

Leon Petrażycki on Norms and Their Logical Study

Elena Lisanyuk

Saint Petersburg National Research University
of Information Technologies, Mechanics and Optics, Russia

e-mail: e.lisanuk@spbu.ru

Evelina Barbashina

Novosibirsk State University,
Novosibirsk, Russia

e-mail: linaba@mail.ru

Abstract:

In this paper we discuss L. Petrażycki's idea of norm as a normative relation and show its repercussions in two perspectives connected to each other, in the legal theory in the framework of which it was originally introduced and where its role was straightforward, and in logic where it played a shadowy role of a fresh idea which in his expectation would have been the core of the novel logical theories capable of modelling reasoning in law and morals. We pay attention to the scholarly environment in which Petrażycki has proposed those ideas and to the unlucky fate of his academic legacy which is now being rediscovered.

Keywords: norm, normative relation, Leon Petrażycki, law, morals, logic of norms, deontic logic, John Stuart Mill, Wesley Hohfeld, Alexander Vvedensky, Sergey Povarnin.

1. Introduction

Leon Petrażycki (1867-1931) was an eminent Russian and Polish legal philosopher. He started his academic career in Kiev, in 1901 he became a professor of St Petersburg University and chaired the department of legal theory up to the revolutionary turbulent year of 1917 when he left Petersburg for Warsaw where he got professorship and a chair of the department of sociology of Warsaw University in 1919-1931.

Petrażycki was born to a Polish family in Vitebsk district, then the Russian Empire and nowadays Belarus, studied law in Kiev University, Heidelberg and Berlin. He was a person of

encyclopedic knowledge, spoke several languages and had a generous expertise scope ranging from medicine and psychology to philosophy and political science. His native language was Polish, he was educated in Russian and German and wrote and lectured in all the three languages. His lectures in St Petersburg University were very popular and attracted many students and extern intellectuals, despite his strong Polish accent and poor rhetorical skills, which made following them an uneasy task. He was an active member of the Russian intellectual and political elite in the first decades of the 20th century. As a legal philosopher, he was respected and honored by numerous colleagues and disciples in Russia and Europe. In 1917, the revolutionary events, subsequent military intervention and the collapse of the Russian Empire interrupted his academic and political career in its zenith and forced him to leave Russia for no return, which unluckily shrunk his legacy. He placed his voluminous academic archive in the University library where no its traces have been found so far. As he felt himself Polish, he chose Warsaw after fleeing from Petersburg. However, in Warsaw, during his later life he remained a Russian liberal intellectual and an internationally oriented Petersburg professor, often misunderstood and suspected of disloyalty by the local authorities, colleagues and the university management.¹

Petrażycki is considered one of the founders of the sociology of law, although that happened mostly indirectly through the legacy of his famous disciples Pitirim Sorokin, Georges Gurvitch and Nicholas S. Timasheff who prepared the first and so far the only English translation of some of Petrażycki's works [4]. Most of Petrażycki's papers and books were written in Russian during the Petersburg period of his life. He was a prolific author and contributed not only to various fields of law, but also to psychology, political philosophy, feminism, philosophy of science and logic. Influential in contemporary Russian legal philosophy, Petrażycki's legacy is still less studied than it deserves and remains largely underestimated [5]. It is hardly makes up a serious research issue to theorize how the legal philosophy in the middle of 20th century would have evolved or whether its key trends would much differed from those known to us today if Petrażycki's papers would have been widely available to scholars outside Russia in the first decades of the 20th century when they had been first published. What makes up such an issue is to find out which of Petrażycki's ideas absorbed in themselves the relevant research agenda of his time, how they pasted it into a substantially fresh framework and thus forwarded it so very much ahead that what would have promised to be a headlining conception instead remained unrecognized or unnoticed by his contemporaries as well as by later researchers, largely due to the unhappy circumstances. This paper sheds light on one such idea of his, which enjoyed many repercussions first in legal theory and later in some logical theories of norms. It is the concept of norm as a normative relation, central in his theory of law and morals, which he proposed in his treatise 'A Theory of Law and State in in relation to theory of morals' first published in St Petersburg in 1907, with revisions reprinted in Russian several times [6].

