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ON CERTAIN VALUES OF THE LVOV-WARSAW SCHOOL AND LOGICAL CULTURE
TOWARDS CHALLENGES OF CONTEMPORANEOUSNESS**

Abstract

This article explores the question of how the members of the Lvov-Warsaw School promoted values that can be regarded as components of so-called logical culture. The author argues that these values are strictly connected with science. With references to Łukasiewicz, Czeżowski, and Kotarbiński, the article explores how values shape the logical culture and determines society as directed towards values. The article connects the meta-philosophical perspective with the philosophical one.

Keywords: Lvov-Warsaw School, values, science, logical culture, education, Jan Łukasiewicz, Tadeusz Czeżowski, Tadeusz Kotarbiński

1. VALUES ACCLAIMED BY THE LVOV-WARSAW SCHOOL

No intellectual movement or school has the monopoly to hold values. Nevertheless, among a variety of schools, there are some that form great values to a higher degree than others are able to. It seems that the establishment of the Lvov-Warsaw School (LWS) was possible thanks to the values formed in it. Which of them are the most precious? Which of them can we be proud of on a national scale and which are appreciated worldwide? Opinions on the above

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can be divided. Below, I would like to list the majority of values developed in the LWS:

— forming the mind, intellectual prowess, rational thinking,
— creative thinking, passion for creativity,
— putting forward ideas and problems to inspire imagination,
— critical and ordered thinking,
— simplicity and clarity of the thoughts expressed,
— substantial justification of statements,
— openness to statements and beliefs of others,
— exchange of scientific and non-scientific views,
— formation of aesthetic and ethical sensitivity,
— friendly contacts on the scientific and social grounds irrespective of the individual denomination or worldview,
— high logical culture.

The above-listed values complement one another. Many of them are components of what is usually referred to as logical culture. Combined, they are characteristic of the LWS and have a universal dimension. This very last value is telling in itself, especially in our times of popularly dominant traits such as materialism, egoism, narrow visions, efforts to solely carry out individual people's plans and to meet non-intellectual needs.

Universal values are indispensable for each culture to survive and for each activity system. They enhance creative activity, provide a source of challenges and possibilities that enable expression and self-realization of every individual. Besides, they are of fundamental significance in science and in scientific creativity. Abandoning universal values for the sake of particular ones leads to hampering the intellectual development of man and ends in acceptance of reverse trends in scientific progress or societal culture, whose integral part is the logical culture.

2. CREATIVE AND RATIONAL THINKING IN SCIENCE

The values characteristic of the LWS are vital to science in general. Let us ask then: What are the tasks and values of science? They were presented and highlighted, in particular, by Jan Łukasiewicz (one of the three first disciples of the founder of the LWS — Kazimierz Twardowski).

Łukasiewicz, already in the early period of his scientific activity, when he became interested mainly in methodology of empirical disciplines, wrote a

valuable and beautiful article "O twórczości w nauce" [Creative Elements in Science] (Łukasiewicz 1912).[1] According to Łukasiewicz, the task of science is not *recreative truth*. The scientist's work does not consist in reproducing facts by means of true judgements. It must be based on *creative thinking*. Accordingly, we read:

> To look for the goals of science outside the sphere of intellect is as grossly erroneous as to restrict art by considerations of utility. The slogans "science for science's sake" and "art for art's sake" are equally legitimate. (Łukasiewicz 1970: 6)

Further in the article, Łukasiewicz states:

> science was shaped by a striving for knowledge. . . . it investigates that which may arouse desire for knowledge in every man. . . . the additional value besides truth which every judgement ought to have in order to belong to science might be defined as the ability to arouse, or to satisfy, directly or indirectly, intellectual needs common to humanity, i.e., which may be felt by any man who has a certain level of mental development. (Łukasiewicz 1970: 5)

And:

> The human mind does not work creatively for the sake of truth. The goal of science is to construct syntheses that satisfy the intellectual needs common to humanity. . . . these syntheses also include creative judgements; they are the ones which satisfy intellectual needs. (Łukasiewicz 1970: 13)

Between the two quoted fragments, Łukasiewicz explains that:

> Every intellectual need that cannot be immediately satisfied in an empirical manner gives rise to *reasoning*. . . . There is a creative element in every reasoning. (Łukasiewicz 1970: 6, 8).

It is, the author says, a formal creative factor: "a logical principle of reasoning (. . . a judgement stating that the relation of consequence holds between certain forms of judgements)" (Łukasiewicz 1970: 11). Łukasiewicz acknowledges that such a principle is a product of the mind.

