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Timothy Tambassi

The Philosophy of Geo-Ontologies Applied Ontology of Geography

Second Edition

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Timothy Tambassi
Department of Science of Cultural Heritage
University of Salerno
Fisciano, Italy

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Introduction

Placed at the intersection among philosophy, geography, and computer science, the domain of investigation of applied ontology of geography ranges

- from making explicit assumptions and commitments of geography as a discipline;
- to the theoretical and technical needs of geographical/IT tools, such as GIS and geo-ontologies.

Such a domain of investigation represents the central topic of discussion of this book, which intends:

- to provide an overview of the mutual interactions among the disciplines encompassed in the domain;
- to discuss notions such as spatial representation, boundaries, and geographical entities that constitute the main focus of the (philosophical) ontology of geography;
- to propose a geographical classification of geo-ontologies in response to their increasing diffusion within the contemporary debate, as well as to show what ontological categories best systematize their contents.

The book is divided into three parts. In the first one, *Among Computer Science, Philosophy, and Geography: An Ontological Investigation*, Chap. 1 explores the domain of investigation of applied ontology of geography, showing how the disciplines involved are connected to one another and outlining some possible strategies to provide a way out of the disconnections. Chapter 2 analyzes the kinds of ontologies behind the applied ontology of geography. First, it concerns IT/computer science, within which ontologies are generally conceived as explicit specifications of shared conceptualizations. Second, philosophical ontology is presented as the research area that pinpoints the totality of entities which make up the world on different levels of focus and granularity and whose different parts and aspects are studied by folk and scientific disciplines. Third, the ontology of geography is distinguished by its focus on establishing what geographical entities exist, developing a theory of spatial representation, and explaining how the geographic descriptions of reality emerging from common sense can be combined with those derived from academic geography.

The second part, *Systematizing the Geographical World*, addresses the main philosophical issues of ontology of geography, as well as the ontological assumptions and commitments of geography, namely spatial representation, boundaries, and geographical entities. More precisely, Chap. 3 undertakes to offer an introduction to the theoretical tools needed for advancing a formal theory of spatial representation, tools which include mereology, topology, and the geo-ontological distinction between classical and non-classical geographies. Chapter 4 focuses on geographical boundaries, with the aim of analyzing how the notion of boundary has been conceived by contemporary geo-ontologists, what kinds of geographical boundaries have been identified and categorized, as well as the influence of cultural diversities and human beliefs upon such categorizations. Finally, Chap. 5 provides a sketch of possible approaches, response attempts, and issues arising from the question: “What is a geographical entity?”. The answer to this question will be multi-faceted and will fight the prevailing philosophical trend of simplifying the endless diversity and variation among different geographical perspectives.

While by discussing notions of spatial representation, boundaries, and geographical entities, the second part of the book is mainly speculative, the third part, *The Philosophy of Geo-Ontologies*, analyzes geo-ontologies as an IT/computer application of the theoretical investigation presented above. Chapter 6 explores the emergence of geo-ontologies from the spatial turn and outlines a taxonomy of geo-ontologies grounded on the distinction between spatial, physical, and human geography. The idea behind the taxonomy is to relate geo-ontologies to the geographical debate which, in turn, could improve the conceptualizations of such ontologies. Chapter 7 combines assumptions and requirements coming from IT/computer ontologies, geography, and philosophical ontology, in order to show what categories might complete the current domain of geo-ontologies. The issue is approached by thinking of such a domain as a whole composed of two different levels of categorization. The first level concerns the IT components shared by different ontologies. The second level deals with contents for which philosophical and geographical analysis can include categories that do not appear at the first level. Because the book’s concerns are interrelated in numerous and complex ways, I have considered it appropriate to remind the reader in various places of key features of applied ontology of geography, deeming a certain amount of repetition preferable to relying on cross-references too frequently.

The second edition of the book differs from the first one as it offers a broader analysis of the (philosophical) ontology of geography (see, in particular, Chaps. 1 and 3–5): an analysis that is no more limited to the theoretical need of geo-ontologies. The introduction of the subtitle *Applied Ontology of Geography* is meant to remark this change. Some chapters of the book are based upon papers of mine that have been published during the last few years. In particular, Chaps. 1, 3–5, and 7 draw upon the following papers respectively, and I am grateful to the publishers concerned for permission to use the material in this way: *Applied Ontology of Geography. Mapping the Interdisciplinary (Un-) Connections*. In Tambassi T., Tanca M. (eds.) *The Philosophy of Geography*. Springer, Cham, 2021; *On the Distinction between Classical and Nonclassical Geographies: Some Critical Remarks*. In Tambassi T. (ed.)

The Philosophy of GIS (pp. 125–134). Springer, Cham (2019); From Geographical Lines to Cultural Boundaries. Mapping the Ontological Debate. *Rivista di Estetica* 67:150–64 (2018); What a Geographical Entity Could Be. In Tambassi T. (ed.) *The Philosophy of GIS* (pp. 177–205). Springer, Cham (2019); What kind of ontological categories for geo-ontologies? *Acta Analytica* 34(2):135–44 (2019). Moreover, the taxonomy of Chap. 6 is the result of a collaboration with Diego Magro and was originally published in *Ontologie informatiche della geografia. Una sistematizzazione del dibattito contemporaneo*. *Rivista di estetica* 58:191–205 (2015).

