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The Ancient Episteme of Activity as Ontological Horizon of Modern Education Development

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Abstract

The article deals with the analysis of the ontological level of the phenomenon of “education”, which forms the perspectives of development and the cultural core of the society life. As a prerequisite for the analysis, M. Heidegger's statements about the ontological foundations of modern education and its relationship with Greek thought understanding have been used. Based on the analysis of the ancient episteme of activity (i.e. system of forms and methods of using knowledge) the principles that determine the ontological horizon of modern education development have been explicated. The area of the multi-sectoral system of education, which is becoming today a recipient and bearer of these principles, is described. The methodological basis of the research made is the hermeneutic study of the ancient original sources – the works by Xenophon, Plato, Aristotle, the results of this analysis being projected onto the current situation in education. The ontological components of this projection are: correlation of knowledge with the world of real things, combination of theoretical understanding and practical art, value mediation of activity through the attitude to the truth, creativity of activity. Having made the examination of the antique τέχνη (techne, Lat.) meanings, the author shows the perspectives of the enhanced comprehension of the education and cognition technologization. The horizon of the paradigmatically-differentiated system of modern education development has been considered as the place of cognitive-cultural diversity generation. The characteristic is given of the episteme of activity in the locus of research education, the ideas of which had been formulated in the works by I. Kant, W. Humboldt, K. Jaspers.

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1. Introduction

Education is changing with the changing time. The reality of our time is characterized through metaphors of instability and ambiguity, globalization and cultural resistance, fragmentation and transformation. A conflict and problematic environment along with the dissensual character of thinking is the part of modern educational communities' life. Hence, the range of social and ontological problems becomes the spotlight of theoretical work, inside which the way is being sought to clarify the complicated differentiated present and the vague future.

In the early time of the post-modernism Martin Heidegger very clearly raises the problem of ontological foundations of education. He says the age of education is declining, i.e. to an end is coming education in its classical interpretation – as education that forms a person according to a certain pattern and is based on instructions. Now things are heading towards the age of education, in which man should self-reflect and comprehend himself. In education, comprehension "takes us on a path where we stay" (Heidegger, 1993a, p. 252). From the perspective of what Plato calls παιδεία, such education moves the person to the place of his being, training him to it (Heidegger, 1993b). Thus, in post-classical education the matter is thinking as a place of social and existential human responsibility; about thinking that opens "the doors to the essence of all things and fates" (Heidegger, 1993a, p. 350). The key ontological problem of modern education development is to define the fundamental principles of its future organization, able to provide a place for such a "responsible" and "opening" thinking.

The domination of modern science over the world with its will to knowledge, according to Heidegger, throws back to the Greek thought. The comprehension of modern times is able to gain ground through a dialogue with the ancient Greek thinkers, whose heritage even today "is so authentic that its essence, still closed for itself, is awaiting our attention elsewhere and affects us" (Heidegger, 1993a, pp. 240, 239).

In the "European Nihilism" Heidegger says that there is nothing wrong if the "man in the street" believes that there is a diesel engine because Herr Diesel invented it. Meanwhile, "that there is such a thing as e.g. a diesel engine has its decisive, ultimate ground in the fact that the categories of a "nature" utilizable by machine technology were once specifically thought and thought through by philosophers" (Heidegger, 1993c, pp. 63-176). To paraphrase Heidegger, one could say that modern scientific education has its decisive, ultimate ground in the fact that the categories of episteme and techne were once specifically thought and thought through by philosophers, which specify the high horizon of cognitive activity.

Proceeding from Greek tradition, we can define episteme of education as the knowledge of what gives knowledge to people. The selection of action approach in the phenomenon of education brings the concept of its episteme to theoretical notions of forms and methods of using knowledge in the process of education, i.e. to the episteme of educational activity. Here one can say that the episteme, understood as the knowledge obtained by intellectual labor and being active at the same time, is approaching to a specific techne based on onto-epistemic basis.

