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THE PROFESSIONALISATION OF SCIENCE – CLAIM AND REFUSAL:
DISCIPLINE BUILDING AND IDEALS OF SCIENTIFIC AUTONOMY
IN THE GROWTH OF PREHISTORIC ARCHAEOLOGY.
THE CASE OF GEORGES LAPLACE’S GROUP OF *TYPLOGIE*
ANALYTIQUE, 1950s–1990s*

Abstract. The majority of analyses investigating the professionalisation of scientific domains tend to assume the linear and general features of this transformation. These studies focus on the shift from a non-professionalised state to a professionalised state. This dual approach, however, crucially lacks some other aspects of the process of professionalisation. This issue is discussed within the context of the growth of prehistoric archaeology in France from the 1940s, by observing scientific societies, national research organisations and their social networks. Looking at the scale of Georges Laplace’s career and that of his research group, which studied the *typologie analytique* method, this article demonstrates the benefits of a ternary model which also encompasses the modes of refusal of professionalisation.

Keywords: prehistoric archaeology, professionalisation, scientific societies, scientific specialties, scientific autonomy, social network analysis, Georges Laplace.

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Introduction

Common accounts of the history of archaeology describe a general shift from antiquarians and scientific societies to universities and professional scientific organisations (from local to national and from private to public). They suggest the general replacement of the former bodies by the latter ones. In her introductory chapter to the book *Assembling the Past: Studies in the professionalisation of Archaeology*, Alice Kehoe indicates a transformation from antiquarians to archaeologists which was also a transformation from aristocrats to academics which occurred from the eighteenth to the twentieth century¹. Considering the 1940s in France and the development of the *Centre national de recherche scientifique* (CNRS) Ève Gran-Aymerich describes a consequently gradual decrease in archaeological research by amateurs². Others studies do not address the *professionalisation* of archaeology but its *institutionalisation*. Nathalie Richard investigated the case of prehistoric archaeology, grounded on a definition of an *institution* which encompasses both the *institutional structures* and their *scientific personnel*³.

Whether considering professionalisation, institutionalisation or even disciplinarisation, all these concepts share a processual feature. This is relevant when studying processes: investigating what happens between a given starting state and a given final state. However, an argument against the use of these concepts claims that reality is more complex. Professionalisation, for example, encompasses rather unclear reasons and oversimplifies a multifaceted phenomenon. The aim of this paper is not to critique this, as I consider that the relevance of these processional concepts is relative to the level of analysis adopted, both as to the scale of time, space and social generality (mass). These concepts are of little interest for an ethnographic analysis of the interactions and self-designations of actors observed in practice. On the contrary, at the level of individual trajectories, observing professionalisation does not raise particular difficulties, as we can always explicitly define (and discuss) the criteria we use, for example getting a position, being paid and gaining recognition, etc. Similarly, at the level of discipline or of science itself, many studies have investigated the general changes of scientific practice over centuries. Issues are less clear at the intermediate level of analysis, encompassing the scale of the individual and research group. Indeed, using these concepts at this level tends to overemphasise both the ineluctable and irreversible characteristics of the professionalisation or institutionalisation. This intermediate level of analysis has, however, another particular interest: it is appropriate to observe the eventual struggles between various potential forms of organisations in the science practice, before some of them are integrated into the main historical accounts of the discipline's history and others forgotten⁴. In other words,

¹ See A. B. Kehoe, *Introduction*, p. 1.

² See È. Gran-Aymerich, *Les chercheurs de passé, 1798–1945*, p. 460.

³ N. Richard, *L'institutionnalisation de la préhistoire*, p. 189.

⁴ Martin Rudwick worked at this intermediate scale in his book on the geological controversy of the Devonian period. See M. J. S. Rudwick, *The great Devonian controversy*.

investigating this level allows the observation of how professionalisation or institutionalisation occurs or more interestingly, fails to occur.

I aim to illustrate this claim from a case taken during the history of pre-historic archaeology in France, namely the *Groupe international de recherches typologiques* led by Georges Laplace (1918–2004). Laplace's early archaeological work dates back to the late 1940s, after his engagement in the war¹. Shortly afterwards, he became interested in methodological issues and in the contemporary debates on lithic typology². From the late 1950s he developed his own method, to which he gave the name *typologie analytique (et structurale)*, that he continuously improved until the late 1990s³. This method was dedicated primarily to the study of prehistoric stone tools and integrates a taxonomy, a set of metric coefficients and their relative graphic representations, a coded notation for the description of the stones and an articulated set of statistical procedures (e.g. the chi-squared test, 2 \hat{I} , factor analysis). From 1969 to 1989, Laplace organised an annual one-week seminar in Arudy, a village located in the French Pyrenees. This *Séminaire international de typologie* gathered people coming mainly from France, Spain and Italy. Most of them had an interest in archaeology, even if occasionally some philosophers, linguists, computer scientists, and mathematicians also took part in these meetings.

The work developed by Laplace and his collaborators present two interesting particularities. First, considering the contemporary state of the human sciences in France, their work is one of the few examples of a structuralist approach – and more generally of a theory-founded approach⁴ – in French archaeology. Second, regarding the state of the French research in the general and international history of prehistoric archaeology, their work is contemporary to the worldwide growth of the New Archaeology trend. In a similar manner, Laplace and his collaborators also relied on an in-depth use of computing and mathematical or linguistic formalisations. Hence, the so-called insularity of French prehistoric archaeology regarding methodological and theoretical developments⁵ can be considered as a true statement only if work such as Laplace's, developed outside the main powerful centres of archaeological research, are omitted. Besides the question of the relationships between concurrent forms of organisations⁶, my aim here is also to contribute to explain why there is little mention of this work in discipline historiography.

¹ For details on Laplace's work and life see C. Cabon, *Georges Laplace (1918–2004)*, I. Barandiarán, 2004, *Georges Laplace (Pau 1918–Pau 2004)*, S. Plutniak, *L'innovation méthodologique ...*, S. Plutniak & M. Tarantini, *An influential outsider*.

² For the archaeological controversies Laplace was involved in see M. Tarantini, *Georges Laplace in Italia tra tipologismo e antropologismo*, P. –Y. Demars, *François Bordes versus Georges Laplace ...*, R. Lippé, *Pierres à convictions ...*, A. Vila i Mitjà & J. Estévez Escalera, *Georges Laplace*.

³ For an in-depth presentation see G. Laplace, *La typologie analytique et structurale ...*.

⁴ To get an idea of how the debates on lithic typology could have been philosophically grounded in the international literature see S. Kantman, *Essai sur la formation de concept du «type» ...*.

⁵ F. Audouze & A. Leroi-Gourhan, *France: A continental insularity*.

⁶ Sociologists developed various accounts of this concept. In this paper, I rely on a simple and working definition: an organisation is defined, by G. Ahrne & N. Brunsson, *Organization outside organizations ...*, p. 84,

The first section of this article focuses on the relatively well-known professionalisation process in archaeology during the twentieth century. The following two sections add to this general picture some specific issues. The second section emphasises the growth and the contemporary persistence of non-professional and non-public service organisations, namely scientific societies and associations. Although the sharp distinction between amateur organisations and professional organisations is commonly used by the actors, in practice, these two categories have porous borders and could share similar purposes and values. The third section introduces a third organisational mode characterised by a denial of these two categories of organisations: Laplace's research group gives a striking example of this position. I show how it relied on a particular concept of scientific autonomy (a fundamental aspect in scientific practice), namely the financial organisation of the group and its underlying ideology – notably its association to a French traditional craftsmanship movement called *compagnonnage*, which defined its aims against both those of artistic and scientific practices. This article draws on a documentation I prepared for my PhD research thesis¹, including archives², actors' publications and interviews.

1. The indisputable professional aim in prehistoric archaeology

1.1. Speleology, prehistory and their original proximity

In August 1952, a speleological expedition led by the Belgian Max Cosyns (1906–1998) aimed to investigate the La Pierre Saint-Martin chasm (Arette, in the French Pyrenees, close to the Spanish border). It had been discovered two years earlier by Georges Lépineux when it was subsequently explored through a shaft 320m deep. At this time, it was the longest descent ever made and no adapted equipment was available. Cosyns decided to use the electrical winch for the first time in speleological history. On the 13th August 1952 the fastening of the wire broke and the speleologist Marcel Loubens (1923–1952) fell, lying severely wounded several hundred meters deep. Rescues were organised. Speleologists from Lyon and Mauléon (a nearby town) travelled to the chasm to provide their help. Laplace was among the latter group³ which included the speleologists Michel Bouillon and Pierre

as a decided order, including one or more of the elements of membership, hierarchy, rules, monitoring and sanctions.

¹ A thesis in which I analysed the use, in archaeology, of methods borrowed from mathematics, automatic documentation and formal linguistics during the second half of twentieth century. Laplace and the *typologie analytique* was one of the cases investigated. See S. Plutniak, *L'opération archéologique*.

² Georges Laplace's files at the *Musée National de Préhistoire*, Les Eyzies-de-Tayac (shorten as MNP), Henri Breuil's files at the *Muséum national d'histoire naturelle* in Paris (MNHN), files of the *Sociedad de Ciencias Aranzadi*, San Sebastián-Donostia (Aranzadi), Bordes' files at the *Service régional de l'archéologie de Nouvelle-Aquitaine*, Bordeaux (SRA), *École française de Rome* archives (EFR), files of the CEPAM archaeological centre in Nice (CEPAM), private files of Georges Couartou, Georges Laplace's nephew, private files of André Crémillieux and Hélène Crémillieux, private files of Pierre Murre.

³ The participation of Laplace is mentioned in a letter from (his father) Georges Laplace to François Bordes and Denise de Sonnevill-Bordes, 20 Aug. 1952, MNP. It is also attested in an interview of Boucher. See P. Boucher & X. Peyran, *P. Boucher (1909–1997) ...*, p. 18) and in H. Tazieff, *Neuf nuits de vingt-quatre heures au fond du gouffre de la Pierre-Saint-Martin. VIII. «Ici, Marcel Loubens a vécu les derniers jours de sa vie courageuse»* in: *Le Figaro*, 3 Sep. 1952, p. 5.

Boucher (1909–1997). At the time, Boucher was the president of the Mauléon speleological club. Laplace and Boucher had already collaborated in speleological explorations and in prehistoric archaeological work¹, as in the 1950s these two fields were usually associated. People commonly practised both of these activities and their membership to the respective organizations encompassed both disciplines. For instance, in 1952 Laplace was secretary of the West Pyrenees section of the *Société méridionale de spéléologie et de préhistoire* (SMSP)². Marcel Loubens died on the 14th August, despite the efforts of what was the first organisation of a medicalised speleological rescue. Press coverage of this tragic event was wide, reaching a national audience far beyond the small speleological community, and it raised numerous commentaries. Robert de Joly (1887–1968), a pioneer speleologist and founder of the *Spéléoclub de France* in 1930, severely criticised the equipment and management of the Cosyns' expedition. The death of Loubens offered him an opportunistic case to publish as an indictment against amateur speleologists that he called *spéléistes* by distinction. His publication was also a plea for scientific organisations, such as the *Comité national de Spéléologie* newly founded in 1948 in collaboration with the CNRS. According to him, [o]nly a qualified body can clearly distinguish between a genuine researcher and a more or less well-meaning amateur³. De Joly demanded a strict monitoring of the *spéléistes* by the speleologists:

*Let us assume, therefore, as it will become absolutely necessary, that an organisation is qualified to issue the “speleologist” title and license. This would not forbid young people to explore the caves, who, with good reason, prefer sport, adventure and science to cinemas and cafés, but they will be instructed to undertake these visits only with skilled speleologists. Depending on the difficulty of the exploration, there should be as many speleologists as “cavers”. Thus, each exploration will have a sufficient number of supervisors who will minimise the risks and prevent degradation.*⁴

¹ Their collaborative work led notably to the discovery of the paintings in the Etxeberri cave (Camou–Cihigue) in May 1950. See G. Laplace–Jauretche, *Les grottes ornées des Arbailles*, p. 134.

² See *Bulletin de la Société méridionale de spéléologie et de préhistoire. Année 1948–1949* in: *Bulletin de la Société d'histoire naturelle de Toulouse* 84, 1949. The SMSP was founded in 1947 in Toulouse by Louis Méroc (1904–1970), lawyer and prehistoric archaeologist and Albert Vandel (1894–1980), biologist.

³ R. de Joly, *Comment s'est tué le spéléologue Loubens?*, p. 442: [s]eul un organisme qualifié peut faire sans conteste la distinction entre le chercheur authentique et le promeneur plus ou moins bien intentionné. All translations of publications, archive documents and interviews quotations are mine.

⁴ R. de Joly, *Comment s'est tué le spéléologue Loubens?*, p. 442:

Admettons donc que, comme cela deviendra forcément nécessaire, un organisme soit qualifié pour délivrer le titre et la licence de «spéléologue». On n'interdira pas pour autant l'exploration des grottes aux jeunes gens qui, avec juste raison, préfèrent le sport, l'aventure et aussi la science aux cinémas et aux cafés, mais on leur prescrira de n'entreprendre ces visites qu'en compagnie de spéléologues accomplis. Selon la difficulté de

What is the relevance of this case–study for the aim of this article? What can be observed in speleology – the creation of organisations, journals and licenses, definition of standards, safety rules – and the resulting conflicts of legitimacy between actors according to their social and organisational positions, also occurred during the same period in prehistoric archaeology. Despite their proximity, the respective disciplinary and professional aims in speleology and prehistoric archaeology also implied distinctive and antagonistic relationships between these two fields. For instance, speleologist Jacques Labeyrie (1920–2011, member of the Cosyns’ team at La Pierre Saint–Martin expedition in August 1952), mentions the contentious interactions of his team with Laplace in 1950, after they entered into the Etxeberri caves¹. As the local secretary for the SMSP, Laplace felt morally (if not legally) responsible for the protection of archaeological sites. He was, as other young archaeologists, profoundly convinced of the need for the professional organisation of his research field.

1.2. Laplace’s professional ambition

In 1947, Laplace was demobilised and started to develop his archaeological activities. He registered at the University of Toulouse and took part in the excavations in Montmaurin (near Toulouse), led by an archaeologist who gave lectures at his university, Louis Méroc (1904–1970). In the western part of the Pyrenees, his home region, Laplace did multiple surveys, in particular in collaboration with the Basque ethnographer and prehistoric archaeologist José Miguel de Barandiarán y Ayerbe (1889–1991). In 1949, Laplace published his first archaeological article about these surveys. Its text ended with a firm plea for professionalisation in archaeology, emphasising the virtues of the legislation, of scientific methods, of academic training, and of collective work against the amateur practice of archaeology in an unsystematic, solitary and self–taught manner:

One cannot declare oneself a field archaeologist, any more than one would declare oneself a metal turner. Archaeology is a profession to be learnt patiently, with tenacity and humility. More than in any other disciplines, amateurism must be prohibited and the 1941 law which regulates archaeological excavations has been a blessing. There are excavation schools and academic titles: a self–taught person – despite his merit – remains an autodidact, and reading quantities of literature on Prehistory is not enough. [...] It follows that, alone, the prehistorian can only do bad work: research in a team is essential. [...] The age of the infancy is closed. This is too bad for those who do

l’entreprise choisie, tant de spéléologues pour tant de spéléistes. Ainsi, chaque expédition comptera un nombre suffisant de responsables qui écarteront les risques et empêcheront les dégradations.

¹ See J. Labeyrie, *Les découvreurs du gouffre de la Pierre Saint–Martin*.

