A 17th-Century Example of Diagrams as Educational Tools

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Abstract. Jacob Lorhard’s 1606 textbook Ogdoas Scholastica diagrammatic presentation of ontology is best understood not as a fore-runner of formal ontologies as used by today’s computer scientists but as a pedagogical heuristic, representing one of the first serious uses of diagrams exclusive of accompanying text as a tool for teaching.

1 Introduction

In chapter 8 of his 1606 work Ogdoas Scholastica [Lo2], Jacob Lorhard (1561–1609) compressed the 640\textsuperscript{1} page treatise on metaphysics by Clemens Timpler [Ti] into 58 pages of diagrams.\textsuperscript{2} Lorhard’s purpose in writing the Ogdoas (which also includes chapters on Greek and Latin grammar, ethics, rhetoric, logic, physics, and astronomy) was to create a textbook for use in the gymnasium of Saint Gallen. Lorhard’s chapter eight on metaphysics, or ontology, is of interest for a number of reasons. Firstly, it is the first recorded instance of the Latin word ontologia, from which the English word ‘ontology’ derives, which Lorhard introduced as a synonym of metaphysica [OAS, p. 248]. Secondly, Lorhard’s metaphysical views, following Timpler, show a distinct break with tradition as exemplified by Francisco Suárez’s text Disputationes Metaphysicae. Thirdly, the chapter is one of the first attempts to present ontology in a diagrammatic fashion. While today it is common for formal ontologists in computer science to have diagrams of their system ontologies, Lorhard’s presentation of not only metaphysics but all of the other topics noted above with diagrams instead of text was quite novel for his time.

We briefly discuss the second point in §2, but our main focus is on the third point. We argue in §3 that Lorhard’s decision to present metaphysics in this way was motivated by pedagogical reasons grounded in the fact that his Ogdoas was intended to be a teaching tool. This is not the first time that diagrams were used as an educational heuristic. Petrus Ramus (1515–72) supported the use of dichotomic diagrams for the presentation of scientific knowledge [OUS, pp. 378–379]. Lorhard’s work, however, takes this concept to the extreme by using not only dichotomic diagrams but also more elaborate ones, and by using such

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\textsuperscript{2} An English translation of chapter eight of the Ogdoas is published in [Uc].
diagrams at the expense of the exclusion of actual text. As a result, we argue in §4 that Lorhard’s ontological diagrams should not be seen as forerunners of formal ontologies used by computer scientists today. The use of diagrams to present the conceptual relations between objects (whether these be grammatical categories, logical structures, or even concepts themselves) is a natural further step in this progression.

2 Metaphysics in the Early 17th Century

The dominant tradition in metaphysics at the end of the 16th century as found in Francisco Suárez’s book *Disputationes Metaphysicae*, published in Mainz in 1605 [Lo1]3, makes the proper subject matter of metaphysics the concept of “being”. Though this was the accepted view in both Protestant and Catholic circles, Timpler, and Lorhard following him, reject this view and instead take as the proper subject matter of metaphysics the concept of “intelligible”. (For a further discussion of the views of Suárez, Timpler, and Lorhard, see [OSU, §2].) The concept “intelligible” is more broad than that of being, since intelligible covers both being and non-being. We can, through reason alone and apart from any consideration of material things, understand the concept of “non-being”; hence, it is intelligible.

3 The Diagram as a Pedagogical Tool

At the time that Lorhard wrote and published the *Ogdoas*, he was a teacher at the gymnasium in Saint Gallen, Switzerland. The gymnasium was a school for adolescents to learn “Grammaticen Latinam & Græcam, Logicon, Rhetoricen, Astronomicen, Ethicen, Physicen, Metaphysicen, seu Ontologiam, an t’upom’erei” [Lo2, prologue]. Lorhard’s choice of using diagrams in his textbook was influenced not only by Petrus Ramus, as is discussed in [OUS], but also by the changing views toward book publication in the sixteenth century. As Walter Ong notes, early printed books tended to follow closely in their design and format manuscripts, but over the course of the sixteenth century greater attention was given to the structural presentation of material, with a view towards what he calls “convenient visual forms” [On, p. 432].

It is clear from Lorhard’s remarks in the Prologue of the *Ogdoas* that the book was intended as a teaching tool. What is not clear from these remarks, though, is whether it was meant to be a textbook for students or essentially ‘lecture notes’ for the teacher. When we look at the chapter on ontology, there are two bases on which it can be argued that the book was intended primarily for use by the teacher and not by the student. The first is the relationship between chapter eight and Timpler’s book on metaphysics, and the second is the structure of the diagrams themselves.

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4 Why This is Not a Formal Ontology

Lorhard’s diagrammatic presentation of ontology displays...

5 Conclusions

We conclude...

References


