


“Open” or “Close” Research Instruments? Conflicting Rationales in the Organization of Early Digital Medieval History in Europe (1960–1990).

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Abstract

From the late 1940s onwards, humanities scholars used computers in order to create new types of research instruments, e.g., databases, digital scholarly editions of texts and/or archives, computer programs, etc. Their ambitions in doing so consisted in saving time in tedious, repetitive and error-prone scholarly tasks, enhancing the circulation of data and/or scholarly information, or even contributing to the “progress” of an entire discipline. Sharing these research instruments with interested colleagues was then crucial for these scholars. However, each of these humanities computing collectives developed at the time its own idiosyncratic procedures for editing, analyzing, and publishing computer-recorded material. This profoundly affected the possibility for these research instruments to circulate among scholars.

In this article, I present how medievalists debated about a possible circulation of these digital research instruments in that context, and how it contributes to the development of an early “humanities computing” organization in Europe. I show how medievalists’ ambitions raised a whole series of material and intellectual difficulties which are still essential in our current DH practices and organizations. What data should we edit (and thus, what data are worth sharing)? In what form should we publish these datasets? And do we need common rules for this purpose? I argue that a precise history of early DH communities highlights a strong continuity with contemporary DH issues as well as the importance of historical studies of our field.

From the late 1940s onwards, humanities scholars used computers in order to create new type of research instruments, e.g., databases, digital scholarly editions of texts and/or archives, computer programs, etc. Besides the famous Roberto Busa’s *Index Thomisticus*, studied in an exemplary manner by Steven E. Jones (2016), numerous projects were developed in the 1960s and 1970s in many humanities disciplines across the globe. These works had in common a set of material and technological constraints which derived from the computing equipment available at the time. In addition to important funding challenges, humanities scholars were also confronted with difficulties in accessing to mainframe computers, in dealing with the heaviness of punched card machinery and in a lack of appropriate computer programs and available computer scientists for humanities studies^[1].

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In Lejeune (2021), I have studied how, in that context, medievalists have used computers in order to produce different types of research instruments. I have notably shown that each project had developed at the time its own idiosyncratic methods for both editing and analyzing datasets. It depended on the historiographical trends they followed, the methods they wanted to apply (statistics, data analysis, indexing, lexicometry, etc.), and their material resources (subsidiaries, equipment, human force) [Lejeune 2021] [Lejeune 2023] [Lejeune forthcoming].

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However, I have also highlighted how the production of these digital research instruments was linked, for the scholars involved in these activities, to expectations geared towards benefits for the discipline as a whole. Saving time on tedious, repetitive and error-prone scholarly tasks, enhancing the circulation of scientific data and/or information, or even contributing to the “progress” of the entire discipline: these ambitions were largely related to the possibility of sharing the research instruments they had produced.

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In that context, the intellectual and material difficulties related to the circulation of these research instruments appeared as the common ground on which a collective organization arose in early digital medieval history. What is the purpose of using computers? What data should medievalists edit onto digital storage devices (and thus, what were worth sharing)? In what form should they publish these datasets (punched cards, magnetic tape, listings, printed books)? And did they need to define common rules in order to improve that circulation? Here are some of the questions that animated early debates among medievalists using computers in Europe in the 1970s.

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As every attentive reader might have noticed – and beside an obvious technological gap –, these issues are still crucial in our current Digital Humanities debates, from the will to define what is and what is not DH [Unsworth 2002] [Rockwell 2007] [Svensson 2010], to the debate upon the purpose of a discipline-like organization of the DH field [Orlandi 2002] [Sample 2016], and the ways in which computer science might help improving our current humanities researches [McCarty 2010] [Kirschenbaum 2012b]. However, that strong continuity with early debates in humanities computing was never brought to light in the literature, even if the need for history is acknowledged by many scholars in the field [Berra 2015] [Gouglas et al 2013] [Sula and Hill 2019].

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In this article, I propose to address that absence by focusing on the debates that led to early developments in digital medieval history in Europe. In that perspective, this article takes two firm methodological options.

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First, it takes a stand for the idea that, in order to understand the origin of digital humanities, the historian needs to focus on the *rationale* that led scholars to organize collectively at another scale than the one of their research groups or institutions. In doing so, it stands out from the actual approaches of the early history of the field, who focuses rather on the *results* of these organizations processes, i.e., by studying articles, iconic projects or networks [Thomas 2004] [Kirschenbaum 2012b] [Sula and Hill 2019], or on the *methods* of early computing scholars in the humanities [Hockey 2004] [McCarty 2005].

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Second, I propose to focus on the early forms of collaboration and organization in a specific discipline, medieval history. I will then be able to show how computer-related debates appeared in a pre-existent discipline, how they were closely related to pre-existent disciplinary issues, and how different conceptions of “what to organize for” and “how to organize” collided and competed with each other.

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What were the reasons that led early computer users to develop collective organizations on a scale other than that of their own laboratories or research teams? What problems did they share? What were the goals of such initiatives? And what were the solutions proposed or imagined by the actors to achieve their goals?

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These questions are, in my opinion, essential to better understand how humanities computing organizations arose in a given discipline, and might constitute a grid of analysis for other researchers interested in the early DH organizations in other disciplines. They are also key in order to highlight the great continuity in DH debates since the early 1960s and the importance of historical studies in our field.

