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Thinking about Contradictions

The Imaginary Logic of Nikolai Aleksandrovich Vasil'ev

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To Italo Cubeddu, with whom I began to study philosophy and the issue of contradiction

To Silvio Bozzi, who taught me to love the study of logic and its history

Preface

This book is the result of a long, though not continuous, process. I first began to study Vasil'ev's work for my PhD thesis (*In-contraddizione. Il principio di contraddizione alle origini della nuova logica* [*In-contradiction. The Principle of Contradiction at the Origins of the New Logic*]). I defended this dissertation in October 1996 and it was published in 1999. There I discussed, among other matters regarding the principle of contradiction, the works of a group of thinkers (Meinong, Łukasiewicz, Vasil'ev and Peirce) who made important contributions to the analysis of this principle and the problems related to it and played key roles in the birth of non-Aristotelian logics at the turn of the twentieth century.

My initial interest in the topic of the principle of contradiction led me to a degree thesis, undertaken under the guidance of Italo Cubeddu, on *Opposizione e contraddizione in Aristotele e in Kant* [*Opposition and Contradiction in Aristotle and Kant*]. Professor Cubeddu also supervised my PhD dissertation. At the same time, I also had the good fortune to get to know Silvio Bozzi, whose guidance and stimulating input during many conversations and exchanges was fundamental for the direction and development of my research.

Since then, I have continued to study Vasil'ev's imaginary logic, and I have also had the opportunity to discuss it on several occasions: at the Congress of the Italian Society for Logic and the Philosophy of Science (SILFS), held in Cesena and Urbino on 15–19 February 1999; during a seminar on 'Aristotle and the Birth of Non-Aristotelian Logics', held at the then Institute of Philosophy of the University of Urbino on 7 May 2002; at the Congress 'Knowledge as Network of Models', which took place in Alghero on 20–23 September 2004; in a seminar on the imaginary logic of N. A. Vasil'ev, which I held at the Department of Philosophy and Human Sciences of the University of Macerata on 13 March 2009; during the lectures at the Department of Philosophy of the University of Ljubljana on 23 March 2009; and finally in the international workshop 'On Contradictions' which took place in Padova, on 12–13 December 2013. Some results of my researches on Vasil'ev and non-Aristotelian logics have been published in *Logique et Analyse* 40(159), 1997, 225–248; in the *Journal of Philosophical Research* 24, 1999, 57–112; in my monograph *In-contraddizione. Il principio di contraddizione alle*

origini della nuova logica (Trieste: Edizioni Parnaso, 1999); and in my contributions to *Prospettive della logica e della filosofia della scienza* (Soveria Mannelli: Rubbettino, 2001, pp. 73–87) and *L'impossibilità normativa* (Milano: LED, 2015, pp. 127–148). In 2012, I published, together with Gabriella Di Raimo, the Italian translation of the logical texts by N. A. Vasil'ev (*Logica immaginaria*, Roma: Carocci). The present book is an expanded reworking of my introductory essay published in that work. I am very grateful to the publisher Carocci for the permission to use it here.

In completing the book, I have incurred many debts, not least to the Staatsbibliothek Preussischer Kulturbesitz Berlin, for enabling me to consult its extensive library holdings; to Giuseppe Ambrogi and Francesca Di Ludovico of the Biblioteca Centrale Umanistica of the University of Urbino, who have procured for me every book or article I have requested with promptness and diligence; to Peter Dale, who took charge of the translation of the manuscript and has always been willing to deal with my enquiries about language; and to Patricia Barzotti, Gabriella Di Raimo and Domenico Mancuso, who helped me in the final stage of editing the text.

Urbino, Italy
15 June 2017

Venanzio Raspa

Note to Readers

Works are quoted with the publication date of the edition consulted (e.g. Venn 1894[2]: 11–13). In the case of critical editions, the original date of publication is indicated (e.g. Peirce 1880: *CP* 3.192–193). For manuscripts, the completion date of the work is put into square brackets near the date of publication (e.g. Peirce [1898]/1992: 261); for new editions of works, the date of the first publication is also put before the date of the edition consulted (e.g. Łukasiewicz 1910a/1987). All translations, when the corresponding English one is not shown in square brackets and unless otherwise indicated, are mine. Collective works appear under the name of the editor. In some cases, abbreviations have been used:

A = First edition of Kant's *Kritik der Reinen Vernunft* (1781)
Ak. = *Kants Gesammelte Schriften* (1910 ff.)
B = Second edition of Kant's *Kritik der Reinen Vernunft* (1787)
CP = *Collected Papers of Charles Sanders Peirce* (1931–1935–1958)
GA = *Alexius Meinong Gesamtausgabe* (1968–1978)
W = *Writings of Charles S. Peirce* (1982 ff.)

