Czesław Lejewski: Propagator of Lvov–Warsaw Ideas Abroad

Peter Simons

Abstract. Czesław Lejewski studied in Warsaw before the Second World War, after which he settled in England and resumed an academic career, becoming Professor of Philosophy in Manchester. His writings, all articles, continue and extend the ideas of his teachers, especially Stanisław Leśniewski in logic and Tadeusz Kotarbiński in metaphysics.

1. Life

Czesław Lejewski was born in Minsk in the Russian Empire, on 14 April 1913. In 1920 his family moved to Lublin, where he attended *Gimnazjum*. From 1931 he studied Classics at Warsaw University, where he obtained a master's degree in 1936 with a dissertation on tropes in the sceptics. After military service he returned to the university in 1937 to study for a doctorate in Classics, concentrating on ancient logic. This interest drew him to courses and seminars on logic given by Jan Łukasiewicz and Stanislaw Leśniewski, and philosophy with Tadeusz Kotarbiński. His dissertation *De Aenesidemi Studiis Logicis* was examined and passed by the examiners, including Łukasiewicz, but he was unable to take his degree due to the outbreak of war. He was taken prisoner by the invading Soviets and spent two years in terrible conditions in Soviet labour camps, before joining the 2nd Polish Army Corps under General Władysław Anders after the Nazi invasion of the USSR. In 1942 he made his way by land and sea from Russia to Britain via Iran, Iraq, Palestine, Egypt, South Africa, South America, and the USA. Lejewski joined Polish military intelligence in London. After the war he taught English to Polish ex-servicemen in London, marrying an English woman in 1949, and remarrying in 1973 after the death of his first wife. He became a British citizen in 1955.

The communist takeover in Poland decided Lejewski to make his home in England, and he took up doctoral studies again, under the supervision of Karl Popper at the London School of Economics, passing (with Łukasiewicz as examiner again, flown specially from Dublin) with a dissertation *Studies in the Logic of Propositions* in 1954. In 1956 he joined the Philosophy Department at the University of Manchester, where in 1966 he succeeded Arthur Prior as professor, and he remained there until his retirement in 1980. He was visiting professor at Notre Dame University (USA) in 1960-61 and at Salzburg (Austria) in 1984. He never returned to his native land, even after the end of communist rule. After his retirement he lived quietly in Manchester, and died after a long illness on 9 July 2001. His scientific books and

posthumous post-war papers are housed in the Special Collections Department of the library at the University of Leeds.

2. Main Works

Lejewski published only papers, of which probably the most influential was his 1954 article "Logic and Existence" [1], in which he opposed the standard understanding of quantification, coming from Tarski and Quine, with the Leśniewskian understanding in which he had been trained. The difference turns on the fact that in the standard interpretation, which Lejewski called *restricted*, only denoting names (terms) may be substituted for bound variables in the rules of inference, whereas in the unrestricted interpretation also non-denoting names could be so substituted. Another quite widely quoted piece is his 1958 article "On Leśniewski's Ontology" [2], which is the clearest exposition of this, Leśniewski's central logical system. To aid understanding of the system, which in contrast to standard predicate logic includes not only singular and empty terms but also plurally referring terms, Lejewski introduced modified Euler diagrams for representing logical relations among the extensions of terms. He also defined numerous ontological functors and showing that partial inclusion ("Some *a* are *b*") can serve as the sole primitive functor. A particular *tour de force* among Lejewski's historical articles is the long encyclopedia entry "History of Logic", written for the 15th edition of *Encyclopedia Britannica* (1975) [3], which gives evidence of Lejewski's remarkable knowledge of the history of logic.

3. Views

Lejewski's views are based on and extend the logical and philosophical views of his principal teachers: in logic, Stanisław Leśniewski; and in philosophy, Tadeusz Kotarbiński. His logical systems are all either reformulations, adaptations, or extensions of Leśniewski's ideas, while his fewer philosophical articles are either defences of Leśniewski against criticism, or comparisons of Leśniewski with other approaches, and in one case an elaboration of Kotarbiński's materialistic reism.

Lejewski's published papers fall into several thematically connected groups. One group expound or simplify Leśniewski's major logical systems of mereology, ontology and prototheic. A second group offer alternatives and extensions to Leśniewski's systems, often prompted by criticisms of the artificiality of the latter. A third group of articles reflect on the philosophical implications of logic from a Leśniewskian standpoint. A fourth group examine miscellaneous aspects of logic, while a fifth group cover topics in the history of ancient and contemporary logic. We treat the last two groups together.

Lejewski did not start to publish until he was forty, and despite his Polish origins, most of his published papers are in English or are translations from his English.

3.1 Exposition and Simplification of Leśniewski

Lejewski's early articles on mereology propose minor simplifications or new axiomatizations of Lesniewski's theory, based on single axioms. One article discusses atomless and atomistic extensions to mereology [4]; another shows that mereology is consistent relative to protothetic [5]. Lejewski modified Leśniewski's mereological terminology to make it more understandable for English speakers, replacing 'ingredient', 'part' and 'class' respectively by 'part', proper part' and 'complete collection'. In ontology, in addition to the expository 1958 article, Lejewski showed that Boolean Algebra in the axiomatization of Ernst Schröder could be understood as elementary ontology (quantifying only nominal variables), and with nominal definitions can be based on a single axiom for weak inclusion ("Any a are b") [6]. Lejewski also showed, in work parallel to that of Jerzy Słupecki, how to bridge the gap between Aristotle's syllogistic in Łukasiewicz's modernized form and the elementary Ontology of Leśniewski [7].