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1 A New Collective Ambition for Medieval History: Electronic Computers

Since the pioneer project initiated by Busa in 1946, several medievalists have worked with computers in Europe^[2]. Some emblematic achievements are still well-known to both historians and specialists in the digital humanities. The Library of Latin Text originated from activities initiated at the CETEDOC in Louvain-la-Neuve (Belgium) in the early 1960s, where Paul Tombeur (1936–) developed with his team automated concordance methods in order to study medieval texts in Latin [Tombeur 2012]. The 1427 *catasto* international survey, directed by French medievalist Christiane Klapisch-Zuber (1936–) and her American colleague David Herlihy (1930–1991) started in 1966 and is considered the first major computer-assisted quantitative project in the discipline [Lejeune 2021].^[3]

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These examples show the will to apply quantitative methods to large corpuses of medieval sources in the early 1960s. In doing so, medievalists were following early experiments in modern history, e.g., research agenda led by Camille-Ernest Labrousse (1895–1988) or Emmanuel Le Roy-Ladurie (1929–2023) in France or Bernard Bailyn (1922–2020), Charles Tilly (1929–2008) or William O. Aydelotte (1910–1996) in the USA [Shorter 1971] [Lejeune 2021]. They were

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also inspired by methods developed outside the discipline of history, e.g., in demography, in archaeology, in linguistics, and in sociology [Lejeune 2021] [Lejeune 2023].

These two examples also show that the use of computers in the late 1960s and early 1970s implied enterprises that were inevitably collective. I have shown elsewhere that various local working cultures were developed in scattered research teams in the late 1960s and early 1970s [Lejeune 2021]. These teams gathered individuals from different backgrounds (historians, demographers, linguists, computer scientists, card punchers, advanced students, etc.) and from different institutions (universities, research centers, private companies, etc.). They worked on various archival materials, e.g., literary texts, charters, censuses, canon law compilations, etc. They also developed different recording methodologies according to their research goals and their human, financial, and technical means (full-text recording, statistical recording, documentary indexing, etc.) and produced different types of research instruments (databases, corpus of digitized texts or documents, computer programs, printed indexes, etc.).

Nevertheless, some of these collectives of researchers were also connected with each other. Busa's research group in Gallarate was sharing data and collaborators with archaeologists, linguists, and logicians [Plutniak 2021] [Lejeune 2022a]. Just as the latter, the medievalists studying the *catasto* of 1427 borrowed a kinship relationship code from French demographers specializing in reconstituting families from parish registers [Lejeune 2021]. Many medievalists in France also borrowed methodologies from linguists who already used computers in their research, especially in discourse analysis and lexicometry [Lejeune 2023]. Beyond these occasional connections, some scholars launched very important initiatives in the early 1970s that aimed at creating an umbrella organization for the development of computer-assisted practices in medieval history.

1.1 Genesis of an Umbrella Organization of Digital Medieval History in Europe.

Three pioneer initiatives ought to be outlined in the making of an umbrella organization in early digital medieval history. In the late 1960s, it was first a commission of the permanent committee of the Medieval Academy of America (MAA) that decided the constitution of a subcommission that would help in "coordinating and broadcasting the information about computer-assisted work based on medieval texts"^[4]. Serge Lusignan (1943–) and Paul Bratley (1940–), two medievalists from the Institute of Medieval Studies at the University of Montréal (Canada) were in charge of that task. They edited in 1971 the first newsletter dedicated to the uses of computers in medieval history: *Computer and Medieval Data Processing (CAMDAP)*.^[5]

During this process, the *CAMDAP* subcommission faced many difficulties in simultaneously identifying American and European computer-assisted projects in medieval history. This is the reason that led Jean Gagné, the president of the subcommission of the MAA, to ask a European-based colleague of his, Paul Tombeur, to organize a "similar service of information and coordination" in Europe^[6]. At the International Congress of Medieval Philosophy in Madrid in 1972, Tombeur, along with a few colleagues, created the first European organization dedicated to the mission assigned by Gagné, *Ordinateurs et Recherches Médiévales (ORM)* [Wenin 1973].

At the same time, at least two other pioneer initiatives that aimed at organizing the uses of computers in medieval history were in the making in Europe. In 1973, the Belgian medievalist Léopold Genicot (1914–1995), collaborator of Tombeur in Louvain-la-Neuve, published a manifesto in the newborn journal *Francia* entitled "Pour une organisation de la recherche en histoire médiévale" [Genicot 1973]. He argued that coordinating the uses of computers by medievalists could be a first step in re-organizing the whole discipline, an essential process for the improvement of medieval history. Twenty-six medievalists occupying high academic positions offered to help in the realization of that initiative^[7].

In France, a third and rather different initiative was also in progress in the early 1970s. It originated from the activities of Lucie Fossier (1924–2023), a key figure in the development of computer-assisted methods in medieval history in France. At that time, Fossier was creating pathways between several research groups in Europe, e.g., the Institut de Recherche et d'Histoire des Textes (IRHT) in Paris, the Centre de Recherche et d'Application Linguistique (CRAL) in Nancy, the École Française de Rome (EFR), or Cinzio Violante's (1921–2001) research group in Pisa [Crérange and Fossier 1970] [Fossier 1978].

Facing huge difficulties in editing for the computer very heterogeneous historical corpuses, Fossier, the director of the EFR André Vauchez (1938–) and Violante organized a round table that would aim at discussing these intellectual and material obstacles. In 1975, a three-day international colloquium with more than sixty participants took place at the EFR [Fossier, Vauchez, and Violante 1977]. Genicot, as well as several signatories to his manifesto, participated, and the urgent need for a collective organization that would aim at coordinating and promoting the use of computers in medieval history was discussed. Shortly after the colloquium, these debates continued in the pages of *Francia*, where both Genicot and Fossier published drafts of questionnaires that would aim at gathering information in a standard way [Genicot 1975] [Fossier 1976].

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The debates that occurred between 1970 and 1979 between Fossier and Genicot highlight the various dimensions implied by the will to create a transnational and umbrella-type organization for computer users in medieval history in Europe. Filled with ambitions and hopes about potential insights brought by these new computing machines, these medievalists embodied different *rationales* at stake in the making of early humanities computing networks.

