Writing a biography of a book ? The case of Gabriel Cramer's *Introduction à l'analyse des lignes courbes algébriques*

Thierry JOFFREDO

PhD Student, Archives Poincaré, Université de Lorraine, Nancy
thierry.joffredo@univ-lorraine.fr

Novembertagung 2014, Nancy

Plan

Plan

Plan

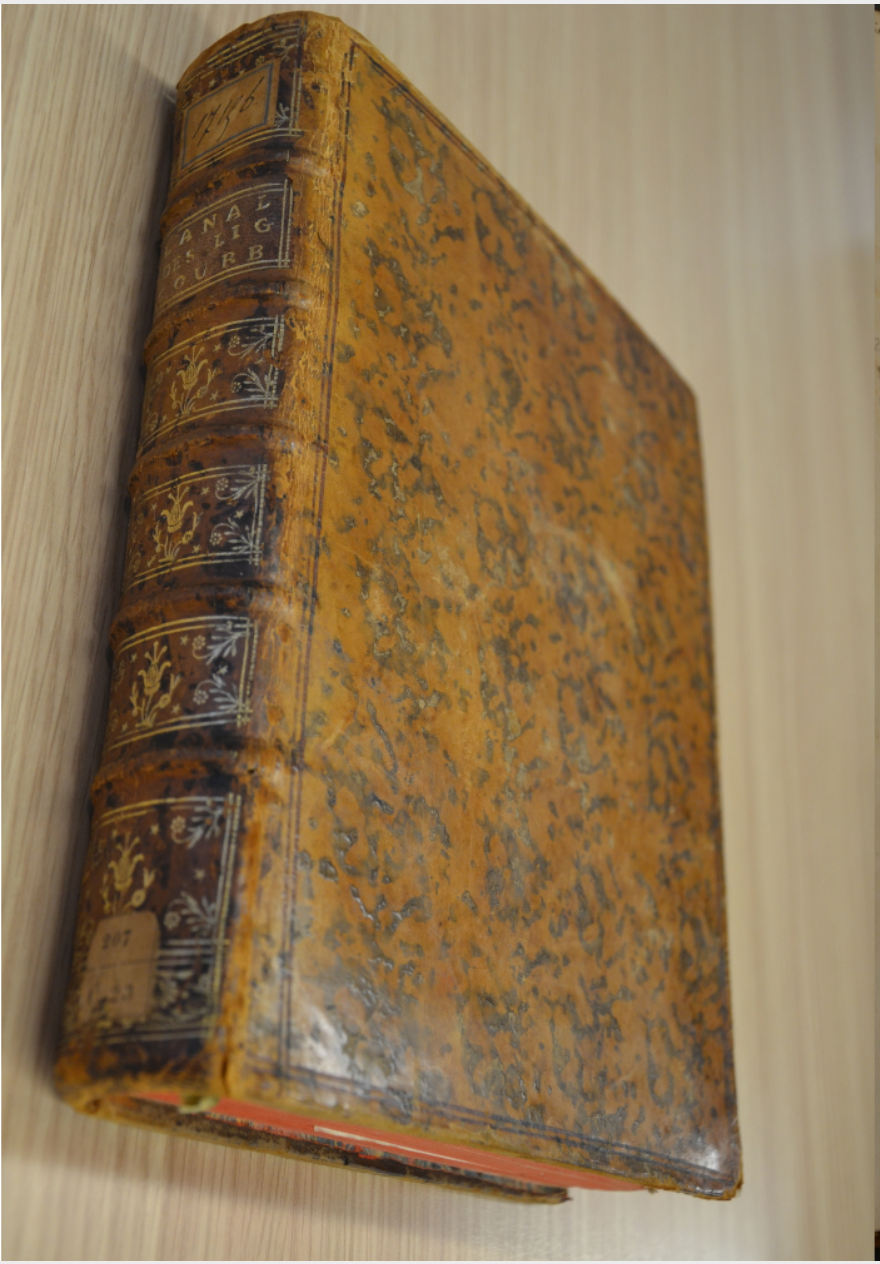
Plan

Introducing the *Introduction*

Gabriel Cramer (1704-1752)

Lifetime of a book : conceptual and material history

Conclusion : methodological issues



INTRODUCTION
A
L'ANALYSE
DES
LIGNES COURBES
ALGÉBRIQUES.

Par

GABRIEL CRAMER,

Professeur de Philosophie & de Mathématiques; des Académies & Sociétés Royales de Londres, de Berlin, de Montpellier, de Lyon, & de l'Académie de l'Institut de Bologne.

A GENEVE,

Chez les FRERES CRAMER & CL. PHILIBERT.

M D C C L.

Introduction à l'analyse des lignes courbes algébriques
(Gabriel Cramer, Genève, 1750)

- Classification of the algebraic curves of the first five orders, extending Newton's works on lines of the third order
- Almost 700 pages, 33 boards of drawings, 13 chapters and 3 short (but famous !) appendices
- Infinite branches, singular points, tangent lines, extrema, curvature, sketching...
- Totally calculus free ! Algebraic methods only
- For beginners : numerous and various examples

Introduction à l'analyse des lignes courbes algébriques
(Gabriel Cramer, Genève, 1750)

- Classification of the algebraic curves of the first five orders, extending Newton's works on lines of the third order
- Almost 700 pages, 33 boards of drawings, 13 chapters and 3 short (but famous !) appendices
- Infinite branches, singular points, tangent lines, extrema, curvature, sketching...
- Totally calculus free ! Algebraic methods only
- For beginners : numerous and various examples

Introduction à l'analyse des lignes courbes algébriques
(Gabriel Cramer, Genève, 1750)

- Classification of the algebraic curves of the first five orders, extending Newton's works on lines of the third order
- Almost 700 pages, 33 boards of drawings, 13 chapters and 3 short (but famous !) appendices
- Infinite branches, singular points, tangent lines, extrema, curvature, sketching...
- Totally calculus free ! Algebraic methods only
- For beginners : numerous and various examples

Introduction à l'analyse des lignes courbes algébriques
(Gabriel Cramer, Genève, 1750)

- Classification of the algebraic curves of the first five orders, extending Newton's works on lines of the third order
- Almost 700 pages, 33 boards of drawings, 13 chapters and 3 short (but famous !) appendices
- Infinite branches, singular points, tangent lines, extrema, curvature, sketching...
- Totally calculus free ! Algebraic methods only
- For beginners : numerous and various examples

Introduction à l'analyse des lignes courbes algébriques
(Gabriel Cramer, Genève, 1750)

- Classification of the algebraic curves of the first five orders, extending Newton's works on lines of the third order
- Almost 700 pages, 33 boards of drawings, 13 chapters and 3 short (but famous !) appendices
- Infinite branches, singular points, tangent lines, extrema, curvature, sketching...
- Totally calculus free ! Algebraic methods only
- For beginners : numerous and various examples

Introduction à l'analyse des lignes courbes algébriques
(Gabriel Cramer, Genève, 1750)

- Classification of the algebraic curves of the first five orders, extending Newton's works on lines of the third order
- Almost 700 pages, 33 boards of drawings, 13 chapters and 3 short (but famous !) appendices
- Infinite branches, singular points, tangent lines, extrema, curvature, sketching...
- Totally calculus free ! Algebraic methods only
- For beginners : numerous and various examples

Biographical approach to the *Introduction* ?

