Report of the International Symposium
Newton & Newton Philosophiae Naturalis Principia Mathematica
Geneva Edition ([1739-1742]1822)

University of Oxford, United Kingdom, September 22-23, 2023

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From 22 to 23 September 2023, the International Symposium for the 200th anniversary of the publication of the peculiar Geneva edition of the Philosophiae Naturalis Principia Mathematica by Isaac Newton (1642-1727) was held at the University of Oxford, Oxford, United Kingdom, especially in the beautiful setting of the building for the Careers Service at 56 Banbury Rd., Park Town, in the Centenary Room, whereas, due to the pandemic, it was not possible to organise in 2022, as it was strongly desired and specifically designed by the organising members as an event to be held in person, rather than a cold Zoom virtual classroom call (although, it was proposed anyway, thus creating a mixed event, due to the high demand for participation from professors and scholars from outside the United Kingdom, but unable to attend in person). Such a huge event would not have been possible without the support of numerous institutions, in particular the University of Lille (France), and two of its research units: the HOPAST, History of Physics and Applied Sciences & Technology and the IEMN, Institut d'Electricque, de Microélectricque et de Nanotechnologie, the British Society for the History of Mathematics, the University of Udine and its Department of Humanities and Cultural Heritage and finally HAPP, the Centre for the History and Philosophy of Physics.

Friday, September 22, 2023

The program presented in these two days of fruitful debate and exchange of opinions was born, as explained by the two professors involved, in 2010 during a seminar on mathematics and physics, at the Italian Naval Academy of Livorno when Professor **Pisano Raffaele** (HOPAST at IEMN, CNRS-University of Lille, France) started a rich and wide-ranging project concerning this text, together with Professor **Paolo Bussotti** (University of Udine, Italy), which was followed by a series of events and publications, intending to improve and innovate the techniques of scientific, historical/literary/philological and other types of investigation of the science of the past, to make the history of science and its foundations exciting for theoretical and experimental research. It was precisely

with the joint intervention of both academic figures that the Symposium opened. In addition to introducing the edition itself, consisting of three volumes and published between 1739 and 1742 in Geneva, it has proved equally important to introduce the three key authors who have drawn up such an extensive system of notes and commentaries, namely the mathematicians belonging to the Order of Minors, Thomas Le Seur (1703-1770), François Jacquier (1711-1788) and above all the Swiss Jean-Louis Calandrini (1703-1758). The latter has proved to be the object of particular attention, as the contributions in the notes he drafted intercept physics, mechanics and mathematical physics. Of great revelation is the possibility of being able to effectively distinguish his notes from those of the other authors, that is, being differentiated and made explicit through the addition of an asterisk at the beginning of the note itself. Nevertheless, as also underlined by contributions by other scholars during the Symposium, this certainly does not seem to be valid in all cases because this graphic sign has revealed other meanings and other openings in the course of research, thus making the reading and the archival approach to them even more complex and difficult to interpret. So much so that even today many of them have not yet received an analysis and paraphrase in physical-mathematical terms and in the history of scientific thought. In any case, the contents of these footnotes have proved to be of significant importance, revealing contributions not only belonging to the fields of physics and mathematics themselves but also adding demonstrations of a clear geometrical, methodological nature, together with contributions concerning discoveries and scientific advances that took place after Newton himself and the first two editions of the Principia (1687, 1713). This is one of the most meaningful and significant aspects of the entire research work presented. Based on the results obtained so far from the incessant work, which began thirteen years ago, both scholars have set out to show some key points of what has been achieved, above all: to establish its scientific genesis and philosophical matrix, to calculate and analyze its development in the field of mathematical physics in the extremely fruitful period of Europe at the end of the first half of the eighteenth century and to underline its impact both from the point of view of science and It is not the same as Newton's methodology that emerges in the course of the unravelling of this Genevan version thanks to what is implied by the three major authors, who would do their utmost to replace the previous "geometry of infinity" originally used by the English scientist with a more recent one, characterized by analytical methods and from which a mindset with typically Jesuit traits would emerge. Afterwards, Prof. Pisano showed some concrete examples of what has been listed up to this point, which have been selected because they are considered particularly relevant in order to highlight the relationships between physics and mathematics, in the light of the Geneva edition. At the end of the speech, Professors Pisano and Bussotti then showed in detail the editorial project

