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Plato's *Theaetetus* & logos of the digital humanities

It is a fair presumption that until the fit word is present, you do not have the idea, and the word to become fit requires a suitable contextual usage.

Eric A. Havelock, *Preface to Plato*

I insist on calling it *hermeneutics*, that is interpretation. It is, in fact, one of our cognitive activities which, by going backwards, seeks to reconstruct from a text written by others the structures, rules and choices of the *thinking* which is there so expressed.

Roberto Busa, *Computerized hermeneutics*

The specifics of the humanities are the study of the human and its offspring, already recalled by Socrates in the *Theaetetus*. The dialogue marks a substantial shift in Plato — the discovery to be attributed to Wincenty Lutosławski, the author of the chronology of Plato's works — that is, from pre-existent and transcendental ideas to the categories of reason, from philosophy as the “love of wisdom” to the “love of knowledge”.

The legacy of Greek philosophy for the humanities is the “soul” as the principle of movement, i.e. of thought. Martin Heidegger's interpretation of Greek philosophy as “care”, and that of “ideas” in Edmund Husserl's phenomenology, both revive in Jan Patočka as “care of the soul”, allowing him to reread Plato from the perspective of today's scientific mindset.

Plato's dialogues would not be possible without writing, as several authors show; however, it is Walter Ong, the author of *Language as Hermeneutic*, who grasps "writing" as the first "technology" that transforms thought. Thus, contrary to the widely held view of the so-called lack of the definition of knowledge in the *Theaetetus*, I argue that the quest for knowledge refers to the logic of thinking — the theme related to Charles S. Peirce's logic of discovery and still distinct from "technology" — and provides the constitution of the humanities of the information and communication age, i.e., the digital humanities.

"The care of the soul": Socrates, Plato

Expressions such as the "care of the soul" and the "spiritual person", closely related to the "sciences of spirit" (*Geisteswissenschaften*) understood as the "Humanities", require precise analysis based on the findings of Scottish classicist John Burnet and Czech phenomenologist Jan Patočka, among others.

Certainly, it is Plato who voices this turning point that shapes the development of philosophy in general and the humanities in particular. But the real hero of it is undoubtedly Socrates. Burnet, in his influential article on the legacy of Socrates, of which Plato became the true exponent, notes that Socrates must be placed in the context of the outbreak of the Peloponnesian War to properly address the "exhortation to 'care for his soul'", which "must have come as a shock to the Athenian of those days, and may even have seemed not a little ridiculous. It is implied, we must observe, that there is something in us which is capable of attaining wisdom, and that this same thing is capable of attaining goodness and righteousness. This something Socrates called 'soul' (ψυχή)"¹. Socrates comes to this statement from scratch, in a sense that he does not find it at hand, ready to express his thought. Firstly, it comes to signify "courage"; and secondly, the

1 J. Burnet, *The Socratic Doctrine of the Soul*, London 1916, p. 12–13.

“breath of life”². The first sense, which is not to be confused with Socrates’ intent is due to the remarks that seek to explain courage and pride from the image of a warrior’s breath and perhaps more so from the snort of his horse. It is an ideal of the age of heroes, no doubt; the ideal of bravery (εὐψυχος). As Burnet observes: “So the word ψυχή was used, just like the Latin *spiritus*, for what we still call ‘high spirit’”³. And in this way the sense should also be extended to mean “man of spirit” as the “magnanimous” man (μεγαλόψυχος)⁴. However, “The second meaning of ψυχή is the ‘breath of life’, the presence or absence of which is the most obvious distinction between the animate and the inanimate”⁵. There is some apparent confusion in this statement formulated by Burnet, because the body is not considered the “living body”, except in the presence of the soul, the body becomes animate; the dead therefore is the inanimate in a sense that the soul leaves it with its ultimate breath. Thus, the soul brings life or rather is the breath of life. This sense captures the phenomena of the dead, with whom one comes into contact by calling ghosts, or in dreams, but also the case of “quit the body temporarily, which explains the phenomenon of swooning (λιποψυχία)”⁶. In the Homeric world, “In a sense, no doubt, the ψυχή continues to exist after death, since it can appear to the survivors, but it is hardly even a ghost, since it cannot appear to them otherwise than in a dream”⁷. Thus, the soul is *imprisoned* in the body, but it is something different from the body. “It is a shadow (σκιά) or image (εἶδωλον), with no more substance, as Apollodorus put it, than the reflection of the body in a mirror”⁸.