As has been shown in our articles, ontologization of education, as a prerequisite for its authenticity, must be based on research of its fundamental principles of its being (Karpov, 2013b). Completeness, functionality, and depth of ontologization require special entity spaces of the cultural phenomenon be defined – a universe space, a generative-constituting space, and ontogenic space. In the universe space, the reality of education is explicated in its cultural, historical, social, anthropological and other dimensions. From here the path is outlined to the study of fundamental systems and ontologically limiting description of a socio-cultural phenomenon, the two other entity spaces being "responsible" for this (Karpov, 2015). Pruginin (2009) says that problems of education and science as cultural phenomena "are rooted in the history and cannot be comprehended without historical reflection".

2. Objectives, methodology and research design

The purpose of this article is to provide an analysis of the ancient episteme of activity (i.e. the system of forms and methods of using knowledge), and, on its basis, to explicit the principles that determine the ontological horizon of modern education development as well as to emphasize the area of the multi-sectoral system of education, which is now becoming a recipient and bearer of these principles. The methodological basis of our work is the hermeneutic study of source material of antiquity, the results of which are projected onto the current educational situation. The

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3. Discussion of the research outcomes

3.1. *Techne as the episteme of activity*

Ontological horizon of modern education can be comprehended through the notion of the antique τέχνη (techne, Latin) that creates the objectified world. The antique τέχνη, considered as a broad plan of educational action that involves into reality and has become a special kind of cognitive technicism, is able to pave the way to achieving another dimension of educational culture. On this way, it is possible to overcome the imposed cognitive clichés and counteract the attacks of a terrible reality, in which, according to T. Adorno (2001), "commodification of relations between people will penetrate any experience and literally become the absolute" (Adorno, 2001, p. 100).

The polysemy of the ancient Greek concept τέχνη bears inside an expressive concentrated image that represents the man's method to personify himself in his fate; the way resulting from practices of art, craft and science. The agent of fate is τέχνητης – an artisan, an artist, or a technician; but at the same time, he is an expert and master. In the poetic language, τέχνασμα is his skillfully made something; at the same time it is τεχνητός – something imaginary invented by art, or τεχνικός – work of art skillfully made, i.e., it is both artificial and artistic, and is both work and beauty (Weissman, 2006).

As knowledge combined with activity, τέχνη means the craft of war and playing music, authority administration and agriculture, steering a boat and cookery, real estate management and blacksmithing, medical treatment and mathematical operations, making money and the art of painting, measuring the Earth and the motion of planets, policies, witchcraft and prophecy.

Craft in ancient Greece was supposed to be a practice unworthy of a free man, a citizen. In Athens, paid labor was considered such a disreputable practice. Not only "manual" labor was assumed to be reprehensible but also the artistic and mental work when it presupposed to commerce wisdom (Sobolevskii, 2003). In "Oeconomicus, on the Management of a Farm and Household" (Xenophon, 2003a), Xenophon mentions "those arts which are called handicrafts are objectionable, and are indeed justly held in little repute in the cities (Xenophon, 2003a, 4; 2). The craft is a shameful non-liberal pursuit, whereas agriculture is the best occupation for a perfect human, says Socrates, because those who cultivate the land are ready and capable of defending the state, whereas the craftsmen are not (Xenophon, 2003a, 6; 5-10). At the same time, for instance, he says that the study of geometry should be pursued until the student was competent to measure a parcel of land. He was against carrying the study of geometry so far as to include the more completed figures on the ground that ... they were enough to occupy a lifetime, to the complete exclusion of many other useful studies, this statement can be found in the "Memoirs of Socrates" (Xenophon, 2003b). The same is with the study of astrology; here it is important "to be able to determine the nighttime, the month and the year for land and sea travels and for guards", ... but there is no use in studying planets and wandering stars and "in fretting over studies of their distances from the Earth, the time and reasons of their origin." (Xenophon, 2003b, IV. 7.2, 3).

A.F. Losev (1974) says that Plato distinguishes two types of cognition, he denotes them with the terms "gignōscein" and "epistasthai"; the first leads to the acquisition of passive knowledge, gnōsis; the second yields acquiring art, techne, i.e., to the knowledge of how to do something. Antiquity creates a tense semantic interaction between the general concept of "active knowledge", which is denoted with the word ἐπιστήμη (episteme, Latin) and its operational presence in the form of τέχνη. Richard Parry (2008) in The Stanford Encyclopedia of Philosophy notes a close positive correlation between episteme and techne, as well as their fundamental contrast.