"*La difficulté et l'intérêt d'une biographie historique seront de reconstruire les* ***différentes identités d'un acteur*** *en suivant ses* ***trajectoires dans différents champs*** *(disciplinaires, professionnels, académiques, politiques, ...) qui apparaissent pertinents lors de la problématisation du projet biographique.*"
Nabonnand et Rollet 2012, p. 13-14

What if this actor is... non-human ?

Biographical approach to the *Introduction* ?

"*La difficulté et l'intérêt d'une biographie historique seront de reconstruire les* ***différentes identités d'un acteur*** *en suivant ses* ***trajectoires dans différents champs*** *(disciplinaires, professionnels, académiques, politiques, ...) qui apparaissent pertinents lors de la problématisation du projet biographique.*"
Nabonnand et Rollet 2012, p. 13-14

What if this actor is... non-human ?

Biographical approach to the *Introduction* ?

Conceptual and material history of the *Introduction* :

- How does it take place in the corpus of algebraic curves studies ?
- Can we say something about the author's intentions ?
- How does the mathematical subject is treated (topics, methods, results) ?
- What does it learn us about the elaboration and dissemination of a scientific book in the mid-18th century ?
- How has it been read and received by its contemporary and later readers ?

Biographical approach to the *Introduction* ?

Conceptual and material history of the *Introduction* :

- How does it take place in the corpus of algebraic curves studies ?
- Can we say something about the author's intentions ?
- How does the mathematical subject is treated (topics, methods, results) ?
- What does it learn us about the elaboration and dissemination of a scientific book in the mid-18th century ?
- How has it been read and received by its contemporary and later readers ?

Biographical approach to the *Introduction* ?

Conceptual and material history of the *Introduction* :

- How does it take place in the corpus of algebraic curves studies ?
- Can we say something about the author's intentions ?
- How does the mathematical subject is treated (topics, methods, results) ?
- What does it learn us about the elaboration and dissemination of a scientific book in the mid-18th century ?
- How has it been read and received by its contemporary and later readers ?

Biographical approach to the *Introduction* ?

Conceptual and material history of the *Introduction* :

- How does it take place in the corpus of algebraic curves studies ?
- Can we say something about the author's intentions ?
- How does the mathematical subject is treated (topics, methods, results) ?
- What does it learn us about the elaboration and dissemination of a scientific book in the mid-18th century ?
- How has it been read and received by its contemporary and later readers ?

Biographical approach to the *Introduction* ?

Conceptual and material history of the *Introduction* :

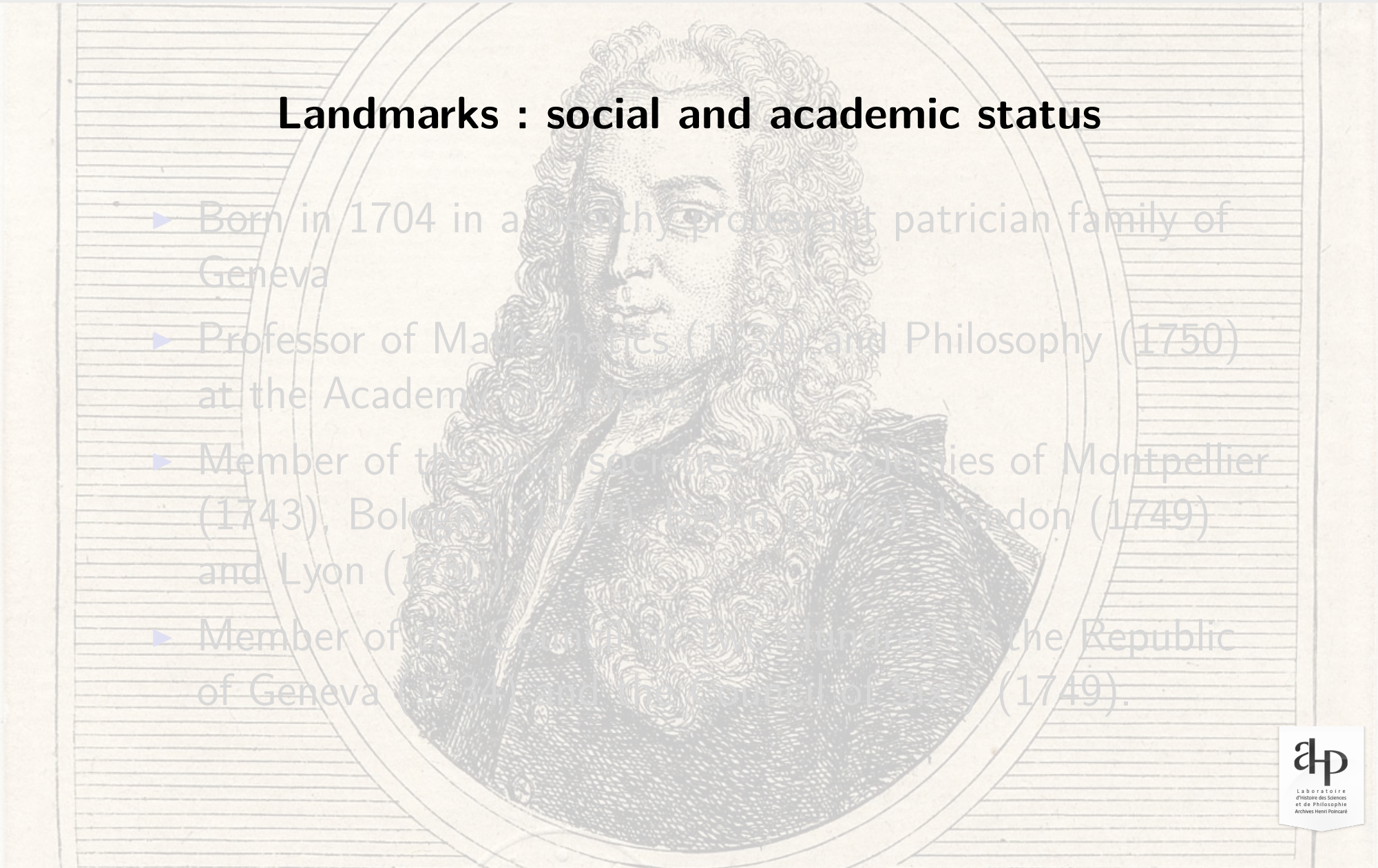
- How does it take place in the corpus of algebraic curves studies ?
- Can we say something about the author's intentions ?
- How does the mathematical subject is treated (topics, methods, results) ?
- What does it learn us about the elaboration and dissemination of a scientific book in the mid-18th century ?
- How has it been read and received by its contemporary and later readers ?

Biographical approach to the *Introduction* ?

Conceptual and material history of the *Introduction* :

- How does it take place in the corpus of algebraic curves studies ?
- Can we say something about the author's intentions ?
- How does the mathematical subject is treated (topics, methods, results) ?
- What does it learn us about the elaboration and dissemination of a scientific book in the mid-18th century ?
- How has it been read and received by its contemporary and later readers ?

Landmarks : social and academic status



- Born in 1704 in a wealthy protestant patrician family of Geneva
- Professor of Mathematics (1734) and Philosophy (1750) at the Academy of Geneva
- Member of the Royal Societies of Sciences of Montpellier (1743), Bologna (1749), London (1749) and Lyon (1750)
- Member of the Council of Two Hundred of the Republic of Geneva (1734) and Syndic (1750).

Landmarks : social and academic status

- Born in 1704 in a wealthy protestant patrician family of Geneva
- Professor of Mathematics (1734) and Philosophy (1750) at the Academy of Geneva
- Member of the Royal Societies of Sciences and Academies of Montpellier (1743), Bologna (1749), Berlin (1749), London (1749) and Lyon (1750)
- Member of the Council of Two Hundred of the Republic of Geneva (1734) and Syndic of the Republic (1749).