*not understand. We need researchers seriously trained in the difficult, but productive disciplines of true scientific work.*¹

Laplace defended this view over the next decades (even if in the details some variations and nuances can be discussed: I will elaborate later on his reference to craftsmanship). Ten years later, he deplored the destruction of archaeological sites by unqualified archaeologists: [...] *more than ever, meticulous excavations are indispensable: too many sites have been destroyed, and thus, the mixed archaeological materials have become unusable or have misled interpretations. Prehistory is a science and an art. Nothing worthwhile can be created without asceticism.*²

Laplace's emphasis on the necessary scientific foundations of prehistoric archaeology is associated with a positive judgement on professionalism. This is illustrated in a letter written ten years after the previous quote. The letter is addressed to Henri Delporte (1920–2002) in response to the critical review Delporte wrote about the book Laplace extracted from his PhD thesis³: *A long-time solitary researcher, as you know, it is only in the last few years that I have been assisted by a young team, spontaneously created and composed, for the most part, by professionals who work with total freedom.*⁴

Despite his early claim in favour of the necessity of team-work, Laplace did most of his work alone or with few collaborators, namely Alberto Broglio (1931–), an Italian archaeologist. At the same time, after Laplace published his thesis, he and Broglio co-signed a call for the constitution of a research group on typology in the main Italian journal of prehistoric archaeology⁵. This was the root of the group which annually gathered in Arudy from 1969 to 1989 and that Laplace refers to in his letter to Delporte. In this letter, Laplace emphasises the fact that members of this group have mostly professional

¹ G. Laplace–Jauretche, *Prospections et fouilles*, p. 466:

On ne s'improvise pas plus fouilleur, qu'on ne s'improviserait tourneur sur métaux. Il s'agit d'un métier à apprendre patiemment, avec ténacité et humilité. Plus que partout ailleurs, l'amateurisme doit être proscrit et la loi de 1941 qui régleme les fouilles archéologiques a été une bénédiction! Il existe des écoles de fouilles et des diplômés de faculté: un autodidacte – malgré son mérite – ne reste qu'un autodidacte et la lecture des gros traités de préhistoire ne suffit pas. [...] Il s'ensuit donc, que seul, le préhistorien ne peut faire que du mauvais travail: la recherche en équipe s'avère indispensable. [...] L'âge est clos des balbutiements. Tant pis pour ceux qui ne comprendraient pas. Il faut des chercheurs sérieux formés aux disciplines rudes mais fécondes du véritable travail scientifique.

² G. Laplace–Jauretche, *Quelques considérations sur l'origine ...*, p. 124: [...] *plus que jamais des fouilles minutieuses deviennent indispensables: trop de gisements furent détruits dont les matériaux mélangés sont inutilisables ou ont égaré l'interprétation. La préhistoire est une science et un art. Rien de valable ne se crée sans ascèse.*

³ Laplace's thesis was published as G. Laplace, *Recherches sur l'origine ...*. Delporte published two reviews in the main French journals of prehistoric archaeology, the *Bulletin de la Société préhistorique française* and *L'Anthropologie*. See H. Delporte, *Georges Laplace ...* and H. Delporte, *Laplace (G.) ...*.

⁴ Letter from Laplace to Henri Delporte, 15 Nov. 1967, MNP: *Chercheur longtemps solitaire, comme vous le savez, ce n'est que depuis quelques années que je me trouve assisté par une jeune équipe, spontanément créée et formée pour la plupart de professionnels, qui travaille dans la plus totale liberté.*

⁵ See G. Laplace & A. Broglio, *Proposta per la costituzione ...*.

positions¹. He also answers Delporte's commentaries on his *typologie analytique* method. Not only does Laplace mark a difference between professionals and amateurs but, furthermore, he provokingly identifies as *amateur* the propositions of a well-known professional archaeologist, namely Denise de Sonnevile–Bordes (1919–2008, then *maître de recherche* at the CNRS since 1952):

*The value of a method is judged by the results it achieves, by the progress of knowledge it grants by combining flexibility and rigour. [...] you acknowledge to have encountered major difficulties, if not insurmountable ones, in your attempt to compare the results obtained by the traditional typology of Sonnevile and by the analytical typology of Laplace. Could it have been otherwise, given the fundamental differences between the two systems? One will appear superior to the other, depending on whether one considers the viewpoint of the stamp collector or the viewpoint of a naturalist taxonomer. Far from excluding each other, they are harmoniously complementary in the historical perspective that goes from amateurism to scientific research. I am truly in favour of a peaceful coexistence, leaving time to make the necessary stratifications, and it is an act of faith!*²

Laplace assumes that the growth of scientific knowledge goes from amateur research to scientific research. For him, the difference between his typological proposition and that of his rival Sonnevile–Bordes, is one evolution, assuming that his own proposition represents a step in the scientific progress.

Besides Laplace's own views on this controversy concerning lithic typology, it is worthwhile to underline that this debate opposes two archaeologists working and being paid by a professional organisation, the CNRS. This very fact is a consequence of the rapid growth of prehistoric

¹ In the reports of Poyemau and Gatzarria excavations, Laplace distinguishes the participants between three categories: *fouilleurs professionnels*, *fouilleurs en stage pré-professionnel*, *fouilleurs non professionnels*. See G. Laplace, *Rapport de fouilles 1968. Grotte du Poeymau. Commune d'Arudy (Basses-Pyrénées)*, p. 2, SRA.

² Letter from Laplace to Henri Delporte, 15 Nov. 1967, MNP:

La valeur d'une méthode se juge aux résultats obtenus, aux progrès de la connaissance qu'elle permet en alliant souplesse et rigueur. [...] vous reconnaissez avoir rencontré des difficultés majeures, sinon insurmontables, dans votre tentative de comparer les résultats obtenus par la typologie traditionnelle de Sonnevile et par la typologie analytique de Laplace. Pouvait-il en être autrement tant la diversité de nature des systèmes est foncière? L'un apparaîtra supérieur à l'autre selon que l'on se place du point de vue du collectionneur de timbres ou du point de vue de la taxinomie naturaliste. Loin de s'exclure, ils se complètent harmonieusement dans la perspective historique qui va de l'amateurisme à la recherche scientifique. Je suis réellement partisan de la coexistence pacifique, laissant au temps le soin d'opérer les stratifications nécessaires, et c'est un acte de foi!

archaeology in research and academic organisation during and after World War II.

1.3. Professional organisations for prehistoric archaeology

The history of the institutionalisation of prehistoric archaeology in France is relatively well-known. In this section, I draw on the main steps identified in previous works¹ and provide complementary new data. I aim to give a general picture of the context in which researchers, such as Laplace, developed their requests for professionalisation and took an opportunity to begin their own professional careers.

Although the majority of events involved in the institutionalisation and professionalisation of prehistoric archaeology happened after World War II, some key events were before this period. Concerning the educational aspect², it is worthwhile to note that a *certificat* of prehistoric archaeology was created in Toulouse in 1921, even if it was still associated with the history chair³. During the war, the Vichy regime established the first legal regulation for the practice of archaeology and the protection of archaeological materials with the *Carcopino* law published on the 27th September 1941⁴. This law was completed by a subsequent one on the 21th January 1942, by which an archaeological section was created in the CNRS (*XV^e commission*). It was commissioned to authorise excavations. Consequently, in 1943, the CNRS started the publication of *Gallia*, a periodical aimed at publishing the raw results of current excavations. In 1945, the French territory was divided into archaeological administrative regions, one division for historical research and the other for prehistorical research (see Figure 1⁵)⁶.

In 1946, André Leroi-Gourhan (1911–1986) founded the *Centre de recherche et de documentation en préhistoire* (CDRP), a research center attached to the CNRS. Its direction was shared by Leroi-Gourhan, Franck Bourdier (1910–1985) and Harper Kelley (1896–1962). In 1948, the *XV^e commission* of the CNRS became the *Comité technique de la recherche archéologique en France* and was committed to the coordination of archaeological research for the period prior to 800 AD and was soon in charge of the *Gallia* publication⁷. The same year, Louis-René Nougier (1912–1995) defended the first doctorate (*thèse d'État*) about a prehistoric archaeology

¹ For a more detailed synthesis about the institutional development of prehistoric archaeology in France, see È. Gran-Aymerich, *Les chercheurs de passé, 1798–1945*, pp. 449–468 & F. Audouze, *La préhistoire et le CNRS*.

² On the development of prehistoric archaeology teaching in France see A. Hurel, *L'enseignement de la préhistoire*.

³ See A. Hurel, *Un prêtre, un savant dans la marche ...*.

⁴ See È. Gran-Aymerich, *Les chercheurs de passé, 1798–1945*, p. 456.

⁵ All figures are at the end of the paper, pp. 148–154.

⁶ By decision of the 13th September 1945 decree, followed by a definition of the divisions within the 14th December 1945 decree, which were modified afterwards by the 7th December 1946 decree. See [Gallia], *Législation archéologique*, p. 230.

⁷ See A. Leroi-Gourhan, *France*, p. 148.

matter. One year later, in 1949, he obtained the first university chair devoted to this domain, created for him in Toulouse¹.

In order to get a wider picture, I draw on the *International Directory of Anthropological Institutions* published in 1953 by the Wenner–Gren Foundation². Leroi–Gourhan authored the chapter about France. He insists on the historical *trend to maintain an equal division in anthropological research among ethnology, physical anthropology, prehistory, ethnography, sociology and linguistics*³. The French section of the *Directory* gives information about a total of 43 institutions, divided into four categories: educational, professional associations, research institutions and museums, and subsidising agencies⁴. Excluding the institutions in the last category and those not related to prehistoric archaeology, there is a total of 24 institutions, whose spatial distribution is shown in Figure 2.

Leroi–Gourhan mentioned the names of 99 actors related to the 24 French institutions concerning prehistoric anthropology. Using graph theory allows us to study some structural properties of the networks we can define from these relations between actors and institutions.

A first network is produced in which two institutions are tied by an edge if an actor belongs to both institutes (see Table 1).

	Institutions network	Actors network
Nodes	24	99
Edges	61	532
Components	10	10
Degree centralisation	0.61	0.47
Betweenness centralisation	0.07	0.23

Table 1: Descriptive statistics for the network of actors and for the network of institutions related to anthropology in France in 1953. A component of a graph is a subgraph in which any two nodes are connected to each other by paths. Degree and betweenness centralisations measure the tendency of a graph to be organised around particularly central nodes (in terms of degree centrality or betweenness centrality). The resultant values are normalised to a range between 0 (weakly centralised) and 1 (highly centralised). Data: A. Leroi–Gourhan, *France*.

In the resulting network, the edges are weighted by the number of actors belonging to each pair of institutions. The very low betweenness centralisation value and the high degree centralisation value indicate that the main part of

¹ In 1955, his *maitrise de conférence* position was turned into a full professor chair.

² On the role of the Wenner–Gren Foundation in the development of methodological and theoretical aspects of archaeology in France and in western Europe. See S. Plutniak, *L'innovation méthodologique ...*.

³ A. Leroi–Gourhan, *France*, p. 141.

⁴ Replication data and programming codes used for this paper are available at <http://dx.doi.org/10.7910/DVN/S2ZPXL> [retrieved Nov. 19, 2017].

the network of institutions is not structured by different dense subparts but there are some particular institutions which are related to more actors. So, the centrality of each institution has been computed and results reported in Table 2¹. They confirm an observation made by Leroi–Gourhan on the high centralisation of anthropological activities in Paris, particularly in the *Musée de l'Homme*².

Institution name	Address	Degree
Musée de l'homme	Paris	15
Association française pour l'avancement des sciences (section 12 ethnologie)	Paris	13
Institut d'ethnologie	Paris	12
Centre de formation aux recherches ethnologiques	Paris	12
Institut de paléontologie humaine	Paris	9
Institut des études préhistoriques des Eyzies	Les Eyzies–de– Tayac	8
Centre de documentation et de recherches préhistoriques	Paris	7
Société préhistorique française	Paris	7
Société d'anthropologie de Paris	Paris	7
École d'anthropologie	Paris	7
Université de Lyon	Lyon	6
Laboratoire d'anthropologie physique (EPHE)	Paris	6
Institut français d'anthropologie	Paris	4
Université de Rennes	Rennes	2
Institut d'anthropologie générale	Rennes	2
Laboratoire du Peyrat	Villebois–Lavalette	1
Faculté des lettres de Paris	Paris	0
Musée des Antiquités Nationales	Saint–Germain–en– Laye	0
Comité technique de la recherche archéologique en France	Paris	0
Université de Toulouse	Toulouse	0
Université de Poitiers	Poitiers	0
Institut catholique de Paris	Paris	0
Université de Dijon	Paris	0
Musée des sciences naturelles	Lyon	0

Table 2: Centrality of the French anthropological institutions in 1953 based on the co–membership of their participants (vertex weighted degree). Data: A. Leroi–Gourhan, *France*.

¹ Centrality has been computed in terms of weighted vertex degree, i.e. the sum of the edge weights of the adjacent edges for each vertex. About the centrality and centralisation concepts see L. C. Freeman, *Centrality in social networks I: conceptual clarification*.

² See A. Leroi–Gourhan, *France*, p. 141.

A second network is produced in which two actors are tied if they belong to the same institution (see Table 1 and Figure 3). Articulation points¹ in the network and nodes' centrality have been computed (see Table 3)². We found that, according to Leroi-Gourhan's presentation, himself and Henri-Victor Vallois (1889–1981) appear as the key-actors in the field: their structural positions correspond to the articulation points of the graph and they have the highest centrality scores (respectively 0.19 and 0.17).

Actor name	Betweenness centrality
André Leroi-Gourhan	0.19
Henri-Victor Vallois	0.17
James-Louis Baudet	0.08
Yvette Oddon	0.05
Henri Breuil	0.04
Raoul Hartweg	0.03
Georges Bidet	0.03
R. Humbert	0.02
Pierre Métais	0.01
André Basset	0.01

Table 3: Centrality of actors based on their membership to the main French anthropological institutions in 1953: normalised betweenness centrality ranging from 0 (weakly central) to 1 (highly central). Only the ten most central actors are reported. Data: A. Leroi-Gourhan, *France*.

In this context, the CNRS took an increasing role in the growth of prehistoric archaeology in France during the second half of the twentieth century. As shown in the map of the prehistoric archaeology institutions in 1953 (see Figure 2), only the University of Toulouse and the *Institut des études préhistoriques des Eyzies*³ were mentioned in southern France. The increase in the recruitment of archaeologists, such as Laplace, in the different French regions was also a consequence of the CNRS' national development policy initiated by the director Frédéric Joliot-Curie (1900–1958) in 1944⁴. The CNRS' role was also notable in regards to its publications: in 1958, the periodical *Gallia Préhistoire* was created as a specialised complement to *Gallia*. From 1944 to 1991 prehistoric archaeology began to be associated with ethnography and physical anthropology (see Table 4).

¹ In a graph, articulation points are nodes whose removal increases the number of connected components.

² Centrality has been computed in terms of betweenness centrality: in graph theory, the betweenness centrality of a node is the number of shortest paths between all the pairs of nodes of the graph that pass through this node. All graph-related computations have been made with the *igraph* package for R. See G. Csárdi & T. Nepusz, *The igraph software package for complex network research*.

³ Founded in 1949 and directed by Henri-Victor Vallois, with the assistance of Georges Malvesin-Fabre (1893–1956).

⁴ See È. Gran-Aymerich, *Les chercheurs de passé, 1798–1945*, p. 462. For a general account of prehistoric archaeology at the CNRS see also F. Audouze, *La préhistoire et le CNRS*.

Creation	Suppression	Section no.	Title
1944	1967	20	<i>Anthropologie, préhistoire et ethnographie</i>
1967	1971	23	<i>Anthropologie, préhistoire et ethnographie</i>
1971	1976	25	<i>Anthropologie, préhistoire et ethnographie</i>
1976	1983	30	<i>Anthropologie, préhistoire et ethnographie</i>
1983	1991	33	<i>Anthropologie, préhistoire et ethnographie</i>
1992	–	31	<i>Hommes et milieux: évolution, interactions</i>

Table 4: Prehistoric archaeology in the CNRS sections since 1944. Various sources.

