
Digital Humanities Context

Technological changes at the information production, communication and mediation level (Barbot and Lancian 2003) affect the economic and social life of all people, and in particular of the researcher. At the same time, these changes are transforming his/her practices: we can cite, as an example, the access to scientific knowledge facilitated by the use of databases, the presentation of this knowledge to the community through digital media as well as to the public student and “any public”¹, according to different formats (audio, audiovisual or graphic). These changes integrate into a development approach already initiated several years ago. Even if digital humanities are rooted in a movement in favor of the dissemination, sharing and development of the scholarly knowledge produced by scientific communities, they want to play a role and incite the use and development of HSS digital tools, online/offline, as well as to motivate questions around their definition: do digital humanities constitute a new discipline? And/or a methodology for HSS? Both?

With this in mind, we describe in this chapter the reasons which, today, lead the HSS to “be structured”, or rather to “evolve” with the computer science field. We then present the different lines of thought which structure the current debate on digital humanities (training, innovation related to teaching and research, transliteracy development²), as well as the questions that these lines raise in the academic context. Next, we present the three

1 Term borrowed from Alain Thousand concerning MOOCs. It is not a question of proposing media of knowledge to the “general public” but rather to “any public”, that is to “different publics”.

2 The ability to read, write and interact through a variety of platforms, tools and means of communication.

fields of actions which make up the activities related to this field and to which our research results, presented later in the book, are joined. Finally, we describe the digital resources which, over the years, have contributed to the evolution of scientific practices in humanities and social sciences (HSS).

1.1. Knowledge in humanities and social sciences should be structured through interaction

Developing knowledge, along with the epistemological question of the construction of this knowledge, has always been the goal of scientific research. In the field of language sciences, we can cite, for example, Ferdinand de Saussure, the founder of linguistics. He rejects the primacy of the ontological existence of objects of knowledge for the benefit of their construction in and through scientific practice: “it is the point of view that creates the object” (Saussure 1916). From a completely different perspective, Michel Foucault, who intended to identify “changes that occur in general in the field of history” and more specifically “in the field of history of knowledge” (Foucault 1969, p. 25), defended the idea that discourses are not simple representations of things but “of practices which systematically form the objects of which they speak” (*ibid.*, pp. 65–67). These objects are thus developed through discourses, exchanges and divergences between the participants who formulate their individual, but also collective, points of view (associated with communities and/or theoretical trends).

However, historically, in “the discipline of knowledge” which dates back to the 18th Century (Foucault 1997), the world of academic research is organized in “fields” (Bourdieu 1992). Until the middle of the 20th Century, each of these fields, such as sciences, history, arts, literature, law and management, identified its own objects of study, drew on its methodologies and disseminated its knowledge according to its own specific methods and scientific protocols of communication. Thus, knowledge and know-how were produced and disseminated to closed communities, to which the researcher, author of his/her publications, belonged. This structuring by fields is translated over the years in the representations of stereotypes, still present today: on the one hand, we have the so-called “exact” sciences, also called “hard sciences” or simply “sciences”, and on the other hand, the HSS, also called “soft sciences”.

We had to wait for the research conducted in the 1990s in the sociology of sciences to be able to consider “science as a system of exchanges” (Vinck 1995) between different networks formed by laboratories, research teams, inter-university projects, partner institutions, etc. The use of digital technologies in these networks has promoted the development of new methods of scientific work, in consortia, in larger communities and in collaboration between participants who are not all researchers (technicians, engineers, industrialists, for example). These methods generated geographic mergers, groups and exchanges of research practices between “hard” and “soft” sciences, constituting this “third culture” (Brockman 1995), *Digital Humanities* (Berry 2012; Latour 2010). Through this third culture, we are witnesses of the development of perspectives from different horizons (HSS and computer science, among others) which were previously separated, to open up a “community of interests” between researchers (Booker *et al.* 1997) belonging to laboratories³ that integrate individuals from different disciplinary fields.