Not opposing it entirely, the scientific school of Ionia advanced the “materialistic”⁹ explanation. Burnet points out, that “This appears to have

2 J. Burnet, *The Socratic Doctrine of the Soul*, p. 13.

3 J. Burnet, *The Socratic Doctrine of the Soul*, p.13.

4 J. Burnet, *The Socratic Doctrine of the Soul*, p.13.

5 J. Burnet, *The Socratic Doctrine of the Soul*, p. 14.

6 J. Burnet, *The Socratic Doctrine of the Soul*, p. 14.

7 J. Burnet, *The Socratic Doctrine of the Soul*, p. 14.

8 J. Burnet, *The Socratic Doctrine of the Soul*, p. 14.

9 On Parmenides as “the father of Materialism”, see J. Burnet, *Early Greek Philosophy*, London 1945, p. vi.

originated in the doctrine of Anaximenes, that ‘air’ (ἀήρ), the primary substance, was the life of the world, just as the breath was the life of the body. That doctrine was being taught at Athens by Diogenes of Apollonia in the early manhood of Socrates, who is represented as an adherent of it in the *Clouds* of Aristophanes¹⁰. Materialist explanation shifts the soul (ψυχή) from dream to “normal waking consciousness”¹¹. Burnet observed, “This point is especially emphasized in the system of Heraclitus, which was based precisely on the opposition between waking and sleeping, life and death”¹². Heraclitus maintained that the “soul is in a state of flux just as much as the body”. Consequently, nothing can be affirmed, because nothing is the same again, just as you cannot step into the river twice. Put differently, “There is nothing you can speak of as ‘I’ or even ‘this’”¹³.

In the pre-Socratic period, in Sophocles’ latest play the *Philoctetes*, Burnet finds two instances, which allude to the soul in the sense ascribed by Socrates. Burnet notes: “Odysseus tells Neoptolemus that he is to ‘entrap the ψυχή of Philoctetes with words’, which seems to imply that it is the seat of knowledge, and Philoctetes speaks of ‘the mean soul of Odysseus peering through crannies’, which seems to imply that it is the seat of character”¹⁴. But they are really on the limit. The urging to “care for his soul” seems to imply no more than “take care of his skin” or recommend to have “a good time”¹⁵. Burnet concludes: “If we can trust Aristophanes, the words would suggest to him that he was to ‘mind his ghost’. The *Birds* tell us how Pisander came to Socrates ‘wanting to see the ψυχή that had deserted him while still alive’, where there is a play on the double meaning ‘courage’ and ‘ghost’. Socrates is recognized as the authority on ψυχαί, who ‘calls spirits’ (ψυχαγωγεί) from the deep”¹⁶.

10 J. Burnet, *The Socratic Doctrine of the Soul*, p. 19.

11 J. Burnet, *The Socratic Doctrine of the Soul*, p. 19.

12 J. Burnet, *The Socratic Doctrine of the Soul*, p. 19.

13 J. Burnet, *The Socratic Doctrine of the Soul*, p. 19.

14 J. Burnet, *The Socratic Doctrine of the Soul*, p. 19.

15 J. Burnet, *The Socratic Doctrine of the Soul*, p. 24.

16 J. Burnet, *The Socratic Doctrine of the Soul*, p. 24.

Socrates claimed to bring the soul into existence “in language derived from his mother’s calling”, in a way never thought of, of which especially Plato’s dialogues the *Theaetetus* and the *Symposium* leave the mark¹⁷. The doctrine of Socrates, to which Plato gives voice substantially shapes language by transforming it into the medium of thinking. As stated by Julius Stenzel: “Socraticism was essentially an experiment in the reinforcement of language and a realization that language had a power when effectively used both to define and to control action”¹⁸. If this is the case, Plato offers especially in the *Theaetetus* a *genesis of the sense* or *logic* of the soul (ψυχή), that is, the *logos*.

Jan Patočka in *Plato and Europe* advances an analysis intended to pose the problem,¹⁹ noting: “[t]he conceptualization of the soul in philosophy from its Greek origins consists in just what is capable of truth within man, and what, precisely because it is concerned about truth, poses the question: how, why does existence in its entirety, manifest itself, how, why does it show itself?”²⁰ Put differently, “Care of the soul is fundamentally care that follows from [...] the manifesting of the world in its whole, that occurs within man, with man”²¹. Yet, if “Socrates proves immortality in the *Phaedo* through the similarity of the soul to the ideas”²², Plato’s argument is unconvincing²³. Patočka notes: “Plato’s grand myths are all about life *after death* or *before natality*, about life before this life. The myths about prenatal existence of the soul are in fact even more important than those after death”²⁴. The reason is due to the master’s choice, which manifests in the play of the soul’s conversation in view of death/birth as the last test of existence through freedom, as Patočka rightly states²⁵. Put it otherwise, life after death and prenatal life are not within time, so they pertain to pure

