



HAL
open science

Working with manuscripts, in Report No. 2249b/2022, History of Mathematics through Collaboration: Toward a Composite Portrait of Oswald Veblen

Emmylou Haffner

► **To cite this version:**

Emmylou Haffner. Working with manuscripts, in Report No. 2249b/2022, History of Mathematics through Collaboration: Toward a Composite Portrait of Oswald Veblen. Mathematisches Forschungsinstitut Oberwolfach. 2022. hal-04352769

HAL Id: hal-04352769

<https://hal.science/hal-04352769>

Submitted on 3 Jan 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

[3] O. Veblen, Oswald Veblen Papers, US Library of Congress.

Working with manuscripts

EMMYLOU HAFFNER

In this talk, my aim is to give a number of methodological elements and tips to navigate archival material, and in particular private manuscripts (e.g., notebooks, drafts, etc.). In doing so, I was guided by two main considerations: the aspects which intrigued and interested me most when I first started working with private manuscripts, and – what I hope to be the main takeaway of the talk – the idea that in studying such manuscripts, *everything matters*, no detail is insignificant.

To give a number of theoretical pointers, I use examples of manuscripts from a selection of authors from the 18th to the 20th century: G. W. Leibniz (Leibniz-Archiv, GWLB), Bernhard Riemann (Cod. Ms. B. Riemann, SUB Göttingen), Richard Dedekind (Cod. Ms. R. Dedekind, SUB Göttingen), David Hilbert (Cod. Ms. D. Hilbert, SUB Göttingen), Élie Cartan (Fonds 36J, Académie des sciences de Paris), and Oswald Veblen (MSS 44016, Library of Congress), as well as Georges-Louis Le Sage [3], and Gabriel Cramer [17]. The talk addresses mainly modern manuscripts (as opposed to ancient and medieval ones). It relies largely on the assumption that we are taking texts to be historical objects, situated in space and time. Mathematical texts are not mere means of transportation for an abstract, fixed meaning, but tools on and with which mathematicians work,¹ which is particularly true of manuscripts.

To work with manuscripts, it is useful (maybe even indispensable) to use methods from textual studies and material history. Although developed outside of history of mathematics, methods from philology and codicology are particularly fruitful for the analysis of manuscripts. There are no (so far!) developed theory of philology or codicology for scientific texts,² and it is the historian of mathematics' task to appropriate these methods so as to make the best use of them for our work. This talk highlights some of the main points worth paying attention to from that point of view.

1. MATERIAL AND CODICOLOGICAL ANALYSIS OF MANUSCRIPTS

Material, formal, spatial, scriptural elements are all important to interpret a manuscript. While they are just steps in the analysis and description of the document, they are important ones, as they can give clues about dating, chronology, or circulation of the manuscript.

The structure and format(s) of the document testify of specific practices, and constrain the writing and the writing choices. A (far from exhaustive) selection of examples gives an idea of the variety that can be encountered, and the many interesting issues that can arise. [3] provides a very peculiar example with G.-L. Sage's

¹See [8] for such methodological statements.

²This is not to say that no codicological analysis have ever been done scientific texts, of course. See [9] for a fascinating example.

use of playing cards for his notes. While more standard, the case of notebooks is also quite rich: are the notebooks organized thematically? chronologically? Examples, here, focus on Cartan³ but [1, 16, 15] (among other) can provide additional insights. Finally, authors working on slips of paper and loose sheets are considered, with cases from Leibniz’s and Dedekind’s archives.⁴

Such material elements are important to complement the contentual analysis that historians of mathematics know well how to do. They can give clues about a vast number of questions, such as:

- Who is writing? Are there changes in pens and/or handwriting?
- When was the manuscript written? Dating clues can be observed in re-used papers or watermarks, for example, but this should be used carefully.
- For who was it written? “Private manuscripts”, not intended for anyone’s eyes but their author’s, are a particular type of manuscript to work with, as they often do not obey all the norms of writing to which we are used. As such, they can be more difficult but also more interesting. Here, methods from genetic criticism can be useful.⁵
- What is the chronology of writing? [17] provides a beautiful example.

2. FOCUS ON LECTURE NOTES

Reading notes and lecture notes are a specific type of private manuscript which is of interest to us, since we are working on (at least one of) Veblen’s lecture notebook on the foundations of geometry from 1901. History of science has investigated the question of reading and lecture notes rather extensively (although history of mathematics is noticeably absent from most of these studies) and provides great methodological insights.⁶

The first, and maybe most important, aspect of such notes is what [18] calls “several enunciative instances”, namely the fact that there are at least two voices: that of the person who takes notes, and that of the text or speaker on which notes are taken. In addition, it should be underlined, still following [18], that what should guide the analysis of lecture (or reading) notes is the study of “the writing operations that govern the processes of formation, transmission and appropriation of (...) concepts”.

