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ORIGINAL PAPER

Collecting human remains in nineteenth-century Paris: the case of the *Société Anatomique de Paris* and the *Musée Dupuytren*

Juliette Ferry-Danini[1]

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Abstract This paper describes the scientific practices of the anatomists from the *Société Anatomique de Paris* (1803–1873) who were collecting anatomical and pathological specimens in Nineteenth-Century Paris and which led to the building of the anatomy and pathology *Musée Dupuytren* (1835–2016). The framework introduced by Robert Kohler to describe collecting sciences (2007) is useful as a tool to identify the set of diverse practices within pathological anatomy in nineteenth-century Paris. However, I will argue that anatomy and pathology collecting had specific features compared to most collecting sciences. Two main collecting practices could be distinguished: first, "finding" anatomical specimens and second, keeping these specimens. The first kind of practices were at least rhetorically and explicitly motivated by Auguste Comte's positive philosophy. But "finding" an anatomy or pathology specimen could not be completely compared to finding an object or making a simple observation, as dissecting as well as some experimental practices were also involved. Heterogeneous practices thus coexisted within collecting in anatomy and pathology. Epistemological as well as pragmatic tensions arose. On top of Kohler's framework, I introduce Sabina Leonelli's concept of "data journey" to offer a narrative of the diversity of collecting practices involved in the *Société Anatomique de Paris* and the *Musée Dupuytren.* I use the concept to analyse how this diversity of practices impacted knowledge production.

Keywords Musée Dupuytren · Société Anatomique de Paris · Collecting science · Anatomy · Pathological anatomy · Positivism

✉ Juliette Ferry-Danini
ferry.danini@gmail.com

[1] Université de Namur, Namur, Belgium

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1 Introduction: how and why did anatomists collected human remains in nineteenth-century Paris?

Medical collections were at the forefront of medicine in the nineteenth century before medicine became the science as we know it today. They are now often neglected. Some museums chose simply to close their collection to the public, as did the Dupuytren museum in 2016. According to a common view of the history of medicine, medical collections lost their usefulness when medicine became an experimental science, and anatomy museums were replaced by laboratories. Anatomy and pathology collections such as the *Musée Dupuytren* would only be the remnant of this history, the testimony of a methodological failure to be opposed to the successes of experimental physiology and contemporary medicine. Is this account of history of medicine, correct? One question that is often forgotten is why medical researchers of the time made these collections—for what legitimate epistemological purposes they collected medical data and anatomical specimens. What knowledge and what type of knowledge did they seek to obtain by that means? This epistemological question is still relevant today as we continue in fact to collect both medical data and medical specimens. Even though it is commonplace to refer to the prestige of the nineteenth-century Paris medical school—which notably attracted foreign medical students or doctors, seeking knowledge and access to wards, dissections, and bodies (Warner, 2003)—not much has, however, been written on the medical collecting practices in Paris of the time, notably compared to the existing scholarship on medical collections in Great Britain (Alberti, 2011). To answer these questions, I will focus on the relationship between two institutions: the *Musée Dupuytren* and the *Société Anatomique de Paris* in nineteenth-century France. More specifically, I will look at the collecting practices of the anatomists of the *Société Anatomique de Paris*, the role played by these practices in the construction of the Dupuytren collection and the epistemological goals the anatomists were explicitly pursuing in doing so, as well as the obstacles—both practical and theoretical—they encountered during their project. This paper will focus on the epistemological questions surrounding the collecting of human remains and I will not attempt to make an exhaustive analysis of the ethics and politics surrounding the practice in the nineteenth century. The question of the morality of collecting human remains was unspoken and unaddressed by the anatomists of the time.

2 Practising Chang's "loser's history" of science

There are different ways of writing history of science. In this paper, I focus on the history of scientific practices. The history of scientific practices has focused largely on the experimental practices and laboratory practices. In 2001, Martin Rudwick argued that the history of scientific collections was like a "black box" in the history of scientific practices (Rudwick, 2001; cited by Kohler, 2007, p. 428). Precursors like John Pickstone—who coined the word "museological sciences" (Pickstone, 1994, 2000) and Suzanne Zeller, suggesting "inventory sciences" (Zeller, 1987)

should be acknowledged. Other historians have followed through, notably Robert Kohler and many others who have now tackled the topic (Alberti, 2011; Kohler, 2002, 2006; McAleer, 2021; Radin, 2017; Sappol, 2002; Strasser, 2012a, 2012b; Tybjerg, 2015). In 2007, Kohler wrote about this situation in the following terms:

> This neglect is understandable. Collecting is decidedly unlike what goes on in laboratories and thus may even seem beyond the pale of proper science. In the grand narrative of scientific progress, collecting is what naturalists did before they became scientists and built labs and gardens and learned to experiment, measure, and model. Collecting in this view is mere fact gathering: a routine preliminary to the real scientific business of manipulating and analysing facts and constructing theories. We have long since renounced the grand narrative; yet its implicit bias against collecting seems to live on. (Kohler, 2007, p. 428)