2. Petrażycki on Norms

In his treatise [6] Petrażycki outlined his psychological, or emotivist, theory of law, which influenced the development of legal thought in Russia and, through his disciples, had an impact on the Western legal thought. In line with his emotivist theory, Petrażycki suggested the definitions of the notion of norm in law and morals and outlined the classification of those norms. He believed that norms are based on the emotions which he treated as a kind of rational feelings in the human intellectual soul. According to Petrażycki, those emotions are agentive imperative-attributive relations, the structure of which varies depending on whether they belong to the legal or moral domain. The emotions emerge in human communications and they play central role in his legal theory, as they provide the ontological foundation for the social life in general. Those rational feelings give rise to social norms which deontologically motivate human conduct whenever something is claimed by an agent or is attributed to some agents in the communication among people. Moral norms originate in the attributive emotions, which impose unilateral obligations onto the agent who exhibits such attributive emotion, although those norms give rise to no claim

obligating any other agent, despite of the fact that they presuppose that there exist agents to whom something is attributed. Giving alms is an example of the attributive emotion of an agent which creates her moral duty to help the needy by means of donation.

Bilateral claim-attribution emotions generate legal norms which connect the active attributive emotion emerging in one agent with the passive claiming emotion in the other agent who thus becomes the beneficiary of what is attributed to her by the active agent. In contrast to the moral norm which although imposes a voluntary duty on an agent who is feeling the corresponding attributive emotion, but it has no imperative force and creates no obligation capable of connecting the two agents, the legal norm clearly refers to the beneficiary passive agent and gives rise to the corresponding imperative which constitutes the legal claim instead of a voluntary attribution in the moral norm.

‘From the established normative relation it follows that it is impossible without a representation of two agents: the one to whom the imperative function of the normative relation is addressed and who is legally obligated; and the other who is empowered or has the right on what is attributed to him and to whom is the attributive function is addressed. Those agents are called the subjects of the normative relation. The subject of the active function is the ‘positive’ subject of the right; the subject of the passive function is the ‘negative’ subject of the obligation’ [7, p. 257].

There are two combinations of the attributive claim and the imperative obligation which Petrażycki identifies as the two distinct groups of norms:

- (1) Unilateral obligatory imperative no-claim norms which impose obligations on one definite subject of the norm only, like ‘help your neighbor’, ‘respect your parents’ and other moral postulates;
- (2) Bilateral imperative-attributive norms consisting of claims and obligations, ‘which by means of obligating one agent secure that obligation with the other agent thus giving the latter the corresponding right or claim so that, according to such norm, the obligation is something the former owes to the latter’ [6, pp. 65-68].

While morals use complete formulations of norm explicitly pointing both to whom the attribution belongs and who has or may attribute it, legal codes seldom employ such complete formulations and often use norms abridged in the three following ways: leaving implicit the agent who is obliged by it and explicitly pointing to the claim and its subject, as in ‘*In the event of non-performance of the obligation in time, the creditor has the right to be reimbursed on the losses caused to him by the delay*’; leaving implicit the beneficiary and referring explicitly just to the obligation and its subject, as in ‘*In the event of non-performance of the obligation in time, the debtor is obliged to pay damages*’; or leaving unspecified both the active and the passive agents altogether and pointing to what has to be accomplished, as in ‘*In the event of non-performance of the obligation in time the damages are payed*’ [6, p. 66].

Diagram 1. Petrażycki’s classification of norms.

Normative relations		
Moral relations	Legal relations	
Unilateral attributions (imperatives)	Bilateral imperative – attributive	
	Imperative – attributive obligatory – claiming formulation	Binary abridged neutral formulation
		Imperative obligatory formulation
		Attributive claiming formulation
Complete formulation	Abridged formulation	
Moral norms	Legal norms	
Norms		

Petrażycki’s conception of norm is founded on the idea of the agentive relations of two kinds, the attributive taking something from one agent and giving that to the other one, and the claiming endowing the latter by something attributed to her by the former. Those relations originate in the

corresponding emotions which are the rational feelings in the agents' intellectual souls. The attributions can be voluntary or imperative depending on whether they concern moral or legal life respectively, but the claims which are the necessary parts of the legal norms can be imperative only. Depending on how, unilaterally or bilaterally, the two relations are constructed they give rise to the moral or legal norms, which then can be linguistically formulated in different ways. The concept of relation plays the central role in Petrażycki's legal theory.