3.2 Alternatives and Extensions to Leśniewski

Whereas Leśniewski's Ontology treats all names, whether singular, empty or plural, as belonging to a single category, natural languages tend to use only singular proper names, which may be empty. To accommodate this, Lejewski proposed a system of what he called *non-reflexive identity*, employing only singular or empty names, and based on identity sentences $a = b$ which are only true if both a and b exist and are the same individual [8]. Another and more radical innovation by Lejewski follows an idea of Kazimierz Ajdukiewicz and introduces a special category of names for abstract classes, resulting in what Lejewski called a *bicategorial ontology* [9]. Lejewski offered this system in an ecumenical and ontologically neutral spirit, as offering a medium for those who believe in classes (sets) to be able to talk with a Leśniewskian accent about such classes, but he himself denied that there are abstract classes. In the l982 article "Ontology: What Next?" [10], Lejewski goes beyond mereology to *chronology*, an ontological theory of temporal objects, based on two primitive notions, one topological, that of an object's being wholly earlier than another object, and one metrical, that of an object's having a shorter duration than another object. He envisaged further extensions beyond chronology, to *stereology*, a theory of objects extended in space as well as in time, and *kinematics*, a theory of objects in motion through space, but though also outlined in a descriptive piece [12], a formal development did not attain publication. It is clear that the extensions were conceived in a Leśniewskian spirit.

Leśniewski based protot,hetic, his extended propositional logic, on material equivalence and universal quantification, with definitions. In a part of his London dissertation, later extracted and published as a paper in 1958 [12], Lejewski showed that material implication, together with universal quantification and definitions, would also do the job. It is a measure of the remarkable consistency of Lejewski's work that over thirty years later, in 1989, he published another paper showing how to fully formalize the 1958 system using Leśniewskian terminological explanations [13].

3.3 Philosophical Reflections on Leśniewskian Logic

Lejewski not only expounded and extended Leśniewski's views, but defended them against all criticisms. This is apparent in the 1954 article on quantification. One frequently made criticism of Leśniewski's extreme extensionalism was that an extensional logic such as his cannot adequately handle belief sentences such as 'John believes that snow is white', and other intensional contexts. Lejewski's account of belief contexts [14] is close to that of Davidson's paratactic view. Lejewski also reflected on the relationship between natural language and the idealized languages of Leśniewski and other logicians: the clearest statement of his view that a mutual give and take is required between natural and artificial languages can be found in the 1979 article "Idealization of Natural Languages for the Purpose of Logic" [15]. Though it does not purport to discuss Leśniewski directly, Lejewski's 1976 article "Ontology and Logic" [16] expounds a conception of the relationship between those two disciplines which is purely Leśniewskian, denying that either logic as a science or quantification as a device carries any ontological import whatever.

3.4 Miscellaneous and Historical Pieces

Among Lejewski's other pieces is another on propositional calculus derived from his London dissertation [17], examining the groups of truth-functions that can be taken as severally independent and jointly sufficient for functional completeness. Lejewski honoured (and corrected) his London *Doktorvater* in the large commemorative volume on Sir Karl Popper with a paper, "Popper's Theory of Formal or Deductive Inference" [18], which sympathetically reconstructs and revises Popper's faulty attempts to reform deductive logic.

In history of logic, apart from the magnificent *Britannica* article, Lejewski wrote two papers on Theophrastus' concept of prosleptic syllogisms [19, 20], a short Italian memoir on Leśniewski and his systems [21], and an Arabic paper on Łukasiewicz. When the latter died in 1956, Lejewski, at the request of the widow Regina Łukasiewicza, performed the service of seeing the second edition (1957) of the classic monograph *Aristotle's Syllogistic* through the press, after Łukasiewicz had became too ill to complete the editing and proof-reading himself.

It was also through Lejewski that the bulk of Łukasiewicz's post-war letters and manuscripts came to be deposited at the John Rylands Library in Manchester.

Lejewski's most straightforwardly philosophical piece is his 1976 article "Outline of an Ontology" [22]. All that exists according to Lejewski are bulky and temporally extended material bodies, and nothing else. His was thus a four-dimensionalist materialist, a nominalist, and an atheist. The article denies that there are mereological atoms, objects without proper parts, where Kotarbiński, whose views Lejewski otherwise closely follows, had been agnostic about whether there are atoms or not.

Lejewski was also an assiduous reviewer of books and articles for various journals, concentrating naturally but not exclusively on works connected with Polish philosophy and logic.

4. Influence, Teaching, Personality

Because of the narrow scope of his interests, Lejewski's influence was confined to a small circle of logicians, mostly those interested in Leśniewski, such as his fellow Leśniewski student Bolesław Sobociński, the New Zealand logician Arthur Prior, the British philosopher Peter Geach, the historian of medieval logic Desmond Paul Henry, and in mereology, the present author. In retirement Lejewski was pleased to act as mentor to Manchester doctoral student Audoënus Le Blanc, whose work on mereology and protothetic he considered an advance on his own. There is however very little secondary literature on Lejewski's work, and he did not aspire to a wide following, accepting with equanimity the esoteric nature of his interests, but he inspired respect, most strikingly that of Prior, among those who shared his interests and his conviction of the importance of formal precision in philosophy.

As a teacher of undergraduates, Lejewski kept close to classical texts, from Aristotle to Russell, though in advanced seminars he would venture into more technical work, proving theorems on the board at a steady pace. His rather dry style and ontological asceticism were not popular with students accustomed to the headier delights of existentialism or Marxism, and his polite, somewhat old-fashioned reserve was considered aloof, but away from the lecture room he could be outgoing and amusing. Friends in the local community in Manchester knew him as 'Czek'. He had no children, but he and both his wives were fond of Shetland collie dogs, and were welcoming to visitors at their home in Cheadle Hulme.

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Peter Simons
Department of Philosophy
Trinity college Dublin
Dublin 2
Ireland
E-mail: psimons@tcd.ie