17 J. Burnet, *The Socratic Doctrine of the Soul*, p. 27.

18 E. A. Havelock, *Preface to Plato*, Cambridge (MA) 1963, p. xi.

19 J. Patočka, *Plato and Europe*, Stanford (CA) 2002, p. 28.

20 J. Patočka, *Plato and Europe*, p. 27.

21 J. Patočka, *Plato and Europe*, p. 27.

22 J. Patočka, *Plato and Europe*, p. 137.

23 J. Patočka, *Plato and Europe*, p. 137.

24 J. Patočka, *Plato and Europe*, p. 137.

25 J. Patočka, *Plato and Europe*, p. 137.

being²⁶. If pure being belongs to life — one of the arguments in the *Phaedo* is actually about the form of life — then the form of life also means the logos, to be precise the logos of the idea.

In the *Theaetetus* Socrates reveals his expertise, stating: “I watch over the labor of their souls, not of their bodies. And the most important thing about my art is the ability to apply all possible tests to the offspring, to determine whether the young mind is being delivered of a phantom, that is, an error, or a fertile truth”²⁷. In addition, his method consists of “the business of match-making”²⁸, since he knows who is in labor pains and therefore either can rightly expect help from him or the direction of the other master. In the *Theaetetus* explicitly, the care of the soul receives not only motivation but also — in the problem posed to Theaetetus — the ultimate purpose of the master’s work accompanying the disciple is revealed, namely “what knowledge is?”²⁹ Hence the difference between the “idea” and the “logos of idea” is another side of the same problem. It is important to note that in the dialogue one of the main proponents of knowledge is recalled Protagoras, the sophist. There are reasons. First, the presence in the conversation of Theodorus as the truthful exponent of the sophist and himself the man of science, the mathematician, the teacher of the intelligent Theaetetus, the young man with whom the conversation goes on. Second, the symbolic context is marked by the Pythagorean doctrine of the relationships between numbers and letters. Thirdly, the theme of the next dialogue, the *Sophist*, emerges and perplexes Plato. Indeed, in the *Theaetetus* Plato states, regarding the sophist: “[w]hat we have to do is to make a change from the one to the other, because the other state is better. In education, too, what we have to do is to change a worse state into a better state; only whereas the doctor brings about the change by the use of drugs, the professional teacher (σοφιστής) does it by the use of words”³⁰. In the *Soph-*

26 J. Patočka, *Plato and Europe*, p. 137.

27 Plato, *Theaetetus* 150c.

28 Plato, *Theaetetus* 151b.

29 Plato, *Theaetetus* 151d.

30 Plato, *Theaetetus* 167a.

ist, Plato finally addresses the question of the difference between Socrates and Protagoras by thematizing the concept of the “spiritual person”³¹.

The logic of the Theaetetus

The question as a leitmotif guides the conversation of now old Socrates — Socrates on the threshold of the trial — in the dialogue with young Theaetetus, asking him: “What is knowledge?” Commentators, even contemporary ones, launch into discussing the conclusion and agree, that Plato provided none, as if the dialogue served no purpose. It was the Polish philosopher Wincenty Lutosławski who studied Plato’s writings with a method of “measuring style”, so-called “stylometry”. Thanks to his work — published under the title “The Origin and Growth of Plato’s Logic: With an Account of Plato’s Style and of the Chronology of his Writings”³², the American logician, Charles S. Peirce could find in Plato a germ of synechism (pragmatism), that is, solving the problem of the continuity of thought, i.e., the logic of discovery, i.e. abduction³³. Lutosławski has demonstrated, that the date of the composition of the *Theaetetus* must be placed beyond 26 years after Socrates’ death. And that the dialogue presents not only a refined logical structure but also contains and provides the most elaborate logic ever, marking the new shift in Plato.

In the framework of the growth of Plato’s logic proposed by Lutosławski, it may be worthwhile to deal more carefully with Peirce’s judgment in this regard. First, “Peirce’s renewed interest in Plato climaxed right around the same time he first read Wincenty Lutoslawski’s *Origin and Growth of Plato’s Logic* in 1898. Lutosławski’s title no doubt excited Peirce’s interest with its notion that logic — and even Platonism — have been subject to growth”³⁴.

31 J. Patočka, *The Spiritual Person and the Intellectual*, in: *Living in Problematicity* (Svazek). Kindle Edition, p. 50–69.

32 D. O’Hara, *The slow percolation of forms: Charles Peirce’s writings on Plato*, p. 101, Ph.D. dissertation, <https://etda.libraries.psu.edu/catalog/6652> (01.12.2022).