This association has not been without the raising of multiple disciplinary conflicts, generally between, on one side, anthropologists and archaeologists and, on the other side, ethnologists¹. Professionalisation in prehistoric archaeology was also expressed through a shared conception of an ongoing modernisation of this field of studies. This enthusiastic belief in the progress of methods and knowledge in prehistoric archaeology can be read in text written by Annette Laming-Empeaire (1917–1977)², Leroi-Gourhan³ and as well as by Laplace, as previously illustrated. Given that professional purpose and the opportunities offered by the contemporary scientific policies, it was possible for Laplace to hope for a career in the professional organisations of scientific research.

1.4. Laplace's trajectory in the professional organisations of archaeology

From 1950 to 1983, Laplace made his career in the CNRS. I will now briefly summarise his trajectory, highlighting the support he received from central actors of the 1950s who have been identified in the preceding text. The underlying idea is that a social dimension of professionalisation relies on the development of relationships with the key actors of the field.

His first professional activity was education: from 1938, Laplace was a primary teacher in the Esquiule public school (Basses-Pyrénées). Due to the support of Louis Méroc and Henri Breuil⁴, Laplace was selected by the twentieth section of the CNRS in October 1950 and got his first annual contract as *attaché de recherches*⁵. In 1953, he obtained his reassignment from the Ministry of National Education to the CNRS: no longer a teacher, this administrative decision made him a researcher⁶. In 1954, two significant

¹ In 1969, Léon Pales (1905–1988) summarised the evolution of this CNRS section and claimed that the division between its three components was ineluctable. See L. Pales, *Réflexion sur la section 23 du CNRS*, document dated 10 Mar. 1969 and addressed to Pierre Monbeig, Jacques Ruffié, Denise Ferembach & Denise de Sonnevillle-Bordes, BOR 41, SRA.

² See A. Laming-Empeaire (éd.), *La découverte du passé*.

³ See A. Leroi-Gourhan, *Les fouilles préhistoriques. Technique et méthodes*.

⁴ See Letter from Henri-Victor Vallois to Henri Breuil, 16 Nov. 1950, BR 42, MNHN.

⁵ See Letter from Louis Méroc to Henri Breuil, 20 Jan. 1951, BR 37, MNHN.

⁶ Decision dated 13 Jan. 1953. Letter from the *Inspecteur* of the Basses-Pyrénées academic region to

events marked his professional recognition. First, he was suggested for the Girard Prize, a three-year grant from the *Association française pour l'avancement des sciences*¹, an organisation in which Henri-Victor Vallois was involved. Second, he was appointed corresponding member of the *Commission des Monuments Historiques* for the prehistoric sites of the Basses-Pyrénées *département*². The same year, he contributed to the reorganization of the gallery of prehistory in the natural history museum of Toulouse, under the supervision of Louis Méroc³. A turning point of his professional career occurred in 1956, when he was recruited as a member of the *École française de Rome*, due to the support of Henri Breuil⁴. He was the first prehistoric archaeologist recruited in this prestigious institution and he stayed there for two years, from 1956 to 1958. However, despite this prestigious position, his professional progression was too slow for him in the following years. He wrote to Jean Bayet (1892–1969), director of the *École française de Rome*, complaining: *I am currently forty-one years old and my scientific future may be undeniably compromised by the delay of this appointment*.⁵

Finally, in October 1960, he was promoted to *chargé de recherche* by the CNRS with a permanent contract⁶. His progression through the CNRS hierarchy continued with his promotion in 1968 as *maître de recherche*⁷, notably supported by Henri-Victor Vallois and Lionel Balout (1907–1992)⁸. During this period the *Université de Pau et des Pays de l'Adour* in Pau was being created, after the discovery of important gas resources in the western part of the Pyrenees in 1951⁹. The university opened in 1971. Laplace was in charge of a course on the geology and archaeology of the Quaternary Period. He also participated in the council of the regional studies department of the *Institut universitaire de recherche scientifique* (IURS). This organization aimed to centralise the management of research resources in Pau. Finally, in 1978, Laplace was promoted *directeur de recherche*, this time supported by Henri Delporte and by the ethnologist Georges Condominas (1921–2011) who

Laplace, 13 Jan. 1953, Couartou's files.

¹ Decision dated 27 Feb. 1954. See *Séance du 23 juin 1955* in: *Bulletin de la Société préhistorique de France* 52, 5–6/1955, p. 253.

² Decree dated 25 Jan. 1954. Letter from the *sous-directeur des monuments historiques* to Laplace, 12 Mar. 1954, Couartou's files.

³ See Letter from Laplace to François Bordes, 14 Feb. 1954, BOR33, SRA.

⁴ On the scientific and institutional motives of the recruitment of Laplace at the *École française de Rome* see S. Plutniak & M. Tarantini, *An influential outsider*, pp. 80–83.

⁵ Letter from Laplace to Jean Bayet, 3 Oct. 1959, EFR: *J'ai actuellement quarante et un ans et mon avenir scientifique risque d'être indéniablement compromis par ce retard de nomination*.

⁶ See Letter from Laurichesse (on behalf of the CNRS) to Laplace, 18 Nov. 1960, Couartou's files.

⁷ See Letter from Louis Plin to Laplace, 7 Feb. 1968, Couartou's files.

⁸ Letter from Henri-Victor Vallois to Laplace, 13 Apr. 1968, MNP.

⁹ Creation of the university by the decree no. 70–1174 dated 17 Feb. 1970.

was the director of the thirtieth section of the CNRS¹. Laplace retired five years later, in 1983.

Given this summary, Laplace's trajectory seems representative of the new kind of professional career which was possible after WWII. However, a significant aspect of his scientific activities has not been addressed, namely the role played by scientific societies.

2. The growth and resilience of archaeological societies

In this section, I show that during the twentieth century, the development of professional archaeological organisations did not lead to the complete dismissal of archaeological societies. Laplace's career is taken as an example of organizational crossover and of the inter-dependency between societies and professional organisations.

2.1. General summary of the development of archaeological societies

The development of scientific societies in France was an important trend during the nineteenth century and the beginning of the twentieth century. Its acme was noted by some authors as occurring in the 1930s (see Figure 4), declining after WWII². During the 1940s, there was general concern about the future of scientific societies, voiced by actors of these societies and by the promoters of new research organisations. On one hand, the reform of the CNRS initiated by Frédéric Joliot–Curie in 1944 was a landmark for the institutional organisation of science in France, and for prehistoric archaeology in particular since it marked the start of its rapid growth. The decline of scientific societies worried the supervisors of the professional organisation, as illustrated by the report on the funding of these societies signed by Lucien Febvre (1878–1956), member of the historical commission of the CNRS³. On the other hand, the fear that the professionalisation of scientific practice implied the demise of the scientific societies was an ongoing concern⁴. Actually, the relationships between scientific societies and the growing professional research organizations were a complex issue: on one hand, the new legal regulations and the new professional organisations implied a new control given to the professional researchers; on the other hand, actors involved in both types of organisations were not uncommon and continuous

¹ See Letter from Henri Delporte to Laplace, 7 Apr. 1977 and letter from Georges Condominas to Laplace, 15 Sep. 1979, Couartou's files.

² See J.-P. Chaline, *Sociabilité et érudition*, pp. 221–225.

³ See *Réunion de la XV^e Commission du 18 mars 1943*, Archives Nationales, CNRS, 800 284, liasse 48, mentioned by É. Gran–Aymerich, *Les chercheurs de passé, 1798–1945*, p. 460.

⁴ In his conclusion, J.-P. Chaline, *Sociabilité et érudition*, p. 225, asks: *Were the science societies only a temporary palliative to the shortcomings of the universities and to the lack of public support for research? [Les sociétés savantes n'auraient-elles été qu'un palliatif temporaire aux insuffisances des universités et à l'absence de soutiens publics à la recherche?]*

attempts were made to initiate collaborations between professional institutions and scientific societies¹.

To obtain a general picture of the evolution of archaeological societies, I rely on the data provided online² by the *Comité des travaux historiques et scientifiques* (CTHS), an organisation created in 1834 that aimed to federate the multiple scientific societies. I selected all the organisations – 104 societies in total³ – considered as relevant by the CTHS (either named society or association) and tagged as related to archaeology (see Table 5).

decade	1820	1830	1840	1850	1870	1880	1890	1900	1910
n	2	5	2	1	2	2	3	2	2
decade	1920	1930	1940	1950	1960	1970	1980	1990	2000
n	4	2	3	8	5	9	8	3	3

Table 5: Number of archaeological societies founded in France by decades between 1824 and 2004. Data: *Comité des travaux historiques et scientifiques*.

I distinguished between three groups of societies according to their thematic scopes: multidisciplinary societies which combine for instance historical, folklore, artistic and archaeological studies; archaeological societies without specific scopes; and societies specialised in prehistorical archaeology. A temporal analysis of these data shows, first, that the general trend during the period 1824–2004 was an increase in the number of organisations; second, that societies with a specialisation in prehistoric archaeology did not appear before the early 1900s; and third, that the number of generic archaeological society increased during the 1960s and 1970s, while the number of prehistoric archaeological societies suddenly increased in the mid–1970s (see Figure 5).

Mapping these data shows the unequal distribution of these societies in France (see Figure 6). A notable low density can be observed in the west Pyrenees region, which remains unchanged throughout the 1824–2004 period.

Indeed, due to their remote and mountainous locations, the Basque country and Béarn were less closely monitored by the decentralised state institution for archaeology, the *Direction des Antiquités préhistoriques et historiques*, established in Bordeaux⁴. The state control started to increase from 1991 with the creation of the *Service régional de l'archéologie*⁵.

¹ See È. Gran-Aymerich, *Les chercheurs de passé, 1798–1945*, pp. 460–461.

² Data extracted in July 2017. Archived page can be seen at https://web.archive.org/web/*/http://cths.fr/an/ and the resulting data set is available at <http://dx.doi.org/10.7910/DVN/S2ZPXL> [retrieved Nov. 19, 2017].

³ Note that the rate of organisations that disappeared is under-estimated in this dataset.

⁴ In 1966 the archaeological administrative divisions are redesigned and these regions are no longer under the control of the 10th region showed in figure 1: the 10th region is divided between the new 13th and 14th regions. See *Decree no. 65–49 dated 11 Jan. 1965 «fixant les Circonscriptions archéologiques»* in: *Journal Officiel*, 21 Jan. 1965, p. 547.

⁵ Interview of Christian Normand, government officer at the Service régional de l'archéologie, 5 Jun. 2017. On the transformation of the *Direction des Antiquités préhistoriques et historiques* into the *Services régionaux de l'archéologie* as parts of the *Direction régionales des affaires culturelles* see J. Tarrête,

2.2. Situation in the southwest of France

Laplace was born in Pau, and as a man who was firmly attached to his home region, he lived in various places but always in the Béarn. After his demobilisation in 1947, he settled in Jurançon and, later, moved to a smaller village, Coarraze, around 1963. To get an idea of the possible local intellectual and social resources Laplace had access to, it is worthwhile to look at the geographical distribution of the scientific organisations. First, we note that before WWII, the region had relatively few scientific societies. They were concentrated in the two main regional cities, Toulouse and Bordeaux (see Figure 4).

Concerning archaeology after the war, we have already note that in 1953 this part of France had no professional organizations (see Figure 2). A similar observation can be made for the scientific societies dedicated to archaeology. I then consulted a smaller extraction of the data compiled by the *Comité des travaux historiques et scientifiques*. I extracted the societies with an archaeological aim and then selected those which existed in 1953 (see Figure 7).

There was only one society in the western part of the Pyrenees and it was not specifically dedicated to prehistoric archaeology: the *Association régionaliste du Béarn, du Pays basque et des contrées de l'Adour*, created in 1917 and located in Pau. From Laplace's location, the closest organisation for prehistoric archaeology was the *Société préhistorique de l'Ariège*, located in Foix (see Figure 7, eastern Pyrenees). Created in 1945 by Romain Robert (1912–1991), this society published a journal entitled *Bulletin de la Société préhistorique de l'Ariège. Préhistoire, spéléologie ariégeoise*. As indicated by the title, this society encompassed both speleology and prehistoric archaeology.

To summarise, these results give a picture of the situation and of the resources available to Laplace when he started his archaeological activities. I turn now to the ways he managed his involvements both in local and non-local scientific organisations.

2.3. Laplace's continued involvement in archaeological societies

Laplace's first archaeological membership was in 1948, when he joined the *Société préhistorique française*. Admission in this society required sponsorship by a member: Laplace benefited from the sponsorship of Louis Méroc and Raoul Cammas (1905–1987), two archaeologists he worked with from 1947 at the Montmaurin excavations directed by Méroc¹. His membership to the *Société préhistorique française*, a national-scale society, was a significant step. At the beginning of the 1950s, the members were predominantly located in the Paris region. An increasing membership from the southwest of France was noticeable, even if it was not yet locally organised². Due to his location and his interest in the Béarnese and Basque cultures, Laplace was also involved in societies with regional aims.

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¹ See *Séance du 22 Avril 1948* in: *Bulletin de la Société préhistorique de France* 45, 3–4/1948, p. 86.

² See P. Soulier, *Un siècle de Bulletin de la Société préhistorique française (1904–2004) ...*, p. 56.

In 1946, José Miguel de Barandiarán, exiled in France since 1936, created the *Institut basque de recherches Ikuska* in the village of Sare (Basses-Pyrénées). Laplace's membership in *Ikuska* is recorded in 1948 and 1949¹. He contributed actively, being in charge of the speleology section alongside Jesús Elosegui Irazusta (1907–1979), and published three articles in the first issues of *Ikuska. Documents et questionnaires*, the institute journal². In the same period, Laplace also joined the *Société internationale d'études Basques «Gernika»* (SIEB) created in 1948 in Bayonne³. The same year, the *Ikuska* institute and the Gernika society organised the seventh congress of Basque studies – the first congress in exile – in Biarritz, in which Laplace also participated⁴. Laplace was also a teacher in the summer courses, *conversaciones*, organised by *Ikuska* at the *Musée basque* in Bayonne in 1949 and 1950⁵.

From the early 1950s, Laplace relied on his memberships in various scientific societies to contribute to the local organisation of archaeological research. Two examples can be given. In 1951, he was a member of the *Société méridionale de spéléologie et de préhistoire* (SMSP) and assumed the function of secretary of the section related to the western Pyrenees region⁶. His involvement is still documented in 1953 and in 1954, but Laplace was no longer mentioned from 1958 in the publications of the society. Furthermore, in 1953 Laplace created a *laboratory* of prehistoric archaeology and an exhibition gallery inside the Pau Museum of fine arts⁷. The same year, with some collaborators, he took the initiative to gather the local members of the *Société préhistorique française*:

Chaired by the eminent Basque archaeologist, the Abbot J. N.[M.] de Barandiaran, Director of the Institute of Basque Research, a meeting was held at the Prehistoric Archaeology Laboratory of the Museum of Pau, attended by various members of the French Prehistoric Society. At the end of this first meeting, it was decided to periodically group the members of the French Prehistoric Society of our region in order to collaborate. The members of the French Prehistoric Society who were not informed,

¹ See J.-C. Larronde, *Histoire du VII^{ème} Congrès d'Études Basques. Biarritz, 1948*, p. 42.

² On the paintings of the Etxeberri cave see G. Laplace-Jauretche, *Etxeberri'ko-karbia (La Grotte d'Etcheberry)*. On his surveys and excavations in the west Pyrenees see G. Laplace-Jauretche, *Prospections et fouilles*. On the paintings of Chachiloaga cave see G. Laplace-Jauretche, *Nouvelles peintures préhistoriques en Haute-Soule. Chachiloaga*.

³ J.-C. Larronde, *Histoire du VII^{ème} Congrès d'Études Basques. Biarritz, 1948*, p. 59.

⁴ The congress was held from the 12th to the 19th September 1948. See J.-C. Larronde, *Histoire du VII^{ème} Congrès d'Études Basques. Biarritz, 1948*.