Purely creative products of the mind are theorems of logic. "Its theorems," we read further in the article, "are true on the strength of definitions and axioms derived from reason and not from experience. This science is a sphere of pure mental activity" (Łukasiewicz 1970: 11). In a passage full of poetic expression, Łukasiewicz states that:

> Logic gives rise to mathematics. . . . Logic, with mathematics, might be compared to a fine net which is cast into the immense abyss of phenomena in order to catch the pearls that are scientific syntheses. It is a powerful instrument of research, but an instrument

[1] The article was also published by the Philosophical Library in Lvov in 1934 and is included in (Łukasiewicz 1961: 66-75); translated into English in (Łukasiewicz 1970: 1-15).

> only. Logical and mathematical judgements are truths only in the world of ideal entities. . . . The a priori mental constructions, which are contained in every synthesis, imbue the whole science with the ideal and creative element. (Łukasiewicz 1970: 11-12).

The author emphasizes that what the mind has produced does not have to be fantasy only. Concluding the article, Łukasiewicz likens creativity in science to poetic creativity. He writes:

> Poetic creativity does not differ from scientific creativity by a greater amount of fantasy. . . . But the scientist differs from the poet in that he reasons at all times and places. He need not and cannot justify everything, but whatever he states he must link with ties of logic into a coherent whole. (Łukasiewicz 1970: 14)

Creative and rational thinking in science is among the values constituting romantic rationalism. It can be supposed that this trend dominated in the LWS over positivist rationalism. Although the LWS is best-known for its great achievements in mathematical logic, mathematics itself, and exact philosophy, creativity in the domain of deductive sciences does not seem to fit in with positivist rationalism.

I believe that goals of science, just like art, should not be looked for outside the sphere of reason and fettered by the demands of usefulness. "Those who would like to turn science into a servant of everyday needs hold a low opinion of science," Łukasiewicz writes in the article mentioned above. Practical value of scientific truths is neither their sufficient nor indispensable feature (Łukasiewicz 1970: 4).

Nowadays, science is stripped of its tasks and aims by invasion of commerce and market, which has penetrated, as we can see, not only the sphere of artistic and sports activity but also those of scientific research, the mass media, schools, and academia. Transformation of science into a means of mass usability leads to acceptance of mediocrity and easily secured success.

The word "creativity" has been devalued, since creativity is not only production of something new, in particular, practical or even beautiful objects, but creating something intellectually and socially valuable.

I would like to add, though, that a creative attitude is not opposed to practical reality, especially in relation to computer science. Yet the very fact of the multiplication of computers does not make society any better informed or wiser. Overloading people with a great deal of information is a cause behind the lack of their own judgements and ideas. The abundance of information results in a loss of the ability of rational analysis of it, rational thinking, and constructing syntheses. Information alone is of little worth in the world of human values. Knowledge is better than information, and wisdom is better than knowledge. Information or technological society does not teach wisdom.

In order to solve problems, one needs wisdom and proper values. The way to solve problems is thus knowledge and content-related discussion.

Discussion was a vital factor in forming the creative thought in the LWS, and this was in connection with the excellent atmosphere created by Kazimierz Twardowski and his disciples. They were characterized by specific *logical culture* so rarely met today not only in the language of public debate but also in the language of culture.

The question arises: Is logical culture, functioning as one of more important values in the LWS, accepted in contemporary world? In order to justify the answer to the question, let us first ask: What does this kind of culture consist of?

3. WHAT DOES LOGICAL CULTURE CONSIST OF?

It is worth recalling what Tadeusz Czeżowski — a disciple of Kazimierz Twardowski — wrote about logical culture of man and logical culture of society already after the War.

> We recognize a man of logical culture first of all by the fact that he knows limits of his own competence, realizing within what limits he holds knowledge sufficient to make firm statements and justify them. Since logical culture makes him sensitive to truth and falsity, to correctness of thoughts and logical errors; it forms — as we might say — logical conscience which is the foundation of criticism towards oneself and others. This criticism is, in turn, a shield guarding against the impact of feelings that so often distort the logical course of thoughts, and likewise against aspirations, prejudices, and superstitions evoked by feelings. It protects against the temptation of making use of dishonest polemical tricks, sophistries, subreption, insinuation. Thus, it incorporates reliability and righteousness into thinking. It allows raising above everything that impairs the matter-of-factness of the stance by biased moments and overcoming dogmatic obstinacy. It offers the possibility of understanding opposite standpoints, opens the road to reasonable tolerance that does not embark on destroying the opponent, but endeavors to win him over. And it is how logical culture links to ethical and social culture. It elevates people over the differences that divide them and unites them with knots of all-human solidarity, revealing the path to everlasting ideals of truth and good and beauty that are inseparably united with it. (Czeżowski 1958: 278)