In 1913, a famous American legal theorist Wesley Newcomb Hohfeld (1879-1918) introduced a classification of legal relations based on the idea that any legal relation consisted of two sides connecting its two agents, the subjects pertaining to those sides, in a certain way [8]. Whenever one of the two agents has a right to act in a definite way, has a power, or a privilege, then there always exists the other subject of that legal relationship, on whom it imposes the duty ensuring the right of the first subject, or the responsibility to execute her power, or the no-right or the disability. The Hohfeldian legal relations are binary with respect to agents and are asymmetric regarding the two relations they combine. They can be modelled with the help of formal notions of either inseparability which generates the correlatives between the two relations combined in one legal relationship, or incompatibility which gives rise to what Hohfeld called the opposites and what can be treated as the contradictory pairs of the relations [9].

Hohfeld was unfamiliar with Petrażycki's ideas, and Petrażycki knew nothing of the Hohfeldian legal analysis. The idea of relation provides the conceptual foundation in both Petrażycki's and Hohfeld's legal theories, although the ways how they elaborated this idea as well as the fates of their academic legacies essentially differ. Hohfeld's ideas became classics in the Western legal theory; they influenced the development of deontic logic and legal applications of the computer science. Contrary to that, Petrażycki's legacy remained largely unnoticed in this respect.

3. Logical Ideas of Petrażycki

There are two logical ideas relevant to our present discussion of Petrażycki's concept of norm as the normative relation: the notion of position, an intellectual entity responding to his intention for the refinement in the logical ontology, and the distinction between logic of descriptive and non-descriptive positions. Petrażycki thought that from the philosophical standpoint there existed just one object of the logical inquiry – rational feelings in the intellectual soul. He named them positions and maintained that once they were properly identified, this object would remain the same for any logical theory, existing and would be, and would prevent confusions and discrepancies in them.

At the turn of the 19-20th centuries, the ontological discussions were characteristic of the research agenda in many sciences, and the dispute over the ontological foundation of logic was a part of anti-psychologist and anti-irrationalist movement which later became known as the positivist turn in philosophy. With the help of his notion of position, Petrażycki purported to achieve two objectives: to define a novel logical ontology and to resolve the divergence between the two traditions of doing logic, in which the ontological foundations of logic had been treated diversely. The English-American tradition focused on the propositions, linguistic entities, while the continental tradition pursued the judgements, mental entities [10, p. 780]. With help of the distinction between the positions of these two kinds, he was going to demonstrate that the two different object areas of logical concern, the kingdoms of facts and of relations reflected by 'the objective-cognitive positions' and by 'the subjective-relative positions' respectively, would generate two different patterns of logical theories in which the ontological foundation of the inquiries would be one and the same but the basic concepts including the laws of logic would have to be revised.

According to Petrażycki, positions are atomic mental entities; they are the simplest indivisible units of meaning capable of generating molecular positions as complex units of meaning. *There are gods* is a simple position, *There are gods living on Olympus* is a complex position containing two simple positions. Interestingly, *Some gods live on Olympus* is a complex position, too, as it contains *There are gods* as a simple position along with another complex position *Gods*

live on Olympus, where the connective *is* itself generates a simple position. Positions can be true or not true or even ‘froth’ with respect to what their meaning conveys; they are expressed by means of propositions or judgements, simple or complex, and thus make them true or false. The initial bearers of the truth-values are positions which endow with those values the propositions or judgements as linguistic or mental entities expressing them [10, p. 782]. The way how Petrażycki portrays his new notion of position is vague regarding the ontological discrepancies between the two traditions this notion is meant to resolve. The positions resemble the judgements in the continental tradition, and there is no clue how to draw a clear distinction between the two notions, something one would expect to find given Petrażycki’s strong intention to resolve those discrepancies with the help of his notion of position.