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1.2 Computers as an Opportunity: Re-Organizing the Whole Discipline

In his 1973 article in *Francia*, Genicot regretted that medieval history suffered from huge defaults (“défauts”) and was in some extent “fragile”, because “its studies and conclusions relied on mediocre texts and insufficient archives examination” (“dépouillement”); “partial”, because “it is too often only qualitative” and even “false to a certain extent”, because “a dimension of the past is absent due to the fact that historians have not inventoried all the manuscripts of an author work” [Genicot 1973, 692–694].

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In order to address the situation he diagnosed, Genicot developed since the early 1960s three types of research instruments (“instrument de travail”): inventories of available archive material; better quality editions of sources; and typologies of archive documents.

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In 1972, he published the introduction of a now well-known collection for French-speaking medievalists, entitled “Typologie des sources du Moyen Âge occidental”. This methodological instrument aimed at “establishing the nature of each genre of sources and presenting the specific critical rules valid for each of these genre” [Genicot 1972, 1258]. From Genicot’s perspective, it was meant to help every medievalist in the analysis of unfamiliar historical sources, in order for them to “consider each element of each testimonies” and therefore to elaborate “a rigorous and total history” [Genicot 1972, 1257].

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Ten years before, Genicot had also begun another project that aimed at making a new type of working tool for the medievalist: an edition, recorded on IBM punched cards, of a corpus constituted by all the Latin texts produced within the frontier of the actual Belgian territory before 1200. The goal of this work was to give to the historians

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a useful tool, almost indispensable, as many of their issues are semantic one and cannot be solve without tracking every uses of a given word. [Genicot 1974, 29]

In his aforementioned article published in 1973 in *Francia*, Genicot insisted on the function of computers in this process of tracking words in large corpuses in the following words:

Are we going to impose on scholars the immense and tedious task of going through all the texts and classifying alphabetically all the words? This would be a waste of both their time and competence. Because machines can perform this task. Electronic computers exist and historians must use them. [Genicot 1973, 694]

In the subsequent text, Genicot developed the value of such uses of these new machines for the medievalists:

They [medievalists] will also ask it [the computer] to analyze and characterize the language of each document, of each author, of each period or region, and they will be able to better judge the authenticity or provenance of the texts, to better decide on the values of the copies in case of loss of the original [...] and thus publish more reliable editions. [Genicot 1973, 695]

In light of the above, several functions were therefore attributed to computers by Genicot in 1973.

First, computers were machines that helped perform sorting and classification operations automatically and rapidly. Then, they were perfect tools for delivering medievalists from the time-consuming and tedious task of tracking the uses of words in large amounts of texts.

Regarding our matter, it is also particularly relevant to acknowledge that Genicot articulated in his article three different and fundamental elements for anyone who wants to understand the interest shown by humanities scholars for computers:

1. a diagnosis regarding the state of the discipline;
2. a solution to overcome that situation, based upon the creation of new working instruments; and
3. the support of a technical tool, the computer, devoted to a given function in the making of these working instruments.

This idea was not new in medieval history at the time. In 1961, the French medievalist Georges Duby (1919–1996) had already appealed to linguists to create better research instruments for lexicology. His intention was to advance the history of mentalities through a precise study of the vocabulary of medieval men and women [Duby 1961] [Lejeune 2023].

However, Genicot's diagnosis was far more general. Computers were considered by Genicot as a solution to overcome the fragility of medieval history, not just to improve the history of mentalities. Just as Duby claimed, these machines offered the medievalists efficient means to produce convenient inventories of both texts and words. Yet, Genicot also acknowledged the help of computers in publishing better-quality paper editions of archive material.

Nonetheless, the Belgian medievalist was aware of the magnitude of that program. The main difficulty was, in the context of the 1970s, the cost of projects using computers (in time and in subsidies). He then identified two specific pitfalls that, according to him, justify the need to set up a *secretariat* that will aim to coordinate the activities of medievalists using computers on a discipline-wide scale.

The first one concerned what he called “unnecessary duplication” [Genicot 1973, 695]. In the absence of an information canal, two distinct research teams could machine record the same texts or create the same programs with the same functions. This type of situation would be detrimental to the efficient use of researchers' time and funds since it would lead to the duplication of work already done by others. The second high-priority pitfall identified by Genicot was related to what he called “limited undertakings” [Genicot 1973, 695]. According to him, projects intending the record of only part of the texts ought to be avoided whenever possible, as this would limit the possibilities for other collectives to use these research instruments.

Both Genicot's diagnosis of medieval history and the solutions he proposed aroused a strong adhesion within the community of European medieval historians in 1973. Twenty-six medievalists from different countries in Europe and North America supported the call and claimed their will to engage in the making of a permanent secretariat. Among them were many famous European medievalists: Georges Duby, professor at the Collège de France; Philippe Wolff (1913–2001), supervisor of the aforementioned 1427 Florentine *catasto* study; Karl-Ferdinand Werner (1924–2008), director of the German Historical Institute in Paris and supervisor of a computer-assisted prosopography project [Werner 1977]; Karl Hauck (1916–2007) founder in 1968 of the Sonderforschungsbereich 7 of the Institut für Frühmittelalterforschung at the University of Münster, where numerous computerized investigations in medieval anthroponymy were carried out in the 1970s [Sonderforschungsbereichs 7 1990] or even Tombeur, the aforementioned director of the CETEDOC.

Despite this strong support, another *modus operandi* for connecting research groups using computers in medieval history was also in development at the time. Oriented towards other goals and adapted to projects mobilizing other types of sources, it shed light on the existence of various ambitions attached to electronic means of calculation within the discipline in the early 1970s.

1.3 Computers as a Challenge: Building Bridges over Common Difficulties

The second important initiative in the discipline in Europe originated from the coordination activities of the French medievalist Lucie Fossier (1924–2023). In 1970, Fossier was working at two major French institutions: the Institut de Recherche et d'Histoire des Textes (IRHT) and the Centre de Recherche et d'Applications Linguistiques (CRAL). At the end of the 1960s, the cooperation between the CRAL and the IRHT originated from the will to use computers for indexing corpuses of medieval manuscripts (charters, corpus of canon law) [Naïs 1970].