Subsequently, Czeżowski writes about logical culture of society:

> Undoubtedly, logical culture of society depends on logical culture of individuals that compose the society; nevertheless, logical culture of society possesses peculiar features and manifestations that we should pay attention to. We encounter them in social life in every place where human thoughts come into contact with one another, clashing or cooperating, or competing with one another in mental, political, organizational life, in

> public meetings and discussions, in the press and other publications, in teaching, legislature, and on many roads of normalizing interhuman relations. In every place where logical culture introduces transparent ordering according to principles of classification and ranking, definitions compliant with rules of defining, it protects against premature generalizations and mechanical schematizing, helps to organize work in sensible way. Still, the most important moment rests in the fact that logical culture raises in society the level of requirements regarding clarity and appropriate justification of statements and notions. In effect, utterances aiming to evoke exclusively or primarily emotional reactions lose their power. Journalism, political games, and all public activity counting on social response, must satisfy these higher demands of logical correctness. Seriousness of discussion wins, whereas demagogues lose their ground, understanding becomes easier since it finds in logic the basis of settling contentious issues. Society of high logical culture becomes more unanimous and closer-knit, . . . thanks to that it finds signposts in logic to guard it against going astray and taking paths of passion and breakup. (Czeżowski 1958: 279)

In the light of the above-quoted statements by Czeżewski, it can be concluded that the following four components, pointed out by Kazimierz Ajdukiewicz (also a close disciple of Twardowski) are the necessary constituents of logical culture: clarity, criticism, consistency, and diligent exchange of ideas (cf. Brożek et al. 2020: 20).

The following seems therefore to be a rhetorical question: Does the logical culture of today constitute a desired value in private and social life as well as in scientific research?

Another question naturally arises: What can be done to raise the general logical culture of society, being an integral part of society's culture in general?

4. WHAT CAN BE DONE TO RAISE LOGICAL CULTURE OF SOCIETY?

It is fairly obvious that, first, it is necessary to raise the logical culture of individuals of a society. However, how can one cultivate logical culture without knowledge of general principles of scientific logic, which forms the basis for clearly and precisely formulated considerations and correctly justified statements, critical attitudes towards one's own and others' opinions, as well as a factual discussion?

Having general logical knowledge is an indispensable element of an educated man and exerts an influence on society's education. This opinion was shared by outstanding representatives of the LWS and the founder of the School.

4.1. THE INFLUENCE OF KAZIMIERZ TWARDOWSKI ON LOGICAL EDUCATION

The creator of the LWS paid attention to general education of each person and to his or her logical education as well. He not only lectured on logic himself and influenced its development in Poland (Jadacki 2021) but also encouraged teaching it both in secondary schools and at universities (Twardowski 1920, Woleński 2021: 35). In his didactic work, he displayed a very high level of logical culture. Of particular importance to him was logical education of the teaching staff; he assigned logic an important place in educating teachers (Kleszcz 2021: 57-59). It was already in 1901 that he wrote a handbook designed for teachers and self-taught people (Twardowski 1901). Twardowski treated logic as a vital tool thanks to which one can achieve required logical competence. He underlined that in order to develop such competence one needs to practice.

Twardowski was not only an outstanding scholar and organizer but also an excellent educator (Czeżowski 1938/2021, Rechlewicz 2021). He attached great importance to general logical culture of his students; he exerted a strong influence on his disciples' didactic practice. His educational activity allowed forming a group of students who won world acclaim for philosophy and logic.

Twardowski's opinions on logical education and its importance to logical culture of society were continued by his direct disciples, in particular by Kazimierz Ajdukiewicz, Tadeusz Czeżowski, and Tadeusz Kotarbiński.[2]

4.2. LOGICAL EDUCATION: WHEN AND HOW?

Logical culture of man is developed already in students at school, then it is perfected in university students. This is connected with tasks of schools and universities, with tasks for their teachers, school and academic logical education as well as with curricula in force. Thus, the question arises: What should be the canon of knowledge, the corpus of information on logic mandatory for each school and university student, each adult, especially a teacher? It is not my intention to enter the dispute on whether knowledge of scientific logic is necessary for scientists, and to what extent. I do argue, however, that they are absolutely needed for school and academic teachers as it is on them

[2] See Brożek et al. 2020, especially Chapters Two, Four, Five, Six (treating, respectively, of logic in the LWS and the components of logical culture: clarity in the LWS, correct justification in the LWS, diligent exchange of thoughts in the LWS) as well as Chapter Eleven, devoted to the didactic methods in the LWS, particularly didactics of logic and its significance to sculpting logical culture.

that logical education of each secondary school student and university student depends the most.

