

Presentation of the Book of Olga Pombo

“O CÍRCULO DOS SABERES”

by  
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Let me thank Olga Pombo for the honour of presenting her challenging book *O CÍRCULO DOS SABERES*<sup>1</sup>.

The book is a passionate and fascinating defence in more than 300 pages of the driving and inspiring force of the concept of unity of science as put into action by the realization of encyclopaedic projects. It has been structured in four main chapters with a preface, an introduction, three conclusions and an appendix. It is in this appendix that, as I will discuss further on, we find the solution to the systematic and historic aporias of the “acentered” notion of unity of science thoroughly developed along the book.

I will take the book under consideration itself as an encyclopaedia and will give me the liberty of building a path where the appendix is seen not as an appendix but rather as the solution to what I take to be the main conceptual problematic underlying the book. Some would perhaps say that I am deconstructing Olga Pombo’s book. I would rather prefer to say that I am activating an implicit Lull-like combinatorial mechanism underlying the book to pick out my own

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<sup>1</sup> Olga Pombo (2012), *Os Círculos do Saber*, Lisboa: CFCUL/Gradiva, 314pp.

reading path of it or - more accurately – I would say that I am starting such activation.

In fact I read the preface and introduction as posing the problem, followed by the four main chapters as containing the historic and systematic development of this problem and the appendix as a solution or perhaps as a generalization of the riddle.

## PREFACE, INTRODUCTON AND FIRST CHAPTER

To put it perhaps too roughly: in the preface, the introduction and first chapter, our author presents the concept of the unity of science embodied by the realization of encyclopaedic projects as involving a dialectics between the drive to systematization and the openness or dynamicity of the project and its actuality. Particularly in the introduction, Pombo shows that though it might be out of fashion to talk about the Unity of Science this is only a superficial analysis. The development of the project finds historical forms of realization by what the author calls *Figuras* which are present today as they were before – this subject has been developed in the last chapter, A ENCICLOPEDIA NO SECULO XX and in the conclusion, particularly, the paragraphs ENCYCLOPEDIA E HIPERTEXTTO.

The link between the *Figuras* and the notion of Unity is in fact the

main subject of her previous book *Unidade da Ciência. Programas, Figuras e Metáforas* (2006)<sup>2</sup>. In this previous book, Olga Pombo puts forward the idea that the notion of the unity of science encompasses an abstract and concrete level in a continuous interaction. The concrete, material level yields notions such as encyclopaedia and institutions like libraries and universities. It is actually the interweaving of images, abstract regulative ideas, metaphors and institutional conceptions which perform the unity of science in all its diversity. When I presented the latter book four years ago, I think, I suggested that Olga Pombo's proposal can be thought as a semiotic process by the means of which a concept and what it signifies are in a kind of internal relation. Now, the point of the first three parts of the book under consideration here (preface, introduction and first chapter) as I read it, links the etymological roots of the word Encyclopaedia, circle of knowledge, with the balance or unbalance between structural and dynamic efforts in the notion of Unity of Science. Thus, it is a Circle because of the dialectics between openness and systematization and, it is a circle because of the constant realization of the project. This seems to apply particularly to the two major figures of her study: Leibniz and Neurath. Let me quote some paragraphs of the preface (pp. 13-14):

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<sup>2</sup> Olga Pombo (2006), *Unidade da Ciência. Programas, Figuras e Metáforas*, Lisboa: Duarte Reis, 324 pp., (2<sup>a</sup> edição Lisboa: CFCUL/Gradiva, 2011, 343 pp.).

*I put together in this book a set of studies which, having encyclopaedia as its object of study, aim to think what the circle, while a device of sensibilization of the inteigible, let us see in an analoogical form. Three of these studies have been already published: “The Encyclopedic Project”, “For an History of the Idea of Encyclopaedia” and “Encyclopaedia of the XX century”. Partialy rewritten, those studies are now integrated in a larger and more coherent whole which includes a more extense inedit study : “Philosophical Encyclopedia”. There, I aim to do the balance of the more important projects for philosophical encyclopaedia, from Ramon Lull to Neurath, passing by Comenius, Bacon, Leibniz, the positivist encyclopaedism of Comte, or the romantic encyclopaedism of Novalis and Hegel. Above all Leibniz and Neurath. As for Leibniz, I would like to evaluate the unique place he ocupies in the history of encyclopaedism. We owe to Leibniz the more extensive and more accurate, fecund formulation of the theoretical model, which is simultaneously rigorous and heuristic, of the encyclopaedia as a systematic structuration of human knowlede. With Neurath, the heritage is double. On the one hand, he firmly articulates encycopaedia and Unity of Science; on the other hand, he defends the possibility of a plural unity, not hierarquical but open, combinatory and decentered from itself<sup>3</sup>.*