⁵ The first course was held from the 29th August to the 3th September 1949 (see *Conversaciones de Ikuska* in: *Eusko Jakintza* 3, 4–5–6/1949, p. 364) and the second from the 4th–9th September 1950 (see *Conversaciones de «Ikuska» año 1950 (del 4 al 9 de Septiembre en el Musée Basque* in: *Eusko Jakintza* 5, 4–5–6/1950, p. 385).

⁶ See SMSP, *Bulletin de liaison*, no. 5, Nov. 1951, p. 6.

⁷ See SMPS, *Bulletin de liaison*, no. 7, Nov. 1953, p. 10.

were asked if they wished to be summoned later; to contact one of the following members: Mr the Abbot J. N.[M.] de Barandiaran, in Sare, Mr Bouchet[r], 44 rue Victor–Hugo in Mauléon, Mr Laplace–Jauretche, 3 avenue de Gélou, Jurançon.¹

The same year, Laplace joined the *Société des Arts, Lettres et Sciences de Pau*, and he remained a member for a long period until at least 1971². He participated in society gatherings, gave two oral communications which were published afterwards in the society journal: a first one in 1960, entitled *Les grottes d'Oxocelhaya*³ and a second one in 1963, entitled *Problèmes de l'origine de l'aurignacien à la lumière des fouilles de la grotte Gatzarria*⁴.

Beyond the national borders, Laplace also joined foreign archaeological societies. A first example is in Italy. During his stay at the *École française de Rome*, he was invited to become a member of the *Istituto Italiano di Paleontologia Umana* in 1958⁵, an institution created in 1927 in Florence on the model of the French *Institut de paléontologie humaine*⁶. A second example concerns the *Grupo de ciencias naturales Aranzadi*, created in 1947 by Jesús Elosegui Irazusta in San Sebastián–Donostia. Laplace became a member in 1963, when he aimed to study the lithic collections from the Urtiaga cave preserved by the Aranzadi society⁷. Afterwards, Laplace kept close contact with basque archaeologists for subsequent decades. He published two papers in *Munibe*, the society journal⁸, and remained a member of Aranzadi until 1980. This overview of Laplace's involvement in various scientific societies

¹ The mistakes of the original text are reproduced. This article comes from an unidentified journal, without author and date but can be cross-dated to 1953, MNP:

*À la Société Préhistorique Française
Groupe de recherches des Pyrénées Occidentales
Sous la présidence de l'éminent archéologue basque, M. l'abbé J. N.[M.] de
Barandiaran, directeur de l'Institut de Recherches Basque, une réunion s'est
tenue au laboratoire d'archéologie préhistorique du Musée de Pau, à
laquelle assistaient divers membres de la Société Préhistorique Française. À
l'issue de cette première réunion, il a été décidé de grouper périodiquement
les membres de la Société Préhistorique Française de notre région en vue
d'une collaboration. Les adhérents de la Société Préhistorique Française qui
n'ont pu être avisés, sont priés, s'ils désirent être ultérieurement convoqués,
de se mettre en relation avec l'un des membres suivants: M. l'abbé J. N.[M.]
de Barandiaran, à Sare, M. Bouchet[r], 44 rue Victor–Hugo à Mauléon,
M. Laplace–Jauretche, 3 avenue de Gélou, Jurançon.*

² See *Bulletin de la Société des sciences, lettres et arts de Pau* 7 (4^e série), 1972, p. 429.

³ Presentation given the 27 Feb. 1960 and published as G. Laplace–Jauretche, *Les grottes d'Oxocelhaya à Saint–Martin d'Arberoue*.

⁴ Talk presented the 22 Feb. 1963 and published as G. Laplace, *Le problème de l'origine de l'Aurignacien à la lumière des fouilles de la Grotte de Gatzarria*.

⁵ See Letter from Alberto Broglio to Laplace, 27 Mar. 1958, MNP.

⁶ M. Tarantini, *Dal fascismo alla repubblica*.

⁷ His membership dated 14 Nov. 1963. See *Aranzadiania* 74 (2^a serie, n. 8), Enero 1964, p. 92. See also *Acta de la reunión de la Sección de Prehistoria del G. de C. N. Aranzadi, celebrada el 26 de Octubre de 1963*, folder 243–1 Actas sección prehistoria, Aranzadi.

⁸ See G. Laplace, *Solutrén et foyers solutréens* & G. Laplace, *De l'application des coordonnées ...*

shows the weight of this type of scientific organisation in his scientific activities. One might conclude that, in his case, the professional organisation and the scientific societies were of equal importance. However, I must qualify this assumption by looking at a particular event that occurred at the beginning of the 1950s.

2.4. Early 1950s crisis: Laplace's denial of the scientific societies

In the early 1950s Laplace and François Bordes were close friends and collaborated in various fieldworks (Pech de l'Azé, Gatzarria: 1952, 1953, Montmaurin: 1949, 1951). They had a lively correspondence, sharing aspects of both their private and professional lives. In 1951, Laplace informed Bordes about the difficulties he encountered with the SMSSP and announced he would resign from the society and from his secretarial position¹. One year later, Laplace suddenly resigned from many of the societies in which he was involved². He wrote to Bordes about his surprise that the societies had no reactions:

Really, I will remember the beginning to this year 1952! How many things ended! First, the SOCIETIES, large and small, obscure or famous, scientific or not scientific, to which I had, with the unconsciousness of youth and with the naivety of the little shepherds, given my support and my heart. And if it was only a question of support! But no, Sir, I had also accepted responsibilities, as incongruous as varied. [...] I THREW THE SOCIETIES OUT OF THE WINDOW ... I was expecting a terrible row. Nothing. NOTHING ... but the song of the westerly wind that was pushing the clouds. So, I took off my beret and I felt JUGARA in my heart, coiled, swinging its moon head.³

Laplace's surprise at the society being nonchalant to his resignations came with a worry: the control that Louis Méroc had over him, as the director of the tenth prehistoric archaeological region (see map in Figure 1):

¹ Letter from Laplace to François Bordes, 27 Feb. 1951, BOR 33, SRA.

² On this rupture with the scientific societies see also S. Plutniak, *L'innovation méthodologique ...*

³ Letter from Laplace to François Bordes, 26 Jan. 1952, BOR 33, SRA:

Vraiment, je me souviendrai de ce début d'année 1952! Que de choses se sont liquidées! D'abord les SOCIÉTÉS, grandes et petites, obscures ou célèbres, savantes ou pas savantes, auxquelles j'avais dans l'inconscience de la jeunesse et la naïveté des petits bergers, donné mon adhésion et mon cœur: Et s'il ne s'était agi que d'adhérer! Mais non, Monsieur; avait accepté des responsabilités, aussi incongrues que variées. [...] J'AI FOUTU LES SOCIÉTÉS PAR LA FENÊTRE ... Je m'attendais à un terrible vacarme. Rien. RIEN ... que le chant du vent d'ouest qui poussait les nuages. Alors j'ai enlevé mon béret et j'ai senti JUGARA dans mon cœur; lové, qui balançait sa tête de lune.

Excavations are reserved for him [Méro] and for the people of Toulouse ... and to me, the test pits. I am certainly not capable of digging a site without Mr Lacombe, Mr Mothe, Mr Delaplace and Mr Cammas, for example ... See how the first clandestine excavation of Boucher in Aussurucq concluded. Greetings to the wise master, who declares that peace does not reign in the hearts, who calmly judges without distinction, the idiots who pillage the sites and those who try to stop the misdeeds of pretentious beasts. [...] One divides, one arbitrates, and one reigns. I CANNOT ACCEPT IT ANYMORE. I defend the witnesses of the past at the same time as my future, my profession. M[éro] exceeds his role as director. He uses it. You know the affection, the gratitude I have for him, how much I appreciate his methods, the honesty of his work ... but he does not hold me with a string ... MADAM, the umbilical cord is broken, the bird has left the nest, it is the law of the world.¹

We saw earlier that Laplace had never ceased to be a member of various societies. Hence, the announcement of his sudden withdrawal from the societies in 1952, but in the end he did not do so with respect to all of them.

Given these elements, one might think that later Laplace and his collaborators would have organised their activities either on the model of professional organisations or on the model of scientific societies. But they did not. The 1952 incident gives a key to understanding why. On one hand, it can be seen as a moment of clear demarcation between professional and amateur prerogatives. It corresponds to the *boundary work* coined by Thomas Gieryn², an effort made by the actors to delimit the extent of their scientific legitimacy and to exclude some practitioners. This typical form of conflict between categories of actors has been studied in numerous cases, in archaeology by Philippa Levine³ and in other fields such as zoology by Susan Leigh Star and

¹ Letter from Laplace to François Bordes, 26 Jan. 1952, BOR 33, SRA:

À lui [Méro] et aux toulousains les fouilles ... à moi, les sondages. Sans doute ne suis je pas foutu de fouiller un gisement sans MM. Lacombe, Mothe, Delaplace, Cammas, etc. ... Voyez aussi la conclusion donnée à la première fouille clandestine de Boucher à Aussurucq. Salut au maître sage, qui déclare que la paix ne règne pas dans les cœurs, qui juge sereinement et sur le même plan les imbéciles qui saccagent les gisements et ceux qui s'efforcent de mettre un frein aux méfaits des couillons prétentieux. [...] On divise, on arbitre, et on règne. MOI, JE NE MARCHE PLUS. Je défends les témoins du passé en même temps que mon avenir, mon métier. M[éro] outrepassé son rôle de Directeur. Il s'en sert. Vous savez l'affection, la reconnaissance que j'ai pour lui, que je pense du bien de ses techniques, de l'honnêteté de son travail ... mais qu'il ne compte pas me tenir par une ficelle ... MADAME, le cordon ombilical est rompu, l'oiseau a quitté le nid, c'est la loi du monde.

² See T. F. Gieryn, *Boundary-work and the demarcation of science from non-science*.

³ See P. J. A. Levine, *The amateur and the professional*.

James Griesemer¹. In these conflicts the actors can rely on various resources to oppose their rivals. Star and Griesemer analysed the relations between administrators, and amateur and professional scientists working in a natural history museum. These authors emphasised the mediation function of some *boundary* objects such as typologies, ideal types, and standardised forms. It is accepted that standardisation is a way to increase control: first of all on the operations made by scientists and, possibly, also on the scientists themselves. In this perspective, legal regulation (which is a standardisation of social norms) also appears as a potential resource for the actors engaged in demarcation conflicts within a scientific field. However, even if Laplace's *typologie analytique* can be characterised as a boundary object, he did not intend to rely further on standardisation – and even less on legal regulation – to shape a collective method to practise science. Indeed, the 1952 incident was also, on the other hand, an expression of the refusal of the new forms of administrative and institutional control on archaeological activities. In the letter quoted above, Laplace appears in an uncomfortable intermediate position establishing distance with the scientific societies but also being limited in his actions by the new legal and professional archaeological organisations. The position he claims is defined by two aims: an epistemological purpose (to protect and to study the traces of the past) and a more personal and ethical purpose: to ensure his professional activity in acceptable conditions. I now address the ways Laplace and his collaborators attempted to achieve these two aims.

3. Organisational alternatives for archaeological research

3.1. The Arudy group: collective research and funding

In 1968, Laplace was promoted to *maître de recherche*. Vallois, who had advised him since the beginning of his career, insisted in a letter on the autonomy implied by this promotion: being *maître de recherche* means the person is entitled to choose his own research topics, can apply for funding and can assume the direction of a research group². Indeed, Laplace set up the *Centre de recherches d'Arudy* in the Arudy village (Basses-Pyrénées) in 1968. The Centre was located in the *Hôtel de Poutz*, an eighteenth century manor. It had offices, a library, a *laboratory*, a conference room³, a dormitory, and a kitchen. The next year, the first edition of the *séminaire de typologie d'Arudy* was held there, from the 11th–16th August⁴. These initiatives seem to normally fulfil what was expected of a professional research career. Once again, a detail would lead to qualify this view: the foundation of the Arudy Center was not negotiated with the CNRS hierarchy as one might expect, but was done in collaboration with local institutions: namely, the Arudy municipality⁵ – whose

¹ See S. L. Star & J. R. Griesemer, *Institutional ecology, "translations" and boundary objects ...*

² Letter from Henri-Victor Vallois to Laplace, 13 Apr. 1968, MNP.

³ Letter from Laplace to Henri-Victor Vallois, 18 Jun. 1971, MNP.

⁴ See the reports of the seminar in: I. Barandiarán, *Arudy 1969. Coloquio internacional de tipología & J. M. Merino, El coloquio internacional de Arudy*.

⁵ Municipal decision of the 25th September 1967. See G. Laplace, *Rapport de fouilles Poeymau 1968*, SRA.

mayor was Georges Houraa, a friend of Georges Laplace¹ – and with the recently created national park of the Pyrenees, in which Laplace was called to join the scientific board².

At the same time, in 1969³, Laplace was invited by Louis David (1927–2016) to join the *Centre de paléontologie stratigraphique* of Lyon, a laboratory he created in 1963 and associated with the CNRS. Students and researchers in Lyon such as Robert Vilain, Sabine Morelon or Denise Philibert took part in the excavations directed by Laplace in the Pyrenees as well as in the Arudy seminars. Nevertheless this partnership ended in 1974, due to a conflict about the very nature of their collaboration. David wrote to Laplace and complained about what he perceived as a lack of commitment:

*You need to know there are deadlines, rules, forms. You have done nothing of all this, it is hardly the behavior of an adult researcher who is conscious of his responsibilities. I have nevertheless spoken to Mr Éluard about this small problem which we may be able to resolve on friendly terms, but I repeat that on the official level it is an additional demonstration of your non-integration into a formal research structure.*⁴

Laplace answered with his own appreciation of the situation but, in any case, this incident manifested once again the limits of Laplace's involvement in the *official structures of research*. Afterwards, he focused on his own Centre, renamed the *Centre de palethnologie stratigraphique «Eruri»* from 1973 (*Eruri* stands for Arudy in Béarnais language⁵). The annual seminars continued until 1989 and the centre published *Dialektikê. Cahiers de typologie analytique* every year from 1972 to 1987.

In 1981, the *Centre de recherches archéologiques*, a CNRS laboratory created in 1970 to organise the archaeological research at the national level, published a directory about this domain of research in France⁶. It gathers information about 75 researchers, 550 museums and 270 research teams, including the *Centre de palethnologie stratigraphique*. Its record provides

¹ Interviews with Christine Cabon (11 May 2013) and Geneviève Marsan (12 May 2013).

² Decree of the 10 May 1968 establishing the scientific board of the national park in: *Journal Officiel*, 31 May 1968, p. 5313.

³ Letter by Laplace to Louis David, 21 Mar. 1974, MNP.

⁴ Letter from Louis David to Laplace, 15 Mar. 1974, MNP:

Vous devez savoir qu'il existe des délais, des règles, des imprimés, que vous n'avez rien fait de tout cela, ce n'est guère le comportement d'un chercheur adulte et conscient de ses responsabilités. J'ai néanmoins parlé à M. Éluard de ce petit problème que nous pourrions peut-être résoudre sur le plan amical mais je vous répète que sur le plan officiel il est une démonstration supplémentaire de votre non intégration dans une structure officielle de recherche.

⁵ See P. Raymond, *Dictionnaire topographique du département des Basses-Pyrénées ...*, p. 14.

⁶ See M.–B. Chardenoux, B. Lequeux, A. Querrien & S. Roscian, *Répertoire de la Recherche Archéologique Française*.

some basic information including the number of researchers (1: Laplace) and the number of volunteer collaborators (4: Delia Laplace–Brusadin, Françoise Lavaud, Michel Livache, and Sylvie Prudhomme). The presence of the Arudy *Centre* in this directory manifests a form of recognition, but it also records an unusual particularity: the sources of funding are said to be limited to *personal funding*.