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The IRHT, created in 1937 as the first humanities' laboratory of the CNRS, was a "resource" institution where scholars tracked, gathered, and published research instruments for medievalists, e.g., indexes, catalogs, microfilms, or paper editions of medieval manuscripts. Their collaboration with the CRAL, founded in 1966 at the University of Nancy, relied on the fact that Nancy was one of the main university hubs of computer science in France in the late 1960s, alongside Grenoble and Paris. Scholars from the IRHT thus wanted to benefit from the expertise of Nancy's computer scientists in developing digital scholarly methods [Grossetti and Mounier-Kuhn 1995] [Créange and Haton 2014].

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In that context, Fossier acted as an agent of cooperation between both her institutions. In 1970, she co-authored an article in the *Annales ESC* with a computer scientist at Nancy, Marion Créange (1937–) [Créange and Fossier 1970]. She then created a computer science department at the IRHT in 1971 and started several digital projects: the production of computer-assisted editions, the creation of computer programs, and the publication of a book dedicated to a computer-assisted methodology for indexing archive material [Fossier 1978].

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In 1974, Fossier acted once more as a facilitator in another cooperation that took place between the École Française de Rome and the University of Pisa. Together with Cinzio Violante and André Vauchez, they initiated the organization of a colloquium intended to bring together these two research groups. In the editorial of the conference proceedings, the three editors present the initial purpose of the conference as follows:

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In connection with two projects currently underway - the publication of Pisan charters prior to 1200 for the historians of the University of Pisa and that of the registers of the popes of the fourteenth century for the French School of Rome - French and Italian medievalists were led to address the issue of the respective validity of traditional methods and computer science in the field of the exploitation of large series of documents preserved in the archives.

Having made, each on their side, the experience of the difficulty that there is, in our time, to carry out, in this domain, publishing enterprises that are at the same time led according to rigorous scientific criteria and likely to be completed in reasonable times, the signatories of these lines had, since 1974, put in common their perplexities and their desire to search for new solutions. [Fossier, Vauchez, and Violante 1977, 5]

This quote allows us to identify several differences between Fossier's initiative and Genicot's.

The first one is related to the fact that this *momentum* took shape at a local scale. Fossier, Violante and Vauchez did not initially aim to create a general framework that would encompass every computer-using collective across the discipline. They rather tried to get a few of these collectives to cooperate as they faced common challenges.

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This quote also reveals another essential difference with Genicot's program. It concerns the type of texts to which the working instruments that these actors plan to develop must give access to. In this second case, the research groups of Vauchez and Violante shared difficulties regarding the edition of "historical document" instead of "literary" works. In the foreword to the proceedings of the colloquium, the three editors formulated this distinction in these terms:

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The object of the present colloquium was mainly the historical document, the archival sources, dispersed, diverse in form and content. This kind of text, one suspects, cannot be treated by a machine in the manner of a literary work, first because it is presented in another form, then, and especially, because the point of view of the historian who will use the results of the treatment differs fundamentally from that of a lexicologist or a philologist. If, in the case of a literary corpus, the user

asks the machine to help him or her identify the characteristics of style, vocabulary, grammar or syntax presented by a work or an author, the essential concern of the historian is to grasp the content, i.e., the purely documentary aspect of a text, that is in any case devoid of literary value and most often anonymous. [Fossier, Vauchez, and Violante 1977, 6]

The working instruments that Violante and Vauchez wanted to develop were therefore intended to provide access to sets of documents that were completely different from those that Genicot was aiming for in his 1973 article.

However, it was also the scientific purpose of these instruments that was conceived differently by these actors: the historian, unlike the philologist or the lexicologist, would be interested in the *content* rather than in the *language* of the texts. In the perspective of giving access to this *content*, the organizers also put forward the necessity of constituting new research instruments, which necessity was justified by the limits encountered while editing “traditional” sources. Indeed, the traditional paper publication “implies long delays” of realization, often several decades, which practically prevented access to the majority of the documents. 39

One prominent example could help in realizing how long such a project could take. The undertaking to publish the collection of 13th-century papal registers begun in 1884 by the École de Rome and ended in the late 1990s [Galland 1996]. In this context, Fossier, Vauchez and Violante insisted, in the foreword of the proceedings, on the requirement of the historians: 40

Even if he benefits, one day, from a perfect edition, he [the historian] wants in the immediate future to be able to use the sources already stripped and asks that they be at his disposal even before they are put into final form. [Fossier, Vauchez, and Violante 1977, 6]

As with Genicot’s program, these research instruments were not intended to replace traditional editions but were meant to provide historians with a new type of resource for conducting certain types of research.

To pursue this objective, computers appeared to be a new solution. Still in the foreword of the proceedings, the three organizers presented the function of this new technical tool in these terms: 41

At this stage, the computer can, without a doubt, intervene in a happy way by allowing a rapid use of innumerable data - and also by contributing to accelerate the usual procedures of edition, in particular because of possibility to automate the elaboration of indexes of names, indexes of persons and places as well as of subject indexes. [Fossier, Vauchez, and Violante 1977, 7]

In a similar manner to the proposition of Genicot, the electronic means are presented by this second group of actors as tools that aimed to facilitate and to accelerate scholarly tasks rather than research itself.

However, the functions assigned to computers were here rather different. In order to allow “a rapid use of innumerable data” or “to automate the elaboration of indexes”, scholars did not have to record their documents in full, that is, as chains of character. Instead, they used a documentary language to describe the content of their corpora, following a methodology called documentary indexing (“indexation documentaire”) [Fossier and Zarri 1975]. 42

Just as in the case of Genicot, these elements reveal the relationship that this second group of actors establishes between: 43

1. a diagnosis regarding the defaults of the discipline;
2. the new type of working instruments that needed to be developed in order to overcome that situation; and
3. the function devoted to computers in the realization and the exploitation of these working instruments.

