Chapter 10

Leśniewski’s Ontology

Referential concepts in conceptual realism are based on a logic of proper and common names as parts of quantifier phrases. This conceptualist logic of names is similar to Leśniewski’s logic of names in that the category of names in Leśniewski’s system also contains common as well as proper names.\(^1\) Leśniewski’s logic is different, however, in that names do not occur as parts of quantifier phrases but are of the same category as objectual variables. Leśniewski described his logic of names as “ontology,” apparently because it was to be the initial level of a theory of types, which Leśniewski called semantic categories.\(^2\) Leśniewski’s general framework also included mereology, which is a theory of the relation of part to whole, and protothetic, a quantificational logic over propositions and \(n\)-ary truth-functions, for all positive integers \(n\).

Leśniewski’s logic of names has been used for years as a framework in which to interpret and reconstruct various doctrines of medieval logic.\(^3\) We have given an alternative interpretation and reconstruction of medieval logic in terms of the framework of conceptual realism.\(^4\) It is relevant therefore to see how, or in what respect, Leśniewski’s logic of names is similar to our conceptualist logic of names. In fact, as we will explain, Leśniewski’s logic of names can be completely interpreted, and in that sense is reducible, to our conceptualist logic of names.\(^5\)

Leśniewski’s based his system of mereology, i.e., his logic of the relationship between parts and wholes, on his logic of names, and though the exact form of this connection is not clear it has something to do with the notion of classes in a collective sense as opposed to a distributive sense. Our conceptualist logic of names, on the other hand, is the basis of a logic of classes as many, i.e., a logic

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\(^1\)This chapter is a development of material from my 2001 paper, “A Conceptualist Interpretation of Leśniewski’s Ontology,” *History and Philosophy of Logic, vol. 22.*

\(^2\)See Lejewski 1958, p. 152, Slupecki 1955 and Iwaniuś 1973 for a description of Leśniewski’s general framework as well as his logic of names.

\(^3\)See, e.g., Henry 1972.

\(^4\)See chapter 8 and also Cocchiarella 2001 for the details of such a reconstruction.

\(^5\)See below and also Cocchiarella 2001 for a detailed proof that Leśniewski’s logic of names is reducible to our conceptualist logic of names.
of classes that in some respects is similar to Leśniewski’s mereology, but in other respects it is also different. Unlike the connection between Leśniewski’s logic of names and his mereology, however, the connection between our logic of classes as many and our simple logic of names is both precise and a fundamental part of conceptual realism.

We will first briefly describe Leśniewski’s logic of names and then formulate the simple logic of names that is a fragment of our broader, more comprehensive formal ontology for conceptual realism. We will then explain how Leśniewski’s system can be interpreted within our logic and how certain oddities of Leśniewski’s system can be explained in terms of our logic where those oddities do not occur. We will then explain how the logic of classes as many is developed as an extension of the simple logic of names.

The logic of names of Leśniewski’s general framework and of our framework of conceptual realism provide, incidentally, another illustration, or paradigm, of how different parts or aspects of a formal ontology can be developed independently of, or even prior to, the construction of a comprehensive system all at once.

10.1 Leśniewski’s Logic of Names

In Leśniewski’s logic of names, as in our conceptualist logic, there is a distinction between

1. shared, or common names, such as ‘man’, ‘horse’, ‘house’, etc., and even the ultimate superordinate common name ‘thing’, or ‘object’;

2. unshared names, i.e., names that name just one thing, such as proper names; and

3. vacuous names, i.e., names that name nothing.\(^6\)

There is a categorial difference between names in Leśniewski’s logic and names in our conceptualist logic, however. In Leśniewski’s logic names are of the same category as the objectual variables, which means that they are legitimate substituends for those variables in first-order logic. In our conceptualist logic, names belong to a category of expressions to which quantifiers are applied and that result in quantifier phrases such as ‘every raven’, ‘some man’, ‘every citizen over eighteen’, etc.

The one primitive of Leśniewski’s logic, aside from logical constants, is the relation symbol ‘\(\varepsilon\)’ for singular inclusion, which is read as the copula ‘is (a)’, as in ‘John is a teacher’, where both ‘John’ and ‘teacher’ are names.\(^7\) Using ‘\(a\)’, ‘\(b\)’, ‘\(c\)’, etc., as objectual constants and variables for names, the basic formula of

\(^6\)See Lewjeski’s 1958 for a detailed description of Leśniewski’s logic of names.

\(^7\)Apparently, it was Łukasiewicz who prompted Leśniewski to develop his logic of names when he expressed dissatisfaction with the way G. Peano used ‘\(\in\)’ for the copula in set theory. Cp. p. 414 of Rickey’s 1977.