For Aristotle's texts, the following abbreviations have been used:

Cat. = *Categoriae* (*Categories*); transl. by J. L. Ackrill
Int. = *De Interpretatione* (*On Interpretation*); transl. by J. L. Ackrill
An. pr. = *Analytica Priora* (*Prior Analytics*); transl. by A. J. Jenkinson
An. post. = *Analytica Posteriora* (*Posterior Analytics*); transl. by J. Barnes
Top. = *Topica* (*Topics*); transl. by W. A. Pickard-Cambridge
Metaph. = *Metaphysica* (*Metaphysics*); transl. by W. D. Ross

Notes on Transliteration

The transcription used for Cyrillic characters refers to English transliteration. Given the possibility of transliterating some of the characters in a different way, I will go on to specify what criteria are adopted in the following cases:

- е is transliterated as *e*.
- ё is transliterated as *yo*.
- ж is transliterated as *zh*.
- и is transliterated as *i*.
- й is transliterated as *i*.
- k is transliterated as *k*.
- х is transliterated as *kh*.
- ц is transliterated as *ts*.
- ч is transliterated as *ch*.
- ш is transliterated as *sh*.
- щ is transliterated as *shch*.
- ы is transliterated as *y*.
- э is transliterated as *e*.
- ю is transliterated as *iu*.
- я is transliterated as *ia*.

Such criteria have not however been observed in all cases as the transliteration of certain names has been established by convention for some time, and in particular in the case of well-known people, such transliterations also appear in the bibliographies. A list follows of exceptions to the above:

- The marked sign ъ is removed, whereas the weak sign ь is maintained in the majority of cases, with the exception of the word *Казань* which is always transliterated as *Kazan* and several names of authors (e.g. *Gogol*, etc.; see Index of Names).
- Certain names such as *Достоевский*, *Посский*, *Побачевский* and similar, although ending in *ий,* are not transliterated according to the above-mentioned rules, but in accordance with English transliteration through which they have

become established (e.g. *Dostoevsky, Lossky, Lobachevsky*, etc.; see Index of Names).

- First names, patronymics and surnames of celebrated personalities are equally transliterated in accordance with the more widespread English transliteration and not according to the above-listed rules (e.g. *Balmont*, *Bryusov*, *Tolstoy*, *Bely*, *Yekaterina II Alekseyevna of Russia*, *Vladimir Ilyich Ulyanov Lenin*, *Yemelyan Ivanovich Pugachev*, *Vladimir Sergeyevich Solovyov*, etc.; see Index of Names).
- Equally, the patronymic *Васильевич* is transliterated as *Vasilevich* when referring to Pavel Kopnin, *Vasilievich* when referring to Nikolai Gogol and *Vasilyevich* when referring to Ivan the Terrible, whereas in all other cases it is transliterated in accordance with the rules listed above (see Index of Names).
- First names and patronymics such as *Алекса́ндр* and *Алекса́ндрович* are transliterated as *Alexander* and *Alexandrovich* in the case of names whose transliteration has become established or if they are cited in texts, whereas in the remaining cases the above rules are observed. Hence, with reference to the Vasil'evs, the first name *Алекса́ндр* and the patronymic *Алекса́ндрович* are transliterated according to the above-mentioned rules as *Aleksandr* and *Aleksandrovich*.
- In English *Васильев* is transliterated as *Vasil'ev*, *Vasil'év*, *Vasiliev*, *Vasil'iev*, *Vasilyev* or *Vassilyev*. Here the first transliteration will be used, but the other five are preserved in citations from texts of other scholars when they use them and in the bibliography.