Techne is connected with knowledge that contains the recipe for "know-how"; that is why Socrates named many activities epistemes. In "Memories of Socrates", Xenophon says that "the commander should ... possess qualities both natural and acquired by studying" (Xenophon, 2003b, III. 1; 6, 7). In its turn, the episteme indicates the type of theoretical components of techne. In the "Charmides" by Plato (1990c), the episteme of medical treatment is defined as the "knowledge of what gives health" (165s). His "Euthydemus" (1990a) comments that "science gives people ... skills in any acquisition and work": in woodwork people are guided by carpentry knowledge, in the production of

utensils – by the relevant science (281b, a). In the "Nikomachean Ethics" (1976b), Aristotle states that "to be skillful means to understand (theōrein) how something is coming into existence from things that could be and not be"-источник, год, страница (1140a, 10). Hence, the antique *techne* appears as an instrumentally arranged kind of knowledge, its *theoretical nature* being its genetic trait.

Techne as art must be able to "reasonably determine the nature of the fact that it offers, ... name the reasons for its activities". Unreasonable work cannot be described as art (Gorgias, 465a) (Plato, 1990b). A real doctor, that is, a skillful doctor, must be able to give their patients *a report* about their illness; he "explores the origin and nature of their diseases" (The Laws, 720p, d; emphasis added), (Plato, 1994d), as "theoretically, medical treatment "has perceived both the nature of what it treats and the reason for its actions" (Gorgias, 501a). *Techne* loses itself as art, relying on bare empiricism; It loses *understanding* when knowledge becomes a bare procedure, an action, *praxis*. It is a shoddy *techne*, the handicraft in the worst sense of the word. The example is a physician assistant who is mastering "his art through observation, experience and guidance from his lords; he relies only on empiricism and is not able to explain what his actions yield (Laws, 720a, b, c).

But such is a cook, whose *techne* "should rather be considered as a "knack" in contrast to medical treatment, because ... cooking ... is entirely focused on pleasure and serves to it alone" (Gorgias, 501a). Here appears another peculiarity of *techne* in addition to its theoretical nature, which allows to consider it art; namely, the high values orientation of *techne*. Arts always "care for the best soul benefit, "says Socrates in the "Gorgias", and others neglect this benefit and ... are turned entirely towards the enjoyment of the soul" (501b). In the latter "man devotes himself to pleasure only, not distinguishing between the best and the worst "(501s).

In the "Statesman" (the "Politicus"), Plato (1994c) actually identifies *episteme* and *techne* in the analysis of two kinds of knowledge - practical and cognitive (theoretical). Practical knowledge covers arts of building and all crafts in general that "possess knowledge which could be referred to as *ingrown into the work*, and thus they create things that did not exist before." Arithmetic is a theoretical knowledge as well as some other related arts, which "do not get on with some work and provide only the *pure* knowledge (Statesman, 258e,d). To theoretical arts, one can relate state administration and housekeeping as well as an architect's creative work when they *introduce knowledge into techne rather than manual labor* (Statesman, 259s-e).

Though this classification may be very conditional (geometry yields practical implications and cookery is not only the list of recipes), a special mention should be made of the two principles transforming *techne*: the "knowledge ingrown into the work" (technologization of knowledge) and "work which includes knowledge" (theorization of practice). The "knowledge, ingrown into the work" is in fact a designed activity that exists separately from the thing that was made by this "technologized" art. R. Perry (2008) notes in this regard that the practical *Technes* bring themselves into existence separately from *Techne* products, while the theoretical *Technes* do not.

The theoretical part of *techne* as art is clearly more attractive in ancient times than the empirical component. "The experience is the knowledge of the single and art is the knowledge of the general/common, writes Aristotle in "Metaphysics". Of course, "the one who has abstract knowledge but no experience and cognizes the general but does not know the single containing in it,...is often mistaken in treatment because he has to treat the single. But yet we believe that knowledge and understanding are more related to art rather than to experience" (Aristotle, 1976a, 981a15-20). Those who are masters of art are more wise than those with experience are, because "the former know the cause and the latter do not, i.e. they know "why" rather than "what "(Metaphysics, 981a15-20). And further: " ... the art is more knowledge than experience, because those who are masters of art are able to teach, but those who have experience are not"(Metaphysics 981b5). However, Plato also says that the two-fold way is far much better. Both a doctor and a teacher of gymnastics must both *prescribe* and *explain* (Laws, 720d, e).