This paper builds on this trend and studies the collecting practices within anatomy and pathological anatomy collecting in a historical context. As Kohler insists, we lack studies on "how museums acquired collections and who did the gathering and why" (Kohler, 2007, p. 429). In many cases, the literal "fate of anatomy collections" is still undecided (Knoeff & Zwijnenberg, 2015). For instance, the *Musée Dupuytren* and many similar institutions have been shut down to the public. My methodology is at the crossroad of history and philosophy of scientific practices: my aim is to understand the epistemological goals and struggles of anatomists building these collections. To borrow Hasok Chang's terminology, anatomy and pathology collections are the "losers" of the history of medicine (Chang, 2021, p. 107), understanding whether they really deserve to be seen as such will be one of my goals in this paper. I aim to follow in the footsteps of Karin Tybjerg and Bruno Strasser who have notably separately argued that studying past biology and medical collecting can teach us about the present struggle of today's data-driven collecting sciences (Strasser, 2012b, 2017; Tybjerg, 2015, 2022). As it will become clear, as I use concepts introduced to study modern day data sciences, the reverse is also true.

3 Collecting sciences' family resemblances

In 2007, Kohler introduced the conceptual tool of "family resemblances" to suggest a definition of what makes a "collecting" science (Kohler, 2007). Family resemblance is a useful tool to give a somewhat flexible definition that avoids the pitfalls of conceptual analysis through necessary and sufficient conditions. To build his definition, Kohler notably goes through different case studies: palaeontology, natural history, archaeology, and anthropology. Interestingly, Kohler does not straightforwardly include medicine and pathological anatomy as being a part of the "collecting sciences." His framework is useful for several reasons: first, it makes it clear that some practices within the *Société Anatomique de Paris* did not depart from other collecting sciences, suggesting a continuity. It also draws attention to important features such as the tension between collecting specimens and storing these specimens. Furthermore, when going through the archives of the *Société*, the framework is

useful as a tool to distinguish between features common to most collective sciences, and those that were peculiar and constitutive of anatomy and pathology in nineteenth-century Paris. Indeed, the framework helps to showcase how some practices deviated in some subtle ways from other collecting sciences, making of pathological anatomy a rather unique case within collecting sciences, though still arguably retaining a place within that family. In what follows, I first summarise and describe the core features of Kohler's framework before comparing and situating anatomy within collecting sciences.

3.1 The materiality of the found objects

The first family trait of collecting sciences Kohler identifies is the materiality of the collected objects: put simply, the collected objects—as diverse as inorganic things, living creatures or human artefacts—are found in nature, they are "found objects" (Kohler, 2007, p. 432). To give these objects a scientific value, the origin of each object—all associated data—is carefully collected as well:

> We must know where and how things were found to make them into science. That is why collecting practices, though varied, display marked family resemblance: they perform the common epistemic feat of giving particular things a general value. (2007, pp. 444–45)

According to Kohler, it's because of this materiality that all associated data around found objects—notably their provenance—are so important: they are what give the objects their "scientific worth" (2007, p. 444). The opposite is true for lab-made objects or facts: the "placelessness" of the laboratory space is what gives them their scientific value (2007, p. 444). Under Kohler's definition, collecting sciences and laboratory sciences thus stand at opposite sides of a spectrum.

Because collecting from nature can be tricky—for instance, whether things will be found can be unpredictable and bound to many different factors (2007, p. 445)—most collecting sciences have engineered collecting procedures to make collecting more efficient. Kohler even talks about "practices of place" (2007, p. 445) to designate practices focused on the space of collecting: where to go, how to go, how to bring back objects to another space. Other important procedures unique to collecting sciences are all practices associating with keeping and storing the found objects: how to curate, display and classify collected things. As he puts it nicely, "All scientists are finders (in one way or another); only collecting scientists are also keepers." (2007, p. 432).

3.2 The ambivalent relationship with vernacular actors and cultures

A second important family trait of collecting sciences is the involvement of vernacular elements in their practices: diverse social groups participate in the gathering process. For instance, non-scientists may just happen to be the ones on location picking up the objects first. Residents "can seize upon fleeting opportunities

to collect—but in their own ways and for reasons that are as often monetary, aesthetic, or recreational as scientific" (2007, p. 445).

Despite this close relationship with non-scientific actors involved in collecting, Kohler argues that collecting scientists also tend to take seriously collecting as a part of their own scientific task and professional role. According to Kohler, the nineteenth-century movement towards empirical exactness in scientific circles pushed scientists to care about collecting in person and not just delegate (2007, p. 446). In other words, a lot of the collecting was done by the scientists themselves, in the spirit of correctly collecting the objects according to their scientific goal.

