who uses a non-idealistic dialectical logic. To comprehend what this characterization means for his methodological perspective we should consider some of his previous works. According to his explanations, the consciousness of the national reality can be schematized in two poles which shape every representation; the *naïve consciousness*, which can be defined as the one unaware of its fundamentals; and the *critical consciousness*, that can be defined as “the one which has clear conscience of the factors and conditions that determines it”¹²¹³, being also characterized by a systematic thinking guided by the categories of objectivity, historicity, totality, rationality, activity, liberty and nationality¹⁴.

10 We will not translate “ter” and “haver” to English for both terms mean “there to be”. In Portuguese, they are commonly used as synonyms, but Vieira Pinto gives a philosophical distinction based on the fact that, to animals, nature *tem* (“has”, “provides”) all the goods they need to survive, it is already there. To humans, the world must *haver* (“come to exist”) the goods they need, but they only *haverá* (future form of *haver*) if humans produce them.

11 On the author’s reflection, the Herod Complex is defined by “the dread of new-borns, of infancy, from where the increasingly bigger and more politicized young crowds of tomorrow will come demanding that the adult generations explain the way they organized society for the young.” (Vieira Pinto, 2005, vol. I, p. 504).

12 This and all the translations from Portuguese are provided by the authors, except where noted otherwise.

13 Vieira Pinto, A. *Consciência e realidade nacional*, vol. I, p. 83.

14 Idem, vol. II.

One may identify some conceptual proximity with Paulo Freire's thoughts, as also when regarding the titles of the previously mentioned manuscripts on ethics and education; this proximity occurs because of the influence exercised by Vieira Pinto on the Brazilian educator who calls him "Brazilian master"¹⁵. On the other hand, the non-idealistic dialectic in his conception can be understood as the science of the movement of reality¹⁶.

Some authors considered Vieira Pinto a Marxist¹⁷, others portrayed him as a Hegelian¹⁸, but the most accurate analysis, in our opinion, was made by Marcos Freitas, Norma Côrtes and Ernesto Faveri in different works¹⁹, who showed that Vieira Pinto sought the Marxist thought, but the phenomenological and existentialist as well. Norma Côrtes²⁰ production should be regarded, as she provided a profound hermeneutic analysis of what can be considered his *magnum opus*, "Consciência e realidade Nacional". But, above all, we should consider Marxism, Existentialism, Phenomenology or any other philosophical school as influences to the author who created his own way of thinking, which is, and we are currently investigating, extremely coherent with the most recent productions on the decolonial thought²¹. We defend that Álvaro Vieira Pinto should be regarded as a pioneer of the decolonial movement because his reflections illuminate and predict several of the current modernity-coloniality-decoloniality discussion topics²².

15 Faveri, J. *Álvaro Vieira Pinto: Contribuições à educação libertadora de Paulo Freire*, 2014; Freire, P. *Pedagogia do oprimido*, 2016, p. 101.

16 Vieira Pinto, A. *Ciência e existência*, 1969.

17 Paim, A. *História das ideias filosóficas no Brasil*, vol. I, 2007.

18 Domingues, I. *História da filosofia no Brasil: legados e perspectivas- ensaios metafilosóficos*, 2017.

19 Freitas, M. *Álvaro Vieira Pinto: a personagem história e sua trama*, 1998; Côrtes, N. op. cit.; Faveri, J. op. cit.

20 Côrtes, N. *Consciência e Realidade Nacional: Notas sobre a ontologia da nacionalidade de Álvaro Vieira Pinto (1909–1987)*, 1999; Côrtes, N. *Esperança e democracia: as ideias de Álvaro Vieira Pinto*, 2003.

21 Ballestrin, L., *América Latina e o giro decolonial*, 2013; Bernardino-Costa, J., Maldonado-Torres, N. & Grosfoguel, R., *Decolonialidade e pensamento afroasiático*, 2018; Martins, P., *Teoria crítica da colonialidade*, 2019.

22 Costa, B. & Martins, A. *Álvaro Vieira Pinto e o pensamento decolonial*, 2019a; COSTA, B. & MARTINS, A. *Álvaro Vieira Pinto e o Pensamento Decolonial: a questão da colonialidade do saber*, 2018.

As we mentioned earlier, “O conceito de tecnologia” covers a vast number of themes related to technology and we will not dissect it in its minimal details. Instead, we will discuss the author’s concept of technology itself, exposed in the first part of the book, in chapter IV.

As Álvaro Vieira Pinto elucidates, the term “technology” possesses four main meanings: according to the *first meaning*, technology is understood as the *logos of technique*, the science or theory of technique, comprehending the notion of the arts, the abilities to do something, the professions and, generally speaking, the way of producing. This is the primordial meaning of technology, which is going to be emphasized in our paper and unfolds the others. In the *second meaning*, the most commonly used, according to the author, technology is taken as an equivalent to technique and can be used to express the notion of “know how”. The philosopher points that the tangle of technique and technology can foment dangerous mistakes in the examination of sociological and philosophical concerns.