It also introduces a first set of key elements to distinguishing between the two rationales at stake: the organizational scale (European vs. local), the type of corpus (literary texts vs. archival documents), the object of the research (language vs. content) and the recording methods (full-text vs. indexing).

As we will see, from 1975 onwards, these debates were at the core of the development of a general framework in digital 44

2 Debates Upon the Purpose of a General Framework for Digital Medieval History

Fossier, Vauchez and Violante finally decided to “broaden the scope of their investigation” for the 1975 colloquium they held in Roma [Fossier, Vauchez, and Violante 1977, 7]. Genicot was invited to deliver the concluding remarks, and more than a dozen collectives engaged in historical research through electronic means presented their ongoing experimentation.

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Many of these projects were similar to the type of computer use described by the editors in the foreword of the proceedings. Led for the most part by archivists, they aimed to produce documentary research instruments that complemented the more traditional paper-based editions of sources. This type of instrument was therefore not dedicated to deal with a specific historical issue, but was intended to be as generic as possible, so that it could be used by a wide range of researchers.

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Another type of research instrument was also presented in Rome. It could be characterized by the institutions in which their authors worked: universities and research centers such as the CNRS or the German Historical Institute. Unlike the others, their producers did not aim to create generic research instruments but to develop databanks designed to solve a predefined historical problematic [Autrand 1977] [Genet 1977] [Mollat du Jourdin 1977].

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These second type of initiatives were not in line with the initial intentions of the conference organizers, for at least two reasons. First, they were not intended to provide access to the *content* of a large collection of documents since they may involve smaller sets of sources. Then, the instruments developed in these contexts were intended to allow the pursuit of a single scientific project without any intention to produce material that could be shared outside the working group. The possibilities of circulation of these heuristic research instruments were therefore quite different from those of the documentary research instruments that the collectives of archivists sought to produce.

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In his closing remarks, Genicot emphasized that specific issue in order to set a direction for the future organization he had in mind:

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Are we going to put the computer at the service of “open” research or “closed” research? In other words, will it be used to develop working instruments or to solve limited questions? [Genicot 1977, 425]

As we will see, the debates following this event in Roma were strongly articulated with the issue of the circulation of the research instruments, in a context where the two visions presented in Section 1 collided.

2.1 A Normative Framework for “Open” Research Instruments

In the conclusion, Genicot classified each of the recording methods of historical data presented by the speakers on an axis that goes from “open” research to “closed” research. Full-text recording was at one end of this axis since it allows: “to prepare and to facilitate all researches indiscriminately [...]. Including those that we do not think of today and that the progress of the problematic will raise one day” [Genicot 1977, 425]. The method of documentary indexing (“indexation documentaire”) was from Genicot’s perspective in the middle of this axis since while seeking to produce generic working tools, this method of recording limited the possible reuses. The last recording method identified by Genicot was statistical recording. He considered it a “closed research” since once the problem for which the instrument was designed has been solved, “the recorded tape or disk is no longer of interest” [Genicot 1977, 426].

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As some participants have shown with great detail during the conference, full-text recording implied material difficulties - and especially time and cost - that limit its systematic use. To overcome this problem, Genicot proposed several solutions to his colleagues. First, users could combine methods by recording, for example, some samples of the archival collections in full-text while using an indexing method for the rest of the collection.

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Second, medievalists could follow certain “imperatives” (“impératifs”) [Genicot 1977, 428] that would allow, no matter which method was chosen, to constitute research instruments that can be reused by other researchers: 52

1. “to operate on a set or on a slice of a set, with clean edges”;
2. “to draw as much inspiration as possible from the use that scholars will make of the tapes and discs today and tomorrow, that is, from the questions they will ask them”;
3. “to warn the user of the procedure followed and of the limitations that result from it”; and
4. “to reduce to a minimum the manipulation, intervention or interpretation of the document prior to the recording” [Genicot 1977, 428–429].

These rules highlight how Genicot’s concern to harmonize recording methods goes hand in hand with the question of making these research instruments available. In the conclusion of the proceedings, Genicot stressed another dimension of this same issue: 53

Should concordances of various types be drawn up, and distributed in book form, as was done by the Centre de traitement électronique des documents, the Cetedoc of Louvain for Lateran IV or Vatican II? Or do we just keep the list on the computer and offer to take a copy at their own expense? Or simply transfer the text or analysis to tapes and disks and make them accessible to those interested? [Genicot 1977, 430]

These various ways of publishing research instruments were also instrumental in debates about how to share and make available the products of computer use. While Genicot considered paper publication to be “the best” solution, he pointed out that its high cost prevents its systematic application. In the case of lack of funds, it could be sufficient, according to him, to “make it known that a set has been entered into the machine according to such and such modalities and that it can be consulted under such and such conditions” [Genicot 1977, 430].

Genicot’s 1975 proposal sketches out the first discussion on new forms of publication of research instruments in medieval history. It addresses the issue of their circulation which, not being able to pass through the medium of traditional academic publishing (the book), must be communicated in other forms (digital). In the last part of his conclusion, he suggested a clear agenda for the organization of the activities of every collective involved in the use of computers in medieval history: 54

One would first have to carefully describe the genre of corpuses he is working on [...] in their external characters and especially in their content and texture [...] in order to decide how to deal with them, to judge the necessity and possibility of recording them or not [...].

A second step would be to elaborate in a precise way, with the help of technicians, the mode of treatment, the “program” best adapted to each genre. In order to obtain or allow that, every enterprise is henceforth cast in a uniform and appropriate mold.

Finally, it would be a question of making known the projects completed, in progress or envisaged. And that in an identical, clear, complete form; much of the information today diffused is unusable because it lacks rigor; some even omit to say the type of computer employed. [Genicot 1977, 430]

Genicot’s agenda took up main lines of discussion of the colloquium: the issue of the description of the corpuses, the one of the definitions of the most suitable recording methods, and the one about the computer programs applicable to each dataset. The last part even proposes a first definition of the requirements to be followed in order to achieve the sharing of these new research instruments in an “identical, clear, complete” way [Genicot 1977, 430].

