

FORSCHUNGSKOLLOQUIUM ZUR WISSENSCHAFTSGESCHICHTE

Prof. Dr. Friedrich Steinle

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Diagrams with Frames: The Birth of the Newtonian Vision of Light

Newton's optical theory was one of the most successful scientific theories ever, significantly contributing to the emergence of the scientific world-view, and yet the question is far from trivial: what was/is it? It is hard to think of Newton's optical theory as an easily delineable entity. Apart from the historical development, one of the difficulties pertains to the optical diagrams: are they part of the theory (as mathematical idealizations) or of the evidence-base, or are they paper tools, heuristic devices, etc.? How to account for them in the reconstruction of the theory? I first look at the role of diagrams in the mature exposition of the theory (the *Opticks*) focusing on novel depictions (e.g. the 'spectral image'), and linking them to lexical items Newton introduced (e.g. spectrum, refrangibility) in order to note the potential inconsistencies that had an effect on the understanding and reception of the theory. Second I trace the evolution of optical diagrammatic conventions in Newton's early notebooks and *Optical Lectures*, to show the various research agendas that needed to be reconciled, and argue that novel drawing conventions co-developed with the textual precization of the theory.

PD Dr. Gábor Áron Zemplén is Associate Professor at ELTE GTI (Budapest) and Senior Researcher at the MTA BTK Lendület Morals and Science Research Group. He lectures at the Budapest University of Technology and Economics. His interests include the history of modificationist colour-theories (16th to 19th centuries), and integrative approaches to History and Philosophy of Science. He is currently in Weimar, studying the reception of Newton's and Goethe's contributions.

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