Landmarks : social and academic status

- Born in 1704 in a wealthy protestant patrician family of Geneva
- Professor of Mathematics (1734) and Philosophy (1750) at the Academy of Geneva,
- Member of the Royal Societies of Sciences of Montpellier (1743), Bologna (1745), Berlin (1746), London (1749) and Lyon (1750).
- Member of the Council of Two Hundred of the Republic of Geneva (1734) and of the Council of Sixty (1749).

Landmarks : social and academic status

- Born in 1704 in a wealthy protestant patrician family of Geneva
- Professor of Mathematics (1734) and Philosophy (1750) at the Academy of Geneva,
- Member of the royal societies or academies of Montpellier (1743), Bologna (1744), Berlin (1746), London (1749) and Lyon (1750),
- Member of the Council of Two Hundred of the Republic of Geneva (1734) and Syndic (1749).

Landmarks : social and academic status

- Born in 1704 in a wealthy protestant patrician family of Geneva
- Professor of Mathematics (1734) and Philosophy (1750) at the Academy of Geneva,
- Member of the royal societies or academies of Montpellier (1743), Bologna (1744), Berlin (1746), London (1749) and Lyon (1750),
- Member of the Council of Two Hundred of the Republic of Geneva (1734) and the Council of Sixty (1749).

Landmarks : scientific activities

- Published writings : *Introduction à l'analyse des lignes courbes algébriques* (1750), plus a few dissertations, memoirs or letters on various topics (sound, history of mathematics, astronomy...)
- Editor of Christian Wolff's *Elementa matheseos universalis* (1732), Jacob Bernoulli's complete works (1744), Maclaurin's correspondence between Jean and Daniel Bernoulli (1745),
- Active correspondence with J. Bernoulli, Stirling, Buffon, Dortous de Mairan, Clairaut, d'Alembert, Euler, Condillac, etc.

Landmarks : scientific activities

- Published writings : *Introduction à l'analyse des lignes courbes algébriques* (1750), plus a few dissertations, memoirs or letters on various topics (sound, history of mathematics, agronomy, ...).
- Editor of Chr[illegible] *theseos universalis* (1[illegible]) and Jacob Bernoulli's complete works (1744), [illegible] correspondence between Jo[illegible] (1745),
- Active correspondent with [illegible] Stirling, Buffon, Dort[illegible] Clairaut, d'Alembert, Euler, Condillac, etc.

Landmarks : scientific activities

- Published writings : *Introduction à l'analyse des lignes courbes algébriques* (1750), plus a few dissertations, memoirs or letters on various topics (sound, history of mathematics, agronomy, ...).
- Editor of Christian Wolff's *Elementa matheseos universalis* (1732-1741), Johann I and Jacob Bernoulli's complete works (1742 & 1744 resp.), Correspondence between Johann I Bernoulli and Leibniz (1745),
- Active correspondence with Bernoulli, Stirling, Buffon, Dortous de Mairan, Clairaut, d'Alembert, Euler, Condillac, etc.

Landmarks : scientific activities

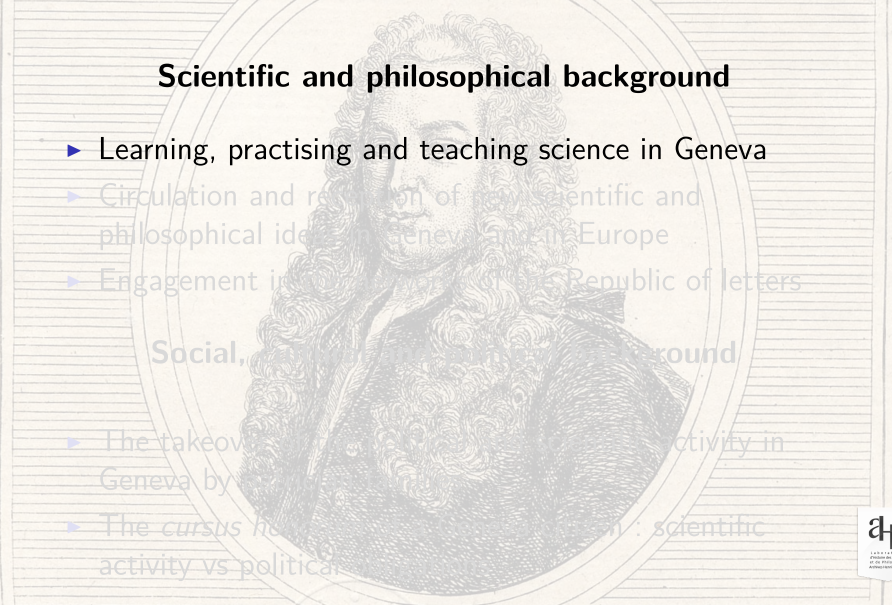
- Published writings : *Introduction à l'analyse des lignes courbes algébriques* (1750), plus a few dissertations, memoirs or letters on various topics (sound, history of mathematics, agronomy, ...).
- Editor of Christian Wolff's *Elementa matheseos universalis* (1732-1741), Johann I and Jacob Bernoulli's complete works (1742 & 1744 resp.), Correspondence between Johann I Bernoulli and Leibniz (1745),
- Active correspondence with the Bernoullis, Stirling, Buffon, Dortous de Mairan, Clairaut, d'Alembert, Euler, Condillac, etc.

Scientific and philosophical background

- Learning, practising and teaching science in Geneva
- Circulation and reception of new scientific and philosophical ideas in Geneva and in Europe
- Engagement in the networks of the Republic of letters

Social, cultural and political background

- The takeover of the patriciate on scientific activity in Geneva by the Calvinists
- The *cursus honorum* and the reformation : scientific activity vs political engagement



Scientific and philosophical background

- Learning, practising and teaching science in Geneva
- Circulation and reception of new scientific and philosophical ideas in Geneva and in Europe
- Engagement in the network of the Republic of letters

Social, cultural and political background

- The takeover of the political and scientific activity in Geneva by patrician families
- The *cursus honorum* of a Geneva citizen : scientific activity vs political obligations

Scientific and philosophical background

- Learning, practising and teaching science in Geneva
- Circulation and reception of new scientific and philosophical ideas in Geneva and in Europe
- Engagement in the networks of the Republic of letters

Social, cultural and political background

- The takeover of the patriciate on scientific activity in Geneva by the Calvinists
- The *cursus honorum* and the representation : scientific activity vs political activity

Scientific and philosophical background

- Learning, practising and teaching science in Geneva
- Circulation and reception of new scientific and philosophical ideas in Geneva and in Europe
- Engagement in the networks of the Republic of letters

Social, cultural and political background

- The takeover of [illegible] scientific activity in Geneva by [illegible]
- The *cursus honorum* and [illegible] : scientific activity vs political [illegible]

Scientific and philosophical background

- Learning, practising and teaching science in Geneva
- Circulation and reception of new scientific and philosophical ideas in Geneva and in Europe
- Engagement in the networks of the Republic of letters

Social, cultural and political background

- The takeover of [illegible] scientific activity in Geneva by [illegible]
- The *cursus honorum* [illegible] : scientific activity vs political [illegible]

Scientific and philosophical background

- Learning, practising and teaching science in Geneva
- Circulation and reception of new scientific and philosophical ideas in Geneva and in Europe
- Engagement in the networks of the Republic of letters

