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Leibniz on the Representation of Geometrical Objects: The Role of Algebra

Friday 19 September 2025 11:40 (20 minutes)

My talk will be aimed to analyse Leibniz's position in relation to the use of algebra as a means to represent curves and diagrams in geometry. The reference sources (partially not yet edited) will be the ones concerning the geometric symbolism invented by Leibniz, i.e. the *characteristica geometrica*. The analysis will begin with the presentation by Leibniz of the difference between a 'true' geometric symbolism, i.e. able to convey the construction of the solution of a geometric problem without the cumbersomeness of cartesian algebra, and a *speciosa* for quantities, a 'revised' algebra devoid of the problems implied by the method of Descartes. I will try to situate such a distinction within the context of Leibniz's discoveries during his Parisian stay (1672-1676), and I will show its developments in the following texts on *characteristica geometrica*. Eventually, I will try to draw a connection between the representation of geometrical objects in algebra and *characteristica geometrica* with the expression of other mathematical entities (such as numbers) by other representational devices.

Keywords

Characteristica, geometry, algebra, representation, symbolism, Leibniz

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Short Biography

My name is Alessia Salierno. I am a PhD student under a co-tutoring contract between the state university in Milan (Università Statale, Dipartimento di Filosofia Piero Martinetti –Filosofia e scienze dell'uomo) and the University of the city of Paris (Université Paris Cité), namely the laboratory SPHERE, specialised in the history and philosophy of science. I have had the chance to take part to the life of the laboratoire SPHERE, spending half the duration of my PhD in Paris. My tutors are Stefano Di Bella on the side of the University of Milan, and Vincenzo De Risi on the side of SPHERE.

I have graduated (both B.A. and M.A.) in Philosophy at the University of Milan (B.A. grade 110/110 with distinctions, tutored by Paolo Spinicci; M.A. grade 110/110 with distinctions, tutored by Niccolò Guicciardini

Corsi Salvati).

Here is a list of my recent interventions in talks, seminars and conferences:

- 15.05.2024 Atelier Mathesis (SPHERE, Paris), Journée des jeunes chercheurs.
- 10.06.2024 Séminaire doctoral d'études leibniziens (SDEL, the branch of the French Leibnizian society for PhD students; ENS Paris)
- 06-08.08.2024 Workshop Philiumm and Leibniz Edition, GWLB Hannover (Leibniz Archiv, Hannover) -04-
- 05.10.2024 Colloque des doctorants de la SDEL (Université Paris-Nanterre, Nanterre)
- 07.11.2024 Colloquio dei dottorandi e giovani ricercatori della Sodalitas Leibnitiana (on line seminar, Sodalitas Leibnitiana, Italian Leibnizian society). I am currently one of the organisers of this seminar
- 16-18.01.2025 Forum Descartes (Utrecht)

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