In 1975, shortly after the Rome colloquium, Genicot published in *Francia* the second part of his article “Pour une réorganisation de la recherche en histoire médiévale”. There, he argued that the circulation of standard information should enable digital research instruments to be used by other collectives than the one that produced them. He then submitted, as an appendix to the article, a document named a “Model of Description”, which purpose was to standardize the presentation of the achievements of collectives using computers in medieval history [Genicot 1975]. 55

This “description model” aimed at gathering both general and technical information: “documentation studied” (language, period), goals pursued, progress of the work, recording method (full-text, indexing, database), list of descriptors, type of analysis (linguistic, lexicographical, sociological, philosophical, etc.), bibliography. The questionnaire also requests other fundamental elements for the availability of the research instruments: the address of the host institution and the names of the researchers involved, as well as key information for potential re-uses: model of the computer, computer programs and languages chosen, data entry techniques (storage medium codes), and materiality of the data output (cards, magnetic tapes, magnetic disks, listings, etc.).

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This long list of information reflects the essential elements identified by Genicot to improve the circulation of computer research instruments. On the one hand, it concerns intellectual questions, i.e., related to the purpose of the research instruments and the type of sources or collections concerned. On the other hand, it addresses eminently material issues, i.e., the type of computers used or the mode of data storage, which define the portability of these work instruments from one computing center to another.

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This “model” also reflects the fact that scholars had to devise an original publication mode for these new types of scholarly instruments. Unable to print these indexes, dictionaries, and databases on paper and to publish them in book form, the actors implemented new type of descriptive documents. They were intended to enable a more efficient circulation of information and, therefore, a wider reuse of these tools. In that context, Genicot’s aspiration was based on his desire to advance the discipline, as a whole, as he concluded in his article:

58

In all the sciences, organization and collaboration are today one of the major conditions of progress. History is no exception to this law. [Genicot 1973, 697]

At the same time, Fossier, who agreed with the need for a collective organization adapted to the specificity of digital research instruments, contested that proposition. She argued for a more pragmatic approach to the situation, strongly oriented towards the observation that computer use remained an idiosyncratic matter.

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2.2 Towards a Pragmatic Framework for Every Research Instruments and Users

As mentioned in Section 1.3, one of the decisions taken by the participants at the Rome colloquium was to entrust the coordination and dissemination of information concerning the use of computers in medieval history to the computer section of the IRHT. In 1976, a first group of French scholars launched a survey at a European scale that would not only allow to “identify existing projects by means of a questionnaire”; but also to “establish cooperation [...] between specialized laboratories [...] in order to exchange programs”; and to “encourage [...] the creation of data banks” [Fossier and Zarri 1975, 618].

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The modus operandi they set up was distinct from the one proposed by Genicot in 1975, especially regarding the information requested in the questionnaire that will be sent to the identified users of computers. In 1976, Fossier responded to Genicot's proposal in another article published in *Francia* entitled “À propos d'un formulaire d'enquête relatif à 'L'information sur les recours aux ordinateurs” [Fossier 1976]. In this article, she insisted that this model did not take sufficiently into account the problems that arise in the treatment of medieval documents and she propounded several modifications to the questionnaire submitted by Genicot.

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For example, Fossier suggested adding a distinction between primary and secondary sources, since these two types of documentation did not imply the same type of difficulties with regard to coordination between the collectives. Indeed, while Genicot underlined in his 1973 article the problem of “duplication”, which would consist of the recording of identical corporuses of texts by different teams, Fossier explained in his article that this problem did not arise for “archival documents which, because of their uniqueness, their national or even local character, and most often because they are unpublished, are not likely to be exploited simultaneously in several places” [Fossier 1976, 721].

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Fossier also stressed the need to enrich the section devoted to recording methods. She recommended adding a section for respondents to detail the items they chose to extract from the sources. This modification was intended to distinguish the elements recorded from the recording method since, in many cases, medievalists decided to record only certain

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parts of the documents in full-text. Similarly, she proposed to expand the list of output documents mentioned by Genicot. It ought to include not only the type of output products available (index, concordance) but also the other possible functionalities of these research instruments, e.g., retrospective research or real-time exploitation.

In addition to these comments, which were aimed at adapting the model of the questionnaire towards all computer-assisted projects, Fossier also questioned the purpose of this enterprise. She addressed the coordination of the methods of analysis of so-called “documentary” sources. In fact, according to her, “the diversity of treatments to be applied to them [to archival documents] makes it difficult to exchange programs and code” [Fossier 1976, 721].

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She then concludes:

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Because of the extreme diversity of the material concerned, computer processing for medieval historians will always remain an individual matter [Fossier 1976, 721]

This consideration attached to the computer processing of archives material led Fossier to redefine the purpose of a global coordination in the field. In her eyes, a general framework must be put in place, but “instead of bringing an agreement between already constituted laboratories, it has to try to help the hesitant, the isolated without resources, to establish contacts that one would like to be fruitful between individuals” [Fossier 1976, 721].

She then proposed a rather different vision from the organizational framework defended by Genicot. The latter was interested in creating a normative framework that would aim at promoting the circulation of research instruments between collectives that were already using computers by harmonizing their local practices. Instead, Fossier propounded a horizontal model of organization. It would aim at offering researchers who wished to engage in the use of computers for their historical research the information, the resources, and even the help that would enable them to do so. Research groups already engaged in computer-assisted projects would also benefit from such an organizational framework through networking between individuals sharing common problems.

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In the year that followed, the survey launched by the IRHT’s computer science section produced its first results and confirmed the relevance of the model imagined by Fossier. First, the survey yielded meager results, with only twenty-one responses and just four reporting completed works. Second, the vast majority of the respondents were unable to fully complete the survey questionnaire because of the difficulties they encountered in using computers during their research. One file discovered in the archive of the IRHT provides fuel for understanding the situation.