Social, cultural and political background

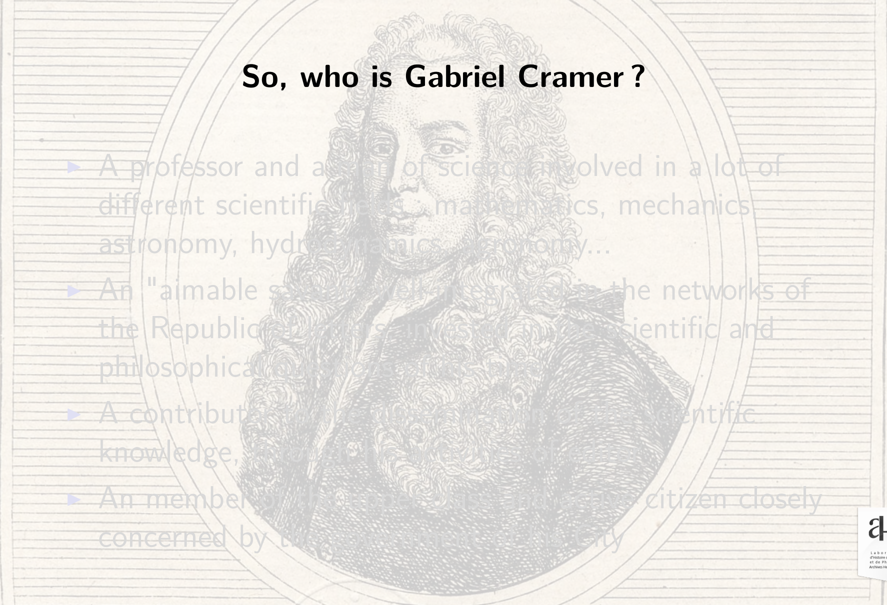
- The takeover of the political and scientific activity in Geneva by patrician families
- The *cursus honorum* of the patrician : scientific activity vs political [illegible]

Scientific and philosophical background

- Learning, practising and teaching science in Geneva
- Circulation and reception of new scientific and philosophical ideas in Geneva and in Europe
- Engagement in the networks of the Republic of letters

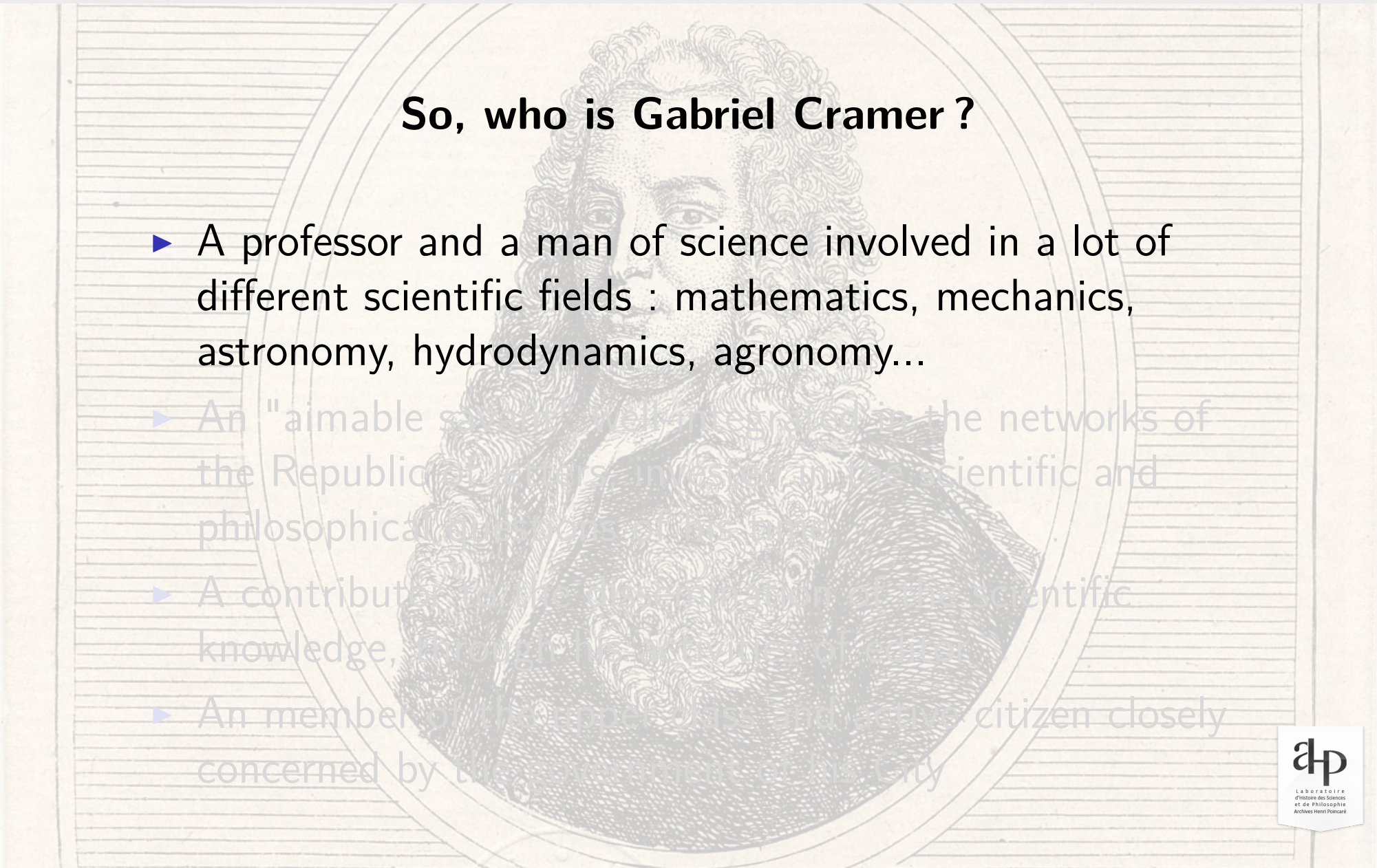
Social, cultural and political background

- The takeover of the political and scientific activity in Geneva by patrician families
- The *cursus honorum* of a Geneva citizen : scientific activity vs political obligations



So, who is Gabriel Cramer ?

- A professor and a man of science involved in a lot of different scientific fields : mathematics, mechanics, astronomy, hydrodynamics, agronomy...
- An "aimable savant", well-integrated in the networks of the Republic of letters, invested in the scientific and philosophical questions of his time,
- A contributor to the dissemination of the scientific knowledge, through his activities of editor
- An member of the upper class and active citizen closely concerned by the government of his City



So, who is Gabriel Cramer ?

- A professor and a man of science involved in a lot of different scientific fields : mathematics, mechanics, astronomy, hydrodynamics, agronomy...
- An "aimable savant" well integrated in the networks of the Republic of Letters involved in scientific and philosophical debates of his time
- A contributor to the progress of scientific knowledge, through his publications
- An member of the corps social and political, citizen closely concerned by the management of the city

So, who is Gabriel Cramer ?

- A professor and a man of science involved in a lot of different scientific fields : mathematics, mechanics, astronomy, hydrodynamics, agronomy...
- An "aimable savant" well-integrated in the networks of the Republic of letters, invested in the scientific and philosophical questions of his time,

So, who is Gabriel Cramer ?