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<sup>3</sup> Reuni neste livro um conjunto de estudos que, tendo a enciclopédia como seu

## LEIBNIZ AND THE METHOD OF “THE BLIND THOUGHT”

After chapter one, O PROJECTO ENCICLOPEDISTA, the book continues with a deep historical overview of the idea of encyclopaedia from the ancient classical times to the encyclopaedia of the XXth century. In chapter three, ENCICLOPEDIAS FILOSOFICAS, our author deals with the two main personalities of the encyclopaedic project, namely Leibniz and Neurath. Let me here discuss some of Pombo’s analysis of Leibniz whose work inherits from Lull an *acentred* idea of system but also from Comenius and Bacon, namely the educative, ethical and political aspects of the project of a language that would put the idea of unity of knowledge into action.

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*objecto de estudo, visam em última análise pensar aquilo que o círculo, em quanto dispositivo de sensibilização do inteligível, dá a ver de forma analógica. Três desses estudos já haviam sido publicados: “O Projecto Enciclopedista”, “Para uma História da Ideia de Enciclopédia” e “A Enciclopédia no século XX”. Parcialmente reescritos, eles foram agora integrados num conjunto mais amplo e de maior coerência que inclui um texto inédito mais extenso: “Enciclopédias Filosóficas”. Aí pretendo fazer o balanço dos mais importantes projectos de enciclopédia filosófica, de Ramon Lull a Neurath, passando por Comênio, Bacon, Leibniz, o enciclopedismo positivista de A. Comte, ou o enciclopedismo romântico de Novalis e Hegel. Sobretudo Leibniz e Neurath. Quanto a Leibniz, quereria avaliar o lugar ímpar que o pensador de Hannover ocupa na história do enciclopedismo. A Leibniz se deve a mais extrema mas também a mais fecunda formulação do modelo teórico, simultaneamente rigoroso e heurístico, da enciclopédia em quanto estruturação sistemática dos conhecimentos humanos. Com Neurath, a herança é dupla. Por um lado, a firme articulação entre enciclopédia e unidade da ciência; por outro, a defesa da possibilidade de uma unidade plural, não hierárquica, aberta, combinatória, descentrada de si própria”, (Olga Pombo (2012), Os Círculos do Saber, Lisboa: CFCUL/Gradiva, pp. 13-14).*

Indeed, Leibniz's project of a *characterica universalis* (extensively discussed by Olga Pombo in her book LEIBNIZ AND THE PROBLEM OF A UNIVERSAL LANGUAGE (1987)<sup>4</sup> takes from Lull the idea of combinatory. The idea of combinatory allows a non deterministic system, where the "user" builds his own way. The combinatory is a technique aiming to deal with the tension between openness and systematization. However, as Pombo shows, Leibniz also prefigures another way out, namely the method of blind thought. But let me first come to the concept of *characterista universalis* as a symbolic language and let me compare it with what happens today.

*Symbolic notation*, as pointed out Göran Sundholm, plays a crucial role in many disciplines. This gets further refined into the notion of a *formal language*. However, the sentences of such languages may be taken in different ways, namely as interpreted objects for primarily mathematical study, or as interpreted instruments to be taken use of.

Today most work in symbolic language is done from a perspective in which the sentences of formal languages are seen mainly as objects of study. This has not always been so. At its inception by Leibniz, the idea of a *calculus* was meant to make the content transparent. Now, despite the fact that a language with the aims of a universal

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<sup>4</sup> Olga Pombo (1987), *Leibniz and the Problem of a Universal Language*, Münster: Nodus Publikationen, 321 pp. (tradução portuguesa, *Leibniz e o Problema de uma Língua Universal*, Lisboa: ed. JNICT, 1997, 320 pp.)