The *third meaning* expresses technology as the ensemble of all the techniques available by determined society in any phase of its historical development. This meaning is important because it is used when referring to the degree of advance of productive forces in a given society. It keeps close ties with the *fourth meaning*: technology as the ideologization of technique, expressing the ideology of technique, which receives great importance in the philosopher’s reflections. Vieira Pinto²³ was aware of the process by which the resources flow from the periphery of the world, constituted by underdeveloped nations, to the core of the so-called WEIRD countries, (i.e. Western, Educated, Industrialized, Rich, and Democratic), enriching the latter at the expense of the former. The ideologization of technique plays an important role in the maintenance of this process, as it offers the subjective, and consequently social, conditions for it. The 1956 “Ideologia e desenvolvimento nacional” offers a deeper understanding of Vieira Pinto’s conceptualization of ideology.

Although in Vieira Pinto’s analysis the second meaning is the most popular, in our perception, after almost five decades, a variant of the third one is the most used, at least in Brazil. In many cases when one uses the term “technology”, they are referring to a technological device, a cybernetic and highly developed product of science. This is the social foundation of the idea, much criticized by Vieira Pinto, that we are living in a “technological era”.

23 Vieira Pinto, A. *O conceito de tecnologia*, 2005.

To understand the critique provided by Vieira Pinto, we should first explore his concept of technique. The author proposes that the correct question over technique should be stated as following: What role does it play in the process of material production of humans' existence by themselves?²⁴? After an etymological study of the term, reaching for its Greek origin, the author clarifies that *technique* was first used as an adjective, only later being taken as a noun. As an adjective, technique is applied to the human act of any sort of production, so it is the human activity that should be considered technical or not.

According to the Brazilian philosopher, the essence of technique "is the mediation in obtaining a conscientious human finality"²⁵, being it done with the aid of tools or not. Later on, the author explains that technique firstly defines the quality of the human action of producing. In a second moment of the cognitive process, the quality of the act is transferred to the agent, to the technician, the human being who does the technical acts, that is, the productive act of a certain human finality. Lastly, after abstracted, the term is turned into a noun, and that allows for the possibility of hypostatizing the technique.

The hypostatization of technique is often criticized by Vieira Pinto²⁶, who points, for example, Martin Heidegger's reflections on this kind of attitude. By raising technique to the quality of being, of thing *per se*, it gains the ability to do things, and what is originally a qualifier receives qualifications and properties unrelated to its quality. Only human acts can be good or evil, states the author; the techniques and technology can be deemed good or bad only in *genere suo*, that is, if the mentioned act as it is achieves or not the finality that it is destined to. The author mentions the atomic bomb dropped over Hiroshima as an example; there is no sense in accusing the technique of perversity, instead we should hold humans responsible for conceiving and executing such hideous crime²⁷. The author conceives that:

in a manoeuvre of historic self-disclaiming, which we judge as a moral duty of critical consciousness to denounce, the holders of social power transfer to an abstraction [technique], an ideal concept, the objective responsibilities that in fact fit individuals perfectly concrete and identifiable²⁸.

24 Ibidem, vol. I, p. 155.

25 Ibidem, vol. I, p. 175.

26 Idem.

27 Ibidem, vol. I, p.178.

28 Ibidem, vol. I, p. 180.

Technique, explains Álvaro Vieira Pinto, is an “existencial” [existential]. That means it is a distinctive trace of human nature, always having a social character, referring to the humans’ attitude and conditioned by work²⁹. Although only recently we have been able to produce intellectual reflections systematic enough to create a new field, humans always exercised technical actions; therefore humans have always lived in a “technological era”. The impressive technical production of today is based on what once was new, but is now obsolete and outdated, much like the current production is bound to be when compared to the new and more impressive creations of tomorrow. In summary, this is the main core of Vieira Pinto’s critique of the notion of “technological era”. In “O conceito de tecnologia”, he also explores the ideological framework of said notion³⁰.

Vieira Pinto’s conception of technique is grounded in the concrete human existence, instead being a free-floating construction. This concept allows us a richer understanding of its presence in different human actions and fields of study. As we elaborated this brief exposition of technique carried out by the Brazilian philosopher, it is possible now to thematize his reflections on the concept of technology, focusing the first meaning we highlighted and its contributions to the humanization of humanity and development of science.

Technology as the logos of technique

Vieira Pinto conceives that from technique, as the qualification of the productive act, arise theoretical considerations that justify the development of a knowledge field which takes it as object and reflects on it and its condition in the objective process. From this conception the author points the legitimacy of technology as science of technique, and as so, it can be the subject of an epistemological approach. The author points to the dispersion of studies on technique in different works of sociology, philosophy or other specific disciplines, highlighting the importance of unification of this field as a defined object of philosophical research³¹.