- A professor and a man of science involved in a lot of different scientific fields : mathematics, mechanics, astronomy, hydrodynamics, agronomy...
- An "aimable savant" well-integrated in the networks of the Republic of letters, invested in the scientific and philosophical questions of his time,
- A contributor to the dissemination of the scientific knowledge, through his activities of editor
- An member of the Geneva's political citizen closely concerned by the [illegible] society

So, who is Gabriel Cramer ?

- A professor and a man of science involved in a lot of different scientific fields : mathematics, mechanics, astronomy, hydrodynamics, agronomy...
- An "aimable savant" well-integrated in the networks of the Republic of letters, invested in the scientific and philosophical questions of his time,
- A contributor to the dissemination of the scientific knowledge, through his activities of editor
- An member of the upper class and active citizen closely concerned by the government of his City

Explicit references

- Heritage (according to Cramer's preface)
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - 'sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Explicit references

- Heritage (according to Cramer's preface) :
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Explicit references

- Heritage (according to Cramer's preface) :
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Explicit references

- Heritage (according to Cramer's preface) :
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Explicit references

- Heritage (according to Cramer's preface) :
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Explicit references

- Heritage (according to Cramer's preface) :
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - 'sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Explicit references

- Heritage (according to Cramer's preface) :
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - 'sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Explicit references

- Heritage (according to Cramer's preface) :
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - 'sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Explicit references

- Heritage (according to Cramer's preface) :
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - 'sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Explicit references

- Heritage (according to Cramer's preface) :
  - Descartes, *Géométrie* (1637)
  - Newton, *Enumeratio linearum tertii ordinis* (1704)
  - Stirling, *Lineae tertii ordinis Neutonianae* (1717)
  - 'sGravesande, *Matheseos universalis elementa* (1727)
  - Nicole et Bragelongne, *Mémoires de l'Académie Royale des Sciences* (1731)
  - de Gua de Malves, *Usages de l'Analyse de Descartes* (1740)
  - Euler, *Introductio analysin infinitorum* (1748)
- Exploring footnotes references (Maclaurin, L'Hôpital, ...)

Implicit references

- Is it possible to find other references, influences, borrowings in the text itself ?
- Reconstructing Gabriel Cramer's personal library and readings
  - by his correspondence
  - by the catalogues of the Public Library of Geneva
  - by post-mortem inventories

Implicit references

- Is it possible to find other references, influences, borrowings in the text itself ?
- Reconstructing Gabriel Cramer's personal library and readings
  - by his correspondence
  - by the catalogues of the Public Library of Geneva
  - by post-mortem inventories

Implicit references

- Is it possible to find other references, influences, borrowings in the text itself ?
- Reconstructing Gabriel Cramer's personal library and readings
  - by his correspondence
  - by the catalogues of the Public Library of Geneva
  - by post-mortem inventories

Implicit references

- Is it possible to find other references, influences, borrowings in the text itself ?
- Reconstructing Gabriel Cramer's personal library and readings
  - by his correspondence
  - by the catalogues of the Public Library of Geneva
  - by post-mortem inventories

Writing, publishing and disseminating : a few milestones

- Nov 1740 : First mention in a letter from Gabriel Cramer to Jean Jallabert
- May 1744 : *Mémoire sur l'évanouissement des grandeurs inconnues*, sent to Clairaut
- Feb 1745 : New mention in a letter from Calandrini to Williamson
- 174 ? : Manuscript of the *Introduction* (BGE Ms-Jallabert 48)
- 1750 : proofs (épreuves), corrections, impression
- Aug-Sep 1750 : Cramer sends himself few exemplaries of his treatise in Paris, Berlin, London.

Writing, publishing and disseminating : a few milestones

- Nov 1740 : First mention in a letter from Gabriel Cramer to Jean Jallabert
- May 1744 : *Mémoire sur l'évanouissement des grandeurs inconnues*, sent to Clairaut
- Feb 1745 : New mention in a letter from Calandrini to Williamson
- 174? : Manuscript of the *Introduction* (BGE Ms-Jallabert 48)
- 1750 : proofs (épreuves), corrections, impression
- Aug-Sep 1750 : Cramer sends himself few exemplaries of his treatise in Paris, Berlin, London.

Writing, publishing and disseminating : a few milestones

- Nov 1740 : First mention in a letter from Gabriel Cramer to Jean Jallabert
- May 1744 : *Mémoire sur l'évanouïssement des grandeurs inconnues*, sent to Clairaut
- Feb 1745 : New mention in a letter from Calandrini to Williamson
- 174? : Manuscript of the *Introduction* (BGE Ms-Jallabert 48)
- 1750 : proofs (épreuves), corrections, impression
- Aug-Sep 1750 : Cramer sends himself few exemplaries of his treatise in Paris, Berlin, London.

Writing, publishing and disseminating : a few milestones

- Nov 1740 : First mention in a letter from Gabriel Cramer to Jean Jallabert
- May 1744 : *Mémoire sur l'évanouïssement des grandeurs inconnues*, sent to Clairaut
- Feb 1745 : New mention in a letter from Calandrini to Williamson
- 174 ? : Manuscript of the *Introduction* (BGE Ms-Jallabert 48)
- 1750 : proofs (épreuves), corrections, impression
- Aug-Sep 1750 : Cramer sends himself few exemplaries of his treatise in Paris, Berlin, London.

Writing, publishing and disseminating : a few milestones

- Nov 1740 : First mention in a letter from Gabriel Cramer to Jean Jallabert
- May 1744 : *Mémoire sur l'évanouïssement des grandeurs inconnues*, sent to Clairaut
- Feb 1745 : New mention in a letter from Calandrini to Williamson
- 174 ? : Manuscript of the *Introduction* (BGE Ms Jallabert 48)
- 1750 : proofs (épreuves), corrections, impression
- Aug-Sep 1750 : Cramer sends himself few exemplaries of his treatise in Paris, Berlin, London.