*characteristica* will always be incomplete and will also evolve – since a complete record of all the elementary concepts required is not available – we can, and that is the force of symbolism, still achieve truth. The idea is that content should be temporarily put aside and activate a mechanical method of calculation, in order to reach, finally, a symbolic result in a purely formal way, but where one could then back-track searching for its conceptual sources. So this is the other way, to go out of the dilemma, not only by the means of a combinatorial structure but by the development of a symbolic temporarily uninterpreted language that should help us to infer even if we can not keep track of the content of all the elementary concepts involved. This has been beautifully discussed by Olga Pombo in the chapter, PENSAMENTE CEGO of her book on Leibniz mentioned above.

Let me suggest now two other points that could be further discussed in relation to how the Leibnizian idea has been received by Frege and how to implement the idea of blind thought. Our author certainly mentions the historical-conceptual path that goes from Lull to Frege (p. 181). However I would like to delve a bit into the shared and unshared aspects of these projects.

Frege elaborated the idea in his *Begriffsschrift*, that is, a *conceptgraphy*, his booklet of 1879, that was consecrated to the development of a content full language with careful meaning-

explanations. Frege shares with Leibniz the idea of developing a symbolic language purported to be put into action.

After WW II symbolic language was not contentfull any more and the technique of temporarily blind calculus converted into mere syntax. This was, as I hope to have conveyed, not at all the idea of Leibniz. Moreover it was neither the one of Frege. Furthermore neither Leibniz nor Frege conceived their *Conceptographie* as a vehicle of communication in the everyday sense; it was a vehicle for winning knowledge and not for everyday communication. This was, in fact, a point of Leibniz's response to Descartes's rejection of the conception of a universal language because of it being ugly and unpractical for everyday communication.

These are the point that Frege and Leibniz share, but let us focus now in their differences that are indeed fundamental. Frege's *conceptography* is built on both a static universe of eternal truths and on a static domain of objects with a universal scope.

A crucial point in Pombo's work is that the method of blind knowledge is linked to the idea that the symbolic notation is subject to historical evolution, something that Frege would never accept. Moreover, since the times of Frege, quantified expressions are understood as standing for quantifiers that are intended to range over the universe of *all objects*. Hence, since all quantifications concern the

same domain, there seems to be no practical or theoretical need to include explicit information concerning the domain of quantification in the quantifier-notation. In such a setting, the role of the predicates is to pick out from an all encompassing universe those subsets of objects which are appropriate for the analysis of the sentence at hand.

Such a strategy has as the side-effect that it liberates the logical form from the subject-predicate. However, the Fregean move is utterly unfaithful to the corresponding natural language expressions – take the formalization of “there are good mathematicians” renders in Frege approach, some individuals are good and these are also mathematicians – and certainly incompatible with Leibniz idea of a dynamic aspect of the *characteristica universalis*. In fact these differences, touch the core of the problematic that I took as central to the book of Pombo.

It is interesting that, in today’s dialogical logic there is a so called formal rule that allows to develop a proof without knowing the meaning attached to atomic formulae involved. Or better, in formal dialogues, a winning strategy (a proof) is built up from plays without knowledge of the meaning of the atomic formulae. This is one not-syntactic way to implement blind calculus. The idea is that you consider the atomic elements of your language as black boxes where their meaning has been kept inside. Thus, if you want to infer, what you do is to see if these elementary sentences required for the conclusion can be won by logical analysis of the premises. In this way we arrive at a conclusion so to say blindly. However, when arrived to

the elementary level, we can open the black box and learn of its content if content has been obtained so far. If not, perhaps the architecture can reveal us some part of it. What I mean is the conceptual (non logical links) of one elementary sentence with the others. The *characteristica universalis* is also an architecture, not a set of unlinked concepts, even in its unfinished state. And in the sense that it builds a conceptual architecture, the *characteristica universalis* can be seen as sharing a fundamental feature of an encyclopaedia.