4.3. ON THE NEED FOR TEACHING LOGIC IN POST-WAR POLAND[3]

Scientific logic, so significant for development of logical culture, is being eliminated contemporarily from school and academic education in Poland. Why? Are theoretical studies in logic completely unnecessary because natural logic is sufficient? Has the view on logical culture cultivated throughout centuries, which was so beautifully described by Czeżowski, changed?

After all, the need for teaching logic in post-war Poland was emphasized by outstanding and influential representatives of the LWS, concerned about proper teaching of it, such as Ajdukiewicz, Kotarbiński — philosophers and logicians — and Jerzy Słupecki — a mathematical logician. Let me quote here a most telling fragment of Kotarbiński's statement on the need to teach logic:

> Indeed, one can learn to speak a language without studying the grammar of the language, one can play an instrument fairly well without knowing musicology, one can skillfully reason and communicate one's thoughts in a clear manner without having for once pondered over the essence of syllogism or the classical form of the definition. Nevertheless, we do teach grammar in primary schools, future virtuosos do pore over treaties on harmony and composition while at conservatories. . . . obviously this comes in handy this or another way. (Kotarbiński 1955: 255)

Ajdukiewicz should be credited with particular merits as regards teaching logic in post-war Poland. He was the author of seven handbooks and the main propagator of the national logical education. After the War, Ajdukiewicz demanded that relevant curricula should be elaborated with reference to teaching logic (on both the secondary and the tertiary levels). He advocated and formulated the principle of making teaching of logic "practical," showing the need for educating appropriate staff of logicians (Ajdukiewicz 1951). His coursebook *Zarys logiki* [An Outline of Logic] (1953) was reprinted many times. Being accepted in the 1950s as the obligatory one for the undergraduate classes of grammar comprehensive schools, it was designed for teachers and it may as well be suitable to offer some basis for teaching logic nowadays. The author begins the "Introduction" to this book as follows:

> He who thinks in a clear and consistent way speaks in a concise and ordered manner; he who reasons rightly and justifies his statements thinks and speaks logically, as we say. There exist two central themes on which the problem area of logic focuses: the first is the question of clear and consistent, concise and ordered thinking; the other — that of correct reasoning. (Ajdukiewicz 1953)

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[3] See Wybraniec-Skardowska 2005.

The first problem area is dealt with by logical semiotics (logic of language) and general methodology of sciences (logical methodology), while the other one is explored by formal logic.

Ajdukiewicz devoted a separate work to tasks for schools and teachers in the sphere of raising logical culture (Ajdukiewicz 1959). Following the reform of university curricula in 1954, Ajdukiewicz published an article (1955) in which he pointed to the necessity of restoring logic as an obligatory subject in every major of university studies. The chief principles formulated in that academic study were interrelated with aims of teaching logic and are binding, I believe, also today. Certain shortcomings exposed in the article with regard to the manner of lecturing in logic being service-bound — for instance, concentration exclusively on issues of interest to the lecturer, monographic presentation of the section selected by the lecturer, overloading with information pertaining to formal logic to the disadvantage of other sections, too weak a stress laid on the quality and quantity of exercises — may as well raise a number of doubts or even objections.

Before the War, Ajdukiewicz had published a valuable work under the title *Logiczne podstawy nauczania* [The Logical Foundations of Teaching] (1934), encompassing knowledge indispensable — in Ajdukiewicz's opinion — as the base of didactics and a necessary component of each teacher's education. I need to note here that a fairly extensive part of the study — of pioneering value for the logical theory of questions — is devoted to analysis of both questions and answers, including didactic questions applied in the erothematic method. It is on the basis of this Ajdukiewicz's pre-war work that his book *Logika pragmatyczna* [Pragmatic Logic] was published (1965); also translated into English. In the introduction, Ajdukiewicz explains what he understands by "logical foundations of teaching": "this knowledge of logic which the teacher ought to hold to be suitably prepared for proper execution of his/her didactic tasks."

As it is well known, the tasks of general didactics include the teaching of logical skills. Ajdukiewicz presents the scope of logical foundations for teaching, consisting — in accordance with the grades of importance — of methodology of sciences, logic of language, and elementary knowledge of formal logic.