These new practices tend to disrupt scientists’ activities in HSS. They reveal new needs that are fulfilled in some cases by the work of a technician or an engineer (audiovisual or computer scientist). They also participate in data collection, in the search of particular components/phenomena in the framework of a qualitative and/or quantitative analysis, as well as in the dissemination of the results on computer media (a website, for example). Today, with the arrival of the political and institutional “wave” associated with digital humanities, this effort of the union of two communities (HSS and computer science) and of research practices is fully realized. It opens not a plotted, but a very real path on an exchange effort, agreement on research protocols, mixed methodologies, broader scientific communication methods and still unidentified theoretical frameworks. Today, these unions are essential for the survival of certain disciplines in HSS that must organize and interact with other actors, other disciplines in order to continue to exist. Knowledge is no longer seen as a possession of the subject, in an internalist view of cognition; rather, it is designed in a localized and distributed social construction (Goffman 1961; 1988; Suchman 1987; Hutchins 1995). With this approach in mind, knowledge is an “embodied and socio-technically

3 A laboratory is defined by Latour and Woolgar (2008) as “a literary inscription system, whose goal is to sometimes convince that a statement is a fact” (p. 91). “[...] A fact is recognized as such when it loses all its temporal attributes and integrates into a vast body of knowledge advanced by others” (p. 92).

registered practice” or “mind-body-thing practice” (Amin and Cohendet 2004). It is both an object and a process, resulting from an interpretative practice which is “increased” by computer applications and Internet architectures designed as objects embedded in the action, in which the individual researcher, actor of his/her thoughts and activities, is a participant, sometimes despite him/herself, in two communities (HSS and computer science) through the use of digital resources that are imposed/proposed by his/her hierarchical authorities. New approaches for the production of bi-disciplinary scientific knowledge gradually take hold, offering the possibility of comparison with those previously implemented.

Through the development of digital humanities, the challenge is therefore to initiate more markedly this distributed social construction which goes beyond disciplines, by examining and questioning the consequences related to increased interpretative practices. Accordingly, we believe that French academic research does not yet sufficiently measure the issues of the presence of digital technology in all of the activities conducted (activities of production, access and dissemination of knowledge). In particular, HSS suffer from a very marked disciplinarization, coupled with the persistence of a too strong individualization of the researcher. Scientific HSS research still remains compartmentalized and does not benefit enough from exchanges with other researchers from neighboring disciplines. We believe that the arrival of digital humanities and the possibilities offered by digital technology will make the disciplinary mentalities in HSS evolve and that relations will be created to investigate objects of research which have every interest to be investigated from different, but also joint, perspectives.

For example, the work on the use of social networks can be considered in different ways by research in language sciences (interaction analysis), in computer science (automatic analysis of traces left by Internet users), or even in sociology (human behavior studies). This is complementary research on the same object, which the researcher does not necessarily always take into account in his/her own approach. One reason lies in the habits of a community which claims to be disciplinary, that is centered on theoretical frameworks sufficiently complex in their historical foundations. A second reason is related to the ignorance of the existence of the work from other disciplines, but also to the difficulties of access to articles (even with the help of digital technology). A third reason is associated with the difficulty in reading this work. University training is currently carried out through models

implemented (even at doctoral program level) according to a persistently too disciplinary approach.

Thus, an opening of research effort beyond the borders of restricted communities is possible. Digital humanities constitute a pretext but also a vector of energy, of which HSS researchers must take hold in order to open up new research approaches and new scientific issues⁴. Such a decompartmentalization, at the disciplinary and individual level, would allow a better circulation of knowledge, identification and treatment of emerging issues, offering a new generation of researchers the opportunity to join a larger and innovative community in its plural theoretical frameworks. These changes are currently transmitted by an institutional desire, through three lines of thought.