67

In 1977, Georges Jehel was preparing a PhD dissertation that aimed to exploit notarial acts preserved in the State Archives of Genoa with computerized methods. The answer to the questionnaire he provided sounds more like a call for help than a status report on his current research. In the “observation” section of the questionnaire, he stated:

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It has been impossible for me to get any help whatsoever. In particular, an approach to the center for research in the humanities on boulevard Raspail went unanswered and unheeded. I started my research with vague information, and I have so far collected about 1,500 articles. I consider the systematic analysis of the minutes as a whole, in which I am willing to collaborate in an exhaustive perspective, to be of decisive interest. [IRHT 1977]

In this quote, Jehel reported on two types of difficulties.

The first one concerned his access to computers and computer specialists. The research center he mentioned here is the Laboratoire d’Informatique pour les Sciences de l’Homme (LISH) of the CNRS. It was created in 1975 in order to provide researchers in the humanities and social sciences with equipment (computers and peripherals) and computer specialists. However, the LISH was not able to respond to the numerous requests from humanities scholars in the first years of its creation, both because of the lack of human resources and because it was particularly engaged with researchers from the EHESS^[8]. The second difficulty faced by Jehel was related to the lack of available information about computer science methods applied to historical sources, which, in spite of the numerous publications in other disciplines (newsletter, bulletin, conference proceedings, etc.), left it to each researcher to constitute his own bibliography.

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Faced with Jehel's confusion, Fossier offered her help. In the two years that followed, she fixed the code he had established for recording notarial acts, advised him about data analysis programs, and even organized meetings on his behalf with other historians who were familiar with the computerized processing of notarial acts. 70

This type of interaction, which arose from this investigation, eventually led the members of the permanent secretariat constituted around Fossier to re-evaluate its function within the field: 71

It was a fiasco. It is quite explicable, because in addition to the tedious and sometimes traumatic aspect of a questionnaire, many medievalists were not able to formulate precise answers. In fact, it was the opposite that they needed: not to give, but to receive information. [Fossier 1988, 2]

In 1979, it was then with the objective to “reach out to the public of medievalists, offering them information that would touch them closely” that Fossier and her collaborators^[9] started a newsletter dedicated to the uses of computers in medieval history: *Le Médiéviste et l'ordinateur* [Fossier 1988, 2].

2.3 The Birth of a Scientific Network in Medieval History Computing.

The first issue of *Le Médiéviste et l'ordinateur*, published in 1979, laid the first stone for the constitution of an information network in digital medieval history. In order to gather both experienced and novice users of computers, the seven editors developed a series of editorial strategies, among which were free distribution, a particular internal organization, and the publication of working documents, e.g., coding sheets, marked-up texts, tables, graphs, etc. As I have shown elsewhere, these strategies aimed at dealing with the heterogeneity of the readership [Lejeune 2022b]. 72

Between 1979 and 2004, more than 330 historians, archivists, demographers, computer scientists, mathematicians, linguists, and archeologists, working in several countries across Europe (UK, Germany, Italy, Spain, Belgium, the Netherlands) were published in the newsletter. Some well-known DH scholars even wrote for the newsletter, e.g., Susan M. Hockey (1946–), Elizabeth A. R. Brown (1932–), or Patricia Galloway (1945–). 73

The list of subscribers is preserved in the archives of the IRHT in Orléans. It shows that *Le Médiéviste et l'ordinateur* was distributed, at its peak, to almost 950 individuals as well as to 50 institutions such as university libraries, archive departments and humanities laboratories in various countries. This wide diffusion alone assesses the success of that enterprise. It highlights to what extent Fossier and her collaborators were at the core of the development of an important scientific network in the field from the 1970s onwards, which is yet to be considered the first of this type in early medieval history in Europe [Lejeune 2021]. 74

Besides the newsletter itself, several other initiatives directly linked to the activities of the editors also show the great dynamism of that network after the 1970s. In 1989, the editors notably organized another conference for the ten years anniversary of *Le Médiéviste et l'ordinateur* [Fossier 1990], which reunited mostly French digital humanists. On a national scale, the late 1980s were also the moment where a huge inter-university project funded by the CNRS started, the ATP “Prosopographie”. It was oriented toward the development of prosopographical research instruments (software and databases). 75

In the early 1980s, the model of organization shaped by the editors of the newsletter even became a model for other historians using computers. In France, modern-period specialists André Zysberg (1947–) and Antoine Prost (1933–), both eminent adepts of computing methodologies, organized a roundtable with some of their colleagues in 1980. Debates notably took shape around the possibility of creating a collective organization at the scale of their research field. In the conclusion, Zysberg claims: 76

The initial idea would be to create a small information network. I'm struck by the lead taken in this field by medievalists with their newsletter, *Le Médiéviste et l'Ordinateur*. [Histoire et informatique 1980, 5]

In 1986, Jean-Philippe Genet (1944–), one of the most active historians on the editorial committee in the 1980s, created, with some former contributors to the newsletter, a peer-reviewed journal named *Histoire et Mesure*. Dedicated 77

to the relation between history and measurement, the journal emphasized the uses of computers not just for the case of medieval history but in the discipline history in general. It therefore provided new ways of promoting and sharing digital studies [Rédaction 2016].

Genet's role in the development of the "computing history" network was also important at an international scale, due to his implication in the *Association for History and Computing*. Officially created in 1987, it followed the organization of an international conference in 1986 by the British historians Deian Hopkin (1944–) and Peter Denley. There, participants decided to create an international umbrella organization dedicated to the organization of an annual conference, the development of national branches, and to the publication of a journal [Genet 1990]. In the late 1980s, probably around 1988, Genet became president of the Association. His trajectory shows how the development of an international network of historians computing relied on the previous development of national branches, such as the one developed within medieval history by the editors of *Le Médiéviste et l'ordinateur*.