Of course, Laplace did not run his excavations or missions using only his own financial resources. For most of his excavations, he received a grant from the *Conseil supérieur de la recherche archéologique* (CSRA, the state institution in charge from 1964 of authorising the funding of excavations in France). For instance, in 1973, he received 2500 F for his excavations in the Olha cave and 1000 F for those in the Gatzarria cave¹. Concerning his travels and research missions, he did, for example, fieldwork in Tunisia in November 1955 funded by the *Institut des hautes études de Tunis*². In 1970, the CNRS granted him 2000 F for a study on public and private archaeological collections (probably in Rome, Florence and Ferrara)³. Laplace had also received occasional grants from foreign research institutions. In October 1971, he completed a mission in Prague, Brno and Nitra, immediately followed by a mission in Florence and Rome in November. He was funded by a collaboration between the CNRS and, respectively, the Czechoslovak Academy of Science and the Italian *Consiglio Nazionale delle Ricerche* (National Research Council). The Spanish *Consejo Superior de Investigaciones Científicas* (Spanish National Research Council) also gave him a grant, in October 1974, to study a lithic collection in Santander⁴.

However, all these sources of funding were *personal* grants. Hence, they are not relevant to our purpose, which only concerns the *collective* organisation of archaeological research. In this respect, the *Centre de palethnologie stratigraphique* relied on personal funding: Laplace's funding and that of people attending the annual seminars. Even publishing the journal of the group, *Dialektikê*, was due to the volunteer work Laplace's wife, Delia Laplace (1924–1997) and to the subscription fees paid by the seminar participants⁵. The financial particularity of this research group brings our attention to other unusual aspects, in particular to Laplace's own conception of scientific research work, scientific autonomy and the scientific ethos.

3.2. Laplace's emphasis on autonomy

Most of the biographical accounts of Laplace emphasise the unusual particularities of his ethical viewpoints. This is particularly the case in reviewing

¹ Conseil supérieur de la recherche archéologique. Section des antiquités préhistoriques, *Séance des 26–27 février 1973*, box 3, CEPAM.

² See G. Laplace, *Campagne de recherches en Tunisie. Novembre 1955*, handwritten report, MNP.

³ See CNRS, *Le CNRS dans le domaine de l'archéologie*, 1970, box Gardin 3, CEPAM.

⁴ Examples taken from Laplace's administrative records, Couartou's files.

⁵ See Letter from Delia Laplace to Suzanne Simone, 3 May 1982, MNP.

how the Spanish viewed him¹. For instance, in Laplace's obituary, the Basque archaeologist Ignacio Barandiarán (1937–) wrote: *He was not an usual prehistorian [...] as an ethical model apparently for a few people (so few?) and always as a critical thinker.*² Another example can be taken from a text entitled *Georges Laplace. La fuerza de la contradicción interna [The strength of internal contradiction]*, written by the Catalan archaeologists Assumpció Vila i Mitjà and Jordi Estévez Escalera:

*The most important thing we learn from Laplace was the possibility to harmonise a firm political position based on the dialectical conception with the archaeological study of paleolithic materials. It was then feasible to make coherent a political and philosophical Marxist position with an archaeological scientific practice.*³

In the following sections, drawing on Laplace's own words and on the judgements of his collaborators, I illustrate three aspects of Laplace's scientific views and ethos. As illustrated by the previous quotations, his personal influence was instrumental in shaping the collective life of the research group in Arudy. Hence, addressing this individual level of analysis cannot be omitted.

3.2.1. Spontaneity

A first theme concerns the high importance that Laplace gave to the idea of spontaneity in this theoretical preferences (his sympathy for orthogenesis and neo-lamarckist perspectives⁴) and his conception of the collective practice of science. This last aspect is illustrated in a letter sent in 1967 to Henri Delporte. Laplace insists on the fact he never tried to popularise his method: in his opinion, its users adopted it by themselves:

I have also never made any effort to disseminate my method. As a result of my own experience, my method has been developed for the sole joy of my own understanding of phenomena. [...] a group of young French, Italian and Spanish researchers – now joined by German, Swiss and even Czech researchers – spontaneously stated that not only had they adopted the

¹ See also A. Sáenz de Buruaga, *Recorrido y reflexiones en torno ...* & F. Gusi i Jener, *León y caballo ...*.

² I. Barandiarán, *Georges Laplace (Pau 1918–Pau 2004)*, p. 327: *No fue prehistoriador del común [...] como referente ético aparentemente para unos pocos (¿tan pocos?) y como pensador crítico siempre.*

³ A. Vila i Mitjà & J. Estévez Escalera, *Georges Laplace*, p. 141:

Lo más importante que pudimos aprender de Laplace fue la compatibilización de una postura política firme y la concepción dialéctica con el estudio arqueológico de los materiales paleolíticos. Era posible hacer coherente un posicionamiento político-filosófico marxista con una praxis científica arqueológica.

⁴ In particular in his 1950s publications, Laplace referred to authors such as the Italian prehistorian Alberto Carlo Blanc (1906–1960), the Swiss entomologist Paul Bovey (1905–1990) and the Spanish paleontologist Miguel Crusafont i Pairó (1910–1983).

*analytical typology, but that they had also formed an international group intended to advance it in its own way ... there is much to do!*¹

This position related to the question of research practice organisation is associated with a declared rejection of hierarchy.

3.2.2. Rejection of hierarchy

To understand the unusual characteristics of the Arudy group, the standard ways in which research was organised in the main contemporary archaeological centres must be summarised. The events of May 1968 were decisive for the reorganization of research and higher education in France². However, at least in the case of prehistoric archaeology, the general distribution of power and authority remained the same: Leroi-Gourhan dominated in Paris, Pierre-Roland Giot (1919–2002) in Rennes, Henry de Lumley (1934–) in Marseille and Bordes and Sonnevillè-Bordes held their position in Bordeaux. The group gathered around Laplace considered Bordes and Sonnevillè-Bordes (and their collaborators) as their principal rivals. For them, François Bordes embodied the perfect archetype of an excessively authoritarian scholar³, contrasting with someone such as Laplace, who represented, to the contrary, the possibility of free and collective thinking⁴. Speaking about the Arudy group, Ignacio Barandiarán insists on the irrelevance of the *school* concept: according to him, there was no such school in Arudy and the main aim of the group laid in free and critical debates:

*[...] it is inappropriate, because oversimplified, to ask if there was a “Laplace school (= ‘system’)”: abhorring the word, he was only satisfied by the attention of those who approached his texts and listened directly to his opinions to know and discuss them, contributing to the mutual enrichment of the analysis.*⁵

¹ Letter from Laplace to Henri Delporte, 15 Nov. 1967, MNP:

Aussi n’ai-je jamais fait aucune espèce d’effort pour propager ma méthode. Fruit de ma seule expérience, ma méthode a été mise au point pour la seule joie de ma propre compréhension des phénomènes. [...] un ensemble de jeunes chercheurs français, italiens et espagnols – auxquels se joignent actuellement des chercheurs allemands, suisses et même tchèques – se sont prononcés spontanément qui non seulement ont adopté la typologie analytique mais ont jeté les bases d’un groupe international destiné à la faire progresser selon ses propres voies et ... il y a fort à faire!

² See the studies gathered in O. Orain (éd.), *Les «années 68» des sciences humaines et sociales*.

³ This view was also shared by other professional researchers, as Vallois who considered Bordes as an autocrate. See Letter from Henri-Victor Vallois to Laplace, 13 Apr. 1968, MNP.

⁴ Interviews with Dominique Ebrard (8 Jun. 2017) and with Michel Livache (12 Mar. 2014) among others.

⁵ I. Barandiarán, *Georges Laplace (Pau 1918–Pau 2004)*, p. 326:

[...] no es adecuada, por simple, la pregunta de si existe una «escuela (= “un sistema”) de Laplace»: término que él aborrecía, sólo compensado por la atención de cuantos se acercaron a sus textos y a escuchar directamente sus opiniones para conocerlas y discutir las contribuyendo al mutuo enriquecimiento del análisis.

When retired, Laplace published a vigorous pamphlet entitled *Autorité et tradition en taxinomie*, criticising various social and political aspects of academic research¹. In this text, he opposes these aspects with the principle of *libre examen* (free inquiry), referring to the eighteenth century Pyrenean philosopher Pierre Bayle² (1647–1706). This theme is frequently attested in his correspondences, for instance in the following letter to Jean–Georges Rozoy (1922–, French physician and prehistoric archaeologist). Laplace contrasts institutional research and its authoritative features with the *genuine researcher* who stands supposedly far from any envy of power:

*Scientific research is carried out in institutions governed by a strong, dominating hierarchy, a reflection of the social hierarchy, inherited from religious hierarchies and medieval academic institutions. The genuine researcher, necessarily freed from the envy of power, as well as from the taste for submission, enters inevitably into opposition with a hierarchy which generally refuses and discourages novelty, unless it tolerates it in the hope of taking it. Are these the professionals you are talking about?*³

This excerpt also illustrates the distance Laplace finally went with his professional ideal and values and with his career ambitions, distancing himself from his earlier claims in the 1950s.

3.2.3. Refraining from careerism

Laplace and Rozoy shared, although contradictory, a lengthy correspondence. Observing the complimentary closes of their exchanges is meaningful for our aim. In a 1974 letter, Laplace signed off his letter by provokingly emphasising the value of liberty and the universal equality of men: *My language is that of a free man held at the liberty of another man. A word to the wise is enough!*⁴ Rozoy's reply was: *My language is that of a totally free man to a professional researcher, which is not in itself dishonourable. I warmly greet you.*⁵ Hence, Rozoy proudly suggested that practising archaeology within a professional framework provides less freedom than practising it in an

¹ A text which has been translated into Spanish: G. Laplace, *Autoridad y tradición en taxonomía*.

² See G. Laplace, *Un exemple de nouvelle écriture de la grille typologique*, p. 33.

³ Letter from Laplace to Jean–Georges Rozoy, 16 Sep. 1982, MNP:

Quant à la recherche, elle s'effectue dans des institutions régies par une hiérarchie pesante, dominatrice, reflet de la hiérarchie sociale, héritière des hiérarchies religieuses et des institutions universitaires médiévales. Le chercheur véritable, nécessairement libre du goût du pouvoir comme du goût de la soumission, entre fatalement en opposition avec une hiérarchie qui très généralement refuse et décourage la nouveauté, à moins qu'elle ne la tolère dans l'attente de la récupérer. Sont-ce là les professionnels dont vous parlez?

⁴ Letter from Laplace to Jean–Georges Rozoy, 12 Mar. 1974, MNP: *Mon langage est celui d'un homme libre tenu à la liberté d'un autre homme. À bon entendeur, salut!*

⁵ Letter from Jean–Georges Rozoy to Laplace, 13 Apr. 1974, MNP: *Mon langage est celui d'un homme libre totalement à un chercheur professionnel ce qui n'est pas déshonorant. Je vous salue bien.*

unprofessional situation. More generally, this example manifests the subtle manipulations of the symbolic and relative borders between the professional, and amateur or non-professional situations.

For the members of the Arudy group, it was clear that the seminars were a place of great intellectual liberty in contrast with the requirements of a professional career. For instance, Ignacio Barandiarán stresses the contrasts with the bureaucratic and management requirements in the contemporary academic institutions:

Considering that, nowadays, the curricula and professional successes in archaeology are evaluated on the number of conferences one has attended or organised, on the managing of interdisciplinary and costly research programs, or on the publications (so often determined/weighed up by one's interest in its self-marketing!) Laplace was an exception among all [...].¹

When Laplace was in trouble with the *Centre de Paléontologie stratigraphiques* of Lyon, he replied to the criticism of his director, Louis David, who declared him to be an asocial researcher:

“Isolated researcher?” No, autonomous researcher, independent researcher, free researcher like his research, indifferent to the bosses and their followers, working calmly with his peers without career concerns. The Centre of Stratigraphic Palaeontology honoured him by opening its doors to him, in exactly the same way as the centre is honoured by the behaviour of a free man. Long live freedom!²

Laplace insisted on his disregard for any form of professional career ambition in academic activities. In fact, Michel Livache – one of the most involved actors of the Arudy group – said that [o]nly people who did not have the need to live for, or make a career, in archaeology could come to Laplace³. An ideal of non-professional practice was hence shared – at least – by some of the group members. Indeed, several conflicts in the group occurred due to the

¹ I. Barandiarán, *Georges Laplace (Pau 1918–Pau 2004)*, p. 327:

Cuando se miden hoy en Arqueología los curricula y el éxito profesional por el número de apariciones y/o protagonismos en congresos, en la gestión de programas interdisciplinarios y costosos o en la aparición/eco (¡tantas veces determinado/dosificado por cada interesado en su propio marketing!) Laplace fue la excepción de todos [...].

² Letter from Laplace to Louis David, 21 Mar. 1974, MNP:

«Chercheur isolé?» Non, chercheur autonome, chercheur indépendant, chercheur libre comme sa recherche, indifférent aux patrons et à leurs clientèles, travaillant sereinement avec ses pairs sans souci de carrière. Le Centre de Paléontologie stratigraphique l'a honoré en lui ouvrant ses portes exactement dans la mesure où il est honoré par le comportement d'un homme libre. Gora azkatasuna!

³ Interview with Michel Livache, 3 Dec. 2012: *ne pouvaient venir à Laplace que des gens qui n'avait pas besoin de vivre, de faire carrière en archéologie.*

incompatibility between this general ethic and the professional ambitions of some participants.

All these statements inform us of the values shared among the members of the Arudy group. However, differences with their actual practices and their life trajectory can be observed. A simple measure of the actors' involvement in the Arudy group is obtained by summing their number of active years, i.e. either by participating in the Arudy seminar or by publishing in the journal *Dialektikê* or in *Archivio di tipologia analitica* (see Table 6). On this basis, considering the ten most active actors, six had a professional position in archaeology during their lifetime (Georges Laplace, François Lévêque, Jordi Estévez Escalera, Fabio Martini, Paolo Gambassini). Four never did: besides their archaeological activities, they were a primary school teacher (Michel Livache), a social worker (André Crémillieux), Greek teacher (Hélène Crémillieux), and physician (Pierre–Louis Trotot). If we enlarge the sample to the first twenty actors, we observe that only six of them did not get a professional position in archaeology. These observations suggest that some of the Arudy seminar participants had indeed career ambitions.

Name	Active years	Name	Active years
Georges Laplace	21	Assumpció Vila i Mitjà	12
Michel Livache	19	José María Merino Sanchez	11
André Crémillieux	18	Jean–Louis Voruz	11
Hélène Crémillieux	15	Gérard Colmont	10
François Lévêque	15	Annamaria Ronchitelli	10
Pierre–Louis Trotot	15	Joël Vital	10
Jordi Estévez Escalera	14	Francesc Gusi i Jener	9
Paolo Gambassini	12	Agostino Dani	8
Jean Lesage	12	Antonio Fandos	8
Fabio Martini	12	Carmen Olaria Puyoles	8

Table 6: The twenty most active participants in the typologie analytique group based on their number of active years (participation in seminars or publications).

One of the main actors, Jean–Louis Voruz (1952–), had a life trajectory of particular interest. If the historical evolution of archaeology was *from antiquarians to archaeologists*¹, Voruz's history would go anticlockwise: when he was 43 years old, after spending nine years as a *maître d'enseignement et de recherche* at the University of Geneva, he became a professional antique and second–hand goods dealer. He did not give up his archaeological works, as he was in charge of authorised excavations and continued to publish his research². This case radically contrasts with a previous case when a participant of the Arudy group had to stop his involvement with the group due

¹ A. B. Kehoe, *Introduction*, p. 1.