The fresh idea about the position is that of a relation by means of which the propositions or judgements are generated as combinations of the positions. ‘There are different relations established among the various positions which are contained in the propositions and judgements’, Petrażycki explains. ‘To study those relations would be a fruitful topic’, he adds in the footnote [10, p. 783]. What he seems to have in mind here is that the existential import of the *is*-connective in ‘the objective-cognitive positions’ gives rise to what he calls the ‘positional logic of truth’ which pursues the correctness of inferences among the human rational feelings with respect to facts’ cognition. No such import is presupposed in ‘the subjective-relative positions’ on which ‘the subjective-relative logic’ focuses. Those ‘subjective-relative positions’ can be expressed either by the critical propositions or judgements regarding values, like in *It is a praiseworthy action*, or by the imperative ones where deliberations or norms are at stake, like in *It was a prohibited action* [10, p. 795]. Since ‘the subjective-relative positions’ are incapable of having the truth-values, neither of the two ways of expressing them has to do with the truthfulness or falsity.

The law of the excluded middle is the issue of Petrażycki’s special concern. He insists that in the novel positional logic, or the logic of the positions, this law is valid only in the logic of ‘the objective-cognitive positions’, and it governs only the principal, or ‘dominant’ contradictory positions but not the consequences inferred out of them [10, p. 784]. Despite his idea that the rules of logic, like the syllogistic rules *dici de omni* and *dici de nullo*, generally apply in the newly constructed logic of ‘the subjective-relative positions’, the law of the excluded middle does not. It is not quite clear what such logic would be given those limitations which on the one hand expand the scope of the logical inquiry beyond the truth matters, but maintain the applicability of the logical rules known as truth-related to that expanded scope, on the other hand. The only hint found in Petrażycki has to do with his idea of the rules’ reformulation along with the ontological refinement of ‘the subjective-relative positions’ [10, p. 798]. One might be willing to view those ideas as close to the non-classical logic but that would definitely be an exaggeration.

Petrażycki’s logical notes show that he had no intention of constructing a logic of such positions himself; he formulated a number of far from clear ideas of what such a logic should be as distinct from the logical theories he seems to have been exposed to but he never went beyond those sketchy remarks. His idea of creating a logic based on the notion of relation, whatever foggy it might appear, along with but distinct from what he called the traditional logic of truth sounds delphic with respect to his notion of normative relation in his legal theory. In those subjective-relative positions Petrażycki saw the object of inquiry in the novel logic which would pursue the rational feelings of values, norms and volitions as playing their decisive role in the practical sciences like medicine, education, politics and law.

4. Around Petrażycki’s Logical Ideas

Petrażycki wrote a book on logic in 1918-1919 while he stayed in Finland in between his Petersburg and Warsaw periods, but the book was never published and no traces of its manuscript have been discovered so far. All we know about Petrażycki’s logical ideas comes from his preparatory sketchy notes posthumously found in his Warsaw archive and published shortly after his death [11]. We refer to its Russian translation [10] here. These notes demonstrate that Petrażycki treated logic as a

general epistemological tool like many of his Petersburg colleagues in the first decade of the 20th century did and not as a collection of formal tools for creating and evaluating formalisms, which has become logic just a decade after that, when the Frege-Russell trend in what we today know under the name of symbolic logic and what many Petrażycki's contemporaries called logistic,² rapidly and radically changed the landscape of the logical inquiry.

Although Petrażycki saw logic as a necessary method for his philosophical scholarship, logic did not belong to his area of professional expertise. At the time when Petrażycki wrote his notes on logic in 1919-1921, his logical ideas have been already obsolete no less than he regarded obsolete the logic he knew, with the only exception of J. Stuart Mill's logical conception, influential in the XIX c. Russia. Petrażycki considered Mill's conception the most outstanding contribution to the field since Aristotle [10, p. 826].

Petrażycki's notes prompt that although he strongly felt a need for a fresh impetus in logic, he was unaware of the new developments in it taking place just next door to him. His notes show neither acquaintance with the Frege-Russell trend in the then logic, which was increasingly gaining influence among logicians and philosophers in the early 20-ies, nor with the results of his compatriots, notably with the logicians of the Lvov-Warsaw logical school from whose groundbreaking contributions that new trend has benefited crucially. Needless to say that the notes contain no mention of modal or non-classical logic, something one would have expected to find there given Petrażycki's aspiration for a logic of non-descriptive subjective-relational positions for analyzing norms, values and actions [10, p. 795].