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Fisciano, Italy
May 2021

Timothy Tambassi

Contents

Part I Among Computer Science, Philosophy, and Geography: An Ontological Investigation

1 From the Philosophies of Geographies to the Applied Ontology of Geography	3
1.1 On the Connections Between Philosophy and Geography	3
1.2 Two Triangles	5
1.3 Ontologies of Geography	7
1.4 Digital Geographies	8
1.5 Big-O Ontology Versus Small-o Ontologies	9
1.6 The Geo-Ontological Circle	10
1.7 (Small-o) Ontological Interdisciplinary Connections	11
1.8 Five Features of (Big-O) Ontological Knowledge	12
1.9 (Big-G) Geographical Disconnections	13
1.10 Representations and Practices	14
1.11 From Applied o/Ontology of Geography to Applied o/Ontology of Geography	15
References	17
2 The Ontological Background	21
2.1 IT/Computer Ontologies and Semantic Web	21
2.2 Some Definitions of IT/Computer Ontology	23
2.3 Clarification of Terms	24
2.4 From the Ontological Turn to Taxonomies of Philosophical Ontologies	25
2.5 Ontology, Metaphysics, and Scientific Disciplines	26
2.6 Ontology of Geography	28
2.7 Common-Sense Geography	29
2.8 Primary and Secondary Theories	30
2.9 Mark and Smith's Experiments	31
2.10 Analysis of Results	32
References	34

Part II Systematizing the Geographical World

3 Spatial Representation 39

3.1 Ontology of Geography and Spatial Representation 39

3.2 Tools for Spatial Representation 40

3.3 Classical and Non-Classical Geographies 41

3.4 Issues from Cartographic Representation 42

3.5 The Capital of Singapore 43

3.6 Looking for No Man’s Land 43

3.7 Sailing to Thule 44

3.8 Poland into Exile 45

3.9 Conclusion 46

References 46

4 Boundaries 49

4.1 The Ontology of Geographical Boundaries 50

4.2 Bona Fide and Fiat Boundaries 51

4.3 Legal Fiat Boundaries and Normativity 53

4.4 Physical and Institutional Boundaries 54

4.5 Boundaries, Cultural Diversities, Human Beliefs 55

4.6 Cultural Boundaries? 57

4.7 Three Levels of Cultural Dependence 58

4.8 Conclusion 59

References 60

5 Geographical Entities 63

5.1 A Chaotic List that Cries Out for Explanation 63

5.2 Avoiding Univocal and Incomplete Accounts 64

5.3 Laundry Lists 66

5.4 Attempts of Definition 67

5.5 On Being Portrayed on Maps 68

5.6 Maps, Granularity of Interest, and Multiple Levels of Details 69

5.7 On What and Where 70

5.8 Drawing the Contour 71

5.9 Cultural Entities 72

5.10 GIS, Knowledge Engineering, and Geographic Objects 74

5.11 Rivers, *Fleuves*, and *Revières* 75

5.12 Danube, *Donau*, and *Дунай* 76

5.13 Vagueness 77

5.14 (Geographical) Kinds and Properties 78

5.15 Relations, Fields, and Time 79

5.16 Boundaries 80

5.17 On Non-Existent and Abstract Geographical Entities 81

5.18 Historical Entities 82

5.19 Complex Geographical Entities 83

5.20 Hierarchical Structures 84

5.21 Three Thin Red Lines 85

5.22 From Multiple (Ways of Doing) Geographies to Multiple
(Kinds of) Geographical Entities 87

References 88

Part III The Philosophy of Geo-Ontologies

6 Geo-Ontologies: From the Spatial Turn to Geographical Taxonomy 93

6.1 From the Spatial Turn to the Diffusion of Geo-Ontologies 93

6.2 The Problem of Existing Taxonomies 95

6.3 A Geographical Point of View 97

6.4 A Geo-Ontological Tri-Partition 98

6.4.1 Spatial Geo-Ontologies 99

6.4.2 Physical (or Natural) Geo-Ontologies 100

6.4.3 Human Geo-Ontologies 100

6.4.4 Other Geo-Ontologies 101

6.5 Conclusion 103

References 104

7 Ontological Categories for Geo-Ontologies 107

7.1 The Geo-Ontological Domain 107

7.2 Issues of a Categorical Ontology 108

7.3 On the General Aims of Geo-Ontologies 109

7.4 From the Need of Accessibility to the Common-Sense
Geography 110

7.5 Ontology Components 111

7.6 Between Formal Ontologies and Ontological Categories 112

7.7 Lowe’s Four-Category Ontology 112

7.8 Overlaps and Deviations: Cumpa’s Fact-Oriented Ontology 114

7.9 From Components to Contents 114

7.10 Variantism 115

7.11 Two Kinds of Completeness 116

7.12 Completeness and Fundamentality 117

7.13 Philosophical Ontology Versus IT/Computer Ontology 119

References 120

Conclusion 123

Index 125

Part I
Among Computer Science, Philosophy,
and Geography: An Ontological
Investigation