1.2. Lines of thought

Thought on digital humanities is mainly organized around three areas:

1) training in digital humanities. This training is widely discussed in the world of Higher Education and Research⁵. Its objective is to develop the students' ability to access a detailed understanding of the strategic, social, cultural and professional issues of the changes in practices with the help of digital technology. "This question [of training] is central, because it is through the implementation of real curriculum that we will be able to elevate digital humanities from what can be perceived as an 'individual pet cause' to a more established position in the institutional landscape" (Berra and Clavaud 2012, p. 41);

2) the emergence of innovations related to teaching and research. From the point of view of education, digital humanities support the democratization of access to educational content and encourage self-learning activities, as evidenced by the proliferation of MOOCs (in France since 2014⁶) and the massive use of Internet users (teachers and/or learners) of tutorials/various documents made available on the web. Regarding research, the issue is to help unlock complex problems calling for the implementation

4 These multidisciplinary approaches in HSS are supported by European calls for projects or by the National Research Agency.

5 Many master's programs now incorporate the term "digital humanities" in their title.

6 With the France Université Numérique ministerial project/platform.

of multidisciplinary approaches, both comprehensive in its approach and analytical in the different points of view analyzed;

3) the development of the transliteracy concept. This concept is understood as an acculturation to digital technology, an ability to interact in a connected world in order to transform the information that is made available into knowledge integrated by the individual and implemented during his/her own activities. This acculturation is a change which leads us to reconsider educational and scientific practices, to step out of the usual framework in order to move toward new spaces of education (schools that are connected, virtual, etc.) and research (conferences that are inverted, remote, with a virtual presence, etc.), oriented toward the abolition of spatial (examples: *learning labs*, *learning center*, *fablabs*, etc.) and temporal boundaries (remote or hybrid collaborative devices, integrating synchronous and/or asynchronous communication tools), making way for training and research situations that are less compartmentalized from a disciplinary and geographical point of view.

These different lines of thought question the contributions of digital technology in the social and university context⁷ regarding:

1) the emergence of new professions (e.g. disciplinary scientific digital publishing), which are not yet considered in the training currently being offered and which call for the implementation of a dual training course (HSS curriculum and computer science curriculum);

2) the process of presentation, sharing, dissemination of knowledge. Even if we see more and more video recordings on the web (examples: conferences, round tables, etc.), scholarly knowledge is still widely presented and disseminated through textual productions, which are thus shared with a particular community that knows where to find/locate these productions (e.g. specialized journals) and reinvests them in its own work, according to well-established citation methods (APA format, for example). Today, other scientific research presentation methods must be taken into consideration with the use of, for example, 3D, virtual reality and augmented reality. These technologies can reflect different research results and illustrate differently the methodologies implemented to obtain them. These

⁷ How do these humanities modify knowledge and disciplines? Should we design training courses in digital humanities? What knowledge and skills should we develop? How should we transmit them? With what objectives? With what critical contribution?

productions would complement written articles, would be published and disseminated both on the same publication circuits and on new channels, reaching new communities that are aware of these presentation methods. For the dissemination of this knowledge on new media, changes have to be considered and new citation format standards of these documents have to be initiated: for example, how can we cite in a video the text of the corresponding article or comment on the scientist's gesture in a virtual reality application;

3) the researcher's personal development, whether he/she is a beginner or experienced. On the one hand, the scientist is constantly asked by his/her institutions to use digital tools (developed by the supervisory institutions). On the other hand, he/she is asked to implement a proven methodology for the development of an innovative work, responding to institutional demands for excellence and important socio-economic needs. The question of the contribution of the digital technology for the individual, actor of his/her own activities, is posed. The challenge is to respond to both growing institutional requirements and personal motivating expectations.

1.3. Fields of actions

Today, digital humanities are opening up the debate on the identification of the professional needs of HSS scientists, which up to this point were disciplinarily "compartmentalized". In fact, as we discussed at the beginning of this part, each discipline was characterized by its research questions, its methodologies, its forms of results and its methods of sharing knowledge with different members of the same community. With the arrival of digital humanities, the HSS researchers' needs are opening up to more transparency and a larger illustration of complementarity in the obtained results, in the work methods which, for some, are pooled together and, for others, tested. All of these initiatives are related to the three fields of actions offered by digital humanities.