Therefore, the antique *techne* is the antique *episteme* of activity (i.e. the system of forms and methods of knowledge management), which is focused on high values, theorized and technologized; in its latter quality it implements itself not only as a separate result. The productive *techne* is also ethical because it is moral to apply the acquired knowledge and benefit from it (Memoirs of Socrates; (II); 7. 8.). Knowledge must be diligently converted into action, both the commander and the farmer will be a success following this, says Socrates in "Oeconomicus" by Xenophon (XX, 5-10).

However, the antique *techne* dealt with magical creation of things that overturned hidden ideas, put into the world by the Creator, into the material reality. The craft simulates forms – a master "always keeps in mind some kind of a

model (εἶδος); so do painters, builders, and shipbuilders as well as gym teachers and doctors (Gorgias, 504a, 503e). They all imitate paradigms of things and at the same time pass on the knowledge of forms. Aristotle's forms that are "the essence of being of each thing and its original entity» are at the top level of being, in a metaphysical "soul"; they are "copied" by art into the operational spheres of human existence (Metaphysics, 1032a30-1032b). The things created by *techne*, says Plato in the "Republic" (1994b), "serve only as a trope that can be seen for sure with the mind's eye" (Plato, 1994b, 510e-511b). This is the kind of something perceived by mind, in pursuit of which the soul does not go back to its origin, this is "what is learned using geometry and related subjects" (Plato, 1994b, 510e-511b). In the "Protagoras" (1990d) he notes that the art of measuring clarifies the truth (356 d, e). Thus, *techne* as knowledge of the forms that objects can take is correlated with the truth; in this way, it becomes a tool of cognition of reality.

Techne as art is related with necessity to creativity rather than to actions; in its turn, creativity (*poiēsis*) and actions (*praxis*) are different things. The commencement of the thing that comes from art is in the creator rather than in the created (Nicomachean Ethics, 1140a1-15). Therefore, *techne* is not just a rationalized activity, which is aware of what is being done, how and why; it is the *creativity* of the spirit groping for the truth. The concept of *techne* contains a wide range of notions of cognitive relations in its capacity to instrumentalize and objectify reality.

The analysis made has provided the opportunity to highlight in the ancient episteme of activity (antique *techne*) the following ontological principles.

1) Correlation of knowledge with the world of real things, which is the ability to perceive socio-cultural forms, into which the current reality may translate knowledge. Here *techne*, providing techniques of truth design, becomes an instrument of its realization.

2) Combination of theoretical understanding and practical art, in which Plato saw duality as the best way to operate.

3) The value mediation of *techne* through practical use for the world and spiritual development of the individual, which is defined by the relation to the truth.

4) The creative spirit of *techne* as a creative and guiding principle that transforms intentions, ideas, knowledge and experience in operational presence in reality.

Hereby, the antique *techne* that has become the episteme of activity makes the organized type of knowledge on how to do "things"; it embraces art of teaching, medicine, engineering, and music. Its fundamental principles specify opportunities of cognition based on *techne* and characterize its descriptive capabilities. It is these principles, projected on contemporary education, that define the ontological horizon of its development.

3.2. Antique *techne* and modern education

The educational *techne* should be considered from the perspective of the episteme of activity of two kinds, about which says the "Philebus" (1994a) by Plato: "... but should we assume that one side of our knowledge of science faced to sciences is creative, while the other is educative and educational" (55d). Hence, both the creative productivity of a student and the educational action of a teacher are included in the arsenal of values of the educational *techne*. It is clear that the antique *techne*, being projected on the way of being of academic communities, is able to present specific "technologizations» of cognitive relationships in different historical periods. Here is also a pure empirism, the routine of student exercises, and the subject formalism; but here is also creativity, academic experience, the things of art and German *Bildung*.

So, P. Bourdieu (1996) now looks upon the "non-Cartesian pedagogy" as a transfer of *arts*, which comprise practical and theoretically rich ways to say and do. Such pedagogy, which we call the "research pedagogy", is aimed at "creating habitus of invention, creativity and freedom" (Bourdieu, 1996, pp. 8-31).