## EMPIRICAL OR IMPURE TRASCENDENTAL

In the presentation of the previous book of Olga Pombo on the Unity of Science<sup>5</sup>, I understood the relation between the figures of the unity of science and its realizations as an internal relation between the concept and what it signifies. So that encyclopaedias, universities, and museums are the signification of the concept of unity of science. Perhaps one could go so far to say that the figures are *tropes*, that is, individual instantiations of the concept of Unity of Science. The point is that these tropes evolve in time. However, there is more there since also universities and encyclopaedias can be thought of as concepts that admit realizations. Thus, the dynamics of the concept of unity of

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<sup>5</sup> Olga Pombo (2006), *Unidade da Ciência. Programas, Figuras e Metáforas*, Lisboa: Duarte Reis, (2<sup>a</sup> edição Lisboa: CFCUL/Gradiva, 2011).

science can be thought as kind of (an equivalence) class of class of its realizations (tropes). And here we come to the solution of the tension between the dynamic and the static, structural aspects: the concept of Encyclopaedia is an historical condition of the possibility of the development of the unity of science. This beautiful idea – the pearl in my view of the book – Olga Pombo calls *transcendental empirical*. Our author discovers later on that her teacher Fernando Gil had a similar concept, *transcendental impure* (285-86):

*I have tried to think Unity of Science not only as a regulative idea but also as a set of material forms, institutional configurations, cultural incorporations that give body to the systematic coherence of scientific knowledge. Community of wise men, School (University), Library, Museum, Encyclopedia, as I see them, constitute other so many figures of Unity of Science. They realize it day by day, sometimes by subterranean, hidden, latent forms, other times by magestetical, imposing, monumental forms, always through concrete practices, structured procedures, silent but persistent. Each step in the production of a new knowledge is always already prepared by those configurations and inscribed in their articulated relations. That is to say, they constitute the conditions of possibility of scientific production, a kind of “transcendental empirical”, simultaneously material and universal, factual and necessary.*

*You may thus understand how, reading again with great attention Fernando Gil last book “Acentos”, a book with which he wanted to say good by to us and that I have choosen to follow in the elaboration of this*

*testomony, you understand the amazement that I felt when, on page 69, I found Fernando Gil's reference to an "impure transcendental."*<sup>6</sup>

Olga Pombo acknowledges her debt to Foucault's concept of *historic transcendental*, but let me perhaps mention one other possible antecedent. The mathematician and philosopher Jean Cavailles who was killed by nazis 1944 in Arras, (near Lille), proposed that the time - which the early constructivists took as the form *a priori* of mathematical proof-constructions - should be understood as historical time. It is the historical time that provides the *a posteriori* condition for the possibility of the development of mathematics. Cavailles seems to give us the means to close the circle between Leibniz's *Characterica Univesalis* and Pombo's *empirical transcendental*.

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<sup>6</sup> *Nesse sentido, tenho procurado pensar a unidade da ciência, não apenas enquanto ideia reguladora, mas também enquanto conjunto de formas materiais, configurações institucionais, incorporações culturais que encarnam a coerência sistemática dos conhecimentos. Comunidade dos sábios, escola, biblioteca, museu, enciclopédia, constituem a meu ver outras tantas figuras da unidade da ciência. Elas realizam-na dia a dia, por vezes de forma subterrânea, oculta, latente, outras vezes majestosa, imponente, monumental, sempre através de práticas concretas, de procedimentos estruturados, silenciosos mas persistentes. De tal forma que, cada passo na produção de um novo conhecimento está sempre já preparado por estas configurações e inscrito na sua relação articulada. Aos meus olhos, elas constituíram-se assim como condição de possibilidade da produção científica, espécie de "transcendental empírico", simultaneamente material e universal, factual e necessário. Compreendem por isso de que forma, ao reler com cuidadosa atenção esses últimos "Acentos" com que Fernando Gil se quis despedir de todos nós e que eu havia escolhido para me acompanhar na elaboração deste testemunho, compreendem o espanto que senti quando, na página 69 encontrei a referência a um "transcendental impuro" (Olga Pombo (2012), Os Círculos do Saber, Lisboa: CFCUL/Gradiva, p. 285).*

Olga Pombo's idea of an empirical or historic transcendental goes beyond the task of prefiguring a solution to the riddle: it is something like its generalization. The tension between the structural and the dynamic efforts is developed within the historical time. It is a continuous and creative effort to build a structure, though the process, a cycle of circles indeed, never stops and recreates itself once and again and again.

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