33 D. O’Hara, *The slow percolation of forms*, p. 133.

34 D. O’Hara, *The slow percolation of forms*, p. 54.

However, Lutosławski was not a logician. On the one hand, Peirce found in Plato the first logician — always of the late dialogues, affirmed the such by the method of the chronology of texts — on the other hand, Peirce finally addressed the question of the movement of thought itself, which required placing oneself in the history of logic³⁵. Yet, in the year 1897, on the threshold of reading Lutosławski's book, Peirce published the article titled *The Logic of Relatives*, in which he desires “to convey some idea of what the new logic is, how two ‘algebras’, i.e., systems of diagrammatic representation by means of letters and other characters, more or less analogous to those of the algebra of arithmetic, have been invented for the study of the logic of relations”³⁶. This is in fact the closest context in which Peirce meets “Plato's Logic”, and the logic of the *Theaetetus*. Second, it has been proven by dating, that Peirce anticipated the discovery of *Triadic Logic*, compared to Jan Łukasiewicz, the author of *Aristotle's Syllogistic From the Standpoint of Modern Formal Logic*, and Emil Post³⁷. However, Peirce's *Triadic Logic* agrees with the Platonic approach of dialogues, that is, it is based not on an extensional account as in Łukasiewicz's case³⁸, but ontology. Beyond doubt, Peirce asserts: “Triadic Logic is that logic, which though not rejecting entirely the Principle of Excluded Middle, nevertheless recognizes that every proposition, S is P, is either true or false, or else has a lower mode of being such that it can neither be determinately P, nor determinately not-P, but

35 D. O'Hara, *The slow percolation of forms*, p. 74.

36 Cfr. Ch. S. Peirce, *The Logic of Relatives*, in: *Collected Papers of Charles Sanders Peirce*, t. 3–4, eds. Ch. Hartshorne, P. Weiss, Harvard University Press, Cambridge, Mass. 1933, 3.456; Sun-Joo Shin, *Peirce's Deductive Logic*, The Stanford Encyclopedia of Philosophy (Summer 2022 Edition), ed. E. N. Zalta; <https://plato.stanford.edu/archives/sum2022/entries/peirce-logic/>.

37 Sun-Joo Shin, *Peirce's Deductive Logic*, The Stanford Encyclopedia of Philosophy (Summer 2022 Edition).

38 Cfr. J. Łukasiewicz, *Aristotle's Syllogistic from the Standpoint of Modern Formal Logic*, Dublin 1957. Aristotle's concept of “bilateral possibility” in Łukasiewicz's many-valued logic does not compete with the position of the lower mode of being of Peirce's triadic logic, contrary to Dariusz Łukasiewicz's claim. Cfr. D. Łukasiewicz, *On Jan Łukasiewicz's many-valued logic and his criticism of determinism*, “Philosophia Scientiae” 15 (2011) 2, p. 7–20. <https://doi.org/10.4000/philosophiascientiae.650>.

is at the limit between P and not P”³⁹. In other words, the three values of a proposition, read in light of the *Theaetetus* are: i) an opinion to be proved to be believed, ii) a judgment as the well-articulated, true proposition, iii) the judgment with an account. If the first proposition is something plausible (*Firstness* in Peirce), the second — “the limit *between*” — is part of current history (*Secondness*), the third, as in the case of the *Theaetetus*, is *fully* represented “in the long run”⁴⁰, that is, as the Socrates’ dream (*Thirdness*). Third, if it is true, that Plato’s logic is due to writing as technology, Peirce’s logic faces a shift due to the development of the “scientific evidence” — the challenge of “the whole of modern ‘higher criticism’” — not to be confused with logic⁴¹.

Peirce’s position stands at the turning point of technology. The shift in symbolic analysis was achieved with a master’s thesis written by computer science pioneer Claude E. Shannon in 1937. However, it required binary notation and electronic realization of the Boolean Algebra⁴². It is in this context that the question of knowledge (ἐπιστήμη/τέχνη) emerges again, precisely because of technology (τέχνη) as a support of order (λόγος). Thus, as Walter Ong notes: “[i]f writing is a technology that transforms thought [...] and if the technology of print further transforms thought [...] and if electronic technology effects comparable transformations in thought [...] it would appear that technology has a much closer interior bond with human consciousness than is commonly allowed for”⁴³.

Returning to the *Theaetetus*. The beginning of the conversation is marked by asking the question yet another way, “So knowledge and wisdom will be the same thing?”⁴⁴

39 Sun-Joo Shin, *Peirce’s Deductive Logic*, The Stanford Encyclopedia of Philosophy (Summer 2022 Edition). Cfr. M. Fisch, A. Turquette, *Peirce’s Triadic Logic*, “Transactions of the Charles S. Peirce Society” 2 (1966) no. 2, p. 75.