concerning the continuation of what has been studied up to this point, to be carried out shortly through the Oxford University Press, of which our participants were able to have a small taste exclusively in a pre-print format. Of vital importance for a more exhaustive understanding of these volumes, a concept constantly reiterated by those who devote their studies to this project, is to take note of the certainly surprising extension of these notes, and comments, which as a whole prove to be a corpus more consistent even than the original text, an example: as can be easily seen, the mathematicians' commentary on Corollary III introducing the Axiom of Motion is three pages long. Last but not least, the essential question of the language in which these footnotes are constructed: in fact, they concentrate (and so will also be for the future development of this design) on their Anglo-Saxon translation into the English language, which, at the moment, it has unknown contents and implications.

Some questions then concluded the central contribution of Professors Pisano and Bussotti, thus leaving considerable room for discussion and debate that followed it accordingly, offering food for reasoning and inspiration for future collaborations: what do these comments represent for the Geneva edition? Can they be defined almost as a draft of a Newtonian encyclopedia? And if so, why, and how? Jacquier, Le Seur and Calandrini in many mathematical geometrical proofs introduce modern approaches to pose solutions to problems that in Newton's time still represented questions to be solved through the deployment of ancient geometry, certainly of Euclidean type, but how does their analytical reasoning develop, what connotations does it take on when, for example, they introduce the then new concepts of $\sin(\alpha)$ and $\cos(\alpha)$ establishing a relation CA = CD, $\sin(\alpha) = \cos(\alpha)$, which results in the equality cos B = cos D in the calculation of certain correlations between angles and lines that intercept them. Again, how did these three scholars, Jacquier, Le Seur and Calandrini, get acquainted? How did they meet? Why write this commentary in Geneva and not in another European city? What historical-sociological-religious aspects have driven them in their intent and in this specific geopolitical context, represented precisely by this Swiss city? And most importantly: what was the original purpose for which this work was conducted? Why was it necessary and why propose it again, study it even today? Many questions have not yet received a definite answer, amply proving how little is still known about this edition and the ultimate meaning it may have within the history of science and the interrelations between the development of mathematics and physics.

Professor **Paolo Bussotti** then followed this dense premise with contributions about some conceptual areas coming from both the Principia of the first edition and the Genevan Principia, framing a study of a specifically notable case, namely the analysis of the problem of isochrony, carried out in Proposition LIII of Newton's work. Analyzing this problem, one can easily see that in the first