The semantics of the concept of "antique *techne*" can be extended to such terms as "technologized cognition", "educational technologism" or "technologism of training practices". With this "antique" understanding, their value goes far beyond a mechanistically conceived technologization in education, which is a reproduction of the standardized strings and examples of both teacher and student activities. The latter is included in the range of meanings of these terms, but only as a single item. Their semantic dominant is the consideration of educational practices from the perspective of cognitive invasion into reality. This *techne* can be creative and formal, theoretical and empirical, but its operational principle, ultimately, characterizes the cultural "perfection" of knowledge in

students.

Cultural-specific technologization of cognitive relationship is implemented either in something alone or in an epistemic complex, which includes miscellany. Therefore, as a dominant start, there can be present only the instrumental part of cognition - the method, its instrumentation and operationability. An example is the "subject" knowledge translation in a discursive form, whose techniques weakly depend on the content. At the same time, the educational *techne* is capable of acting through the objectification of knowledge in reality, through cognitive mechanisms that refer knowledge to the thing "made", which is taken not by itself, but together with the changing environment in its social, cultural and professional spaces of existence.

The principles of the ancient episteme of activities set a *high* horizon of development for the modern "standardized" education. This horizon is "high" not only from the perspective of desirability and the difficulties of achieving. Largely, its location "above" modern education is apparent in the fact that the principles of the ancient *techne* define the metalevel of comprehension for significantly *different* educational practices and loci.

Modern education is fragmentary, both ontologically and epistemically. University and school direct their students towards both cognitively and culturally different spheres of activities, - towards social services, the system of state administration, the arts and technical application of knowledge, traditional intellectual spheres, including: medicine, education, law, science. The functions of an educational institution break up into different paradigmatic loci, where some serve the science and the search for the truth, and others provide regional economies and solve employment problems, somebody else serve the policy and public administration, the others deal with the educational business and operate in the form of social networking providing virtual education. A separate "paradigmatic" locus becomes apparent through the dominant type of cognitive activity, systems of meaningful educational situations and basic methods, normative and methodological declarations, structures of educational organization and forms of educational process. This is the way the paradigmatically-differentiated system of modern education is being formed (Karpov, 2014).

The paradigmatically-differentiated system is able to become a place of producing cognitive-cultural diversity, rather than a universal identity. Like biodiversity that creates opportunities for realization of creative forces of nature, the cognitive-cultural diversity increases the creative productivity and divergent potential of the society developing through the production of knowledge. One of the main tasks of paradigmatically-differentiated education system is creation of mentally comfortable cognitive conditions for different cognitive personality types in the related socio-cultural environment. The solution of this task may be based on the above mentioned principles of the ancient episteme of activity.

Research education is a specific part of paradigmatically-differentiated system of modern education. It is based on a system of education that uses methods of cognition characteristic of scientific research (Karpov, 2012a), and focuses on the cognitive-role structure of the society, which is being formed in its movement to the knowledge society (Karpov, 2013c). The locus of research education becomes the successor of the traditions of classical science education in their regard for truth and its perception, the ideas of which had been formulated by I. Kant, W. Humboldt, K. Jaspers (Karpov, 2013a). Among these traditions is the attitude to research and education as to the search for the truth, the indispensable didactic relationship between research and education, scientific ethos and spiritual foundations of enlightened living.

The separation of research learning in a specific educational area is connected not only with its didactic nature. The determining factor is the social role that is played by research education in the development of the present-day culture, which is increasingly positioning itself as a culture of producing knowledge. Both the society "running on knowledge" and the culture in which this society is developing are based on cognitive abilities of the creative personality. Professions of a cognitive type, with a large amount of creative work in science-related fields are becoming the instruments of this society material and spiritual growth. Education, which brings up young people with potential capabilities to scientific research, i.e. research education plays the role of cultural productive basis of the knowledge society (Karpov, 2012b).

In research education, the cognitive attitude is "technologized" relative to the capacity for productive invasion of scientific knowledge into reality. Educational *tehnologism* becomes *metanotion*, which includes: (a) complex instrumental-temporal structure of interrelated educational methods and methods of teaching based on educational operationalization of scientific research; (b) a set of open science-cognitive problems developed at different stages of learning, (c) specific configurations of creative and discursive aspects of an act of cognition, the dynamics of

socio-cognitive growth and problematic and cognitive paths of a personality, (d) educational infrastructure and communities that "produce" knowledge. Here the educational technologism is becoming scientific and innovative.