40 Peirce’s famous saying.

41 Peirce’s manuscripts on “Minute Logic.” Cfr. D. O’Hara, *The slow percolation of forms*, p. 213.

42 W. Ong, *Language as Hermeneutic. A Primer on the Word and Digitization*, Ithaca–London 2017, p. 72.

43 W. Ong, *Language as Hermeneutic*, p. 90.

44 Plato, *Theaetetus* 145e.

It is important to note that Theaetetus was an exquisite mathematician, the friend of Plato and Socrates. The young man's mind was trained in the science provided to him by Theodorus. And what it means to be trained in science — or rather laboratory science — is what is the background of Peirce's research in the *Fixation of belief* and *How to make our ideas clear*⁴⁵. So, the question about knowledge is indirectly addressed to a problem with judgment, which Plato's disciple Aristotle will explain with the metaphor of an army on the run, that is, in panic, but capable of stopping⁴⁶. Plato examines Socrates' ability, which is neither irrational (*alogos*), because he can “debunk”, nor rational (*logos*) in the mathematical sense of geometry. Socrates' knowledge is in a sense “solid”, analogous to the solidity of Theaetetus' discovery that there are exactly five regular convex polyhedra in Plato's geometry. The *Theaetetus* and the *Parmenides* mark the turning point, which opens up for Plato the questions of the hermeneutics of language initiated in the *Protagoras* and discussed at length in the *Sophist*, armed with the “idea of an idea”⁴⁷, as Peirce captures it, or better yet, the “*logos* of idea”.

Ong notes: “*Leg-* is the same root which gives us our English term ‘lay’ as well as the Greek verb *legein*, of which *logos* is a cognate. In ancient Greek *legein* means basically to pick up, gather, choose, count, arrange, and thus involves the manipulation of discrete units. From this meaning, *legein* develops as an extended meaning ‘to recount, tell, relate’ — that is, to pick out and lay matters in order by use of words”⁴⁸. These are also origins of discourse, that is, of the ordered dialogue, which becomes a standard since Plato's *Symposium*⁴⁹. In the *Symposium* Plato elaborated the passage from the oral world of praise. In Socrates' praise, that is speech fully controlled in verbal articulation, we enter the world of writing. But it is not the

45 Ch. S. Peirce, *How to make our ideas clear*, “Popular Science Monthly” 12 (January 1878), p. 286–302.

46 Cfr. Aristotle, *Posterior Analytics* II 19, 100a.

47 Cfr. D. O'Hara, *The slow percolation of forms*, p. 45–46.

48 W. Ong, *Language as Hermeneutic*, p. 68.

49 Cfr. W. Lutosławski, *The Origin and Growth of Plato's Logic: With an Account of Plato's Style and of the Chronology of his Writings*, Longmans 1897, p. 400, Footnote 251.

whole story, as it were, concluded with Socrates' breakthrough, but as if something is still missing to satisfy the argument, for fulfillment. The twist requires a guest that no one was expecting. Thus, one can rightly argue that at this moment it is not Socrates who is praised, because "[u]nderstanding, knowledge, truth, are realized in the total, existential human lifeworld"⁵⁰.

Now, two things need to be focused on. The first concerns Plato's logical achievements highlighted by Lutosławski that are at stake in the *Theaetetus*⁵¹. The second refers to logic itself, that is, the logic of the soul, as a source of movement and change due to the universality of reason⁵². The author of the chronology of Plato's works notes in this regard, that: "in the earlier dialogue [*Phaedo*] the difficulty is stated and left ironically to wiser men for a solution. In the *Theaetetus* the statement of the difficulty is no longer particular as in the *Phaedo*, but is expressly generalized, and shown to be applicable to innumerable instances, out of which one had been selected as an example"⁵³. On the one hand, the multitude converges toward unity of understanding, on the other hand, the term "soul" becomes the problem⁵⁴. Lutosławski underlines: "[t]hen also the form of the statement is much sharper in the later work, where the problem is reduced to three axioms two of which are in contradiction with the third. The axioms are here said to be in the soul, whereby it becomes clear that we are no longer dealing with transcendental ideas, as in the *Phaedo*, but with subjective notions. While in the *Phaedo* only the fixity of notions is insisted upon, here we see activity as a condition of change, which corresponds to the increasing interest in physical science, and to the constant application of the opposition between *ποιεῖν* and *πάσχειν*, common to the *Theaetetus* with the *Phaedrus*"⁵⁵. Put it differently, "in the *Phaedo* there was no question of change, and only fixity of relations was sought. The notion of change and movement belongs to a later stage, prepared in the *Republic*, beginning