² Interview with Jean–Louis Voruz, 15 May 2017.

to a conflict with Laplace. Laplace explained the situation to Rozoy in a letter, concluding that:

[...] *like so many others, she attended our first seminars without ever having expressed the desire to 'join the tour'. We keep the best memories of her. If we have, perhaps, helped her to become aware of some problems, none of the compagnons were her master. Her academic future cannot, in any way, concern us.*¹

Laplace established a clear line between academic careers and participation in the Arudy group. The vocabulary he used is of interest: the terms *tour*, *compagnons*, *maître* refer directly to the *compagnonnage*, a movement and network of transmission and practice of craftsmanship, widely developed in France since the eighteenth century. By the end of the 1970s, Laplace and his collaborators intended to adopt some aspects of the *compagnonnage* in their own collective archaeological practice.

3.3. The *compagnonnage* as a model for the collective practice of science

3.3.1. The *compagnonnage*'s reaction against academicism

The *compagnonnage* has a long history, involving conflicts between its different branches and attempts to bring them together. In the middle of the twentieth century, important transformations occurred. In 1941, the *Association ouvrière des Compagnons du Devoir et du Tour de France* (AOCDTF) was created with the support of the Vichy regime. Jean Bernard (1908–1994), *compagnon* and stonecutter, played a prominent role. After the war, in 1953, the *Fédération Compagnonnique des Métiers du Bâtiment* (FCMB) was created in reaction against the AOCDTF. Raoul Vergez (1908–1977) appeared as a key figure of this new component of the *compagnonnage*. Both Bernard and Vergez attempted actively to enhance the cultural life and identity of the movement, notably through a vigorous publishing initiative. Laplace had some of these recently published books in his library, which shaped his inspiration.

A noteworthy aspect of this invigoration of the *compagnonnage* culture concerns its self-definition in relation, on one hand, to the working-class movement and, on the other hand, to academic knowledge and society. Regarding this last point, Vergez developed a critical view of the university that agreed with Laplace's own views:

The tactile world has deliberately emasculated itself on the steps of the University, in the blissful, dogmatic, untouchable, quasi-Buddhist admiration it carries to the so-called intellectual patriciate, this

¹ Letter from Laplace to Jean-Georges Rozoy, 16 Sep. 1982, MNP:

[...] *comme tant d'autres, [elle] a fréquenté nos premiers séminaires sans jamais avoir manifesté le désir d'«entrer dans le tour». Nous gardons d'elle le meilleur souvenir: Si nous l'avons, peut-être, aidée à prendre conscience de certains problèmes, aucun des compagnons n'a été son maître. Son avenir universitaire ne saurait, en aucune manière, nous concerner.*

*caste of graduates who holds it on a lead like the hunter keeps his pack of dogs, since the end of the guilds in 1791 with the Isaac Le Chapelier law. Since then, the prerogatives of the university patriciate have continued to develop in all fields.*¹

Vergez, as a *compagnon* firmly bound to his traditions, did not have a Marxist conception of society and did not consider dialectical reasoning as important as Laplace did. However, the archaeologist shared Vergez's critical positions against academism, as shown in others excerpts from his letters to Rozoy: *Many young and old people, who abandon sterile and obsolete academicism, open themselves to dialectical reason. Let us trust them: they do not embarrass themselves with timely syncretism!*²

Ten years later, Laplace describes the adoption of the *compagnonnage* culture and methods in the Arudy group, precisely against these supposed academic vices:

*Against the feudal and clientele systems, against the arguments of authority and the dogmas, researchers denying accepted ideas have created a new devoir compagnonnique whose headquarters is in Arudy. They publish "Dialektiké. Cahiers de typologie analytique" and organise open meetings, by invitation, to those they deem likely to respect the rules that have made the perpetuation of the old devoirs.*³

We saw that Laplace's laboratory, the *Centre de palethnologie stratigraphique* did not have any official existence in the CNRS structure, and he received no funding from this body. In the previous quoted letter, Laplace asserts the creation of a new *compagnonnage*; one might nevertheless wonder what kind of existence this collective entity had.

3.3.2. Archaeology as a *métier compagnonnique*?

In 1975, Laplace wrote to the FCMB and AOCDTF. He aimed to integrate

¹ R. Vergez, *Les enclumes de cristal*, p. 427:

Le monde tactile s'est volontairement émasculé sur les marches de l'Université, dans l'admiration béate, dogmatique, intouchable, quasi bouddhique qu'il porte au patriciat soi-disant intellectuel, cette caste de diplômés qui le tient en laisse comme le veneur tient sa meute de chiens, depuis la fin des corporations survenues en 1791 avec la loi Isaac Le Chapelier. Depuis lors, les prérogatives du patriciat universitaire n'ont cessé de se développer en tous domaines.

² Letter from Laplace to Jean-Georges Rozoy, 12 Mar. 1974, MNP: *Nombreux sont les jeunes et les moins jeunes qui, abandonnant les positions stériles des académismes désuets, s'ouvrent à la raison dialectique. Faisons-leur confiance: ils ne s'embarrassent pas de syncretisme opportun!*

³ Letter from Laplace to Jean-Georges Rozoy, 16 Sep. 1982, MNP:

Face aux systèmes des féodalités et des clientèles, des chercheurs niant les idées reçues, l'argument d'autorité et les dogmes ont créé un nouveau devoir compagnonnique dont le siège est à Arudy. Ils éditent «Dialektiké. Cahiers de typologie analytique» et organisent des rencontres ouvertes, sur invitation, à ceux qu'ils jugent susceptibles de respecter les règles qui ont fait la pérennité des vieux devoirs.

prehistoric archaeology as a *compagnonnage* craft¹. Generally speaking, the inclusion or exclusion of specific crafts is a common aspect of *compagnonnage* history². Hence, there were no *a priori* reasons for not considering the new prehistoric archaeological practice, in which manual work was an important part, as a *compagnonnage* craft. In this context, in a newspaper article about the collaboration between the *Centre de palethnologie stratigraphique* of Arudy and the *Centre de paléontologie stratigraphique* of Lyon for the excavation of the Poyemau cave, Robert Vilain was quoted as saying:

*It is pointless to get into research if one does not know how to use one's hands. A laboratory apparatus is first and foremost an instrument invented by a good workman. It is also fair to say that all who are here have faith in the value of their work. It is their passion and that is why we will find it very natural to participate.*³

However, according to the leaders of the *compagnonnage* organizations, this manual work was not enough to justify the integration of prehistoric archaeology. Laplace received an answer from Jean Bernard on behalf of the council of the AOCDTF:

*The trade you would like to include in the Compagnonnage does not correspond to the required criteria: the Compagnons are above all manual workers, creators by their guild houses, of work from a material. But, there is nothing to prevent you from creating a "Society of Scientific Researchers", with clearly defined characters and goals, with its rules, obligations, and conditions of membership. The Compagnons cannot help you in this matter, being absolutely incompetent [...].*⁴

¹ Letter from Laplace to the AOCDTF, 28 Jan. 1975 (letter mentioned but not recovered).

² For a summary of this history see N. Adell, *Arts de faire, arts de vivre*, pp. 120–121.

³ L. Laborde–Balén, *L'université de Lyon a pris en charge le gisement préhistorique du Pouey–Maü, à Arudy, où d'importants travaux ont commencé* in: *Sud ouest*, publication date not available, cross-dated March 1968:

Il est inutile de se lancer dans la recherche si l'on ne sait pas se servir de ses mains. Un appareil de laboratoire, c'est d'abord un instrument inventé par un bon ouvrier. Il est bon de dire aussi que tous ceux qui sont ici ont foi en la valeur de leur travail. C'est pour eux une passion et c'est pour cela que nous trouverons tout naturel de mettre la main à la pâte.

⁴ Letter from Jean Bernard to Laplace, 15 Feb. 1975, Mourre archives:

Le métier que vous souhaiteriez voir réunir au Compagnonnage ne correspond pas aux critères nécessaires: les Compagnons sont avant tout des manuels, créateurs par leurs maisons de travaux exécutés dans une matière. Mais rien ne vous empêche de former une «Compagnie de chercheurs scientifiques» dont le caractère et les buts seraient définis très nettement, dotée de ses règles, de ses obligations, de ses conditions d'adhésion. Les Compagnons ne peuvent vous aider en la matière, étant absolument incompétents [...].

As a matter of fact, even if archaeologists do manual work, draw artefacts, and have a close relation with the past, they do not undertake creative work by transforming raw materials. Hence, both *compagnonnage* organisations refused their integration. Nevertheless, after this refusal, Laplace and four of his closest collaborators continued to share cultural references, social roles and songs related to the *compagnonnage*¹. A particular consideration was given to a specific form of autonomy also related to the *compagnonnage*, namely autodidacticism.

3.3.3. Autodidacticism

The distinction between professional and amateur condition and practice is closely related to the way knowledge is transmitted. Laplace refused any kind of authority founded on a fixed knowledge, and to the contrary, he emphasised the unlimited nature of the learning process in science, which a genuine scientist must accept. This is illustrated in a letter to Rozoy in which Laplace denies the distinction between professional and amateur and emphasises the necessity of a non-dogmatic and thorough education:

*[...] we are all amateurs. Fortunately. The jacks of all trades are the plague, considering themselves superior to all learning. Worse yet are the obsessed. With them, there is nothing to do. When the jacks of all trades or obsessed hold the power of teaching, the quest for truth is replaced by the duty to retain the word of the teacher, and scientific teaching becomes a teaching of submission integrated into a repressive culture.*²

Transmission is a matter of high importance in *compagnonnage* organizations. It encompasses both the transmission of knowledge as well as of practices, ethics and traditions. Laplace's initial interest in the transmission of knowledge can be dated back to his 1940s war experiences, when he was already in touch with some *compagnons*. It is noteworthy to mention this part of his life, as his time in the Resistance made him highly regarded by members of the Arudy group.

In September 1941 the Vichy regime created the *École des cadres d'Uriage*, a school dedicated to the training of future French executives. The school settled in the Uriage castle, in the Vercors region (Alps). A lively intellectual and cultural dynamism grew there, attracting many people,

¹ Interview with Michel Livache, 12 Mar. 2014 & interview with André Crémillieux & Hélène Crémillieux, 17 May 2017. An in-depth analysis of this adoption of the *compagnonnage* will be given in a coming article.

² Letter from Laplace to Jean-Georges Rozoy, 16 Sep. 1982, MNP:

[...] nous sommes tous des amateurs. Heureusement. La plaie, ce sont les touches-à-tout se jugeant bien au-dessus de toute espèce d'apprentissage. Pire cependant sont les obsédés. Avec ceux-ci, rien à faire. Lorsque des touche-à-tout ou des obsédés détiennent le pouvoir de l'enseignement, le devoir de retenir la parole du maître remplace la recherche de vérité et l'enseignement de la science devient un enseignement de la soumission intégré à une culture répressive.

including Benigno Cacérés (1916–1991), a *compagnon* carpenter from Toulouse. The school trained thousands of young people, addressing a wide range of topics from the future of France to the development of an humanistic culture. This relative intellectual liberty pushed the Vichy regime to close the school in December 1942. The people in charge of the school then joined in the clandestine Resistance and settled in the La Balme castle in Murinais. In August 1943, teams called *équipes volantes* (mobile teams) were created. Their mission was to visit the clandestine Resistance camps in order to give military training and to enhance their morale with cultural, literary and artistic materials. Cacérés took part in these teams as well as Laplace¹. They spent their time between the intellectual work necessary to prepare their interventions in the Resistance camps, manual work at the castle, and camp visits; the topics of learning and self-teaching were of central importance to them, as described by Cacérés in his books². After the war, Cacérés dedicated his life to the development of popular education and set up a significant organisation for this purpose³. He also wrote numerous books, on his life and on education. In one of them, focusing on autodidacticism, he expresses positions grounded both in his experience of the labour movement, his *compagnon* identity and his participation in the Uriage school:

*The self-taught men of the nineteenth century, in an overwhelming majority, had a real trade. To manipulate material, to modify it, to reflect at all times on the free acts of the trade, a structure of thought, an art of thinking, were created and could be applied to another art. The worker remained a proletarian, but his professional and quasi-individual contact with the material he was working with, led him much more easily to the creation. Did not the poor understanding of rationalisation kill these types of men?*⁴

Hence, his positions were widely similar to Laplace's own view.

¹ 18^e Bataillon d'Infanterie parachutiste. États des services de M. Laplace, dated 6 Sep. 1952, Laplace files, EFR. On the Uriage experience in general and for a mention of Laplace see A. Delestre, *Uriage, une communauté et une école dans la tourmente, 1940–1945*, p. 212.

² For a description of the daily life in the Uriage community and in the Murinais castle see B. Cacérés, *L'espoir au cœur*.

³ The *Peuple et culture* movement, alongside with Joffre Dumazedier (1905–2002). Dumazedier also took part to the *équipes volantes* during the war and, as Laplace, was recruited by the CNRS afterwards (in 1952, as a sociologist).

⁴ B. Cacérés, *Les autodidactes*, p. 19:

Les autodidactes du XIX^e siècle étaient, dans une écrasante majorité, possesseurs d'un vrai métier. À manier la matière, à la modifier, à réfléchir à tout instant aux actes libres du métier, une structure de pensée, un art de penser, se créaient et pouvaient s'appliquer à un autre art. L'ouvrier restait un prolétaire, mais son contact professionnel et quasi individuel avec la matière qu'il façonnait le conduisait beaucoup plus facilement à la création. La rationalisation mal comprise n'a-t-elle pas tué ces types d'hommes?

3.3.4. The consistency of the *compagnonnage* reference

Indeed, Laplace showed great concern for specific topics: *métier* (craft) versus profession, criticism against some excesses of (industrial) rationalisation, and emphasis on individual development. In an interview published in 1980 in the *Sud Ouest* newspaper, he summarised the way that the *compagnonnage* might be a model for his group of prehistoric archaeologists:

*I strongly believe in collegiality in scientific research: for example, our seminar will be organised on the Compagnons du Tour de France model, the only hierarchy being that of knowledge and all the participants are true equals in the discussions. It is not for nothing that the bulletin, in which we record the results of our annual seminars, is called “Dialektikê” [...].*¹

We can distinguish two aspects in this use of the *compagnonnage* model, one related to the definition of a collective identity and the other concerning ethical values.

First, the definition of a collective identity and the aims of the *compagnonnage* organisations on one hand and those of the Arudy group on the other hand, share a similar method to dialectically refuse binary oppositions and to settle them through a third position. Indeed, as the *compagnons* distinguished themselves and their practice from art and science, the Arudy archaeologists distinguished themselves from amateurs and professional organisations and identities. There is, in other words, a similar ternary method to define a collective identity which relies on the refusal of a well-known opposition.

Second, concerning values, Laplace and his *compagnons* mixed, to some extent, classical scientific ethical values and those values adapted from the *compagnonnage* culture. Without mentioning them explicitly, Laplace expressed an adhesion to the Mertonian norms of science (universalism, communism, disinterestedness, and organised scepticism)². It is also noteworthy that he had an interest in the sociology of science and occasionally cited³ authors such as Jerry Gaston or Robert Merton, using for example the *honest cryptomnesia*⁴ notion coined by the later⁵. I have already elaborated on

¹ A. Bernard, *Georges Laplace. Connaître les sociétés préhistoriques* in: *Sud Ouest*, 2 Apr. 1980: *Je crois beaucoup à la collégialité dans la recherche scientifique: tenez, par exemple, notre séminaire sera organisé sur le modèle des Compagnons du Tour de France, la seule hiérarchie étant celle du savoir et les participants vraiment égaux dans le débat. Ce n'est pas pour rien que nous avons appelé «Dialektikê» le bulletin dans lequel nous consignons les résultats de nos séminaires annuels [...].*

² See R. K. Merton, *Science and technology in a democratic order*.

³ For example in G. Laplace, *Un exemple de nouvelle écriture de la grille typologique*.