A number of specificities should be taken into account when analysing lecture notes – some relevant to Veblen’s notebook, some less so. For example:

- Who is writing? Are there several scriptors?
- What is the lecturer’s status?
- What are the scriptor’s objectives?
- Which writing acts can be observed? (e.g., underlining, titles, numbering, modifications of the text, rewriting, annotations, ...)
- What formal diversity can be observed?

³See [12].

⁴See [13, 14] on Dedekind, [10] (among others) on Leibniz’s mathematical manuscripts.

⁵See [11], for example.

⁶See, for example, [2, 4, 5, 6, 7, 18, 19].

– Is there a publication planned?

REFERENCES

- [1] F. Balibar, M. Cantor, G. Chevancy, C. Hannoun & J. Jacques, (eds.). *Pasteur, Cahiers d'un savant* (1995), CNRS Éditions, Paris.
- [2] J.-F. Bert, *Une histoire de la fiche érudite* (2017), ENSSIB. Paris.
- [3] J.-F. Bert, *Comment pense un savant ? Un physicien des Lumières et ses cartes à jouer* (2018), Anamosa.
- [4] C. Bittel, E. Leong., & C. von Oertzen (eds.). *Working with paper: Gendered practices in the history of knowledge* (2019), Pittsburgh, PA: University of Pittsburgh Press.
- [5] A. Blair, Note taking as an art of transmission, *Critical Inquiry* 31, (2004), 85–107.
- [6] M.-N. Bourguet, A portable world: the notebooks of European travellers, *Intellectual History Review* 20:3 (2010), 377–400, DOI: 10.1080/17496977.2010.492617.
- [7] M. C. Bustamante, *À l'aube de la théorie des quanta. Notes inédites d'Émile Borel sur un cours de Paul Langevin au Collège de France (1912-1913)*. (2020), Brepols, Turnhout
- [8] K. Chemla, . What is the content of this book ? A plea for developing history of science and history of text conjointly. *Philosophy and History of Science: A Taiwanese Journal*, 4 (1995), 1–46.
- [9] A. Costa, E. Pasini, L'édition critique de la *Dynamica de potentia seu de legibus naturæ corporeæ* de G. W. Leibniz, *Revue d'histoire des sciences*, 72/1, (2019) 137–161. URL : <https://www.cairn.info/revue-d-histoire-des-sciences-2019-1-page-137.htm>
- [10] V. Debuiche & D. Rabouin (eds.), Mathématique et philosophie leibniziennes à la lumière des manuscrits inédits. *Philosophia Scientiæ* 25-2 (2021).
- [11] A. Grésillon, *Éléments de critique génétique - Lire les manuscrits modernes*. (Re-ed.) (2016) CNRS Collection : Textes & manuscrits.
- [12] E. Haffner, Esquisse d'une cartographie des cahiers d'Élie Cartan. *Revue d'histoire des mathématiques*, 23(1), (2017), 125–182.
- [13] E. Haffner, The Shaping of Dedekind's Rigorous Mathematics : What Do Dedekind's Drafts Tell Us About His Ideal of Rigor? *Notre Dame Journal of Formal Logic*, 62(1) (2021) 5–31.
- [14] E. Haffner. Duality as a guiding light in the genesis of Dedekind's Dualgruppen. In Krömer, R., and Haffner, E. (eds), *Duality in 19th and 20th century mathematical thinking*, (2023), Basel. Birkhäuser.
- [15] C. Hoffmann, Processes on Paper: Writing Procedures as Non-Material Research Devices. *Science in Context*, **26**, (2013), 279–303. doi:10.1017/S0269889713000069
- [16] F. L. Holmes, J. Renn, & H.-J. Rheinberger (eds), *Reworking the Bench. Research Notebooks in the History of Science*, (2003), Archimedes. Kluwer Academic Publishers, NY, Boston, Dordrecht, London, Moscow.
- [17] T. Joffredo, Une analyse génétique de *L'introduction à l'analyse des lignes courbes algébriques* de Gabriel Cramer (1750), *Revue d'histoire des mathématiques*, **25**, (2019), 235–289.
- [18] G. D'Ottavi & P.-Y. Testenoire, *Le cours de linguistique. Formes, genèses et interprétations de notes d'auditeurs*, *Langages* **209** (2018).
- [19] E. Leong, Read. Do. Observe. Take note!, *Centaurus* 60 (2018), 87–103.

“The patriarch of the Judeo-Italian intellectuals longing for the embrace with Uncle Sam”: Veblen and the Italian Refugees

ERIKA LUCIANO

The so-called *Measures for the defense of the race* (5 September–17 November 1938) in Italy led to mass migrations, not only of scholars and intellectuals, but of some 6,000 individuals of Jewish descent from all walks of life, forced to leave