After Ajdukiewicz's death (1963), many logicians expressed their concern about teaching logic and pointed to the need for deepening the logical education of teachers. Towards the end of the 1960s, the journal *Studia Logica* (whose founder and longtime editor-in-chief had been Ajdukiewicz[4]) launched a new

[4] After Ajdukiewicz's death, the post of editor-in-chief of *Studia Logica* was held by Jerzy Słupecki.

section "The Problems of the Didactics of Logic," which included, for instance, papers by Słupecki (1968), Pelc (1969), and Kotarbiński (1970).

4.4. DEVELOPING LOGICAL CULTURE

Logical culture relies thus on taking into account the logical foundations of teaching, which were indicated by post-war logicians of the LWS, especially by Ajdukiewicz, and — which is vital — on the functioning of relevant curricula.

Official curricula, methods, and teaching aids used in different subjects are changing not only as a consequence of socio-political and cultural transformations or trends. However, general goals of teaching logic, ones that ought to be respected on different levels of teaching, do not change. They can be achieved through working out or modifying already binding curricula that take account of the basic knowledge of general logic, being an indispensable component of man's education, in particular that of the teacher. This is also connected with the publication of handbooks of practical logic (including the problem area of the art of argumentation) and with their "binding" as if by an official decision.[5]

It is still a disputable issue whether or not logic should constitute a separate subject taught in secondary schools. The above-mentioned Polish scholars and logicians of the LWS, living in post-war Poland, did not take one uniform stance on this. Ajdukiewicz and Kotarbiński advocated introducing applied logic in the undergraduate classes of grammar comprehensive school (Ajdukiewicz 1953, 1959, Kotarbiński 1970), whereas Słupecki opted for fragmentary release of knowledge of logic beginning with early years of the secondary school (Słupecki 1968).

Kotarbiński wrote earlier, among others:

> Logic, as a separate subject being taught, will become unnecessary only when each teacher of any subject . . . has been a competent, courageous logician, able and willing to clarify each logical question while teaching the subject in which he/she is a specialist. (Kotarbiński 1964)

This last opinion by Kotarbiński may be referred not only to the need for teaching logic in grammar comprehensive secondary schools but also in col-

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[5] Regarding the scope of formal logic, a significant role has been played by coursebooks by Barbara Stanosz, yet books by Marek Tokarz and his disciple (Tokarz 2006a, b, Szymanek 2001, Szymanek, Wieczorek, Wójcik 2003) are also worth popularizing from a broader perspective. Also the new edition of the book by Piotr Łukowski (2021) is highly recommended. As far as handbooks published abroad are concerned, attention can be paid to the book by Daniel Bonevac (1990).

leges of higher education. He even put forward a concrete conception of a program relating to logical education of teachers (Kotarbiński 1970).

Supporting one or another standpoint with reference to teaching logic on the secondary level is obviously connected with a given type of preparing students for the teaching profession, since in each case it requires from the teacher deepened logical studies and introduction of logic as one of the major subjects obligatory for the teacher's academic education.

5. PRESTIGE OF LOGIC AND THE RANK OF TEACHING PROFESSION

The prestige of science, of logic, which representatives of the LWS worked out owing to the values which were characteristic of this School, was always connected with the prestige of teaching logic and the rank of teacher's profession.

The significance of teaching logic was appreciated already in the Antiquity, in the times of Plato and Aristotle. In the Middle Ages, logic together with grammar and rhetoric belonged to the so-called *trivium*, the fundamental subjects that were to be taught. In Poland, for a few hundred years it constituted a separate subject in the secondary school. In the 1960s, it was removed from curricula on the secondary level and has not been restored on this level of education until today. In the 1970s, the subject was introduced on the tertiary level of education almost in all the major study courses. Today, academic logic has been eliminated from study programs in many departments not dealing with philosophy or legal sciences.

The efforts and achievements of Polish philosophers and logicians (scholars and educators) with respect to logical education are ceasing to a large extent — it seems — to be appreciated in Poland nowadays. The level of teachers' logical culture, and thus that of young generation, is dropping. Logical culture is decreasing.

CONCLUSION

In order to raise the logical culture of society, it is necessary to implement its logical foundations on the secondary and tertiary levels, as well as to popularize logic wherever the teaching of it has become or is becoming impossible. It would be advisable to integrate the philosophical-logical envi-

ronments and work out a common platform of studies on didactics of logic as well as a new outlook on it in the spirit that used to emanate from the LWS and which was inseparably connected with the ideal of *paideia*, dating back to the Antiquity.

That is why it will be worth developing a substantial discussion on didactics of logic, since such a debate not only offers a source of concepts but provides a good platform for exchanging new, creative ideas and ways of thinking.

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