Nonetheless, because of this close relationship with non-scientific actors, collecting sciences have retained some elements of vernacular cultures. Kohler insists, for instance, on the resemblance between the expeditions of archaeologists and naturalists, and the collective imagery of adventures and outdoor recreations. A common trope was experiencing fieldwork as recreative and restorative for one's health (2007, p. 446). In other disciplines like ethnology, Kohler notes that collecting was sometimes "indistinguishable from commercial work—because it was almost always a market transaction" (2007, p. 446). The borders between the commerce of objects of art and what is considered scientific data can become blurred. As a consequence, collecting sciences are also defined by the ambivalent relationship they entertain with their own practices. This is another family trait among them: the tendency to move away from collecting and object-based classifications. To illustrate this point, Kohler gives the example of ethnologists who moved away from museum practices towards reportage. Overall, in collecting sciences, there are often hesitations on how to move from the empirical "strength" given by objects to create general theories:

> Things still gave object-based sciences their empirical strength and identity, but also opened them to epistemic disparagement. Hence the chronic ambivalence. (2007, p. 447)

This chronic epistemic ambivalence was at the heart of collecting sciences and as it will become clear, anatomy in the nineteenth century was a clear illustration of that.

3.3 The hurdle of keeping "all that stuff!"

Another main family resemblance, which is a consequence of the materiality of the collected objects, is the task left to the collectors to keep and curate all the things. As Kohler puts it,

> The sheer bulk of collections and their vulnerability to time and neglect impose a unique burden on sciences that collect. In no other science must practitioners divide their time so evenly between the high-status work of advancing science and the unglamorous yet essential chores of housekeeping. All that stuff! We historians have given too little thought to the consequences of keeping it, but these must surely be far-reaching. (2007, p. 447)

The sheer fact of having to keep things, entails to classifying and organising them. Curation (as in selecting and organisation process) and conservation have thus both a scientific and a pragmatic goal. Moreover, curating work was sometimes leading the path to classification. However, the overwhelming task of curating objects was sometimes met with disdain, as a technical aspect of the work, rather than a real scientific practice. This is what Kohler calls the "split professional identity" of people involved in collecting sciences (2007, p. 448). For instance, taxonomists may have been perceived by the rest of the profession as mere custodians: "technicians who care more for the technicalities of describing, classifying, and naming than for biological principles" (2007, p. 448).

3.4 A distinctive moral economy of data

Finally, Kohler considers a last family trait, again quite distinctive: the moral economy around the found objects that are gathered and collected *en masse* by collecting sciences. This means that objects are seen as common goods for practitioners to come to look at and study. Keepers have thus a moral responsibility to these users to keep everything in order and in good conditions. But even beyond that, collections are also often opened to the public and objects regarded as public goods. Kohler's reasoning is that collected objects are by nature perishable and unique which grants them this public value. By opposition, objects and facts created in the laboratory can be reproducible and thus can remain private (2007, p. 449) while scientists can retain their ownership.

4 The key relationship between the Musée Dupuytren and the Société Anatomique de Paris

Regarding pathological anatomy, Kohler wrote that the case is not "clear-cut":

> Pathological anatomy, like ethnology, began as an object-based science, before leaving museums for the epistemically more secure and respectable venue of pathology labs. (Kohler, 2007, p. 431)

In a sense, it is correct that anatomy and pathology museums have been abandoned throughout the twentieth century and that they are on the "losers" side of collecting sciences. But things are obviously a bit more complicated than that. As others have shown, medicine still today continues to collect in biobanks for instance (Tybjerg, 2015). I will argue that anatomy and pathological anatomy[1] in nineteenth-century Paris, although exhibiting some of the features described by Kohler's framework, was in fact peculiar in several aspects. I will make this case by exploring and analysing the collecting practices of the members of the *Société Anatomique de*

[1] Both terms are often used interchangeably, especially in the context of the *Société*, where both were practised. Anatomy seemed to be used as a shortcut for pathological anatomy. I will use both terms as well depending on the context and sometimes use anatomy as a shortcut for pathological anatomy.

Paris and the relationship between the *Société* with the *Musée Dupuytren*. Comparing this case study to Kohler's framework shades light to something quite unique about anatomy as a collecting science.

First, something has to be said about the general background—political as well as scientific—preceding the collecting that led to the creation of the museum. On the one hand, after the French Revolution, medical institutions were left in a relative chaotic situation. In 1791, two laws—Allarde law and Le Chapelier law—had banned guilds and all types of professional organisations. These included universities: the Paris Faculty of Medicine and other medical institutions were shut down in the following years. However, three Medical Schools were then opened in Paris, Montpellier, and Strasbourg in 1894. On the other hand, medicine as a field was changing as well, with the beginning of the anatomical pathology in the decades before, with Giovanni Battista Morgagni (1682–1771) and later on Xavier Bichat (1771–1802): the focus of medicine became the dissection of dead bodies. Bichat's death in 1802 and the institutional situation was fertile ground for the reorganisation and reinvention of the discipline. This is at least the dramatic picture given by Michel Foucault in *Naissance de la Clinique* (Foucault, 1963), although the extent of this tumultuous situation and whether it had such a significative impact on medicine and especially medical education remains debated by historians (Brockliss, 1989; Rey, 1993). I will suggest that another factor, namely the impact of Auguste Comte's positivism on medical societies of the time, may have been neglected by historiography.