⁴ See R. K. Merton, *On the shoulders of giants. A shandean postscript*, p. xxiii: *Among other ailments endemic among scholars, Merton defined the honest cryptomnesia as “submerged or subliminal memory of events forgotten by the supraliminal self” as in forgetting the source of an idea one takes to be newly one's own [...].*

⁵ On the relations in the 1970s between the French radical science movement and the emerging *Science and Technology Studies* academic field see R. Debailly, *La critique de la science depuis 1968*.

the values of autonomy, liberty or autodidacticism: in Table 7, a larger set of ethical oppositions concerning knowledge-related practices are presented. For each aspect, the options either valued or depreciated by the main participants of the Arudy group are given. This outlines the structure of a particular system of values which can be considered as underlying the collective organisation of this group.

Knowledge ...	Depreciated	Valued
Model of practice	profession	craft
Organization	scientific societies	self-organization
Social consequence	schools of thinking	free-thought
Validation	narration, inaccuracy	reasoning, methodological rigour
Transmission	academicism	self-learning

Table 7: Valued and depreciated ethical options and aims for the collective practice of archaeology according to the participants of the Arudy group.

To summarise, Laplace's view of scientific practice relies on a critique of scientific institutions on the one hand and, on the other hand, on strongly supporting epistemic values as rationality or truth. Such a distinction might be due to his deep interest in Protestantism (complementing his more general interest in religions and metaphysical issues, including Buddhism and Catholicism). I have already mentioned Laplace's references to the Pyrenean Protestant philosopher Pierre Bayle; indeed, during the 1980s Laplace was also in contact with Protestant Darbyst communities¹, as the Béarn region was one of the French regions where this form of Protestantism was active².

Lastly, let us consider a final aspect of the Arudy annual meeting that was also related to the *compagnonnage* culture, namely songs. Songs appear as an appropriate way to conclude the description of the Arudy group's characteristics. Indeed, singing was a practice related to all the relevant aspects of Laplace's life: his relation to the Pyrenean culture, his war experiences³, and a significant aspect of the shared life during the Arudy seminars⁴. The song repertoire was very large, including traditional or work songs, Italian and Spanish revolutionary songs, bawdy songs, and also, not surprisingly, songs taken from the *compagnonnage* repertoire. At the end of a handwritten variation of the *compagnonnique* song *La conduite*, one read the following verses, which summarise the social and learning ideals shared by the *compagnons* of the Arudy seminars:

¹ Interview with Michel Livache, 12 Mar. 2014.

² See C. Maillebouis, *Sur l'implantation du «darbysme» en France au XX^e siècle*, p. 341.

³ Laplace's war companions emphasised his noteworthy singing skills. See for instance A. Delestre, *Uriage, une communauté et une école dans la tourmente, 1940–1945*, p. 212.

⁴ The songs sung by the participants have attracted the attention of the journalists who reported the meetings. See Tamburo, *Séminaire particulièrement important au Centre de Recherches de la Maison d'Ossau* in: *La République des Pyrénées*, 29 Aug. 1973, p. 12 & A. Bernard, *Érudits à Arudy. L'internationale des préhistoriens ...* in: *Sud Ouest*, 10 Apr. 1980.

Who is the master?
 The one who doesn't know it.
 Who is the companion?
 The one who does not say it.
 Who is the apprentice?
 Everybody.¹

Conclusion

From the case of prehistoric archaeology, I have examined three modes of collective organisation in scientific research: scientific societies, professional research organisations and alternative forms of organisation such as that inspired by the *compagnonnage*. The detailed observation of the individual life trajectory of Georges Laplace and of the research group he led, was a method to emphasise the nuances and porous borders between these three modes of organisation. The values and aims of people changed during their lifetimes, often leading them to hold viewpoints and positions which were contradictory to those in the past.

Laplace, like other young archaeologists in the 1950s, had a firm professional ambition. Although he made a symbolic distance from scientific societies to reach his career aims, in practice these relationships were never completely broken. New professional archaeologists continued to be engaged or to collaborate with *amateur* archaeologists, a term whose meaning had consequently changed. For many archaeologists, a common individual trajectory was to firstly join a scientific society, then pursue academic studies, and then hold a professional position². Furthermore, in some cases, as in the Arudy group, archaeologists intended to define a collective mode of practice, different from the scientific societies and academic organisations, by keeping a distance from professional aims, careers and values.

The general result of this paper is that these three modes were contemporary, and belong equally to the history of prehistoric archaeology during the second half of the twentieth century in France. Furthermore, one might note that these three modes are partially contradictory. How can we explain these apparent contradictions, when the same actors disregard, value or ignore one of these modes? A first answer might be to assume a sharp distinction between the three modes with the idea of an ineluctable historical order: amateur practice, soon or later, will turn into professional practice. Such a sharp distinction is made in prehistoric archaeology in France, notably when

¹ From the lyrics of the Arudy seminars songs, Crémillieux files. Song performed by Hélène Crémillieux, 17 May 2017: *Qui est le maître? / Celui qui ne le sait pas. / Qui est le compagnon? / Celui qui ne le dit pas. / Qui est l'apprenti? / Tout le monde.*

² A striking example is, in Toulouse, the educative action of the *Centre d'anthropologie des sociétés rurales*, a center of anthropology, ethnology and archaeology. This center was created in 1978 and led by archaeologist Jean Guilaine (1936–) under a twofold affiliation to the CNRS and to the newly founded *École des hautes études en sciences sociales*. Hence, Guilaine was entitled to supervise research works submitted to get the *diplôme de l'École des hautes études en sciences sociales*, an higher education degree for which not any prerequisite was necessary. Many archaeologists without former academic training obtained an academic recognition by this way. See, for instance, the story of Pierre Campmajo in: P. Campmajo, *L'archéologie autochtone génère des archéologues autochtones et autonomes*.

dealing with the Laplace and Arudy group cases. In publications and interviews, archaeologists frequently contrast the alleged anti-scientific autarchical or sectarian behaviours of the Laplace group with the Bordes laboratory¹. However, as shown in this paper, the symbolic and organisational frontiers between these modes are relative and can be interpreted and manipulated differently by the different actors. Such a dual conception misses the potential diversity of organisational forms that have been developed, and is unable to account for the possible contradictory statements claimed by the actors, or to account for possible variations in the conceptions over time by an actor or by a collective.

Another way to answer the problem relies on the general sociology of scientific growth. In the 1970s, numerous researchers investigated the development of scientific specialities, assuming that it is at this particular level of action that the mechanisms of scientific progress occur and can be observed and analysed. Grounded on empirical studies, authors proposed various general models of the cognitive and social dynamics of science. For example, Michael Mulkay identified four development phases: 1) scattered researchers identify a new problem and struggle for priority; 2) informal relationships increase among them, a consensus is made on pioneering works; 3) research teams are set up, recruitment procedures are defined; and 4) establishment of a research network while meanwhile pioneer researchers move to another field of investigation². To know if Mulkay's model is relevant in case of the *typologie analytique* group requires a close discussion which goes beyond the historical reconstruction presented in this article. However, my point is that there is no fundamental difference between these types of social and intellectual processes and those related to the development of the other research groups, such as the Bordes group in Bordeaux or Giot's group in Rennes, regardless of how their *success* is considered, or how they are estimated by the analyst. Ideals and policies, as well as access to social and financial resources, are important to understand the ways the relationships between the three modes exist at a particular moment. One mode can be in a prominent position at a given time, and later this place can be taken by another model.

Professional research is, as with any other possible forms, historical and contingent. To focus on the particularities of the Arudy group gave an additional case underlining the historical importance and persistence of amateur or popular science³. Furthermore, the Arudy experience is just one case among others: during the 1970s, scientists from various fields intended to change the conditions of the practice of science in several ways. In archaeology this was for instance the case in the surveys organised by Pierre Gouletquer⁴ (1939–) in

¹ See, for instance, P. –Y. Demars, *François Bordes versus Georges Laplace ...*.

² See, for instance, M. J. Mulkay, *Three models of scientific development*. See also N. C. Mullins, *The development of a scientific speciality*.

³ On popular science see R. Cooter, *The cultural meaning of popular science*.

⁴ Gouletquer took part to the Arudy seminar in 1971.

Brittany¹. More generally, other attempts were made from various scientific fields through the numerous journals created in a critical perspective after the May 1968 period such as *Labo–contestation* (1970–1973) or *Impasciences* (1975–1977)². Nowadays, the popularization of the internet led to the current emphasis on *participatory science* and on autodidacticism, notably illustrated by the high rate of self–taught programmers on the labour market or by the *garage sciences* enthusiasts. In this context, observing the diversity of (not so) old experiences is still relevant today, insofar as guaranteeing the conditions of scientific autonomy is an never–ending struggle.

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¹ See P. Gouletquer, *Préhistoire du futur. Connaître les pays est un repos.*

² On these journals see M. Quet, *Mai 68 et la sociologie des sciences.*

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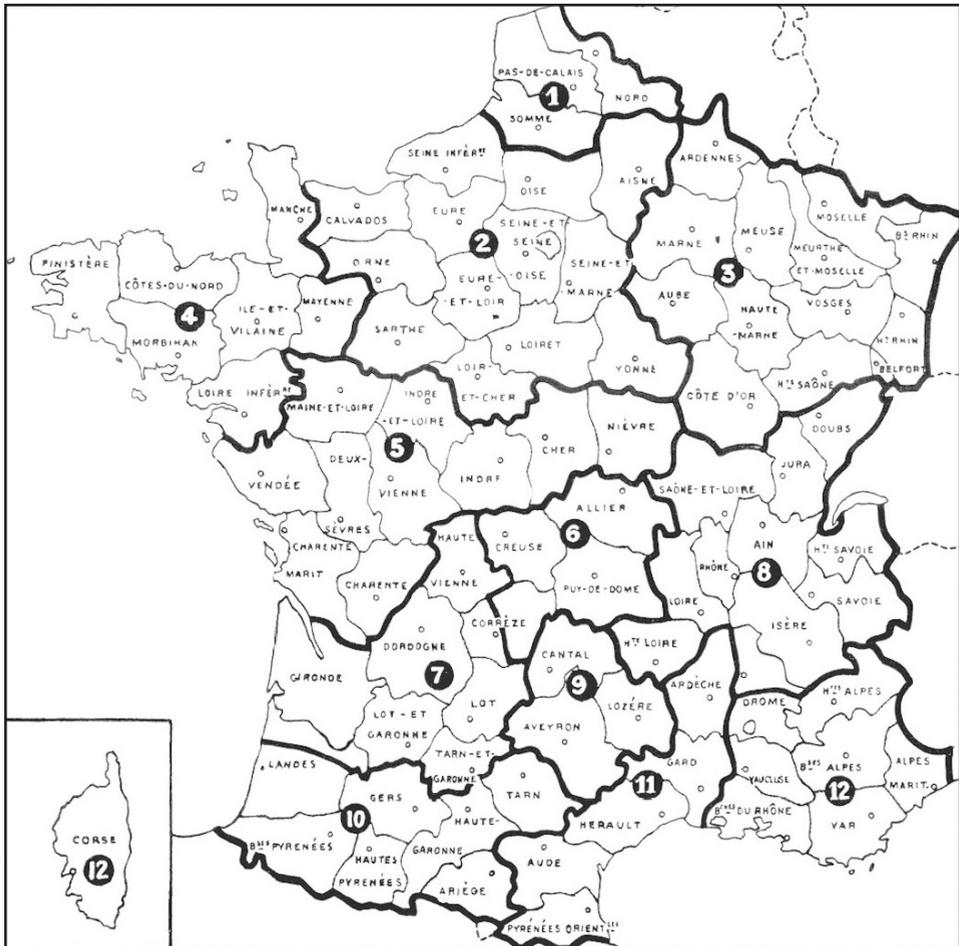


Fig. 1. Administrative divisions of the French territory in twelve *circonscriptions des Antiquités préhistoriques* (1947). Source: Gallia, *Législation archéologique*, p. 231.

Organizations related to prehistoric archaeology in France in 1953

Typology and organization count by place (n=24)

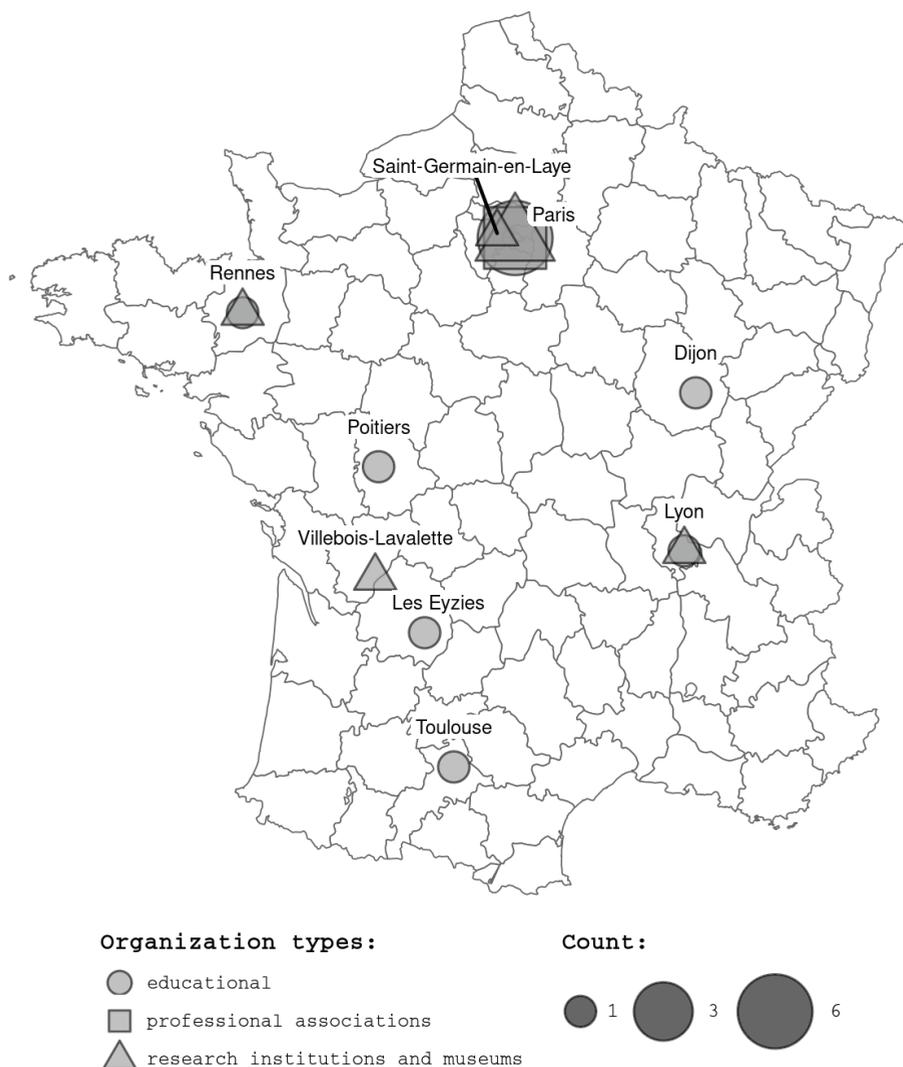


Fig. 2. Locations of educational, professional associations, and research institutions and museums related to prehistoric archaeology in France in 1953. Data: A. Leroi-Gourhan, *France*.