Finally, I would like to explain my choice of the expressions 'principle of contradiction' and 'law of contradiction' in contrast to several contemporary authors who use the expression 'principle of non-contradiction' or even 'principle of (non-)contradiction.' All three of these expressions define the same principle, but the last two have been introduced only recently. In the Greek commentators of Aristotle, the expression ἀξίωμα τῆς ἀντιφάσεως (principle of contradiction), subsequently translated in Latin as *principium contradictionis*, is found. The syntagma 'of contradiction' is an argumentary complement which means the principle concerning contradiction, like the law of universal gravitation is the law which concerns universal gravitation. The expression 'principle of non-contradiction,' or 'principle of (non-) contradiction,' emphasizes on the other hand the normative nature of the principle: this forbids the contradiction. To my mind, the three expressions are equally correct to the extent that they fulfil their role in defining the principle in question. I have chosen the first expression, because, on reading and translating texts of noncontemporary authors, I have noted that none of them used the prefix 'non.' Vasil'ev does not employ the phrase Закон непротиворечия (law of non-contradiction). He writes of the Закон противоречия (law of contradiction). The same holds true for Łukasiewicz, who writes *Satz des Widerspruchs* – or *zasada sprzeczności* (principle of contradiction) – and even for Kant, Sigwart, Erdmann, Göring, Heymans and Husserl. Likewise, it is absent in Mill and Husik, who write *principle of contradiction* or *law of contradiction*. In conclusion, none of the classic authors I have examined have used 'non' before 'contradiction.' For this reason, I have preferred,

as a matter of consistency, to remain loyal to the traditional expression and have chosen ‘principle of contradiction’ and ‘law of contradiction.’ Not to observe a faithful regard for this standard classical term would have entailed my adding, intrusively, of ‘non’ to all the citations from the texts of the authors mentioned or, otherwise, maintaining the original expression in the citations of the texts while adopting one of the other two expressions. That strategy would have given rise to an ambiguity easily avoided by sticking to the traditional terminology.

Contents

Introduction: From an Individual to a World

In 1912, the Russian logician Nikolai Aleksandrovich Vasil'ev (1880–1940) published an essay, "Voobrazhaemaia (Nearistoteleva) Logika [Imaginary (Non-Aristotelian) Logic]," in which he set forth an argument in favour of the possibility of a logic "different from ours," "a logic without the law of contradiction,"[1] and thereby emerged as a supporter of logical pluralism. His starting point was the hypothesis that, in an imaginary world, negative properties (such as non-red) and contradictory objects (those that are simultaneously red and non-red) may be perceived in the same way which, in our world, the book that you are reading at this precise moment, or the redness of our blood, is perceptible. Vasil'ev's contribution to logic consists, in fact, in proposing some outlines of systems, still imprinted on the template of traditional formal logic, that would be valid for such an imaginary world in which, other than contradictory objects and negative properties, subjects capable of perceiving them could also be found. By analogy, one might conceive of a very detailed topographic map that would permit one to take bearings in a large yet unknown region, with the difference that the region delineated by the map does not exist, or is located not in our real world, but in a world conjured up by one's imagination. What would we do with a map like that? And again, what purpose would an imaginary logic serve? In response to this query, Vasil'ev replied curtly: it is "to separate in our logic the empirical elements (that can be eliminated) from the

[1] Vasil'ev (1912: 212 = 1989: 58, 59 [2003: 131]). Vasil'ev's texts, with the exception of two (1911/1989 and 1925), are cited both in the original version and in the collection of his writings published in 1989 by V. A. Smirnov. Although the latter is more easily accessible, the texts contain several omissions and transcription errors; therefore, reference to the original version has become the preferred choice. To give an example: on page 64, fn. 4, the original wording "Канто-Пейбницевская [Kantian-Leibnizian]" has been transcribed as "антилейбницевская [anti-Leibnizian]"; on page 65, fn. 6, instead of ложно (it is false), there is the wording должно (it is necessary), so that the proposition "it is false [ложно] that the law of contradiction is not applicable to God" has become "it is necessary [должно] that the law of contradiction is not applicable to God," as Vergauwen and Zaytsev have translated (cf. Vasil'ev 2003: 137–138, fn. 6); on page 74, the minor premise of the syllogism in *Bocardo* "Все *S* суть *M* [All *S* are *M*]" has become "Все не *S* суть *M* [All *S* are not *M*]," resulting in a syllogism with two negative premises, from which, as is known, nothing can be inferred.

non-empirical elements, which may not be eliminated,"[2] in that the latter are valid not only for all possible worlds but also in those erratic worlds containing contradictory objects.