The *Société Anatomique de Paris* was founded on the 4th of December in 1803 by students of the late Bichat, led by Guillaume Dupuytren (1777–1835). I will use "*Société*" as a shorthand throughout the paper. The *Société* quickly disappears in 1809 and will only be reformed in 1826 under the impulse of Jean Cruveilhier (1791–1874), newly elected at the faculty of medicine. The *Société* has been extensively studied in a prosopographical study by Florent Palluault thanks to the copious archives that the *Société* has left behind (Palluault, 1999, 2022). The *Musée Dupuytren* was created later, in 1835, by the Paris Faculty of Medicine. It was shut down to the public and moved to the basement of *Sorbonne Université* in 2016. A few boxes of archival material[2] about the museum remain at the French National Archives: some documents, especially correspondence, indicate the provenance of certain specimens, and the rest consists mainly of administrative and legal paperwork. The museum's objects are very disparate and extremely numerous: there are anatomy and pathology specimens, both human and animal, wax anatomical models, various medical artefacts, photographs, books and art drawings. I will focus primarily on the case of human remains, which I will refer to as "anatomical specimens" and "pathological specimens", because this is where the connection with the *Société Anatomique de Paris* is relevant. By studying these specimens for what they are, we cannot infer the practices of collecting that made the museum collection what it is still today. The key to uncovering how and why they were collected is the relationship between the *Musée Dupuytren* and the *Société Anatomique de Paris*: from 1835

[2] *Archives Nationales (Site Pierrefite-Sur-Seine)—Sous-Série AJ—AJ/16/6563—Musée et Collections.*

onwards, the *Société* was ensuring a continuous flow of anatomical specimens to the museum. The reason for this continuous flow, however, was quite pragmatic, as I will explain later in the paper. In any case, the abundant archives of the *Société*, as well as the prosopographical work by Palluault, are extremely valuable for studying the scientific practices of the anatomists of the time. It is these scientific practices, described in detail in the minutes and weekly bulletins of the Société, as well as in speeches given within the Société, that can help us understand the epistemological significance of anatomy as a collecting science in nineteenth-century Paris.

5 Collecting anatomy and pathology specimens in nineteenth-century Paris: heterogenous practices

As Kohler has coined using the phrase "Finders, Keepers", there are two main kinds of collecting within collecting sciences' practices: finding and keeping. In French, this distinction can be encompassed by two very close verbs that have no direct counterparts in English—"*collecter"* (collecting as in finding and gathering) and "*collectionner"* (collecting as being a collector, making a collection) —each refers to two distinct moments of collecting practices taken as a whole: first, anatomical parts are gathered, then they are sorted, stored, preserved and finally "*collectionnées*", or in other words, put within a collection. Overall, I will argue that even within these two kinds of collect, collecting in medicine in nineteenth-century Paris corresponds to a plurality of heterogeneous practices, sometimes in conflict, with all distinct epistemic goals. In what follows, I describe these various practices in more detail and highlight their respective epistemic as well as pragmatic goals.

5.1 Collecting as finding, showing, and reviewing specimens

5.1.1 Peer-reviewed collecting practices

Anatomical and pathological specimens were at the centre of the scientific practices of the *Société Anatomique de Paris*. This is not merely rhetorical exaggeration as the admission to the *Société* itself relied on the submission and subsequent peer-reviewing of an anatomical or pathological specimen. In other words, collecting was so important that it granted one access to the peer status in this scientific community. Bringing in an anatomical specimen was part of the admission process, where *Société*'s members voted and decided whether the specimen in question was interesting enough to allow the student to become a member of the *Société*; that is to say, the value of the specimen was "peer-reviewed" by the *Société*'s members.

What does "bring in" and "showing" mean in that context? As Palluault describes in his prosopographical study, for the candidate, it was a matter of showing in person the specimen during a session of the *Société*, explaining the history of the disease in the deceased patient, as well as the clinical state of this patient, providing a general context by citing relevant medical knowledge, producing an autopsy report, in the case of pathological specimens (most commonly), and finally providing general

conclusions on the pathology in question (Palluault, 1999, p. 99). In other words, the materiality of the specimen was not enough, as clinical data and other information were considered as important. The applicant had to demonstrate the relevance of the specimen to medical knowledge in general and had to provide a very detailed handwritten description of the specimen (Palluault, 1999, pp. 99–104). The resubmission of another specimen was possible if the first was not deemed interesting enough. Article 25 of the *Société*'s 1826 rulebook stated that one must

> submit to the *Société* one or more observations [and] hand in their work to a committee charged with the task of reviewing and writing a report to the *Société*.[3]

This peer-review process and the use of collecting as a way to build a scientific community and put constraints on who got to be recognised as a member was one important way in which the collecting practices within the *Société* diverged from Kohler's framework. Most collecting sciences relied on amateurs to find, gather, and collect objects, without these people ever becoming recognised by the scientific community as peers. Here, not only medical students or practitioners were the ones massively involved in the collecting of fragments of dead bodies, but moreover, their peer status depended on the successful submission of a specimen. This is an important departure from Kohler's framework, suggesting that the moral economy around the collected specimens in the case of anatomy was quite different than most other collecting sciences. This is not exactly surprising, because human remains are peculiar in that they were usually not accessible to amateurs. In what follows, I continue exploring the different ways the collecting practices within the *Société* were quite distinctive, while still moving along the lines of Kohler's framework.