Writing, publishing and disseminating : a few milestones

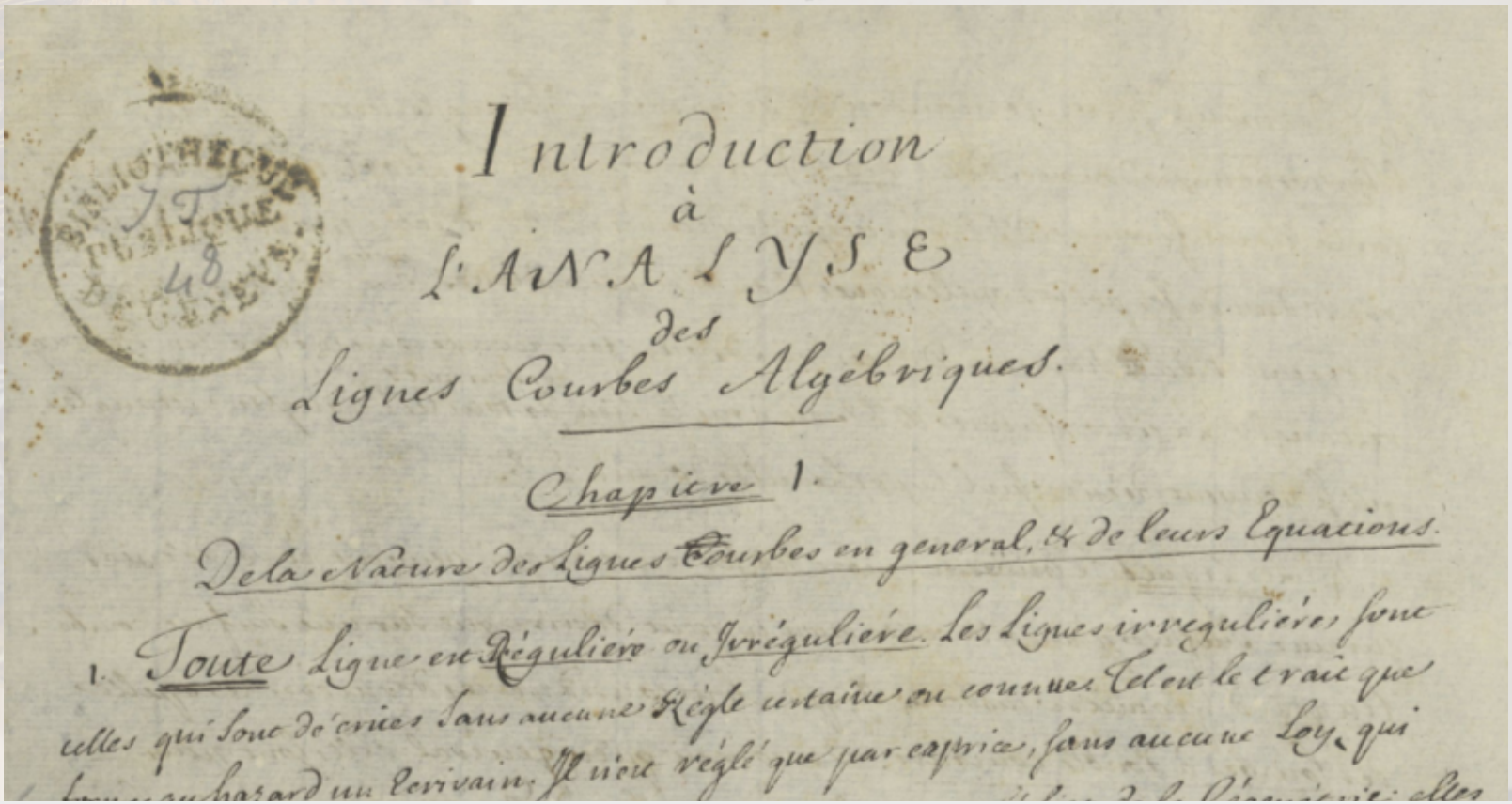
- Nov 1740 : First mention in a letter from Gabriel Cramer to Jean Jallabert
- May 1744 : *Mémoire sur l'évanouïssement des grandeurs inconnues*, sent to Clairaut
- Feb 1745 : New mention in a letter from Calandrini to Williamson
- 174 ? : Manuscript of the *Introduction* (BGE Ms Jallabert 48)
- 1750 : proofs (épreuves), corrections, impression
- Aug-Sep 1750 : Cramer sends himself few exemplaries of his treatise in Paris, Berlin, London.

Writing, publishing and disseminating : a few milestones

- Nov 1740 : First mention in a letter from Gabriel Cramer to Jean Jallabert
- May 1744 : *Mémoire sur l'évanouïssement des grandeurs inconnues*, sent to Clairaut
- Feb 1745 : New mention in a letter from Calandrini to Williamson
- 174 ? : Manuscript of the *Introduction* (BGE Ms Jallabert 48)
- 1750 : proofs (épreuves), corrections, impression
- Aug-Sep 1750 : Cramer sends himself few exemplaries of his treatise in Paris, Berlin, London.

The Jallabert Manuscript (BGE Ms Jallabert 48)

A close analysis of the contents of this manuscript, to be compared to the published text :



Contents of the treatise

A systematic study of the algebraic curves (with the only help of algebra) for the classification of the curves of the first five orders, based on infinite branches and singular points :

- Diameters and centers
- Infinite branches
- Singular and multiple points
- Tangent lines, extrema
- Curvature

Contents of the treatise

A systematic study of the algebraic curves (with the only help of algebra) for the classification of the curves of the first five orders, based on infinite branches and singular points :

- Diameters and centers
- Infinite branches
- Singular and multiple points
- Tangent lines, extrema
- Curvature

Contents of the treatise

A systematic study of the algebraic curves (with the only help of algebra) for the classification of the curves of the first five orders, based on infinite branches and singular points :

- Diameters and centers
- Infinite branches
- Singular and multiple points
- Tangent lines, extrema
- Curvature

Contents of the treatise

A systematic study of the algebraic curves (with the only help of algebra) for the classification of the curves of the first five orders, based on infinite branches and singular points :

- Diameters and centers
- Infinite branches
- Singular and multiple points
- Tangent lines, extrema
- Curvature

Contents of the treatise

A systematic study of the algebraic curves (with the only help of algebra) for the classification of the curves of the first five orders, based on infinite branches and singular points :

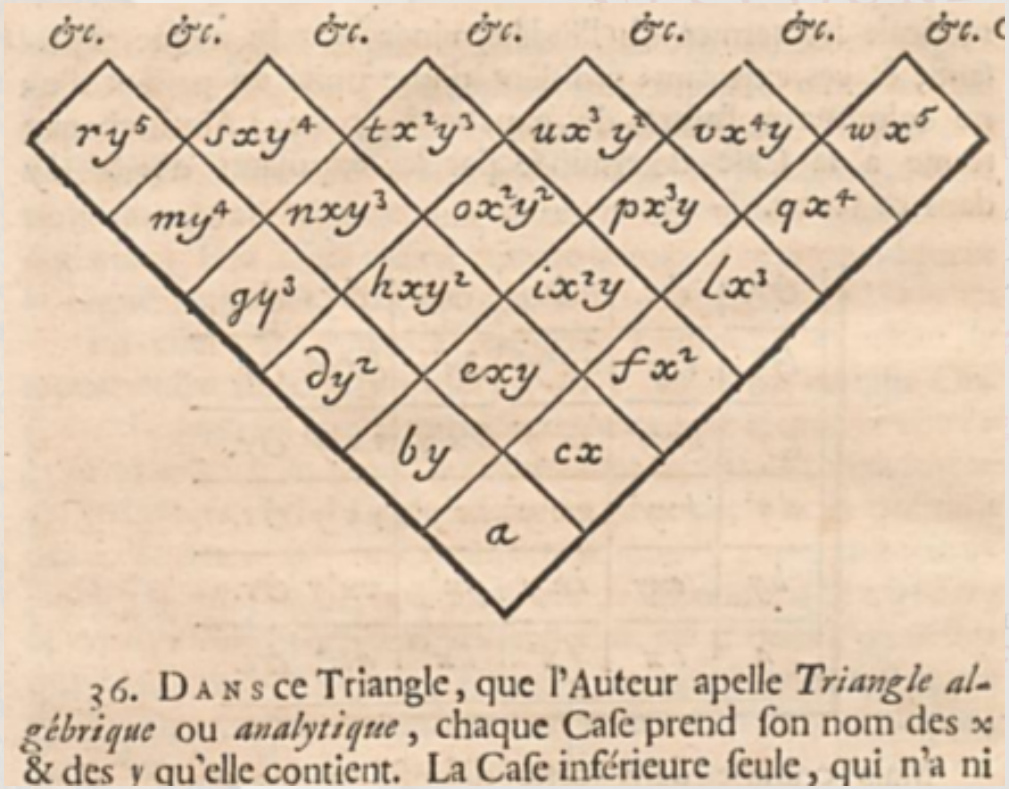
- Diameters and centers
- Infinite branches
- Singular and multiple points
- Tangent lines, extrema
- Curvature

Contents of the treatise

A systematic study of the algebraic curves (with the only help of algebra) for the classification of the curves of the first five orders, based on infinite branches and singular points :

- Diameters and centers
- Infinite branches
- Singular and multiple points
- Tangent lines, extrema
- Curvature

A favored tool : the method of series and the **analytical triangle**



36. Dans ce Triangle, que l'Auteur apelle *Triangle algébrique* ou *analytique*, chaque Case prend son nom des x & des y qu'elle contient. La Case inférieure seule, qui n'a ni

Two important results, known today as **Cramer's rule** and **Bézout's theorem** (Appendices I and II)

APPENDICE.