In our day and age, it is not unusual to hear about contradictory objects and impossible worlds, although controversy surrounds their acceptance. It is at the same time an established fact that a plurality of logics exists. Yet, what can appear to be obvious nowadays was not so in Vasil'ev's time. While Vasil'ev's endeavours to make a radical interpretation of traditional logic place him at the margins of that great movement which, between the second half of the nineteenth and the first decades of the twentieth century, led to the construction of mathematical logic, it is precisely the study of Vasil'ev's work which can contribute substantially to a finer grasp on this period, by prompting us to recognize that traditional logic itself contained a wealth of suggestions and novel problems that in part were already pointing towards a nonclassical pathway.

The most important essays published by Vasil'ev are "O Chastnykh Suzhdeniiakh, o Treugol'nike Protivopolozhnostei, o Zakone Iskliuchennogo Chetvertogo [On Particular Judgments, the Triangle of Oppositions, and the Law of the Excluded Fourth]" (1910), "Voobrazhaemaia (Nearistoteleva) Logika [Imaginary (Non-Aristotelian) Logic]" (1912) and "Logika i Metalogika [Logic and Metalogic]" (1912–1913). To these we should add two very brief writings, *Voobrazhaemaia Logika (Konspekt Lektsii)* [*Imaginary Logic (Conspectus of a Lecture)*] (1911) and "Imaginary (Non-Aristotelian) Logic" (1925), which are similar for their synthetic and expositive, rather than argumentative, character. If one takes into consideration that the last-named text adds nothing new to the others, but simply restricts its scope to a synthetic list of the results Vasil'ev had obtained, it appears that he had exhausted his logical-philosophical meditations within the span of a few years. Yet, he died at the end of 1940! This fact has always stirred my curiosity from the moment I first began to read his texts. If we focus on his publication dates, we will notice that Vasil'ev's logical-philosophical research developed during the undoubtedly difficult years immediately preceding the outbreak of the First World War. He himself was forced to interrupt his investigations and his teaching in order to take up duties on the front line, since, in addition to being a philosopher, he was qualified in medicine, a more serviceable qualification during those years. Yet the war and its horrors unhinged him, and, after a number of twists and turns, a series of psychological crises would lead finally to his committal to a psychiatric clinic.

Vasil'ev's writings were read, reviewed and debated immediately after their publication and stirred considerable interest within Russia. How Vasil'ev's logical-philosophical reflections might have gone on developing had they not been interrupted so dramatically is an open question. In the wake of the rediscovery of his writings, the variety of interpretations that have been given of his imaginary logic, which on occasion has been regarded as anticipating either many-valued logics or paraconsistent ones, either intensional logics or theories of impossible worlds, takes on the guise of an implicit reply to the question and shows that many of the themes

[2] Vasil'ev (1911/1989: 130). Cf. also Vasil'ev (1912: 243 = 1989: 90 [2003: 160]; 1925: 109).

Vasil'ev covered have been confirmed in contemporary logic: they have also inspired, in a number of cases, new research orientations (on quantifiers, modality, negation, incomplete and contradictory objects). The emphasis Vasil'ev laid on the ontological basis of formal logic is clearly modern, as are his hypothesis that formal logic contains elements that reflect our understanding of the world and of the types of objects we deal with and the idea that a logical system is valid for a certain domain of objects.

There are many ways to read an author: one consists in adopting him as a guide for studying a cluster of theories and for knowing a world, or better, a portion of the world. Thus, starting with Vasil'ev, we can re-read a fragment of the history of logic, specifically of traditional logic, tracing a path as far back indeed to Aristotle himself. We are also drawn obviously enough into an investigation of the period in which Vasil'ev lived and wrote, but, at the same time, the nonclassical logics that arose after him also attract our attention.