edition of his work, the English scientist already discusses the dilemma and also gives an answer ("Given the squares of curvilinear figures, the forces with which bodies move in given curved lines that can oscillate at equal times must be found"). Thus guarantees a solution that denotes remarkably interesting reasoning, which leads him to the construction of two additional corollaries to this answer, one about the motion of a circular pendulum placed at the action of certain forces and the other concerning the forces acting on a pendulum clock. Concerning this passage in the first edition, the three major authors of the notes of the Geneva version add a daily series of commentaries that take up about four pages of text in which they explain in detail what approach and method Newton applied in order to be able to ask the question and at the same time immediately ask a precise answer. To then introduce an alternative method, more contemporary to their education, which solves the question equally and finally, setting up precisely this procedure, they try their hand at the corroborated description of isochronous curves when the centripetal force is given. However, to conduct these steps successfully, Le Seur, Jacquier and Calandrini found it proper to divide the question into different sections, enriching them from time to time with exquisitely crafted graphic examples. This case has been presented by Professor Bussotti because the body of notes present under this study represents exhaustively precisely a paradigmatic example of what the Geneva edition is and how its three editors conceived and then carried out this enterprise, also highlighting its historical complexity: throughout the four pages cited above, they do not merely take into account Newton's writing and results but also those obtained previously by Christian Huygens, Johann Bernoulli and Hermann, taking into account that even before the question posed by the motion of the pendulum and therefore by its isochronism was taken into analysis by Nicola Cusano and Galileo Galilei at the end of the sixteenth century, but later also by Evangelista Torricelli, René Descartes and many others including Blaise Pascal and Gottfried Wilhelm Leibniz, who came to establish the existence and characteristics of the so-called cycloid. In fact, in 1659 it was Huygens who definitively proved the correlation between the cycloid and the isochronism because the latter is obtained only by cycloidal oscillations. Newton, in the unfolding of Propositions (XLVIII/XLIX) having as their theme precisely these motions, proposes a fixed point between the area of an arc of a cycloid and the radii of the sphere and wheel under consideration. What emerges is a construction of a geometric character that refers to ancient geometry, giving an aura to the Principia of the first edition of the peculiar traits that have their roots in antiquity, even if the use of infinitesimal calculus is introduced here, albeit with great parsimony: it is precisely this attribute that succeeds in separating, albeit subtly, Newton from an ancient geometric attitude. Precisely in the representation of the cycloid of the original author, we can see the contribution

of the three editors who in this edition introduce for implementations to untie the knots left by somewhat cryptic explanations, a distinctive peculiarity of Newton's style. In them, it is Calandrini himself who introduces the kinematics and therefore the instantaneous generation of the cycloid, together with an increase in the complexity of the "evanescent figures": it is known that he is the author of this thanks to the insertion of the asterisk at the beginning of the note itself even if, as appropriately pointed out before, the certainty about the actual authorship of these contributions must be established from time to time as the sign it does not completely guarantee the safety of Calandrini's work.

Following a convivial coffee break in which the debate was accompanied by moments of presentation and acquaintance among the participants, of considerable depth, in particular, turned out to be the "round table" held at the end of the day mainly animated by two deliberately provocative questions: at the dawn of progress in science in 2023, how important it can still be to study Newton's text and above all the huge corpus of notes attached to it, the real object of analysis of the organizers' presentations, and how much these can somehow influence the understanding that we still have today of the development of science in a historical sense, specifically in the European context. Unlike the presentations presented to the members of the listening audience, the "round table" was held without the support of technological supports (Word PDF, Prezi, Word PowerPoint, etc.), but rather interpreted, as was traditionally the custom in the past, as a moment of open dialogue and spontaneous exchange of positions and ideas, in which comments and considerations of considerable historical-scientific depth emerged. Without preparations. Certainly, in the light of what has been heard during the main expositions of the day, some of the most interesting have tried to formulate concrete hypotheses about the original nature and purpose of the footnotes of this edition, which, as we have already seen, also occupy more space than the original Newtonian writing. Since the research of the interested parties is still open, some questions have remained without a concise or exhaustive explanation, especially concerning the purpose and purpose of these notes, the authors of which themselves have remained evasive. This shows how this characteristic area, theme, is a continuous "work in progress", completely open to interpretations, additions, revisions and so on. This is precisely the aim of the latest project by Professors Pisano and Bussotti, presented for the first time during these two days, in which once again research becomes a key concept for the reconstruction and epistemic understanding of the history of science and its evolution, interweaving natural philosophy, physics, mathematics, accompanied by their respective historical-philosophical fields. And of course, a pretty massive dose of geometry.