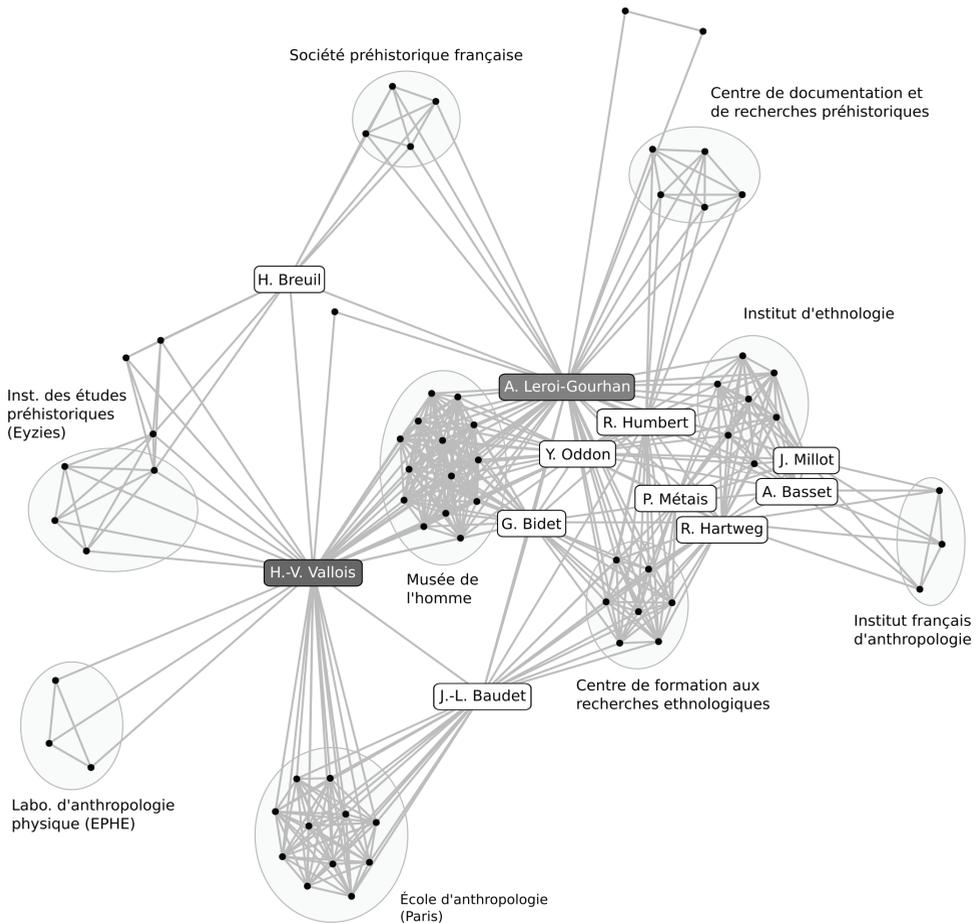


Fig. 3. Relationships between actors based on their co-membership to the main French anthropological institutions in 1953. Only the names of the ten most central actors (betweenness centrality) are displayed; grey labels emphasise the actors positioned at the articulation points of the graph. Groups of actors sharing a common membership to an institution are included in the same circular shape (labelled with the name of the institution). Data:

A. Leroi-Gourhan, *France*.

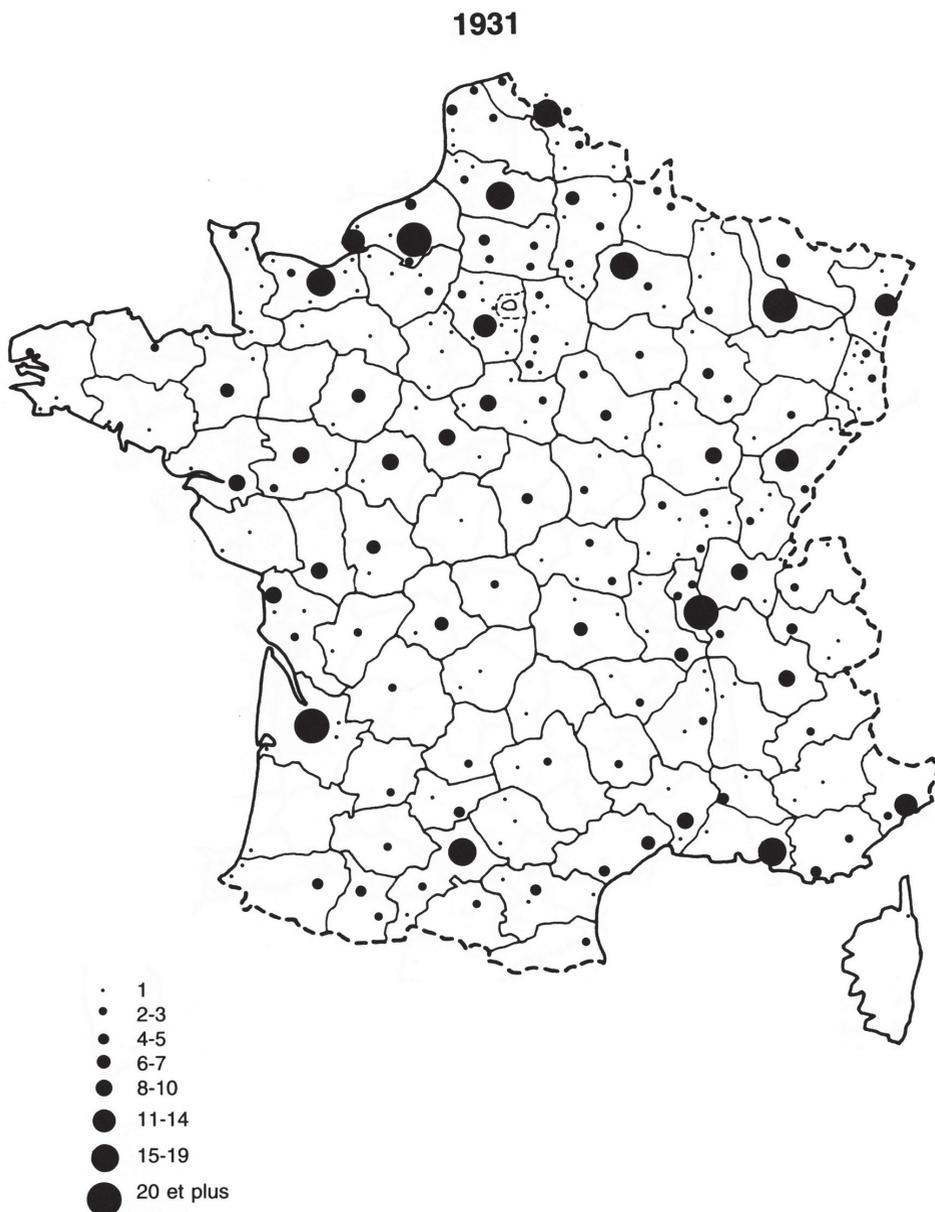


Fig. 4. Spatial distribution of the scientific societies in France in 1931.
Source: J.-P. Chaline, *Sociabilité et érudition. Les sociétés savantes en France. XIX^e-XX^e siècles*, p. 54.

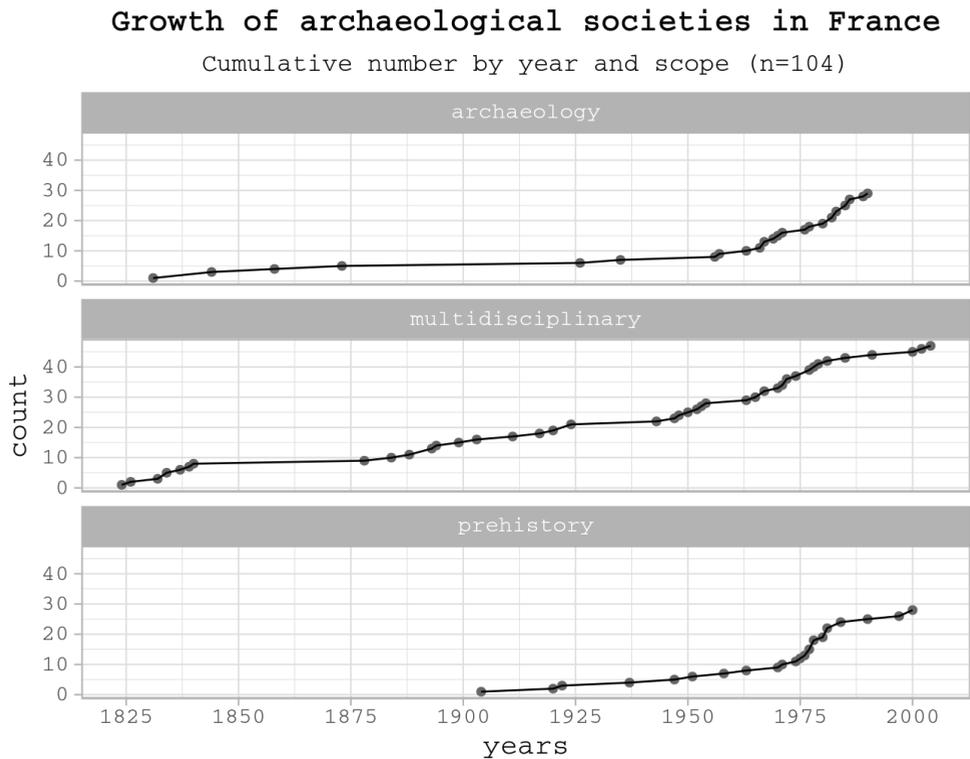


Fig. 5. Distinguishing three thematic scopes, annual cumulative sum of archaeological societies in France between 1824 and 2004.

Data: *Comité des travaux historiques et scientifiques*.

Growth of archaeological societies in France (1824-2004)

Decade of foundation and location (n=104)

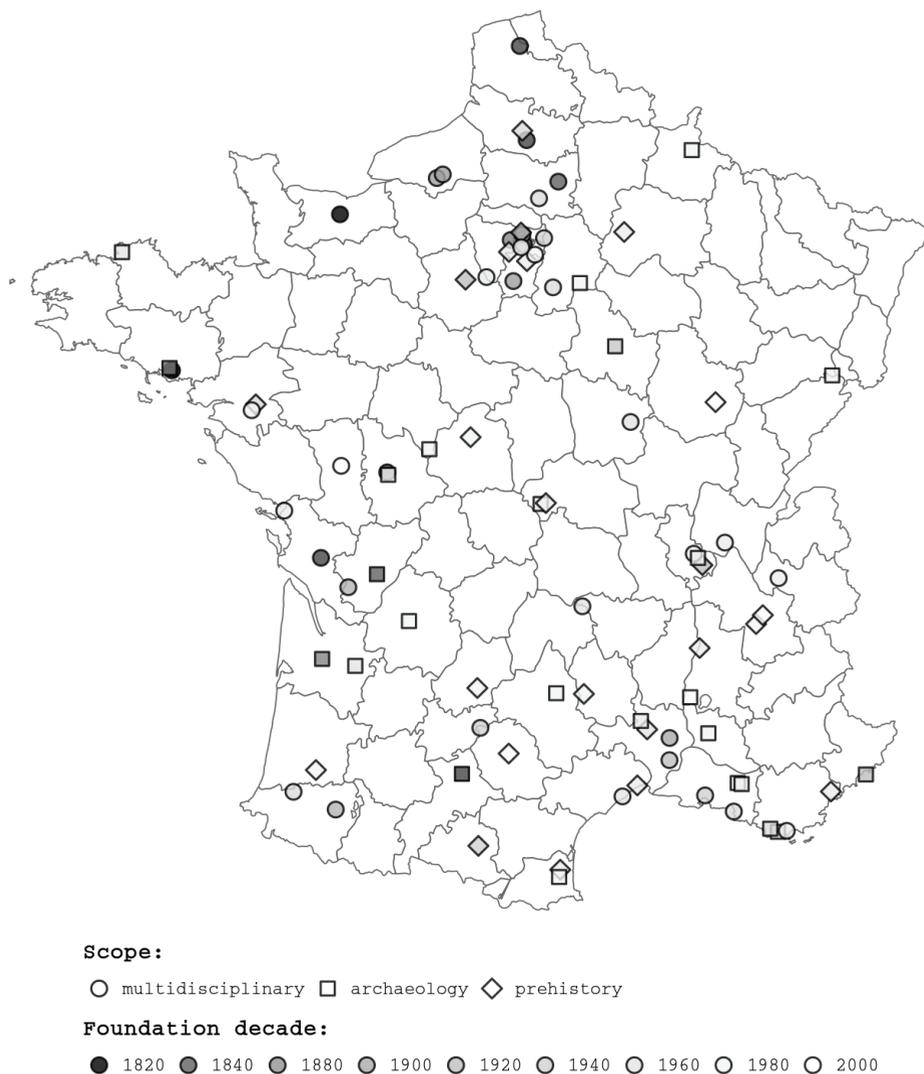


Fig. 6. Location, thematic scope and date of creation of the archaeological societies in France between 1824 and 2004.

Data: *Comité des travaux historiques et scientifiques*.

Archaeological societies in France in 1953

Decade of foundation and scope (n=40)

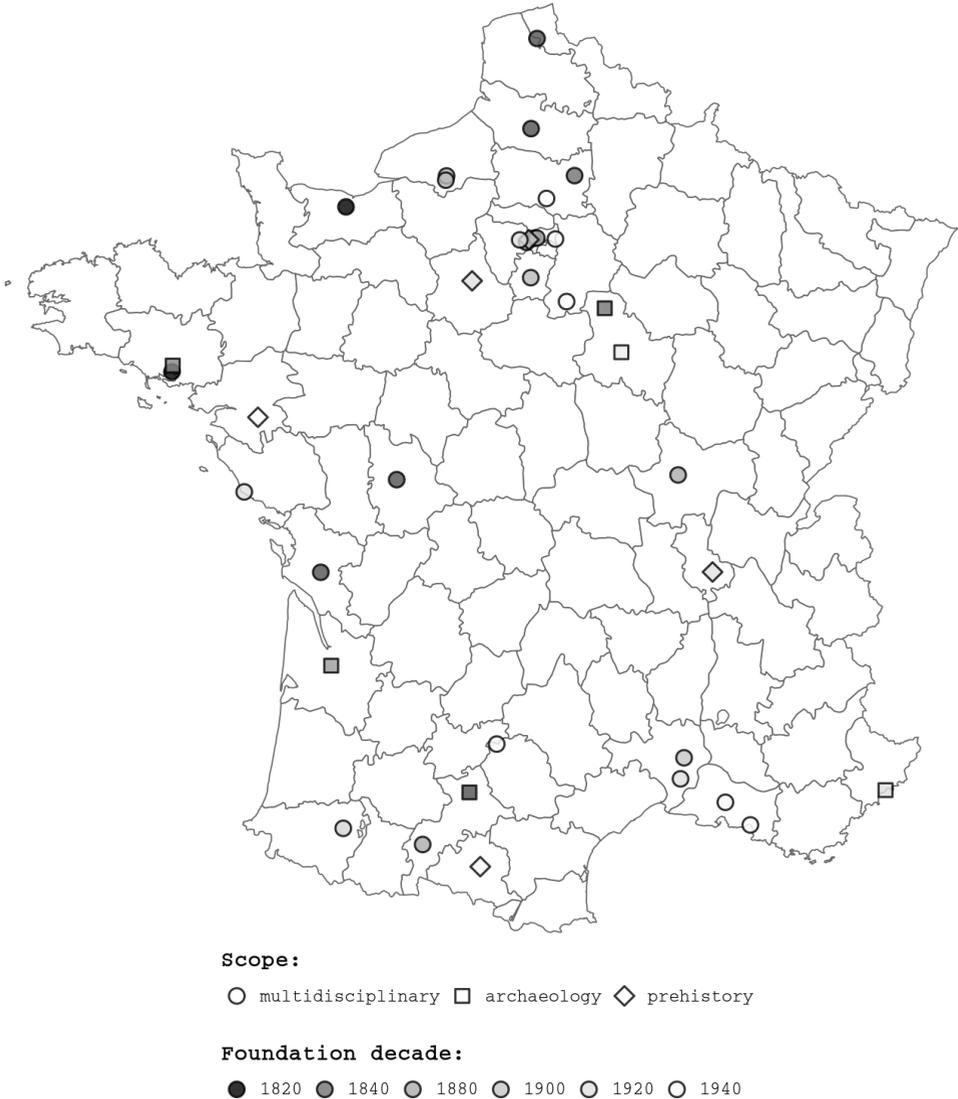


Fig. 7. Spatial distribution and scope of the archaeological societies in France in 1953.

Data: *Comité des travaux historiques et scientifiques.*