On an initial level, the term "field" is understood in the sense of "a space of a certain extent and more or less clearly delimited, in which a known activity takes place"⁸. In this space, the "known activities" carried out by the researcher are considered in regards to the place given to digital technology.

⁸ Excerpt from TLFi (*Trésor de la langue française informatisé* – Digitized Treasury of the French Language).

Not easily quantifiable, not very qualifiable and specific to each actor, these activities correspond to the daily actions executed, assisted by computer tools, such as, for example, the exercise of note taking during the reading of a book/article, supported by a text editor, or the update of a bibliography aided by a reference management software.

Second, the field corresponds to a national and international, institutional and associative decision⁹ (ADHO¹⁰) to build structures dedicated to the support of scientific research. These institutions wish to open research to new work perspectives.

In the European context, and more particularly as an example in the field of language sciences, we mention the ERIC¹¹ CLARIN¹² consortium. An ERIC is a type of international legal entity established by the European Commission in 2009. Its members are governments or intergovernmental organizations. Currently, 14 members and one observer constitute the ERIC CLARIN consortium, which specializes in linguistic resources. This consortium counts 13 countries at present (France is not currently on the list). It aims to provide HSS researchers easy and sustainable access to digital language data (written, spoken, audiovisual or multimodal) as well as tools to discover, explore, exploit, annotate, analyze or combine these data. There is also the ERIC DARIAH¹³ consortium. In this consortium, each member country (currently 17) provides its productions, its knowledge, its skills, and in return benefits from the productions and knowledge offered by other countries. The objective is to establish a network of actors, expertises and computer services, which are sustainable and transferable to other disciplines. These two ERIC participate in the PARTHENOS¹⁴ program,

9 Acting as a “tent” (Melissa Terras), ADHO (Alliance of Digital Humanities Organizations) brings together different associations. It includes a set of associations dealing with digital humanities.

10 Alliance of Digital Humanities Organizations: “global umbrella”, it is a coordinating association of other associations, such as the ALLC, the SCHN, the ACH, the aaDH, the Japanese Association for Digital Humanities, as well as Centernet, which represent the centers of digital humanities. ADHO can be perceived as the UN of digital humanities.

11 European Research Infrastructure Consortium. URL: <https://translate.google.fr/translate?hl=fr&sl=en&u=http://clarin.eu/&prev=search>.

12 Common Language Resources and Technology Infrastructure. URL: <https://www.clarin.eu>.

13 Digital Research Infrastructure for the Arts and Humanities. URL: <https://www.dariah.eu>.

14 Pooling Activities, Resources and Tools for Heritage E-research Networking, Optimization and Synergies, <http://www.parthenos-project.eu>.

recognized in the framework of the H2020¹⁵ program. This program strives to offer a thematic cluster to the two European infrastructures (CLARIN and DARIAH): PARTHENOS aims to focus on different life cycles of digital data in the HSS disciplines, to offer a policy of data access, interoperability, archiving and reuse of these data.

At the French national level, three sets of infrastructure are distinguished. We first have international organizations (IO). They aim to open up the thinking on the tools and devices within the framework of large international agreements. These organizations are legally based on intergovernmental conventions which specify the financial protocol, the objectives of the organization, the requirements for membership, the operating bodies and the contribution methods of the member states.

Next, we find the very large research infrastructures (TGIR¹⁶). TGIRs, translated concretely by means of several LOLF¹⁷ actions, bring together the instruments that are the subject of international or European partnerships. Researchers from all disciplines (astronomy, biology, physics, chemistry, human and social sciences, earth sciences, etc.) thus have access to the most efficient equipment in a very high-level international scientific environment: telescopes, accelerators for high-energy physics, sources of neutrons and synchrotron radiation, lasers and intense magnetic fields, means of high-speed computing, etc.