5.1.2 The positive philosophy behind collecting practices within the Société

Even beyond this admission procedure, the meetings of the *Société* were organised around anatomical or pathological specimens. Those were routinely brought to the *Société*'s meetings and discussed in person. Even though at the time it was not easy to obtain or transport anatomical specimens to the *Société*'s meeting room, it remained fundamental and central for the *Société* to continue to meet to discuss these anatomical specimens over the years. Auguste Comte's positive[4] ideas had an explicit influence on the anatomists of the time, who considered that to revolutionise medicine was first to move away from abstract considerations and to stop clinging to theoretical medical definitions disconnected from organic reality. Their preferred

[3] *Archives de La Société Anatomique de Paris, Bibliothèque Interuniversitaire de Santé de l'Université de Paris*, Cardboard box n°1.

All translations are mine unless stated otherwise.

[4] Most scholars use "positive" as the adjective to refer to Comte's philosophy in English. "Positivist" or "positivistic" are sometimes used, but they seem more commonly used to refer to the later logical positivism, see (Bourdeau, 2022). Since Comte's positivism and logical positivism are two different philosophical approaches, it is helpful to keep the distinction. It is not exactly clear why "positivism" was used in the first place to refer to the Vienna Circle, see (Blumberg & Feigl, 1931) who introduced the label. In that paper, "positivistic" was used as an adjective, "positivist" as a noun.

method was therefore observation, and collecting as a scientific practice was cited as being at the heart of this project. Bringing in an anatomical specimen to be discussed in a session was, so to speak, bringing in empirical proof of the observations that were proposed. This conviction was for example explicitly defended by Jean-Baptiste Barth, an influential member of the *Société*, in an address to the *Société* in 1846:

> If there is one indisputable truth that is now almost universally recognised, it is the importance of facts for the advancement of science and the superiority of their results over those of the most ingenious speculative ideas. (...) Of all the societies born under the influence of these positive ideas, of this need to know so ardent nowadays, none fulfils better than the *Société Anatomique* the convictions capable of serving science well. (...) Indeed, within the *Société*, any discovery of normal anatomy is immediately supported by the justifying specimen and is sanctioned by it only if the demonstration seems obvious to us. The clinical facts which do not involve such a complete exposition are, however, guaranteed by the presentation of the sick part which has become susceptible of examination after a surgical operation, or by the deposit of the organs carefully collected after death. (Barth, 1846)

Although Auguste Comte's name is not directly cited, "positive" ideas would refer to his *Cours de philosophie positive* published from 1830 onwards in several volumes, translated by Harriet Martineau as *The Positive Philosophy of Auguste Comte* (1853). As Barth himself mentioned in his speech, the *Société Anatomique de Paris* was not the only scientific *Société* looking up to Comte's philosophy. A few years later, the *Société de Biologie*'s founders explicitly referred to Comte's positive philosophy as an inspiration, choosing "*biologie*" as a name to designate their own discipline, after Comte's use of the word in his work (Robin, 1850, pp. i–xi; cited by Clauzade, 2018, p. 93).[5] One of the positive ideas that probably had the most impact on the anatomists of the *Société* was that knowledge should come from observation and not a priori thinking. Anatomists could have been inspired by passages from the first volume of the *Cours de philosophie positive* (1830) where Comte praised the value of collecting sciences such as botany and zoology when considering the hierarchy of the sciences:

> (…) the time has arrived for laying down a sound and durable system of scientific order. We may derive encouragement from the example set by recent botanists and zoologists, philosophical labours have exhibited the true principle of classification; viz., that the classification must proceed from the study of the things to be classified, and must by no means be determined by *a priori* considerations. The real affinities and natural connections presented by objects

[5] Interestingly, Charles-Nicolas Houël (1815–1881), member of the *Société Anatomique de Paris* and curator of the *Musée Dupuytren* for many years, was also one of the founding members of the *Société de Biologie*.

> being allowed to determine their order, the classification itself becomes the expression of the most general fact. (Comte, 2000, 1:42)[6]

They could also have been inspired by his later volume focused on biology and anatomy published in 1838. It should be noted that Comte's positive philosophy did not stop at the value of collecting and classification in science, as neither the members of the *Société Anatomique* did: collecting had to lead to some general laws. Each year, the secretary of *Société* was given—perhaps the impossible task—to write a general synthesis of the collective work done by the *Société* throughout the year. One of the secretaries, Jean-Charles Deville (1820–1879), wrote in 1846 that it was the most "gruelling"[7] task among the duties of the secretary to the *Societé* (Deville, 1846). It was in such a positive spirit, that Jean Cruveilhier still identified the goal of pathological anatomy and the Societé in the speech leading to the reforming of the *Societé* in 1826:

> Pathological anatomy is at this stage of the sciences (...) where many facts have been collected, but where a small number have been studied in depth. What remains for us to do is to coordinate all these facts, in order to deduce general laws which constitute a science. (*Bulletins de La Société Anatomique de Paris* 1826, pp. 207–209; cited by Palluault, 1999, p. 421)

The idea of sciences being at a certain "stage" and having to move forward also reflected Comte's positive philosophical classification of sciences and the hierarchy of different steps in their history. Without more textual evidence, of course, it is no use to speculate further what the members of the *Société Anatomique de Paris* retained exactly from Comte's philosophy. However, at least rhetorically, they were inspired in some ways by his positive philosophy. Comte is considered by several scholars as the first philosopher of science as we understand it today (Bourdeau, 2022; Schmaus, 2018, pp. 27–28) and the extent of his influence on sciences themselves in the nineteenth century would probably merit further examination.

The materiality of human remains was clearly seen to be an epistemic "strength" by the *Société*'s members, who insisted on that feature rhetorically. Moreover, these collecting practices defined in a very literal sense the identity of the *Société*'s members as practising members of anatomy and pathological anatomy, by gatekeeping the access to the social group itself based on the peer review of collecting practices. These two traits also illustrate another distinctive feature of these collecting practices: they were all based on a collective effort of reviewing, interpreting, and discussing. This is quite distinctive of anatomy: collecting practices remained central to anatomists' activities and were not delegated. One important reason for that is the nature of the collected specimens—human remains. In what follows, I suggest that this specificity led to the blurring of the distinction between collecting—or "finding"—and experimenting.

[6] For convenience, I am using Martineau's translation—the only translation available still today; however, it should be noted that it was a "freely translated and condensed" as per the title of Martineau's work.

[7] In French, "*pénible*".

5.1.3 The blurred distinction between collecting and experimenting

One important element within the collecting practices of the *Société Anatomique de Paris* that notably diverges from Kohler's analysis is the lack of a clear distinction between experimenting and laboratory practices (Kohler, 2007, p. 444). First, the simple act of dissecting a body to extract a specimen could be seen as being closer to experimenting than collecting; it involved skills, knowledge and it could fail. The meetings of the *Société Anatomique de Paris* did not only consist in bringing in, showing anatomical specimens as well as collectively discussing them; they also included some instances of explicit experimenting. This was despite experimentation departing from Comte's philosophy of biology, which was quite dismissive of the practice in biology and medicine (Clauzade, 2018, p. 107). During meetings organised around one specimen, it sometimes happened that the specimen was dissected to demonstrate some observation, mechanism, or theory (Palluault, 1999, p. 143). Anatomists went even as far as to taste organic material during dissections (1999, p. 136). From 1855 onwards, the *Société* had bought a microscope for its members to use during the meetings (1999, p. 143). The members of the *Société* also periodically hired a contractual chemist to analyse the specimens they were collecting (1999, pp. 41, 136). They also wished to produce statistical data on these anatomical specimens to be able to formulate the most general theses possible. These results were published in the catalogue of the museum where the anatomical pieces were stored. The curator, Charles-Nicolas Houël (1815–1881) published an anatomy and pathology handbook together with the museum catalogue (Houël, 1857). More generally, "finding" and "keeping" a pathology or anatomy specimen almost always involved some dissecting of the body and therefore some type of experimenting. Pathology or anatomy specimens can never be "raw" or purely found objects.

I suggest that this lack of a clear distinction between experimenting and collecting is one of the reasons why the *Société* came to define such a strict peer reviewed admission exam based on the collecting of a specimen. The admission was able to sanction the skills, knowledge, and expertise of the candidates. As Samuel Alberti has noted in a different context, "the collection was credibility in material form" (2011, p. 17). More specifically, this proximity with experimenting is the reason why anatomists labelled their collected specimens with their names. Anatomists were the authors of the specimens as much as they were their finder. The *Société* meetings were in fact more similar to a laboratory—a private space where amateurs were not allowed. This feature distinguishes anatomy from other collecting sciences' practices. Strasser describes laboratories as follows:

> Strict control over who could access the laboratory was key to its epistemic function. The laboratory was accessible only to a select few gentlemen, not the broader public. (Strasser, 2017, p. 189)

This could have indeed been written about the *Société* meetings and the gatekeeping the collected specimens entailed. "Finding" in that context was not just coming across an object in nature but obtaining some results. However, one key difference was the later accessibility of the collected specimens to the public in the museum. Anatomy thus was at the frontier between the experimental sciences and the

collecting sciences, not only in terms of practices, but in regards to the moral economy at work at the time: anatomists were personally attached to the specimens, but these were still displayed in a public setting, with the goal to make them accessible to medical students, other anatomists and even a broader public. Later in this quoted chapter, Strasser describes the reluctance by twentieth-century experimental scientists to share data and the constraints that have helped incentivise these scientists to share these with some rewards like credit, authorship and so on (2017, pp. 196–199). Interestingly, these community rewards and the blurring between the experimental and collecting ethos was already put in place with success by the *Société Anatomique de Paris,* a century before these symbolic rewards were introduced.