The episteme of modern research education "adopts" some ancient *techne's* principles, which acquire from it the following modern interpretations.

1) Research education transfers disciplinary knowledge into the world of real things, which imposes on them a condition of authenticity, and, hence, cognition drives into the path of truth.

2) Technologization of the acquired knowledge takes place, i.e. it becomes able to be put into effect as an activity in specific contexts and to give a socio-cultural objectified sense to educational practices, and in addition, the empirical activity finds its theoretical justification.

3) Cognition justifies itself both acquiring the value dimension and being a productive activity that produces useful "things" for the world, and as an internal, creative self-growth of the personality.

4) Teaching is getting creative in the sense of generating new knowledge and its introduction into reality, i.e., it becomes an innovative instrument for the perceiving person.

On the basis of modern interpretation of the ancient *techne*, the principle of science and innovation technologism in education may be exposed (Karpov, 2004). This principle determines the way of being of research education systems, i.e., what allows this epistemically complex structures to *be* in the conditions when knowledge is becoming a main producing asset of the society. This principle requires *knowledge* should have active relationship with professional spheres of its use, be innovative in the sense of generating new knowledge and possess a socio-cultural value from the perspective of public and personal interests of the student. In relation to educational *cognition*, the principle of science and innovation technologism sets the priority of methods inherent in scientific research, in particular, sets a task to operationalize scientific research as methods of teaching. It is based on generative didactics, which defines the way of learning aimed at the creative productivity of individuals in their attitude to knowledge, in other words, competence in the creation of knowledge. Hence, the principle of science-innovative technologism specifies a particular quality in the cognitive function of new educational communities, which is the ability of the creative person to reveal the truth through the transcending mental act beyond rationality. Thus, this quality of the cognitive method becomes dominant in research education, whose epistemic objects are non-observable entities, and can be understood only through intuitive models (Agazzi, 2009).

4. Conclusion

Our deep intension, rooted in understanding antiquity, is thinking of education essence as the *cultivation of humanity*, as human formation coming from the spiritual culture of humanity. The cultivation of humanity in specific historical and cultural conditions can keep the essence of the human in an individual human creature and take him beyond his socially timeserving state. Hence, education is able today to become a *human* source of the society formation, the society that comprehends itself as the knowledge society.

Focusing on human nature, however, does not prevent education from having different ontological and epistemical grounds even in the same cultural time because the human being is refracted in the social and cultural understandings in different ways, and consequently the approaches to it are based on different principles. Hence, for example, there arises a division of understanding education in the liberal and instrumental light. At the same time, both liberal, and instrumental doctrines are seen differently from different social and cultural locations.

The entry into the state of humanity through education is taking place in the conditions of cultural historical authenticity, due to them and is being comprehended through them. Creative thinking of man today is becoming the determining factor of human society development. In this perspective, modern education is lacking humanity, as it has never had. In other words, the state education has been brought into refuses the developing individual in acquiring and developing the human qualities that are consistent with the cultural movement the society is involved in. Therefore, education loses its essence, becomes a non-education, which the society cannot think of as education, think in those social, cultural and epistemic forms, which are inherent in education as such.

Transformation of the technogenic civilization is connected with the "turn to spirituality» (Lektorsky, 2001), with "spiritual abilities" that are in opposition to the utilitarian values of rational thinking by the moral value of an action (Shadrikov, 1999), by *self*-changing the logic of spiritual development (Bibler, 1975). The spirit is the

determination towards the essence of existence (Heidegger, 1993d). In addition, education and truth, in Greek understanding, is merging in their essential unity (Heidegger, 1993b).

Education is changing with the changing society. However, it underlies the development of the society, its social, political and economic strategies. Hence, there appear the requirements for education, which must keep pace with the rapidly developing society and establish system relations with other areas of activity. In this collaboration, the educational innovations are born, which attract attention to themselves from educational communities, government and society. However, behind these innovations there is always education as such constituting the cultural core of the society with his eternal values, traditions, pedagogical experience and aspiration for education and retention of human origin. It is this cultural core, placed at the center of innovation that is able to give it a long and fruitful life.

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