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Conclusion

A precise analysis of the debates that occurred within medieval history in Europe in the 1970s highlights the fact that an early computing-related network arose from both shared ambitions and common difficulties.

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The cases of Genicot and Fossier show that medievalists shared convictions, drawn from their own experiences, regarding the need to use computers to develop new research instruments for medieval history research (automated indexes, databases, digital scholarly editions of text, computer programs); and observations about the material (cost, time) and technical (data recording options, modes of circulation of research instruments) difficulties they faced in applying these new methods to their source materials.

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In that context, the main challenge for these scholars was the circulation of information regarding computer use within the discipline. However, I have highlighted that very different rationales were defended in the pursuit of that goal. Genicot and Fossier's agenda differed on several points:

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1. the types of corpus considered were different (large collections of documents vs. literary works);
2. the objects of these researches were dissimilar (*content* vs. *language*); and
3. the recording methods used were not the same (documentary indexing vs. full-text recording).

My study underlines that two distinct attitudes were adopted. On one hand, Genicot imagined a normative framework that would aim at defining common rules and standards for the early users of computers in the field. On the other hand, Fossier did not propose any rules or standards. As I have shown, her empirical approach led her to identify medievalists' difficulties. She then created a new channel of communication that will aim at helping or convincing the scholars who hesitated or were wishing for help: *Le Médiéviste et l'ordinateur*.

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That narrative provides, in my opinion, some clear elements to assess the need for another approach to the history of early DH than the ones developed since the early 21th century [Hockey 2004] [McCarty 2005] [Svensson 2010] [Sula and Hill 2019]. First, it shows that the will to collaborate was distinct from the type of computer application designed by the actors. In that perspective, this case-study underlines that early DH practitioners did not organize collectively only because of common practices nor methodologies, but mainly because they faced common difficulties in the access to the information about these original practices.

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Second, it suggests that distinct early DH networks arose from distinct rationales before they eventually joined together to discuss the purpose of a more general framework. This implies that early DH historians need to focus both on the rationales at stake in each of these networks and on the purpose of a more general computer-related framework in the pre-existent discipline. In doing so, we might draw a better picture of the early field, which needs to be considered more as a tree structure than a traditional historical timeline.

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If this avenue of research will inevitably complicate the history of the field, it will also be, in my opinion, of great benefit in order to fight some of the actual criticism that DH faces in the academic world. By focusing on the rationales at stake in early DH history, I am able to show that DH is not just a label nor a power network [Kirschenbaum 2012a]. DH is the

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result of a collective organization of researchers debating about common issues related to the uses of computers in the humanities.

One of the most important debates since the early 2010s is notably the definition of the perimeter of the field. This debate has been dramatically complicated by the huge development of personal computing and the massive uses of computers since the 1990s. Moreover, almost every collective in the humanities now produced digital research instruments in the course of their research, either because of tacit injunctions or data regulations policies. In that context, how should we consider the specificities of DH practices? And what is the role of DH communities in these developments?

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In my opinion, these questions need to be addressed through the lens of historical elements. In that direction, my study acknowledges the fact that early practitioners' crucial issue was potential re-use of digital research instruments. Do we need "open" research instruments created with the purpose of sharing data and opening new avenues of research? Is it even possible, regarding the specificity of every project and the specificity of the problematic in each field of research?

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These issues are still preeminent ones for both DH and the humanities. Because of that, I suggest that digital humanists should not just discuss their own practices and advocates for better digital practices in the humanities. We also need to engage with a reflexive work on massive development of digital since the late 1950s. In that direction, a better history of DH is definitely needed.

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Notes

[1] Beside the now famous first part of *A Companion to Digital Humanities* [Hockey 2004], many recent studies explore some of these projects at a national or disciplinary level, e.g., [Léon 2015] [Plutniak 2017] [Crymble 2021] [Fabry 2021]. For a complete view of these development, the "Directory of Scholars Active" published by the journal *Computer and the Humanities* between 1967 and 2004 offers an incredible material. It compiles a large survey of thousands of projects using computers in the humanities. However, no extensive study of that corpus has been conducted to my knowledge, excepted in [Sula and Hill 2019].

[2] Following Busa's work on Saint Thomas Aquinas, many medievalist philosophers have engaged with computers, soon followed by medievalist historians. A report on some early initiatives in this field could be found in [Wenin 1972].

[3] The outcome of the study was [Herlihy and Klapisch-Zuber 1978]. This book was also published in English and in Italian few years later: [Herlihy and Klapisch-Zuber 1985] and [Herlihy and Klapisch-Zuber 1988], respectively.

[4] All translations in this article are mine.

[5] For an example of the first uses of the directory of scholars active in the *CAMDAP* see [Bullough, Lusignan, and Ohlgren 1974]

[6] Paul Tombeur was the director of one of the most important computer centers in the humanities in Europe, the CETEDOC (Centre de Traitement Électronique des Documents). The CETEDOC was attached to the University of Louvain-La-Neuve in Belgium. Among its major contributions to the field, it initiated the edition for the computers of the now famous *Corpus Christianorum* now available as the *Library of Latin Text* (LLT) [Tombeur 2012].

[7] The most represented country in that list was France (11), then came Germany (5), Belgium (3), England (1), Scotland (1), Italy (1), Spain (1), and Czechoslovakia (1). Some names and institutions of the signatories are given in the first section of this article.

[8] This hypothesis was suggested to me during an interview with Philippe Cibois, a former computer scientist at the LISH in the 1970s.

[9] The editorial board of that publication was formerly composed of seven scholars, six historians and a computer scientist. They were all both attached to French academic institutions and present at Rome colloquium: Christiane Klapisch-Zuber, Jean-Philippe Genet, Josette Metman, Jacques Lefort, Caroline Bourlet and Gian Piero Zarrì.

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