5.1.4 Human remains, collecting strategies and the unspoken moral question

The problematic moral nature of collecting human remains was a blind spot for anatomists of the time. Even though they did not discuss it, anatomists still had to compromise with the fact that most people and most families were unwilling to give away their bodies, or parts of their bodies to science upon dying. It is not explicitly mentioned in the archives whose bodies were collected from hospitals, they were most likely bodies unclaimed by families, unidentified or from the poorest members of society. In rare cases, families may have given consent to the collecting of anatomical parts.[8] But in 1829, a hospital director in Poitiers explained that poor patients were starting to worry their bodies will end up in the possession of anatomists and their students (Saboly, 1981, p. 256; cited by Menenteau, 2009, p. 518). Historians working on human experimentations have underlined that not all human beings became experimental subjects. Grégoire Chamayou has coined the concept of "vile bodies", bodies of humans that have been so disvalued by society they became experimental subjects: prisoners, disabled people, slaves, orphans, and hospital patients (Chamayou, 2014). In the case of the collection of human remains, "vile bodies" also included the poor. In the nineteenth century, activism grew against vivisection done on animals as well as on the dangerous experimentations conducted on patients by doctors in hospitals. By comparison, anatomy did not seem to have raised the same level of organised concern. It was one of the moral blind spots of the anatomists of time: harming the dead was not seen as an obvious or pressing moral issue. In fact, some anti-vivisectionists went as far as to praise the scientific successes of anatomists in order to reject the usefulness of vivisection.[9] The collecting of human remains was also a moral blind spot for the public who enjoyed visiting the medical museums.

Apart from the unaddressed moral question, collecting human remains from unclaimed bodies or the poorest members of society meant one thing: bodies were

[8] For instance, amid a controversy around the autopsy of a victim of a crime, it is said that the widow gave consent for Gilles de la Tourette to collect his brain (Menenteau, 2009, p. 448).

[9] Anna Kingsford, a doctor trained in Paris and antivivisectionist, thus wrote in 1882: "it is noteworthy that for the only incontestable localisation of brain function, science is indebted, not to vivisection at all, but to demonstration by means of clinical observation and the study of pathological anatomy in cases of loss of speech by cerebral injury" (Kingsford, 1882).

scarce.[10] In 1804, the *Société* decided that members would take the responsibility for locating possible interesting human remains in each hospital in the capital. The strategy was to produce numerical tables during the *Société*'s meetings of interesting potential human remains found in each respective hospital:

> The citizen Savary reminds the *Société* that at this moment the dissections are almost entirely suspended and that it is from the observations made in the hospitals that the *Société* must especially be enriched, observing, moreover, that it counts some of its members in almost all the hospitals of Paris as surgeons of these houses as well as students, proposes that some of them present at each meeting the table of the patients who died in each hospital and whose observation and opening of the bodies have been made, by insisting only on the cases which will present interest. Citizen Savary's proposal put to the vote is adopted by the *Société*.[11]

In other countries, like in England and Scotland, most anatomy specimens were also collected from hospital wards by anatomists who relied on professional networks to notice interesting cases—as reported in detail by Alberti (2011, pp. 74–80). The *Société*'s institutional and organised collecting strategy appears to be, in a way, precursory. Systematic collecting was performed much later in London in the thirties (2011, p. 78).

Although Kohler has insisted that for most collecting sciences, the provenance and the data surrounding the collected object were absolutely key, this focus is not clearly apparent within the practices of the *Société Anatomique*. On the one hand, the members did not always seem to care about the origin of the pieces—either morally or epistemologically. In a footnote, Florent Palluault comments:

> The origin of the piece did not matter, as long as it was likely to provide indications on unknown lesions. Everyone was aware of the means used by the "corpse hunters" to provide students with subjects. On November 25, 1807, Laennec promised to bring to one of the following sessions bones found 'in various cemeteries. (Palluault, 1999, p. 134)

On the other hand, the anatomists were well aware of this epistemic "ambivalence". In some discussions, they debated about the possibility that their reflections were biased by the geographical provenance of the pieces they collected and the impact of climate on pathologies.[12] And although they most of the time did not label the specimen with the name of the patient—but with their own name—they also cited on the label the reference of the corresponding clinical case study in the *Société*'s journal. To this day it is possible to go back and forth between a specimen and these published case studies, which constitute in some sense, insights on their

[10] In the twentieth century, when such bodies became too scarce, practices changed to only allow dissection on donated bodies.

[11] *Archives de la Société Anatomique de Paris*, *Cardboard box n°1, Register n°1, 18 germinal an XII,* quoted by Palluault (1999, p. 133).

[12] See for instance, the discussions quoted by Palluault (1999, pp. 143–44).

human provenance. I suggest that this ambiguity around provenance comes down to the nature of human remains and how specimens were collected on bodies—by dissection—which, as I have mentioned, blurred the distinction between experimental science and collecting science. Since this distinction was not clear-cut, the provenance did not have to be clear-cut either, thus operating in a similar way as experimental sciences, within which provenance does not necessarily matter.