At the end of this happy moment of free discussion there followed the private gala dinner at the Randolph Hotel by Graduate Hotels, 21 Beaumont St.,

Oxford, which was enormously appreciated by all who attended, as a series of delicious courses of contemporary haute cuisine, gracefully and lightly accompanied a parlour moment of quiet academic exchange, which made it possible to bring to the surface with more informal traits the issues addressed during the day, with particular reference to extensive clarifications about the new research project not yet started, mentioned above. In addition to this, it was an opportunity to deepen the knowledge between scholars from different fields coming not only from the European framework but also overseas, Boston, Massachusetts, and Chicago, Illinois, United States, specifically, thus giving rise to knowledge and consolidating, where there already existed, fundamental friendships for anyone who approaches or already lives within research paths devoted to internationality, interdisciplinarity and cooperation between different countries.

Saturday, September 23, 2023

The second and last day of the Symposium began with another informal occasion, which guaranteed the happy premises laid the day before, between one tasting and another of excellent English tea and small pastries, provided by the catering service that took care of these circumstances.

After that, the work was brilliantly resumed by the introduction in the plenary session by Professor Dr **Beeley Philip** (University of Oxford, United Kingdom) who announced the change of course of the day, that is the consideration of Newton and "Newtonianism" under a gaze that covers, despite the first day which was much more specific venturing only into the technical aspects and not of the Geneva edition of the Principia, instead interdisciplinary areas, this time interweaving history, religion, astronomy as well as the debate on these issues in a European context permeated by different philosophical attitudes and fervent currents of thought.

The first session was opened by Professor **Wooton David** (University of York, United Kingdom), who proposed a complex but enormously interesting topic: The God of Newton and Voltaire, trying his hand at theology and metaphysics, but not only. One of the key themes is certainly the materiality and mortality of the soul that Voltaire faced after being "converted" to Newtonianism during his stay in England (1726-28) of which he wrote an in-depth commentary in the *Lettres philosophiques* (or *Letters concerning the English Nation*) of 1734, especially in the *Letter of the soul*. In the course of these works, it is particularly compelling how Voltaire himself, speaking of religion, contradicts himself several times, especially when the question of God, his free will, his being or not the creator of the universe is openly addressed, all strongly linked to the dispute about the status of the soul and the morality that would follow for man and to

the intrinsically tortuous matter of necessity/immanence. In 1738, the French philosopher published the *Elements of Newton's Philosophy*, a work that has a primary and particularly key role in the introduction of the physics of the English scholar in the French-speaking field. These were followed by *Newton's Metaphysics* in 1741, which is presented as a comparison between the vision of Isaac Newton and Gottfried Wilhelm Leibniz, also generating a good part of the private conversations between Voltaire himself and Madame Émilie Du Châtelet, who on the contrary, in this area, was a great supporter of Leibniz. This text, however, represents the only one published in which he gives arguments in support of deism, thus agreeing on his labelling as a deist throughout his life and works, even if, very recent studies, held mainly by Gerhardt Stenger, have shown that towards the twilight of his life, he became a sort of modified Spinozian, but in some respects, because considered as one of the few has given an effective meaning to the connection between the soul and the material body even if Voltaire maintains a Christian position on this aspect, giving the reason for it as evidence, proof, of its descent from original sin, thus also introducing the element of the constitution of matter itself and of creation in terms of constant pain and mourning for men, who would therefore have invented morality on their own, also taking into account that God would indeed have created the world but then would no longer take over human issues, spheres, welfare. Professor Wooton then continued his report by highlighting some fundamental concepts for the justification of his position, namely that: Voltaire in *Newton's Metaphysics* is not writing a review of it but that it is already a critique, that the first unpublished edition of the *Treatise on Metaphysics* of 1734 implies deeper critiques of Newtonian deism which he had not been able to send to print in 1740/41, the passages by which Voltaire continued to depart from *Newton's Metaphysics* until he ended up being much closer to pantheism than to deism, and that the consequence that he accepted, As a result of this departure from a natural theistic religion, philosophers must adopt a measure of self-censorship when discussing key metaphysical doctrines, since belief in providential God (which he accepted) was crucial to the social order. Professor Wooton, however, did not limit himself to this but went further, proposing a clarification of the evolution of Voltaire's thought as fundamentally different from that of Stenger, giving rise to an emphasis on the importance not only for Voltaire himself but also for French philosophers in general of the work *Divine Legation of Moses* (1738-41) by William Warburton, especially in its translation and adaptation into French by Étienne de Silhouette (1742). In addition, Professor Wooton has shown a new approach to the evolution of Voltaire's religious positions, both to highlight our understanding of the crisis of deism and rational Christianity in the mid-century and of the reception of Spinozism in France accompanied by the rapid growth of materialism, topics of great interest in the recent works of Jonathan Israel.