More particularly, created by the union¹⁸ of the Adonis Very Large Equipment and the IR-corporus, the Huma-Num (Digital Humanities) TGIR¹⁹

15 The European program Horizon 2020 which brings together the funding of the European Union in the field of research and innovation, and is structured around three major priorities: scientific excellence, industrial leadership and societal challenges. The kick-off was given on December 16, 2013, by Geneviève Fioraso, Minister of Higher Education and Research and came into force on January 1, 2014 in France. URL: <http://www.horizon2020.gouv.fr/cid75832/la-france-donne-coup-envoi-programme-europeen-horizon-2020.html>.

16 Very large infrastructures in digital humanities: <http://www.cnrs.fr/fr/recherche/tgir/presentation.htm>.

17 Organic law on financial laws.

18 On March 1, 2013.

19 The Huma-Num TGIR is supported by the 3598 Mixed Services Unit (Unité Mixte de Services), which associates the CNRS, the Aix-Marseille University and the Condorcet Campus.

aims to facilitate the digital turning point of HSS. It strives to develop a human (a collaboration based on a network of partners) and a technological (perennial digital services) device, the purpose of which is to support the different stages of creation, monitoring and dissemination of digital data. In addition to the Huma-Num TGIR, we can also mention the PROGEDO (Production and Data Management) TGIR. The mission of this second TGIR is to develop the culture of data, to raise the level of national structuring of research communities by deploying a development strategy between research organizations, large establishments and universities, as well as to strengthen the position of France in the European Research Area. With this in mind, PROGEDO organizes the support for the collection, documentation, preservation and dissemination of the data necessary for HSS research. It also participates in the implementation of devices with secure access to its data. In view of its objectives, this TGIR is a gateway to European infrastructures and international devices for the researcher.

Finally, also at the French national level, we find Research Infrastructures (IR). They correspond, for example, to the networks of infrastructures pooling either human resources or research equipment. They have a centralized, identified and effective governance²⁰. We can name the OpenEdition IR (Open Electronic Edition in HSS) and the RnMSH IR (Réseau national Maison des Sciences de l'Homme – National Network, House of the Sciences of Man). The OpenEdition IR designs new digital scientific publishing methods (open access) with online tools of exploitation, appropriation and collaboration. This effort allows for a better circulation of knowledge in addition to an improvement of the impact of multidisciplinary research projects and results for local and national socio-economic actors. The RnMSH IR is currently composed of 23 Houses of the Sciences of Man (Maisons des Sciences de l'Homme), located throughout France. Their objective as infrastructures is, in particular, to implement different platforms²¹ in order to accommodate linguistic data in digital format.

20 See the list of IRs: <http://www.cnrs.fr/fr/recherche/tgir/ir.htm>.

21 Spatio (spatialized data), Scripto (recorded data), Visio (audiovisual corpus), Cognito (for cognitive sciences), and Data (quantitative data corpus) platforms, supplemented by the Fundit.fr platform (Internet portal consolidating the calls for bids relating to mobility and research funding at European and international levels).

Lastly, digital humanities challenge the “service grids”²². These grids offer technical solutions of long-term hosting, dissemination, processing and archiving of projects of corpora, digitized sources and indexed resources that are the subject of sophisticated documentary enrichment (metadata supported by specialized thesauri, for example). In particular, six services are provided by Huma-Num TGIR:

- storage services²³. These storage tools are accessible through Web interfaces or via file transfer protocols. They offer features of access, folder structuring, exchanges and file sharing;

- processing services. At each stage of a project, Huma-Num offers an IT solution adapted to the needs of transformations or analyses of digital data: software for processing, visualization, encoding, setting up databases, etc. With the help of these services, the researcher can “extract and annotate serial or textual data, calculate or annotate multimedia, audiovisual, 3D, cartographic data, etc.”²⁴;

- distribution services²⁵. They bring together a set of tools allowing online data publication. This service promotes open access to data, databases and metadata. It is part of a framework that promotes the controlled reuse of data produced by others, in particular by raising awareness of distribution licenses (Creative Commons, Etalab, etc.) in communities;

- exposition services²⁶. Huma-Num implements a data exposition service called NAKALA²⁷ which offers, on the one hand, access services to the data themselves, and on the other hand, metadata presentation services;

- description services offered by ISIDORE²⁸. It is a service that collects, enriches and offers descriptions and a unified access to digital documents and data (more than 800 data and metadata sources). It is the largest scientific Opendata project in France. It offers access to more than three million digital documents through an adjustable research platform which

22 Evolution of the Huma-Num service grids, created and launched in 2009: <http://humanum.hypotheses.org/tag/grille-de-services>.