Nos. I. & II.

De l'évanouissement des inconnues.

QUand un Problème renferme plusieurs inconnues, dont les rélations sont tellement compliquées qu'on se trouve obligé de former plusieurs équations; alors, pour découvrir les valeurs de ces inconnues, on les fait toutes évanouïr, moins une, qui combinée seule avec les grandeurs connues donne, si le Problème est déterminé, une *Equation finale*, dont la résolution fait connoître d'abord cette inconnue, & ensuite par son moyen toutes les autres.

L'Algébre fournit pour cela des Règles, dont le succès est infaillible, pourvû qu'on ait la patience de les suivre. Mais le Calcul en devient extrémement long, lorsque le nombre des équations & des inconnues est fort grand, & aussi lorsque ces inconnues montent dans les équations proposées à des dégrés fort élevés. Dans ce second Cas on tombe, par les Méthodes ordinaires, dans un autre inconvénient; c'est d'être conduit à des équations plus composées qu'il ne faut, & qui renferment des racines superflues, qu'il n'est pas toujours aisé de démêler de celles qui donnent la vraye Solution du Problème. On se propose dans les deux Nos. suivants de remédier à ces inconvénients.

N°. I.

Voyez pag. 59 & 60.

Soient plusieurs inconnues z, y, x, v, &c. & autant d'équations

$$\begin{aligned} A^1 &= Z^1 z + Y^1 y + X^1 x + V^1 v + \&c. \\ A^2 &= Z^2 z + Y^2 y + X^2 x + V^2 v + \&c. \\ A^3 &= Z^3 z + Y^3 y + X^3 x + V^3 v + \&c. \\ A^4 &= Z^4 z + Y^4 y + X^4 x + V^4 v + \&c. \\ &\&c. \end{aligned}$$

où les lettres A^1, A^2, A^3, A^4, &c. ne marquent pas, comme à l'ordinaire, les puissances d'A, mais le prémier membre, supposé connu, de la prémiére, seconde, troisiéme, quatriéme &c. équation. De même Z^1, Z^2, &c. sont les coëfficients de z; Y^1, Y^2, &c. ceux de y; X^1, X^2, &c. ceux de x; V^1, V^2, &c. ceux de v; &c. dans la prémiére, seconde, &c. équation.

Cette Notation supposée, s'il n'y a qu'une équation & qu'une inconnue z; on aura $z = \frac{A^1}{Z^1}$. S'il y a deux équations & deux inconnues z & y; on trouvera $z = \frac{A^1 Y^2 - A^2 Y^1}{Z^1 Y^2 - Z^2 Y^1}$, & $y = \frac{Z^1 A^2 - Z^2 A^1}{Z^1 Y^2 - Z^2 Y^1}$. S'il y a trois équations & trois inconnues z, y, & x; on trouvera

$$z = \frac{A^1Y^2X^3 - A^1Y^3X^2 - A^2Y^1X^3 + A^2Y^3X^1 + A^3Y^1X^2 - A^3Y^2X^1}{Z^1Y^2X^3 - Z^1Y^3X^2 - Z^2Y^1X^3 + Z^2Y^3X^1 + Z^3Y^1X^2 - Z^3Y^2X^1}$$

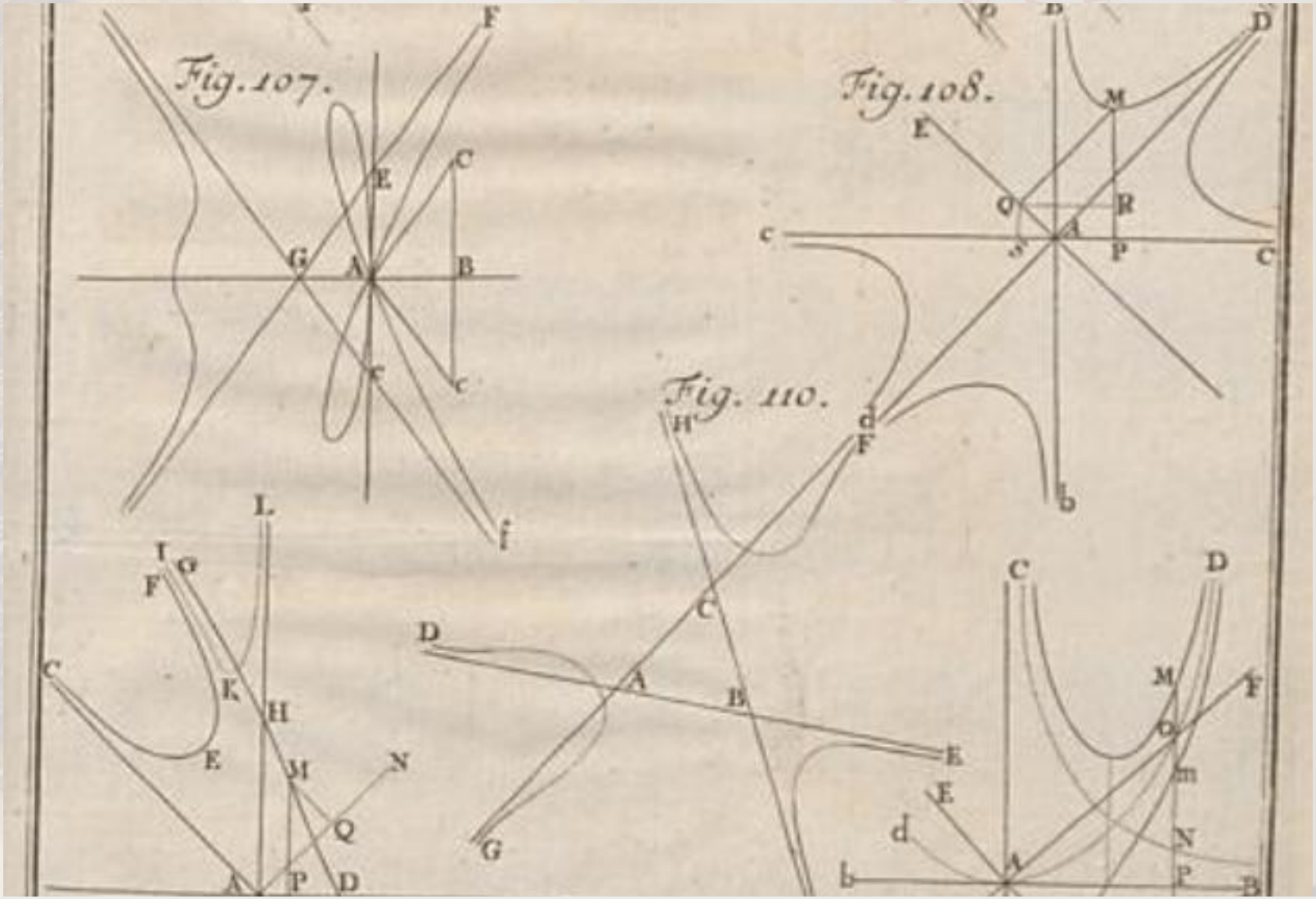
$$y = \frac{Z^1A^2X^3 - Z^1A^3X^2 - Z^2A^1X^3 + Z^2A^3X^1 + Z^3A^1X^2 - Z^3A^2X^1}{Z^1Y^2X^3 - Z^1Y^3X^2 - Z^2Y^1X^3 + Z^2Y^3X^1 + Z^3Y^1X^2 - Z^3Y^2X^1}$$

$$x = \frac{Z^1Y^2A^3 - Z^1Y^3A^2 - Z^2Y^1A^3 + Z^2Y^3A^1 + Z^3Y^1A^2 - Z^3Y^2A^1}{Z^1Y^2X^3 - Z^1Y^3X^2 - Z^2Y^1X^3 + Z^2Y^3X^1 + Z^3Y^1X^2 - Z^3Y^2X^1}$$