50 W. Ong, *Language as Hermeneutic*, p. 34.

51 Cfr. W. Lutosławski, *The Origin and Growth of Plato's Logic*, p. 371–400.

52 This kind of logic attracts Peirce, illuminating his own project of the *Triadic Logic*.

53 Cfr. W. Lutosławski, *The Origin and Growth of Plato's Logic*, p. 383.

54 Plato, *Theaetetus* 184d.

55 W. Lutosławski, *The Origin and Growth of Plato's Logic*, p. 383.

with the *Phaedrus*, and growing in the *Theaetetus* and *Parmenides*⁵⁶. Lutosławski then points out that the shift is marked by the substitution of categories for ideas⁵⁷. One of the inferences is that, for the digital humanities, it is to be considered *πάσχειν* and not *ποιεῖν*, still on “some single form, soul or whatever one ought to call it”⁵⁸, common with physical science. The reason is well grasped by Ong, stating: “[t]oday the humanities are still assumed to make man more human, but they locate the threat that they must counter not in the animal world but elsewhere, in the world of machines”⁵⁹. Therefore, the issue is about the substitution of the *logos* of soul for the soul, namely *anima rationale*, and the intimate order instead of the mechanical one.

The “logos” of soul. Knowledge (*ἐπιστήμη*) and technology (*τέχνη*)

If the idea in the *Theaetetus* stands for the *logos* of soul, the thing to note is that the dialogue crowns a search for such a structure, so its dating some thirty years after the master’s death is justified. The structure is exposed in the spoken language — because “the professional teacher (*σοφιστής*) does it [to change a worse state into a better state] by the use of words”⁶⁰ —, in fact, it is explained in “its three kinds: speech (206d), enumeration of parts (207a), and definition (208e)”⁶¹. In this regard, Lutosławski notes: “The three degrees are declared insufficient to guarantee knowledge, but it may be taken for granted that each of them is held indispensable for knowledge”⁶². However, the “spoken” language of the dialogue would not

56 W. Lutosławski, *The Origin and Growth of Plato’s Logic*, FN 247.

57 W. Lutosławski, *The Origin and Growth of Plato’s Logic*, p. 384.

58 Plato, *Theaetetus* 184d.

59 W. Ong, *Language as Hermeneutic*, p. 319.

60 Plato, *Theaetetus* 167a.

61 W. Lutosławski, *The Origin and Growth of Plato’s Logic*, p. 377.

62 W. Lutosławski, *The Origin and Growth of Plato’s Logic*, p. 377.

be possible without writing, as evidence⁶³, that is, by the technology of letters. Moreover, at stake is still the historical situation due to the Greeks, which becomes a significant factor for the digital humanities and philosophy in the information and communication era. Walter Ong notes: “Socratic-type dialog is not a feature of primary oral culture. *Logos* calls for yes-no responses, as *mythos* does not, and as computers later would. The strength of the Greek drive toward yes-no responses is confirmed by G. E. R. Lloyd, who in his *Polarity and Analogy*, has shown how, by circumstantial comparison with a large number of other cultures across the world, ancient Greek thought from the pre-Socratics on specialized markedly in differentiation (‘polarity’)”⁶⁴.

The impact of the writing on memory, which Plato highlights in the *Phaedrus* as a factor of pretending to know rather than actually knowing⁶⁵, allows the comparison to be made with computer technology and its impact on the human mind⁶⁶.

Lutosławski argues that with the *Theaetetus* Plato enters the critical phase of his philosophy and that the *Theaetetus* shares style with the *Parmenides* and the *Sophist*⁶⁷, and that “the *Theaetetus* is a late dialogue, written by Plato after fifty or possibly after sixty”⁶⁸, and “at the beginning of another period, after a long interruption”⁶⁹.

If the writing were technology, as Ong argues, and even electronic or computer technology, the reconstruction of the dialogue should hold up, thus unveiling the *logos* of Plato's account, on the boundary to the *alogos*

63 “As Havelock (*Preface*) has shown, even though Plato's text represents the Socratic dialogues as oral discourse, this is a kind of discussion directed by a mind formed in a writing culture” (W. Ong, *Language as Hermeneutic*, p. 76).

64 W. Ong, *Language as Hermeneutic*, p. 76.

65 Plato, *Phaedrus* 274c–275b.

66 Cfr. N. Carr, *Is Google Making Us Stupid? What the Internet is doing to our brains*, The Atlantic 2008.

67 Cfr. W. Lutosławski, *The Origin and Growth of Plato's Logic*, p. 389.

68 W. Lutosławski, *The Origin and Growth of Plato's Logic*, p. 391.

69 W. Lutosławski, *The Origin and Growth of Plato's Logic*, p. 399.

detectable by the calculus of Theaetetus⁷⁰. Without going into a discussion of the “mathematical part” — no doubt necessary to do justice to the Greek mathematics of the irrationals and Plato’s thought — let us follow Ofman’s conclusion: “La mathématique grecque ultérieure ne reprendra d’aucune manière le ‘résultat du reste’ dans ce cadre. Il sera abandonné au profit de la théorie des proportions et des entiers relativement premiers. On est bien dans une aporie, dont on sort en changeant de méthode, tout comme indubitablement, il s’agira de le faire pour répondre à la question posée par Socrate: ‘qu’est-ce que la science⁷¹?’”.