Both of Petrażycki's ideas, the notion of position and the two kinds of logical theories the distinction between which was based on a newly defined ontological foundation, were connected to his idea of the subjective-relative logic which was consonant with the idea of relation spread in the air at the turn of the two centuries. The two ideas of Petrażycki seem to have been inspired by Mill's conception of logic of scientific inquiry. They followed Mill in his thrive for a refinement of the ontological foundations of logic as well as in how Mill treated the role of logic in the scientific inquiry with respect to guiding human conduct. According to Mill, human thoughts are a kind of mental feelings along with emotions, volitions and sensations from which the thoughts differ primarily in that they are always conscious feelings. Logic pursues those feelings inasmuch as they are conscious and rational [13, VII, 51]. Moral conduct has a dual nature. As a practical endeavor in its action-wise perspective, it belongs to the domain of art and thus falls outside of the domain of the scientific inquiry. However, since in its reasoning-wise perspective the moral conduct originates in those rational and conscious feelings, nevertheless it belongs within that domain to a definite extent. Deliberations over the material and social causes of human actions and over the feasibility of those actions' objectives are a part of science. Consequently, those reasonings have to be guided by the syllogisms and the rules of logic whenever they seek to be correct for the sake of the actions' efficacy [13, VIII, 944].

Logic of relations was an idea with the help of which logicians of that time were going to start constructing novel logical theories free from the overloaded ontological commitments and ready for wider practical application. Among those logicians were Petrażycki's Petersburg university colleagues Alexander Vvedensky (1856-1925) and his disciple Sergey Povarnin (1870-1952). Most likely he knew the both personally. Gurvitch, one of Petrażycki's disciples, mentioned Vvedensky as his teacher whose lectures in philosophy and logic he attended with great interest. Vvedensky was a professor of St Petersburg University at the same time with Petrażycki, from 1890 up to his retirement in 1923; he chaired the department of philosophy, published several papers on logic and was the author of the most popular logical textbook [14]. He lectured on logic and philosophy in many other higher education institutions in St Petersburg including The Raev Higher Women's Courses where Petrażycki also was a professor.

In his writings, Vvedensky never mentioned any special logic of relations. Unlike his disciple Sergey Povarnin who wrote a treatise on the logic of relations, Vvedensky made no attempts to develop a separate logical theory of any relation other than that of logical entailment which was central in his conception of logic as a science for evaluating reasoning and cognition as

correct or incorrect and for discriminating the former from the latter. However, he (and many other Russian logicians of that time) considered logic to have been a general theory of formal relations between propositions, according to which the logical laws were based on the relations of assertion and negation, so that the contradiction was understood as a relation between an assertion and a negation of the same proposition, the excluded middle – as the strong alternative relation between them, prohibiting contradictions in the correct reasoning, and the identity – as the relation between two assertions or two negations of the same proposition.³

Sergey Povarnin, the pioneer of argumentation studies in Russia, divided logic into three parts, epistemological, formal and discursive. The first of them played a guiding role in the scientific inquiry, the third did so in what concerned the communications among people over the output of that inquiry, and the second had to do with inference and proof, which evaluated the correctness of reasoning in the two. The formal part of logic also could be divided into two subsequent parts in which those inferential procedures were modeled in two different ways. One way was to view the entailment relation between premises and conclusion as the relation between the propositions understood as the bearers of the truth values. This was how the mathematical logic treated inferences in its truth-functional calculi. The other way of doing formal logic was the logic of relations, another kind of truth-functional calculus with the help of which logic pursued the inferences based on the conceptual relations among objects, like ‘bigger than’, ‘confined to’, ‘correlated with’, ‘available to’ and so on. Those relations could be binary, ternary or n -ary, symmetric or not, transitive and non-transitive, connexive, correlative or opposing and etc. In contrast to the mathematical logic where atomic formula was true whenever the descriptive proposition symbolized by the formula corresponded to the facts it conveyed, and false in the opposite case, in the logic of relations atomic formulas expressed the propositions describing certain relations among some objects, and it was those relations that became the propositional truth-bearers in the inferences. For example, let there be a set of objects $\{A, B, C, \dots\}$ connected by the binary relation ‘ ϕ is a cause of ψ ’. Then, if the premises *A is a cause of B* and *B is a cause of C* are true, out of them we can infer the true conclusion *A is a cause of C*. In his logic of relations Povarnin suggested constructing similar deductive primitive inferences based on one relation and the complex inferences based on different relation in the premises [17, 425 and ff].