After the detachment proposed by the second plenary session of the day, chaired once again by Professor Paolo Bussotti, it was the turn of Professor **Marcacci Flavia** (Pontifical Lateran University, Vatican City), who introduced two further significant aspects of the Geneva edition of the Principia, namely the cosmological and astronomical implications contained essentially in Propositions XIII-XIV, which are found in the third volume of that edition. This time, unlike the situations examined so far, Newton's general framework of action changes as the consequences that his enunciation of universal gravity has thrown into the correct world system come into play, which in the mid-seventeenth century still provided for the systems of Tycho Brahe, then perhaps the most fashionable competitor of the Jesuit dimension, to be strongly opposed. And Copernicus, especially in Jesuit circles. For this reason, Newton addresses directly the controversy generated in the third volume of the Principia to resolve it definitively, presenting a conclusion in continuity with the methods of classical astronomy, establishing the reiteration that the first model of observation of the world was constructed with the naked eye, as argued in the *monitum* that follows the *declaratio*, a very engaging section as it was written by the three editors (Le Seur, Jacquier, Calandrini) who literally move on to the statement about their positions regarding the Principia. Only then are explanations about refraction, stellar parallax and the operation of the refracting telescope introduced. At this point, Newton can proceed to the question of *de mundi sistemate*, placing as a necessary basis for a correct resolution the *regulae philosophandi*, the list of crucial *phenomena*, and further mathematical propositions. The focal point of the reasoning is that the world needs any point to function as a centre and, above all, that it is stationary. Newton, on the other hand, is aware of the implications of this statement, which must be defended: opinions are divided into two levels, between those who believe that this centre is the earth and those who believe it is the sun (which, in this text, is explicitly confirmed only in Hypothesis II of Proposition XXVIII). For this reason, the above propositions and the *scholium* are crucial: they concern the elliptical shape of planetary orbits and study the aphelion point and the orbital nodes of planets and comets, whereas, however, these questions had already been strongly opposed by the Jesuits themselves, Giovanni Battista Riccioli in particular, a fervent supporter of a geo-heliocentric system in which epicycles, ellipses and spirals describe the motion of celestial objects, in an attempt to safeguard the ancient accepted system while introducing the mathematical innovations introduced after Copernicanism, describing "spiralized" heavens. Despite this, in this Geneva edition, it is Calandrini himself in his commentary who dampens Newton's own enthusiasm, correcting some of his calculations and downsizing his deductions: the focus and the main objective of Professor Marcacci's lecture segment is precisely the analysis of the coherence and consistency of Calandrini's objections to Newton's astronomical

interpretations about the science of motion. In this section of the Principia, there also emerges a very fascinating component that had not yet appeared in other sections of the volume, namely that the three great commentators separate themselves for a certain moment from being simply talented mathematicians and physicists but try to be more philosophical and to behave like the great thinkers of the past and introduce comments concerning the rules by which philosophy should be used in science and what they are supposed to be. Philosophical hypotheses can be useful at this point of the discussion, especially discussing Newton's statement about the lack of effective measurements of the stars, for which purely theoretical and philosophical speculations would then inevitably take over, aimed at an approximation of what physics still set as a limit.

The lunch break then served as an interlude between Professor Marcacci's speech and the activities that then continued in the afternoon.