29 Ibidem, vol. I, p. 239.

30 Ibidem, vol. I, p. 41, 290.

31 Idem, vol. I.

As conceptualized by a classic Brazilian thinker, Milton Vargas, technique is “a human ability to craft, build and use tools”³², thus inevitably associating technology and engineering closely, as he defines technology as a product of Modern Science with clear preference for the positivist exact sciences. What may cause admiration, but not for a critical thinker, is the fact that the Greek term *τεχνολογία* “technology” can be considered nearly as old as *τέχνη* “technique”. *τεχνολογία* is defined as the systematic treatment of grammar and other³³ *τέχνη* or arts. Vieira Pinto exposed a similar assertion: according to him, language is the “fundamental technique, the technique of technique, the one without which any other would not be”³⁴, because technique, as he clarifies, is not only linked to the material use of instruments, but *a priori* any human action is technical for the simple fact that it is human. That occurs because technique, as discussed previously, holds an existential relevance to humans, as it mediates the process of projecting and consecution of its finalities. This conception promotes technique to its authentic wide range, correcting many mistakes induced from a reductionist perspective that links technique or technology specifically to engineering-related fields.

Walter Bazzo, Luiz Pereira and Jilvania Bazzo, for instance, despite recognizing that philosophers, physicians or teachers can be considered “appliers of technique”³⁵, finds the idea of technology “ingenuous” as an applied science and “unnecessary” as the study of technique³⁶, showing a complete alienation to the essentiality of coherency. In fact, one of the main attributes we find in many thinkers’ reflections which in greater or lesser depth approach technique is the lack of a coherent totality of ideas and notions they defend: their reflections lack a systematic character. What they state on one page contradicts the reflections on the following or in the next chapter, or what they criticize is, in an authentic and critical perspective, exactly what can be referred to them. In this sense, we argue for the need to conceiving technology as the field of study of technique in all the different kinds of beings it is applied to: inorganic, organic and social.

32 Vargas, M. *História da Técnica e da Tecnologia no Brasil*, 1994, p. 15.

33 Liddell, H. & Scott, R. *A Greek-English Lexicon*, 1897

34 Ibidem, vol. I, p. 183.

35 Bazzo, W., Pereira, L. & Bazzo, J. *Conversando sobre educação tecnológica*, 2016, p. 115.

36 Ibidem, p. 82.

These reflections, on the application of technique, offer us the bases of an aspect of the *general theory of technique* proposed by Vieira Pinto³⁷. The author comprehends that it can be elaborated with the following topics: a) classification of techniques; b) its history; c) profitability; and c) its social function. In the *first topic* we understand that we can classify technique from the perspective of its application, as we have pointed, and from the procedure, manually, mentally or consubstantiated in a machine or instrument. On this matter, Cipriani and Bortoleto³⁸ highlight the relevance of treating the anthropogenesis process, because technique and human beings are coetaneous according to the Brazilian philosopher's thought. In the *second topic*, the author approaches the history and historicity of technique using dialectical bases. Refusing the argument of technique as the motor of history, he shows that the work of the masses is the most relevant in this case. On the *profitability* and the *social function of technique*, to consider the social dynamics of work is vital to his mind, that is, there is a tendency for the production of the masses to be appropriated by a ruling minority. His assumption is similar to the third of the interpellations of Dussel's philosophy of liberation³⁹.

Vieira Pinto conceives that from the moment human beings are aware of the unity of technique, its universality and pluriversity, which is offered by technology as a unitary scientific field, they are capable of dominating not only the one they execute, but all the others, knowing its meaning, worth and finalities⁴⁰. This offers us an epistemology of technology grounded in the work executed by the human being. In the author's conception, the outdated of the duality that opposes *the worker*, who is the technician, and *the thinker*, who thinks the technique, is made possible by the critical idea of technology as a unified science.

The philosopher also defends the idea of technology as "the study of the process of human creation through the praxis of material existential realization of the self, as a result of its social conditionings"⁴¹. Because of the previously stated definition of technique, we need to coherently comprehend it in the horizon of every human action. Rigorously speaking, clears Vieira

37 Ibidem, vol. I, p. 236.

38 Cipriani, C. & Bortoleto, E. *A tecnologia como epistemologia da técnica: um estudo a partir de Alvaro Vieira Pinto*, 2015.