Until recently the idea of logic of relations in a vein similar to what had been proposed by Povarnin and other philosophers in the beginning of the 20th century sounded outdated given how G. von Wright evaluated the progress the modal logic designed to model various relations among objects has made in the vein of the mathematical logic:

[T]he most exciting in logical theory after the second world war was the rebirth of modal logic... and it was only with the conception of logic, not as an alternative to Russell’s but rather as a ‘superstructure’ standing on its basis, that modal logic got a good start in modern times. This conception did not gain ground until after the Second World War [18, p. 19].

However, in the beginning of the 21st century those ideas of logic of relations, although differently put, entered the logical landscape again, this time - with the computer science in its search of the appropriate logical tools for modelling such relations among agents or objects as trust, security, access, control and alike [19].

5. Conclusion

Leon Petrażycki proposed the idea of norm as the combination of the agentive normative relations of attribution and claim. Because of the unhappy circumstances this idea did not live a long academic life as it deserved. However, its relevance is apparent in many scholarly repercussions it had, independent, as in the Hohfeldian analysis, as well as those which have been influenced by it indirectly through Petrażycki’s disciples. Those repercussions, whatever far away they may have

gone or reached, are still in the air in the contemporary scholarship, which makes the study of his legacy an ever persistent necessity. Petrażycki did not invent a novel logic; neither did he propose an explicit perspective for constructing one. His contribution to the domain of logic consists in his careful critical overview of its applications to the practical field of law and morals, which provides us with a brilliant sample of academic accuracy and devotedness.

References

1. Kojder, A. Leon Petrażycki's Socio-legal Ideas and their Contemporary Continuation, *Journal of Classical Sociology* 6, 2006, pp. 333-358.
2. Woleński, J. Leon Petrażycki o prawie i moralności, *Rocznik Polskiej Akademii Umiejętności Rok* 2016/2017, pp. 171-182.
3. Cotterrell, R. Leon Petrażycki and contemporary socio-legal studies, *International Journal of Law in Context* 11 (1), 2015, pp. 1-16.
4. Petrażycki, L. *Law and Morality*, transl. by H.W. Babb, N. S. Timasheff (ed.), Cambridge, Mass.: Harvard UP, 1955. Repr. with a new introduction by A. Javier Trevino, Transaction Publishers, 2011; Routledge, 2017. DOI 10.2307/2022017
5. Podgórecki, A. Unrecognized Father of Sociology of Law: Leon Petrażycki. Reflections based on Jan Gorecki's "Sociology and Jurisprudence of Leon Petrażycki." *Law & Society Review* 15, 1980/81, pp. 183-202.
6. Petrażycki, L. *A theory of law and state in relation to a theory of morals*, vol. 1-2, St Petersburg, 1907 (2000). (In Russian), Петражицкий Л. И. Теория государства и права в связи с теорией нравственности. В 2х тт. СПб, 1907 (2000).
7. Petrażycki, L. *Essays in legal philosophy*. St Petersburg, 1900-1903. In E. V. Timoshina (ed.), *Petrażycki L. Legal theory and politics*. St Petersburg, 2010, pp. 245-379. (In Russian) Петражицкий Л.И. Очерки философии права. В: Тимошина Е.В. (ред.) Петражицкий Л.И. Теория и политика права. СПб, 2010.
8. Hohfeld, W. N. 'Some Fundamental Legal Conceptions as Applied in Legal Reasoning'. *Yale Law Journal* 16, 1913 (1946).
9. Lisanyuk, E. W. Hohfeld and L. Petrażycki on norms and normative relations. *Izvestiya vuzov. Pravovedenie* 1 (318), 2015, pp. 112-134. (In Russian) Лисанюк Е.Н. У.Хофельд и Л.Петражицкий о нормативных отношениях и нормах. *Известия вузов. Правоведение* 2015 №1 (318). С. 112-134. Repr. as: Lisanyuk, E. W. Hohfeld and L. Petrażycki on norms and normative relations. A. V. Polyakov (ed.). *The Petersburg school of legal philosophy. Towards the 150th anniversary of Leon Petrażycki*. St Petersburg, 2018, pp. 178-197. (In Russian) Лисанюк Е.Н. У.Хофельд и Л.Петражицкий о нормативных отношениях и нормах. Поляков А.В. (ред.) *Петербургская школа философии права. К 150-летию со дня рождения Льва Петражицкого*. Санкт-Петербург, 2018. С. 178-197.
10. Petrażycki, L. New foundations for logic and classification of science. In E. V. Timoshina (ed.), *Petrażycki L. Legal theory and politics*, St Petersburg, 2010, pp. 775-856. (In Russian) Петражицкий Л.И. Новые основания логики и классификации наук (пер. с польск. А.В. Барабанова). В: Тимошина Е.В. (ред.) *Петражицкий Л.И. Теория и политика права*. СПб, 2010., с. 775-856. (A Russian translation of 11).
11. Petrażycki, L. *Nowe podstawy i klasyfikacja umiejętności*. Z rękopisu wydał Jerzy Finkelkraut. [Jerzy Licki]. Warszawa: Nakładem Towarzystwa im. Leona Petrażyckiego, 1939. (transl. into Russian as 10).
12. Ajdukiewicz, K. Logistic Anti-irrationalism in Poland. In W. Krajewski (ed.), *Polish Philosophers of Science and Nature in the 20th Century*, Amsterdam: Rodopi, 2001, pp. 241-250.
13. Mill, J. S. A System of Logic Ratiocinative and Inductive, Being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation. In J. M. Robson (ed.), *The Collected Works of John Stuart Mill*, vols. 7-8, London: Routledge and Kegan Paul, 1974.