The “Dialogue”, i.e. dia-“logos”

Socrates examines Protagoras’ statement assuming from the beginning, that “Man is the measure of all things: of the things which are, that they are, and of the things which are not, that they are not (152a)”. However, it does not seem contradictory for the sophist to refrain from judging the existence of gods, which in that case according to Socrates would make the arguments “merely persuasive or plausible (163a)”. Proving through analysis that in fact “not every man’s judgment is true (179c)”, Socrates eventually poses the problem of future predication, which is the key point of logic, that is, the question of the *soul* as the principle of motion (156a). Socrates drew from this examination that it is necessary to test “this moving Being, and find whether it rings true or sounds as if it had some flaw in it (179d)”. Therefore, Socrates concludes at the end: “Then we are set free from your friend, Theodorus. We do not yet concede to him that every man is the measure of all things if he is not a man of understanding (183c)”.

To form the arguments, one at a time, the conversation is as follows. In a symbolic way,

⁷⁰ If Theaetetus’ algorithm allowed for the identification of irrationals through symbolic proportion, math progressed due to the theory of proportions formulated by Eudoxus. Cfr. M. Kordos, *Wykłady z historii matematyki*, Warszawa 2005, s. 67–77.

⁷¹ S. Ofman, *Comprendre Les Mathématiques Pour Comprendre Platon — Théétète (147d–148b)*, “Lato Sensu. Revue de la Société de philosophie des sciences” 1 (2014) no. 1, p. 71–80.

if p then non- q , else q

In the first stage of the dialogue, the exam of Protagoras' thesis (152a), a mode of being corresponding to the *fixed* argument, q is out of the question; however, the problem is mentioned because it raises some perplexity for Socrates (163a). Socrates' objective is to find "the *limit* between q and not q "⁷². However, at this point Plato's Socrates does not perceive the difference between Protagoras and himself, the issue Plato takes up later in the *Sophist*⁷³.

Protagoras' secret doctrine — as Socrates argues — consists in assuming that "there is nothing which in itself is just one thing: nothing which you could rightly call anything or any kind of thing. [...] What is really true, is this: the things of which we naturally say that they 'are', are in the process of coming to be, as the result of movement and change and blending with one another (152d/e)". This opposite and conflicting view⁷⁴, represented by the Heraclitean doctrine dates back to antiquity (179e-180d).

Aporia: How is it possible for both of them to be right, that is, to be talking about something and not about nothing? Moreover, because of the conflicting opinions, they seem to struggle for the same.

if p then non- q , else q

In Łukasiewicz's notation (Polish notation): AKpNqKNpq

Test for tautology:

1. NAKpNqKNpq
2. KNKpNqNKNpq
3. KANpqApNq

⁷² Following the account of Peirce's *Tradic Logic*, quoted above. Here, the substitution of "q" for "p".

⁷³ Cfr. J. Patočka, *The Spiritual Person and the Intellectual*.

⁷⁴ Cfr. W. Lutosławski, *The Origin and Growth of Plato's Logic*, p. 378.

4. KCqpCpq

5. Epq

No doubt, there is a dramatic opposition between two conflicting views⁷⁵. And yet Russell's joke, known as "Russell is the Pope". In addition, *Reductio ad absurdum*.

Parmenides and followers "insist that all things are One and that this One stands still, itself within itself, having no place in which to move". (180e) Parmenides' argument standing in opposition to all other doctrines, (152e) does indeed reveal the *soul*, that is, according to Plato: "some single form, soul or whatever one ought to call it"⁷⁶. Lutosławski points out that for Plato: "knowledge was no longer conceived to be a mere intuition of pre-existing ideas, but a product of the mind's activity. Knowledge is to be found in that state of the soul, in which it considers being, or in its judgments (187a). Knowledge is brought under the head of δόξα, not in the meaning of opinion, but of judgment. This position is not contradicted in the following discussion and may be accepted as Plato's true conviction. He explains thought as a conversation of the soul with itself (189e) leading to a choice between affirmation and negation, wherein judgment consists (190a)"⁷⁷. Therefore, Lutosławski's remark about δόξα as judgment refers to a phenomenon, that is, the unified sense of the multitude. Hence intentionality in phenomenology takes its name.