Professor **Beeley Philip** took the floor again, this time as a speaker and delved into the Swiss-style readings that Newton received, considering the Geneva edition of the Principia pre-eminently in the context of the circuit of scientific communication between Jean-Louis Calandrini and the Swiss mathematician, also from Geneva, Gabriel Cramer (1704-1752), who were compared by contemporaries to the mythological figures of Castor and Pollux because they were inseparable from an early age. This closeness continued when they were both assigned to the newly created chair of mathematics at the Acadèmie de Genève in 1774 and the schedule that was organized allowed him to better divide his academic responsibilities so that when one of the two scholars would be busy teaching, the other would have time to travel and extend his circle of knowledge within the scientific community. Thus, proving fruitful relationships and dialogues, both near and far, travelling mainly between Basel, Paris and London. Among Cramer's most prominent acquaintances are Nikolaus Bernoulli, Leonard Heuler, Moivre, Halley and Maupertis. Thanks to his extensive correspondence with Basel and his impeccable reputation as a mathematician, he was later commissioned to publish the works of Johann Bernoulli and the Miscellaneous works of Jacob Bernoulli. Calandrini's on the other hand, was (and still is) associated mainly with the Geneva edition of Newton's Principia, as has been pointed out repeatedly, in which he contributed one of the most significant commentaries. Professor Beeley then highlighted once again the numerous problems related to the production of this edition, as has already been noted, but in this presentation, he wanted to emphasize the relationships that seem to exist between the three publishers, especially the very high consideration that Le Seur and Jaquier, both more than established mathematicians, reserve for Calandrini himself and his additions during the work on the Principia. In particular, in the preface to them, both point out with great vivacity and enthusiasm the enormous dedication that Calandrini has

reserved for his duties, not only concerning the painstaking control of the various engraved figures and the correction of typographical errors, but also in the drafting of his commentary on the conic sections. In addition, both add remarks about his explanations to his notes and to some of their notes whose clarity did not emerge at once. However, there is a strong suspicion that these praises do not go all the way and do him justice because the evidence that has appeared in recent years would show that in reality, the contributions of Calandini alone have been many more and much more in-depth. The fundamental aim of Professor Beeley's talk, however, remains to show and analyze how the network of knowledge in the scientific community has contributed, and possibly to what extent, to this edition of the Principia in which the extensive and dense correspondence with the most prominent figures mentioned above has taken part. In conclusion, it is also significant to show if and how this network has played a considerable weight role in the decisions made by the editors to include commentaries of various kinds and on the nature of Calandrini's contributions.

Subsequently, the floor passed to Professor **Sarah Hutton** (University of York, United Kingdom) who, on the other hand, emphasized the debate concerning Newtonianism in Europe, especially in France, England and Italy, considering as a centre of attention the criticisms of Emilie Du Châtelet, a figure already mentioned with special regard to the field covered by Voltaire, addressed to James Jurin. The exchange of letters between Du Châtelet and Jurin was particularly animated by the former's criticism of the theory of the latter, better known as "Achilles' argument", directed precisely against the *forces vives* that she instead advocated in her compendium Institutions of Physics. The subsequent publication in Italy of the critique by Madame Du Châtelet, which took place in 1747, made possible thanks also to the intercession of Father Jacquier, is indicative both of the complexities of the scientific interconnections and of the problems that reverberate through the republic of scientific letters between the publication of the Geneva edition and the enormous industrial work of Du Châtelet herself. Concerning the translation into French of Newton's Principia Mathematica: an arduous and complex work in every respect because although it was written in Latin, Newton's language is thorny and often incomprehensible, so only a great Latinist of his calibre could have grasped every singular nuance of the original to translate it into French, with the ultimate goal of making it a more usable and immediately understandable work. In order to be able to do this, she does not limit herself to "only" translation, a work that is already long and, as has been pointed out, harsh, but also creates a mathematical commentary that makes considerable use of analytical formulas in which a rather significant change in the use of the discipline is already denoted, an evolution, or expedients such as the integral and differential notation are added. Thus, converting the almost archaic geometric method used by the English studio, into an analytical

discourse rendered in full, also exploiting elements of infinitesimal calculus of the Leibnizian type.