23 <http://www.huma-num.fr/services-et-outils/stocker>.

24 <http://www.huma-num.fr/services-et-outils/traiter>.

25 <http://www.huma-num.fr/services-et-outils/diffuser>.

26 <http://www.huma-num.fr/services-et-outils/exposer>.

27 <https://www.nakala.fr>.

28 <http://www.rechercheisidore.fr/apropos>.

federates access to digital data of HSS research while linking data by means of multilingual enrichments;

– archiving service²⁹. Huma-Num supports data producers throughout the archiving process, and creates the link between scientific communities and CINES³⁰. It helps data producers in choosing a data format and designing, in a standardized form, the descriptive data (metadata) which are essential to their entry into the CINES archiving system.

Through these grids, we want to implement resources and more widely shared solutions, faced with redundant needs of digital data cycle management. These services are useful in several communities as well as several disciplines and provide ideas of practices to other researchers. These practices are then questioned and tested. Some are validated in their scientific contributions, while others are tested and then abandoned.

Thus, digital humanities, through the first field of action, are interested in the researchers' practices according to a rising approach, in that the objective is to apprise and categorize the actual activities. The other two provide infrastructures that the researcher can solicit and services that he/she can use in his/her individual and collective activities. We are here in a top-down approach, where organization proposals are implemented and digital resources suggested. This provision of digital resources is not new. Over the years, according to the different phases that form the history of digital humanities, several resources have already been proposed.

1.4. Digital resources at the heart of digital humanities

Digital humanities, as they are historically described in the literature, give the impression of an inventory, a list of actions carried out in different, separated contexts that are produced over the years. This is not the case. We are very much in the presence of a continuum of activities carried out in the same direction of creation and development of a merger between HSS and computer science, responding to an increasingly more defined need.

29 <http://www.huma-num.fr/services-et-outils/archiver>.

30 Centre informatique national de l'enseignement supérieur – French National Information Center for Higher Education.

Currently, we are in a third phase, or rather a third period (Citton 2015), which unites HSS and digital technology.

The first period (1949–1980), known as *Literary and Linguistic Computing*, focuses mainly on the development of quantitative models (index creation, frequency calculation, lexicometry, etc.). An example of a digital resource that dates back to this period is Frantext³¹. It is a database of more than 4,000 texts³², available online, by subscription, which range from the beginning of the 16th to the beginning of the 21st Century, in addition to several texts from the 13th Century. This resource offers to the researcher the possibility to conduct quantitative synchronic and/or diachronic research in HSS. It also offers the possibility to select and consult a list of texts through bibliographical criteria (titles, authors, dates/periods, literary genres), to specifically search for a word or an expression in a text or a set of texts, to conduct tallies (frequency calculations) on the use of words by decades as well as searches of co-occurrences (use of two words close to one another) from graphic words or lemmas³³.

This digital resource eases data collection activities, which can be complex in some cases due to the difficult access of some texts and/or the number and the diversity of the texts³⁴ necessary for the researcher's study.

The second period (1980–1994), called *Computing Humanities*, began in the 1980s. It created a unifying process between digital technology and HSS through the implementation of formal frameworks (standards and classifications of heterogeneous data). One of the most important projects of this period is TEI (*Text Encoding Initiative*)³⁵:

31 The base of Frantext texts proposed by ATILF, Nancy 2 University (<http://www.frantext.fr>). But others are also interesting, such as the *Base de français médiéval* or even the *Corpus de la littérature médiévale de Garnier*.