Thus, Parmenides' argument, *p*

Protagoras' argument, *q*

Heraclitus' argument, *r*

if *p* then *q*, else *r*

In Łukasiewicz's notation: AKpqKNpr

75 W. Lutosławski, *The Origin and Growth of Plato's Logic*, p. 378.

76 Plato, *Theaetetus* 184d.

77 W. Lutosławski, *The Origin and Growth of Plato's Logic*, p. 375–376.

Test for tautology:

1. NAKpqKNpr
2. KNKpqNKNpr
3. KANpNqApNr
4. KCpNqCNpNr

Thus, it is tautology, namely *tautos logos*.

The ‘if p then q , else r ’ function, that is, ‘AKpqKNpr’, known as *Reduced Ordered Binary Decision Diagram* (ROBDD) was first introduced by Randall Bryant in 1986 in *Transactions on Computers*⁷⁸, and later described in the paper delivered to the 27th ACM/IEEE Design Automation Conference⁷⁹. The authors claim that “Efficient manipulation of Boolean functions is an important component of many computer-aided design tasks”⁸⁰. In Boolean Algebra, compared with Sheffer stroke and Peirce arrow, the ROBDD satisfies the theorem of Claude E. Shannon, founder of information theory⁸¹.

Conclusion

The humanities nowadays make use of computers in a variety of ways, so that the texts of past authors can be examined not only under the aspect of style, as proposed and done by Lutosławski, but of ever-increasing ease in the investigations posed to the text or comparative texts.

78 R. E. Bryant, *Graph-Based Algorithms for Boolean Function Manipulation*, “IEEE Transactions on Computers” C-35 (August 1986) issue 8, p. 677–691; <https://doi.org/10.1109/TC.1986.1676819>.

79 K. S. Brace, R. L. Rudell, R. E. Bryant, *Efficient implementation of a BDD package*, 27th ACM/IEEE Design Automation Conference, 1990, p. 40–45; <https://doi.org/10.1109/DAC.1990.114826>.

80 Cfr. P. Janik, *Weryfikacja równoważności funkcjonalnej opisów układów cyfrowych*, University of Science and Technology, Wrocław 1992, M.S. Thesis.

81 P. Janik, *Weryfikacja równoważności funkcjonalnej opisów układów cyfrowych*, p. 25.

But it is Plato who efficiently introduces to philosophy the so-called “technology-assisted mind”, as one would say, with the results lasting for centuries. If we ask what Plato’s phenomenon of influence consists of eventually we come to the ideas, or better yet the logos of idea, which is the source of science itself. The order of ideas depends on technology, as scholars have shown. Still, it is education — at least in its purpose — that makes man sensitive to technology through training. Thus, effectiveness in thinking according to technology, as the effect of training, is not the same as thinking humanly. And without thinking humanely, understanding cannot be achieved⁸².

The digital humanities that emerge from this investigation find a legacy in *philosophy* or better said in Plato’s *philology* and the latest “logos” realization.

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Abstract

Plato's Theaetetus & logos of the digital humanities

The specifics of the humanities are the study of the human and its offspring, already recalled by Socrates in the “Theaetetus”. The dialogue marks a substantial shift in Plato — the discovery to be attributed to Wincenty Lutosławski, the author of the chronology of Plato’s works — that is, from pre-existent and transcendental ideas to the categories of reason, from philosophy as the “love of wisdom” to the “love of knowledge”. Thus, contrary to the widely held view of the so-called lack of the definition of knowledge in the “Theaetetus”, I argue that the quest for knowledge refers to the logic of thinking — the theme related to Charles S. Peirce’s logic of discovery and still distinct from “technology” — and provides the constitution of the humanities of the information and communication age as the digital humanities.

Keywords: Plato, Theaetetus, logos, phenomenology, digital humanities

Abstrakt

Teajtet Platona i logos cyfrowej humanistyki

Specyfiką nauk humanistycznych jest badanie człowieka i jego dziedzictwa, o czym przypomina już Sokrates w Teajtecie. Dialog ten wyznacza istotną zmianę u Platona — odkrycie to należy przypisać Wincentemu Lutosławskiemu, autorowi chronologii dzieł Platona — tj. od idei preegzystujących i transcendentalnych do kategorii rozumu, od filozofii jako “umiłowania mądrości” do “umiłowania wiedzy”. Tak więc, w przeciwieństwie do szeroko rozpowszechnionego poglądu o tak zwanym braku definicji wiedzy w Teajtecie, argumentuję, że poszukiwanie wiedzy odnosi się do logiki myślenia — tematu związanego z logiką odkrycia Charlesa S. Peirce’a i wciąż odrębnego od “technologii” — i stanowi konstytucję humanistyki ery informacji i komunikacji jako cyfrowej humanistyki.

Słowa kluczowe: Platon, Teajtet, logos, fenomenologia, cyfrowa humanistyka