In the end, Professor Hutton's speech was replaced by that of Professor **Lewin Chris G.** (Institute and Faculty of Actuaries, United Kingdom), which focused on the period of the second publication of Newton's Principia (1685), investigating a little-known aspect of this period of fervent intellectual activity, namely the ignition of his interest in composite tables of information for the renovation and acquisition of properties, concessions and leases owned by colleagues and cathedrals. These plates were produced by George Mabbut, a butler or superintendent at King's College, Cambridge, and certified as corrected by Newton himself on September 10, 1685. They were then published anonymously the following year, again in Cambridge, with this official certification affixed. Professor Lewin focused specifically on the contents, background and authority of these certified plates, then giving them a posthumous historical reinterpretation that wants to emphasize exactly how these are better known as the Tablets of Sir Isaac Newton, as reported later through their numerous re-editions, and how they became the subject of controversy in 1731 when an anonymous critic suggested that such boards would have excessively and unfairly favoured cathedrals and their colleagues, to the detriment of tenants. In a final analysis, Professor Lewin posed the question of how these considerations might have influenced its original publication of 1686 and the general involvement of Newton himself.

The last speech of the day, which ended the activities of the two-day International Symposium on the Geneva edition of Newton's Principia, was that of Professor **Mandelbrote Scott** (University of Cambridge, United Kingdom). Specifically, he pointed out the presence of many editions, as well as translations, of the same text that appeared between 1687 and 1822 and the presentation he made of them, aimed precisely at analyzing their form and content, also taking into account their position within the market concerning the circulation of works of a mathematical nature throughout the eighteenth century. In addition to this, the increasingly critical changes introduced by its author and by the various publishers, many of whom worked directly side by side with Newton, have been underlined and highlighted. In researching this topic, the joint work of translators and commentators has not been neglected, especially to the extent that they have contributed to the transformation and elaboration of the future history of the text, while also keeping in mind the priorities of the publishing houses that sponsored the distribution of Newton's work. In doing so, there has also been a more or less marked change in attitudes towards the various mathematical scholarships and, in particular, towards other mathematical publications and studies through an average obtained on a large works scale, written in Latin. The example of the use of single surviving copies of the Principia is another theme

that Professor Mandelbrote has dealt with in order to support the thesis concerning the diffusion of Newtonian ideas and the fascination aroused by these particular editions. In addition, to conclude, he also dwelt on the aspects of the pedagogical environment in which studies on Newton's work have developed over time, with the firm hope that the meaning and relevance of these works may emerge in all their scope, also making valuable additions to the economic-material context for the interpretation of Newton's work in the field of mathematics.

With this wish, which was certainly intended to be a good omen for future research activities, the first international conference on Newton and the Geneva edition of his Principia was completed with great success both in terms of the quality of the talks proposed, and of participation in presence and online, as the chairman happily highlighted, as well as the real organizer, Professor Pisano Raffaele, who, together with his close collaborator Professor Paolo Bussotti, took the floor again to draw the strings of two days of intense academic activity but to thank once again all those who took part directly and indirectly, thus combining a nucleus of formal and methodological historical-scientific research on the one hand and scientific studies on the European/abroad side on the other, with a participatory approach that involved problem-solving by bystanders and a round table in which the latest evidence on the subject and multidisciplinary expertise were mobilized. Furthermore, the multiple experiences of the participants in the field were carefully and diligently placed at the centre of attention, with the sharing and development of their perspectives, or the development of a concrete and transversal case study to the themes, which would not be limited only to the disciplines directly involved but which would open doors for dialogues projected to the deep involvement of others. These goals have certainly been achieved with enormous success, as enthusiastically emphasized by Professors Pisano and Bussotti, thus foreshadowing excellent future developments in the analysis of the Geneva edition of the Principia.