32 4,746 references, 285,923,119 words, from the 10th to the 21st Century.

33 All forms of a same verb, a same adjective or a same noun, for example.

34 Frantext consists of mainly literary works, but also contains historical, political, philosophical and scientific works.

35 General presentation: <http://www.tei.fr/presentation/>; markup proposals: <http://www.tei-c.org/index.xml>; TEI Lite: code to exchange: an introduction to the final TEI Edition revised for TEI P5, http://www.tei-c.org/release/doc/tei-p5-exemplars/html/tei_lite_fr.doc.html.

“TEI has therefore taken the form of a unique, encyclopaedic model, of representation of the signifying elements of a text.”
(Burnard 2012)³⁶

It is an initiative instituted by an international academic community. Its objective is to define recommendations for the encoding of textual documents in XML³⁷. Launched in 1987, this initiative aimed to establish interoperability between the texts of linguists, historians, literati, philologists and even archaeologists. Through the markup language of the document and its structuring³⁸, the objective is to facilitate the sharing, dissemination and archiving of texts. Each text is thus described in its structure: nesting of paragraphs and verses in addition to the different exchanges between interlocutors that form the text.

This standardization plays an important role in the construction of a common culture of research in HSS. It marks a willingness to engage in a sharing of texts beyond the discipline and the nature of the scientific work carried out on these documents.

Finally, since 1995, we have entered the *Digital Humanities* period. This most recent period is characterized by the arrival of a set of practices and multidisciplinary scientific issues related to the dissemination of research results in connection with the deployment of the web and, more particularly, of social media (blogs, wikis, social networks, etc.). *Digital Humanities* interrogates in particular the dissemination methods of scientific productions. The objective is to provide transparency to the activities conducted, to the processes of progress of works/projects produced and the

36 Paragraph 41, <http://books.openedition.org/oep/242?lang=fr>.

37 eXtensible Markup Language. XML provides a simple way to represent structured data as a linear stream of characters, and to mark specific parts of this stream with “tags” appointed to indicate a structural function or elements of semantics.

38 “MOOC Ville Durable: être acteur du changement”: xMOOC, offered by Laurent Vassallo and myself, from January to March 2014, University of Montpellier-IUT in Beziers. The exchanges between the different MOOC participants in the discussion forums were structured (TEI-XML), constituting a corpus made available to everyone in the framework of the ORTOLANG project (Outils et ressources pour un traitement optimisé de la langue – Tools and resources for optimized language processing), an equipment of excellence validated in the framework of future investments. One of the objectives of this project is to collect the corpora currently available in the different humanities laboratories and to make them available to everyone (researchers and non-researchers). These corpora are available: <https://www.ortolang.fr/market/corpora>.

reflections of the participants involved. For example, research logs are defined as a tool of scientific information open to the entire HSS community. These logs are a place to present ideas, field data, difficulties encountered and questions that make up an ongoing research project. They are defined as journals of research in construction, in the process of being completed, a kind of *work in progress*. These logs can be individual or collective. They present information in connection with the seminar of a research team, a laboratory or even a scientific association, for example. It is also a place to announce future scientific events/activities, a list of publications (related to the project), a personal and/or academic *curriculum vitae*³⁹. As this is a space of freedom where everyone can free themselves from the conventional publication intermediaries (book or journal publishers), these research logs offer the means to control publishing (frequency and content). It thus presents a new form of writing, with neither temporal nor scientific constraints (date, writing standards, content evaluation by a peer, etc.).

The research log, as it has been originally defined by its designers, has the role of disseminating the research activity of a scientist or someone associated with a project in the process of being completed. This dissemination promotes exchanges between actors from the private world and the public world, students as well as everyone interested in the topic addressed. With this in mind, the log offers the possibility to these readers to be able to submit comments and thus enter into interaction with the actors of the presented research.