It is incumbent on us to examine the formative cultural and historical backdrop of a writer, the milieu in which his own reflections took shape, both because his theories, and those he grappled with, bear traces of the period in which they were worked out and because (and this assumes all the more importance if we are to avoid embarrassing misprisions) the language and terminology of any specific age will always suffer inflections from the historical process itself. To give an instance, Vasil'ev employs the term 'metalogic,' which however is not to be taken in the meaning it has today, but rather by analogy to the traditional meaning of the word 'metaphysics':

> Metaphysics is the knowledge of being regardless of the conditions of experience. Metalogic is the knowledge of thought regardless of the conditions of experience.[3]

Again, he employs the term 'суждение' (*suzhdenie*), which I have translated here as 'judgement' and not as 'proposition,'[4] according to the meaning attributed to judgement in the course of the nineteenth century. Judgement is linked to the mind that formulates it and carries in itself a psychical characterization, which however is lacking in proposition, that is the linguistic expression of a judgement. Even were we to allow a Platonism that holds theories to exist in themselves, independently of the subjects that formulate them, it still remains true that in our 'sublunary' world, to adopt Aristotle's wording, we encounter theories through the works and discourses of their authors, finite beings endowed with minds and bodies. We must thus temper idealism with a touch of materialism which gently tugs us down from the hyperuranion back to the earth, so that we may take into consideration the historical and material conditions that play a pertinent role in the elaboration of theories. Such

[3] Vasil'ev (1911/1989: 130; 1912: 242 = 1989: 89 [2003: 159]; 1912–1913a: 73 = 1989: 115 [1993: 345]; 1925: 109).

[4] As was instead done by some translators; cf. Vasil'ev (1993; 2003). Because of different lexical choices, I will give references to available translations of Vasil'ev's writings, but I will make a free use of them.

historical and material factors must cover not only the general outlines but also the particular circumstances that surround and inform the context in which the writer happened to work.

This means, in the specific case of Vasil'ev, that we must consider, if only succinctly, the state of logic in both Russia and Western Europe between the end of the nineteenth and the beginning of the twentieth century and, above all, the ways in which he absorbed and reworked the input and suggestions flowing from external sources. Thus, alongside external history, internal history, consisting of those readings and encounters which were to be decisive for the formation and development of Vasil'ev's philosophical meditations, is equally relevant. There are cases where his affinities with a number of contemporary logicians and philosophers lack overt textual confirmation in his writings, but they highlight all the more a generalized interest in certain arguments of that period.

How are we to trace these coordinates? Starting from the general picture and then simply projecting it onto the particular is out of question because it would not be enlightening, in so far as the general conditions of the age were shared by all (or nearly all) the logicians and philosophers of a certain time. Instead, we must begin with the particular, starting from the individual Vasil'ev himself, and then moving on from him towards the identification of the general context of that world, which was, after all, Vasil'ev's or, better still, that which we have access to via what we know of Vasil'ev's life and work. In order to accomplish this, I will begin with a synthetic outline of his life, which, to say the least, contains dramatic features: suffice it to recall that he lived through the First World War, the October Revolution and Stalinism, and spent a third of his life in a psychiatric hospital.

Vasil'ev is remembered, above all, as a logician and, in particular, for his articles on what he called 'imaginary logic.' In fact, he was also deeply interested in poetry, psychology, history and literary criticism. It is true that he never achieved prominence in any of these fields: his poetry, which was composed in a style reminiscent of Russian symbolism, left no mark on Russian literature; as a psychologist, Vasil'ev taught the subject, but failed to develop his own theory; his contributions to historical studies and literary criticism are too few in number to constitute a notable output; his status as philosopher is tightly bound to his work as a logician, in the sense that, at least in his published writings, the theories he espoused belong either to the field of logic or to the philosophy of logic. However, if logic is the area where Vasil'ev achieved his most noteworthy results, it is nonetheless true that one cannot neglect the versatile nature of his production, if one wishes to obtain a comprehensive impression of the man as a scholar and intellectual. This is also indispensable if we are to fully grasp the way he came to work out the notion of an imaginary logic and the meaning he placed on it. Therefore, although I will mainly focus my attention on Vasil'ev's writings on logic and the philosophy of logic, I have thought it opportune to broaden my examination, albeit briefly, over the other disciplines

which engaged his interests. In the chapter dealing with Vasil'ev's life (Chap. 1), I will also look at his activities as a historian and man of letters and then pass on to an examination of his logical output. The latter will be framed first and foremost within its historical and cultural context (Chap. 2) and then expounded in a systematic form (Chap. 3 and 5). An intermediate chapter (Chap. 4) will deal with attempts, contemporary to his own, to develop non-Aristotelian logics that present affinities with imaginary logic. Lastly, I will conclude with a review of the interpretations of imaginary logic that have been given over the last hundred years (Chap. 6).