39 Dussel, E. *Filosofia da libertação: crítica à ideologia da exclusão*, 2017.

40 Ibidem, vol. I.

41 Ibidem, vol. I, p. 246.

Pinto, only a few of the human actions cannot be considered technical, and that is because human existence is oriented by the finalities it proposes on the process of production of its existence. Here the dialectical categories of *ter* and *haver* can help us theorize this matter, because the human “is a living being biologically compelled to create for himself the ecumenical where he is installed”⁴². In this sense, he highlights an important difference: initially, humans considered the Kantian *technica naturalis* as the phenomena portrayed by nature; now the human behaviour and production occupy the quality of phenomena to be studied. Technology, thus, as the study of technique, gathers in the research of the relations of humans a basis of its epistemology.

Vieira Pinto conceive that *work* occupies an essential hole on the fundamental axiomatic notion of philosophy of technology⁴³. In fact, his conceptions of ethics and philosophical anthropology holds deeply embed this category, but now we would like to highlight the political consequences of his reflection on technique. According to him the “capacity that the human being acquires of consciously exercise the direction of the historical course of existence, leading him to more perfect forms of coexistence among all the individuals in the act of collective production, is what is denominated politics”⁴⁴. Thus, he conceptualizes politics with an ethical note, which allows us to associate his philosophy of technology with the application of technique on the improvement of the condition of work and existence of the masses of the underdeveloped countries. Current reflections on his production supports this claim.

Jairo Carvalho⁴⁵ discusses the asymmetric economic exchanges in Vieira Pinto’s perspective. He affirms that the philosopher clarifies this process, denounces the oppression it provokes on the poor nations and defends the formulation of policies of autochthone creation of technology and science, both directed to the solution of national problems. In other work, the same author⁴⁶ discuss with Vieira Pinto’s thought and defends the thesis that nationality is a fundamental critical and epistemological category that allows us to examine who, why, for what reason technology is produced.

42 Ibidem, vol. I, p. 245.

43 Ibidem, vol. II, p. 537.

44 Ibidem, vol. I, p. 208.

45 Carvalho, J. Tecnologia, política e filosofia em Álvaro Vieira Pinto, 2017.

46 Carvalho, J. A nação como conceito da filosofia da tecnologia de Álvaro Vieira Pinto, 2019b.

Carvalho makes explicit the political aspect of Vieira Pinto's proposal, differently of many academics who seeks the philosopher's book only to quote his conception of technology or technique, thus neglecting some practical aspects of his reflections. He is often quoted in fields such as education, especially when reflecting Information and communications technology (ICT) and its role in the educational process, nonetheless it lacks an appropriation of Vieira Pinto's thinking in his philosophical amplitude.

Concluding remarks: the first words of a debate

The conclusion of this paper should be understood through the Portuguese word "*desfecho*", which means "denouement", generally linked with the end of a plot, of its conclusion or resolution. But, as meditates João Augusto Pompéia⁴⁷, the *desfecho* is also a *des-fecho*, that is, the negation of the act of closing [*fechar*]. We elaborated a brief thematization of the concept of technology according to the Brazilian philosopher Álvaro Vieira Pinto certain that there is much more to approach. We would deepen our exploration on the first meaning of technology and also discuss the other three, especially the last one, the ideological, for the importance of the theme.

We find the elaboration of technology as a scientific discipline extremely necessary. As the discovery of new techniques and the production of knowledge on it grows incessantly and rapidly, it justifies a new unified study field. Moreover, the reflections on the essence of technique and its link to the human production of existence, offered by Vieira Pinto, would contribute to the enhancement of technological research.

It is necessary to discuss the applicability of Vieira Pinto's theses on recent themes such as artificial intelligence (AI), deep learning algorithms, neural networks, among others. Although the author himself devoted a whole chapter of the book (vol. II, ch. XIII) on the matter of intelligence, the historical development of technology imposes the discussion of his conceptions in the light of current topics.

We would find our reflections incomplete if we did not mention the need for a nationalist-based politics of technology in underdeveloped countries. In another work, we addressed the theme of nationalism in Vieira Pinto's

47 Pompéia, J. *Na Presença do Sentido: uma aproximação fenomenológica a questões existenciais básicas*, 2014.

thought more profoundly⁴⁸; now we would like to highlight the importance of thinking politics in terms of national interests. Jairo Carvalho⁴⁹ points the political relevance of thinking in these terms. Based on Vieira Pinto's thought, he offers a philosophical justification of what is conceived as “technological policy”, which integrates the productive forces and the actions of fomenting scientific and technological research for the sake of the wellbeing of the inhabitants of a given country.

If the Brazilian state does not look after the social development of its own people, who else is going to worry about it? One of our main contradictions – term that should be taken in a dialectical sense – is the imperiousness of being in march again as a nation, striving for a national project of development and liberation.

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48 Costa, B. & Martins, A. *Notas à Recepção do Pensamento de Álvaro Vieira Pinto: o caso Vaz e a educação em Consciência e Realidade Nacional*, 2019b.

49 Carvalho, J. *Filosofia da tecnologia e interesse nacional*, 2019a.

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