Thus, the research log is unique in that it plays a part in the support of the sharing of ideas related to the advancement of research results that we want to be collective and open to a wider, multidisciplinary audience. It is a space for collective thought, where the researcher can submit his/her ideas-intuitions and hypotheses, so as to generate discussion with other actors, but also with him/herself:

“The scientific blog appears as ‘a maieutics, a birth of the thought’: the posts are a first stage in the construction of

39 Research logs are notebooks of teachers-researchers, theses, seminars, ANR research groups, associations, excavations, libraries, books, journals: <https://entese.hypotheses.org/769>.

research, they can serve as foundations for more elaborate work: communications, publications, parts of the thesis...⁴⁰.

In this last phase of digital humanities, through the research logs which are proposed, willingness to implement an approach that is more reflective than productive is embraced. In fact, in the first two phases, the proposed resources aimed to provide means to the researcher to carry out analyses supported by digital technology and to standardize them with the objective of sharing the collected and produced data. Through research logs, the desire is to show/illustrate a personal and/or collective process in construction, so as to develop it in real time, in the same way as the fulfilled work. This leaves a trace of the process followed, specific to each person as well as to the group, which is integrated into a (not always conscious) strategy. Its first two phases were lacking, but the researcher can benefit from it today.

These three fields of actions should not be considered as independent fields. We should not regard them as separate from each other, but rather as complementary, linked by a scientific need (field 1), identified, collected and disseminated by institutional structures (field 2), and giving rise to responses formulated in the form of a service grid (field 3) by research organizations. Thus, in these fields of actions, where the researcher sees (especially in the latter) frameworks which are imposed on him/her as well as new procedural and technological constraints (a national and international approach), we see, on the one hand, a way to question digital technology in its daily and long-term contributions (field 1), and on the other hand, the possibility to bring to light the needs which have not yet been satisfied (field 3).

1.5. Conclusion: digital assistance in the fields of action

This first chapter aspired to present the context of our reflection, namely that of digital humanities. First, we described them as an area which is aligned with a historical continuity moving toward multidisciplinary scientific practices (HSS and computer science). Second, they were presented as opening up the institutional debate on training needs in the face of new professions, the emergence of possible innovations in the context of teaching and research, aimed at facilitating the production and appropriation

40 Research logs are presented in: http://entese.hypotheses.org/1519#_ftn10.

of scholarly knowledge in addition to the development of an acculturation to digital technology, to cope with the expectations of academics and citizens. Third, digital humanities were described as taking shape around three fields of action: the field of observation of the researcher's activity, the institutional field where infrastructures are implemented to build networks and facilitate national/international collaborations, and finally the field of digital services (service grid). This last field is not new. As it is presented in the fourth part of this chapter, it refers to the production, the dissemination of digital resources and the standards which have marked the history of HSS for more than 50 years. In fact, since the first phase of digital humanities (*Literary and Linguistic Computing*), several resources which aim to categorize and share data as well as diversify studies in HSS (qualitative and quantitative approaches) have been proposed and disseminated to the largest number possible.

In keeping with this approach and considering the promotion of the integration of changes associated with the use of digital technology in scientific practices, which appear to be essential to the evolution of HSS research, we propose, in the next chapter, a definition of the concept of digital assistance. This definition, based on our research results, is a continuation of the different activities already carried out and discussed in the framework of different fields of actions. In fact, we first consider the notion of digital assistance as a means to observe and then categorize the activities carried out by the researcher. The objective is to understand the reasons behind the choice or non-choice of digital technology in practices. Secondly, we consider the concept of assistance which aims to question the way in which digital technology can participate in the creation, maintenance and/or development of international networks, as well as the sharing of experiences, data and knowledge formulated. We wish to propose an approach which allows the implementation of sustainable means of dissemination of the collective actions carried out in the networks, as well as the data they convey. Finally, beyond the "service grids" proposed at a national level, our objective is to provide a method which characterizes the contribution (measured and defined) of the old service grids to the researcher-user, and which opens up new proposals. The idea here is to provide methods aimed at the specification of the proposed services and to identify new ones.