Introd. à l'Analyse des Lignes Courbes. Oooo L'é-

Thierry JOFFREDO

Sketches of curves



Reading and reception : a dynamical analysis

- Immediate reception by contemporary readers :
  - Letters (d'Alembert, Euler, Clairaut...)
  - Reviews (Journal des sçavans, Nova acta eruditorum)
- Further reception
  - by mathematicians (Laplace, Bézout, 19th century german or britannic geometers, etc.)
  - and historians (Montucla, Chasles, Cantor, Boyer, etc.)

Reading and reception : a dynamical analysis

- Immediate reception by contemporary readers :
  - Letters (d'Alembert, Euler, Clairaut...)
  - Reviews (Journal des scavans, Nova acta eruditorum)
- Further reception
  - by mathematicians (Laplace, Bézout, 19th century german or britannic geometers, etc.)
  - and historians (Montucla, Chasles, Cantor, Boyer, etc.)

Reading and reception : a dynamical analysis

- Immediate reception by contemporary readers :
  - Letters (d'Alembert, Euler, Clairaut...)
  - Reviews (Journal des scavans, Nova acta eruditorum)
- Further reception
  - by mathematicians (Laplace, Bézout, 19th century german or britannic geometers, etc.)
  - and historians (Montucla, Chasles, Cantor, Boyer, etc.)

Reading and reception : a dynamical analysis

- Immediate reception by contemporary readers :
  - Letters (d'Alembert, Euler, Clairaut...)
  - Reviews (Journal des sçavans, Nova acta eruditorum)
- Further reception
  - by mathematicians (Laplace, Bézout, 19th century german or britannic geometers, etc.)
  - and historians (Montucla, Chasles, Cantor, Boyer, etc.)

Reading and reception : a dynamical analysis

- Immediate reception by contemporary readers :
  - Letters (d'Alembert, Euler, Clairaut...)
  - Reviews (Journal des sçavans, Nova acta eruditorum)
- Further reception
  - by mathematicians (Laplace, Bezout, 19th century german or britannic geometers...)
  - and historians (Montucla, Chasles, Cantor, Boyer, etc.)

Reading and reception : a dynamical analysis

- Immediate reception by contemporary readers :
  - Letters (d'Alembert, Euler, Clairaut...)
  - Reviews (Journal des sçavans, Nova acta eruditorum)
- Further reception
  - by mathematicians (Laplace, Bézout, 19th century german or britannic geometers, etc.)
  - and historians (Montucla, Chasles, Cantor, Boyer, etc.)

Reading and reception : a dynamical analysis

- Immediate reception by contemporary readers :
  - Letters (d'Alembert, Euler, Clairaut...)
  - Reviews (Journal des sçavans, Nova acta eruditorum)
- Further reception
  - by mathematicians (Laplace, Bézout, 19th century german or britannic geometers, etc.)
  - and historians (Montucla, Chasles, Cantor, Boyer, etc.)

Conclusion

- My point is to show that, under some conditions of validity, it is meaningful, relevant and fruitful to use this kind of approach to a scientific text.
- But I have to deal with methodological issues. For example :
  - Scale effects : time periods (from the 1740-1750 decade to the 1637-today period) and space (from Geneva to the whole european space)
  - Variety and number of the sources involved (civil registers, correspondence, manuscripts, publisher archives, printed books, reviews...) and strong intertextuality.
  - Brief (or not) incursions in other fields of knowledge, such as sociology, book history.

Conclusion

- My point is to show that, under some conditions of validity, it is meaningful, relevant and fruitful to use this kind of approach to a scientific text.
- But I have to deal with methodological issues. For example :
  - Scale effects : time periods (from the 1740-1750 decade to the 1637-today period) and space (from Geneva to the whole european space)
  - Variety and number of the sources involved (civil registers, correspondence, manuscripts, publisher archives, printed books, reviews...) and strong intertextuality.
  - Brief (or not) incursions in other fields of knowledge, such as sociology, book history.

Conclusion

- My point is to show that, under some conditions of validity, it is meaningful, relevant and fruitful to use this kind of approach to a scientific text.
- But I have to deal with methodological issues. For example :
  - Scale effects : time periods (from the 1740-1750 decade to the 1637-today period) and space (from Geneva to the whole european space)
  - Variety and number of the sources involved (civil registers, correspondence, manuscripts, publisher archives, printed books, reviews...) and strong intertextuality.
  - Brief (or not) incursions in other fields of knowledge, such as sociology, book history.

Conclusion

- My point is to show that, under some conditions of validity, it is meaningful, relevant and fruitful to use this kind of approach to a scientific text.
- But I have to deal with methodological issues. For example :
  - Scale effects : time periods (from the 1740-1750 decade to the 1637-today period) and space (from Geneva to the whole european space)
  - Variety and number of the sources involved (civil registers, correspondence, manuscripts, publisher archives, printed books, reviews...) and strong intertextuality.
  - Brief (or not) incursions in other fields of knowledge, such as sociology, book history.

Conclusion

- My point is to show that, under some conditions of validity, it is meaningful, relevant and fruitful to use this kind of approach to a scientific text.
- But I have to deal with methodological issues. For example :
  - Scale effects : time periods (from the 1740-1750 decade to the 1637-today period) and space (from Geneva to the whole european space)
  - Variety and number of the sources involved (civil registers, correspondence, manuscripts, publisher archives, printed books, reviews...) and strong intertextuality.
  - Brief (or not) incursions in other fields of knowledge, such as sociology, book history.

Conclusion

- My point is to show that, under some conditions of validity, it is meaningful, relevant and fruitful to use this kind of approach to a scientific text.
- But I have to deal with methodological issues. For example :
  - Scale effects : time periods (from the 1740-1750 decade to the 1637-today period) and space (from Geneva to the whole european space)
  - Variety and number of the sources involved (civil registers, correspondence, manuscripts, publisher archives, printed books, reviews...) and strong intertextuality.
  - Brief (or not) incursions in other fields of knowledge, such as sociology, book history.

Thank you for your attention. A few references :

- Cramer, Gabriel. 1750. *Introduction à l'analyse des lignes courbes algébriques.* Genève : chez les frères Cramer et C. Philibert. http://dx.doi.org/10.3931/e-rara-4048.
- Kaeser, Marc-Antoine. 2003. La science vécue. les potentialités de la biographie en histoire des sciences. *Revue d'Histoire des Sciences Humaines* 8 (1) : 139. http://www.cairn.info/resume.php?ID_ARTICLE=RHSH_008_0139.
- Nabonnand, Philippe, et Laurent Rollet. 2012. *Les uns et les autres..., biographies et prosopographies en histoire des sciences.* Nancy : Presses universitaires de Nancy.