14. Vvedensky, A. *Logic as a part of epistemology*, St Petersburg, 1912 (In Russian, Введенский А.И. Логика, как часть теории познания. СПб., 1912).
15. Vasiliev, N. V. *On particular propositions, the triangle of oppositions and the law of the excluded fourth*, Kazan, 1910. (In Russian) Васильев. Н. А. *О частных суждениях, о треугольнике противоположностей, о законе исключенного четвертого*. Казань, 1910.
16. Bazhanov, V. A. Nikolai A. Vasiliev, His Life and Imaginary Logic Legacy. In V. Markin, D. Zaitsev (eds.), *The Logical Legacy of Nikolai Vasiliev and Modern Logic*, Springer, 2017, pp. 1-8. DOI 10.1007/978-3-319-66162-9.
17. Povarnin, S. Logic of relations. Its essence and meaning. In L. Tonoyan (ed.), *Collected works of Sergey Povarnin*, vol. 1., St Petersburg, 2015, pp. 339-472. (In Russian: Поварнин С.И. Логика отношений. Ее сущность и значение \\\ Тоноян Л.Г. (ред.) Поварнин С. И. Соч., Т. 1. СПб, 2015. С. 339-472.).
18. Von Wright, G. H. Logic and Philosophy in XX century. In Von Wright, G. H. *The Tree of Knowledge and Other Essays*, Leiden: E. J. Brill, 1993, pp. 7-24.
19. Van der Torre, L., and R. Van der Meyden. *Deontic Logic in Computer Science: 9th International Conference, DEON 2008*, LNAI 5076, Berlin-Heidelberg: Springer, 2008.

Notes

-
1. For the biographical data see [1], for the academic evaluation of the legacy see [2], for the legacy's fate in the West, see [3].
 2. In the mid-war period *logistic* was the special term for the sentential calculi proposed in the Frege-Russell trend. The *logistic* was regarded a novel branch of rather mathematic than logic. The term *logistic* was coined by either K. Twardowski or by his disciple J. Łukasiewicz in their lectures in the first decade of the 20th century in Lvov University for discriminating what they called anti-metaphysical turn in logic from the older tradition in it [12, p. 243]. Using the new term for the new trend made it possible to reserve the traditional term *logic* for its traditional understanding as the epistemological part of philosophy. In that sense term *logistic* went out of use and was replaced by *logic*, or *symbolic logic*, after the WWII as the *logistic* eventually became the *logic*.
 3. Nikolai Vasiliev's 'imaginary logic', a forerunner of the paraconsistent logic, proposed around the same time [15], was an attempt to construct a logic with the nonexclusive relation between an assertion and a negation of a proposition [16].