Chapter 1

From the Philosophies of Geographies to the Applied Ontology of Geography



Abstract This chapter pursues two main goals. The first one is to explore the domain of investigation of applied ontology of geography, by providing an overview of the mutual interactions among the disciplines encompassed in the domain, namely philosophy, geography, and computer science. The second goal is to reveal the disconnections, by delineating some possible strategies designed to increase the interdisciplinary dialogue. In accordance with such goals, Sects. 1.1–1.5 respectively examine the connections between philosophy and geography, philosophy and geographies, philosophical ontologies and geographies, computer science and geographies, and philosophical ontologies and IT/computer ontologies. Section 1.6 acknowledges that the domain of research of applied ontology of geography should include, at least, two different kinds of geography: empirical geography and academic geography. Then, Sects. 1.7 and 1.8 point out that philosophical and IT/computer ontologies are more connected to empirical geography than to academic geography. Finally, Sect. 1.9 explores the reasons why academic geography is currently disconnected to the (philosophical) ontological debate, and then Sects. 1.10 and 1.11 outline some possible strategies to provide a way out of the disconnections.

Keywords Digital geography · Empirical geography · Geography · IT ontology · Naïve realism · Philosophical Ontology · Philosophy of geography · Practices · Representations · Spatial analysis

1.1 On the Connections Between Philosophy and Geography

Getting a complete overview of the possible connections between geography and philosophy might be an extremely ambitious task (Tambassi 2018; Veríssimo Serrão 2018; Tambassi and Tanca 2021). For this reason, instead of providing an exhaustive survey, Tanca (2017, 2018a) rather focuses on some guidelines that describe some current connections between the two disciplines. According to the author, there are essentially four different (and interacting) ways for philosophy and geography to communicate (Fig. 1.1):

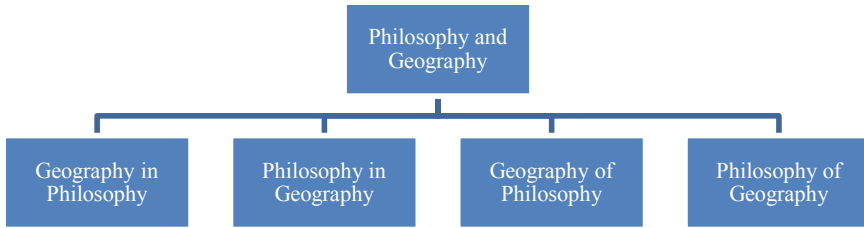


Fig. 1.1 Tanca's (2017, 2018a) connections between philosophy and geography

- 1.1.1. geography *in* philosophy;
- 1.1.2. philosophy *in* geography;
- 1.1.3. geography *of* philosophy;
- 1.1.4. philosophy *of* geography.

Dealing with the first two connections means to think in terms of inclusion. More precisely, what is at stake in the *in*-relations is the capacity of each of the two disciplines to open its doors to examples, theories and experiences coming from the other discipline. In this way, we can have geographical notions populating philosophical debates (Kant 1787; Arendt 1955; Benoist 2001; Farinelli 2004; Foucault 2007; Lévy 2021) and philosophical notions infiltrating geographical debates (Harvey 1969; Tuan 1971; Raffestin 1980; Peet 1998; Minca 2001; Church 2011; Lussault 2021). Geography of philosophy is instead centered on those places and/or geographical contexts within which philosophical theories have been developed and philosophers have moved and worked—such as Königsberg for Kant, London for Marx, Berlin for Benjamin, and so forth (Deleuze and Guattari 1994; Holenstein 2004; Rossi and Viano 2004). Finally, philosophy of geography refers to the debate on the nature of geographical knowledge and reality, a debate that includes, among others, ontological, epistemological, social, and cultural groundings of geography as a discipline (Dardel 1952; Farinelli 1992, 2009; Bonesio 2000; Smith and Mark 2001).

As for 1.1.4, philosophy of geography, it might be more appropriate to speak of *philosophies of geographies* in the plural (Fig. 1.2). This shift emphasizes the

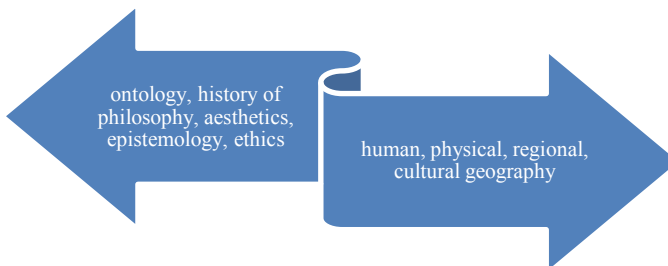


Fig. 1.2 Philosophies of geographies