The collecting strategies highlight the materiality with which anatomists were confronted in their practices, a materiality that was seen as an asset by positive scientists, but which also carried some ambivalence. Like other collecting sciences, anatomy and pathological anatomy was a place of proximity between scientific work and vernacular practices. However, vernacular practices were still less prominent than in other collecting sciences. These vernacular elements are especially evident in the heterogeneous provenance of the specimens found in the *Musée Dupuytren*, the collection which welcomed the collected specimens gathered by the members of the *Société*. Within the museum's archives, we find letters showing evidence of donations from doctors who did not belong to the *Société* (the famous head donated by Baron Larrey, for example); but also purchases from private collections (for example the collection of the citizen Bicheron, "*Cabinet d'Anatomie Artificielle, Infiniment Curieux*"—she was a private collector); the donations of foetuses from a renowned Parisian midwife (Marie-Louise Lachapelle); the exhumation of a young hydrocephalic girl authorised by the Paris prefecture of police; several purchases via the suggestions of an apothecary[13]; and even, more surprisingly, donations of casts by Prince Napoleon in 1856 from his trip to the Nordic countries.[14] The social background of the collectors was thus far-ranging, but anatomists from the *Société* were the main providers of the collection.

From the beginning, the museum's pieces were considered as public heritage or common goods: documents from the archives attest that the Ministry of Education in particular was the one to authorise the Medical Faculty of Paris to collect and buy collections.[15] One can wonder about this insistence on the public moral economy of collected anatomy specimens. This seems to contradict the way anatomists retained a special kind of professional reward thanks to collecting, by getting credit and authorship on collected specimens, or by taking the admission exam to the *Société*. Strasser has suggested that in collecting sciences that involved a large number of amateurs, the commodification of the collected objects came as "some kind of financial, symbolic, or personal reward" (Strasser, 2017, p. 189). The same could be said of public medical museums. Perhaps putting on public display these collections could have been as a way to acknowledge the laymen participation in these, not as collectors, but as the deceased who were collected upon. Since the French Revolution, cemeteries were in fact

[13] For instance, the apothecary Menot writes in a letter in 1814 about the death of an "extraordinary" tall man, offering his service to exhume and transport the remains to the Cabinet of the Societé. The archive also contains the reply from the faculty, but I could not fully decipher the handwriting.

[14] *Archives Nationales (Site Pierrefite-Sur-Seine)—Sous-Série AJ—AJ/16/6563—Musée et Collections.*

[15] *Archives Nationales (Site Pierrefite-Sur-Seine)—Sous-Série AJ—AJ/16/6563—Musée et Collections.*

considered public lands. To this day, human remains in public museums are considered by French laws as protected public heritage. This public moral economy stands in tension with the fact that most of the pieces were collected from unclaimed bodies of deceased individuals and with the unspoken moral issue this represents. It also complicates the destruction, restitution or cremation of human remains from French medical museums (Crignon & Cheminaud, 2023).

5.2 Collecting as keeping, curating, and showing

5.2.1 The Musée Dupuytren and the beginning of systematic keeping

The *Société Anatomique de Paris* and the *Musée Dupuytren* shared a deep relationship from their inception onwards. This relationship was at the same time geographical, institutional and legal. The main reason for this relationship at first appears to be purely pragmatic. The dean of the Medical Faculty, Mateu Orfila, decided to grant the *Société* a room to meet in the Faculty of Medicine in exchange of the commitment of its members to stock their anatomical specimens, no longer in the *Société*'s own collection, but in the newly created *Musée Dupuytren*, itself affiliated to the Faculty. This agreement was ratified in the *Société*'s rulebook of 1840, whose articles 17 and 18 specified that:

> The parts presented by the candidates, and which the *Société* has ordered to be preserved, will have to be deposited in the *Musée Dupuytren*; those presented by the members will also be deposited, provided that they agree to it. (article 17)
> Each piece deposited in the museum will bear the name of the *Société*, the name of the candidate or the member who presented it and the indicator of the bulletin which mentions it. (article 18) *(Archives de La Société Anatomique de Paris,* Cardboard box n°1)

It is important to underline that before this agreement with the dean, the *Société* already kept a number of anatomical pieces presented during its sessions. Indeed, in 1829, the number of specimens must have been large enough for Martin Saint-Ange to be named "curator of the Anatomical Museum of the *Société*" (Palluault, 1999, p. 146). It was not the creation of the *Musée Dupuytren* that led to the practice of keeping anatomy specimens, it only systematised it. The curator of the *Musée Dupuytren* was generally also a member of the *Société*. Anatomists were finders, sometimes keepers and only later, with the museum, systematic keepers. Despite this proximity, the relationship between the *Musée Dupuytren*, on the one hand, and the *Société Anatomique de Paris*, on the other hand, were not without conflicts. These institutional conflicts even led to personal tensions between the members of the *Société* itself.

5.2.2 "Data frictions": from institutional conflicts to personal insults

The tensions between the two institutions can be explained by the rivalry between the practices of collecting and dissecting anatomical specimens, on the one hand, and the collection and conservation of these specimens, on the other hand. These two objectives—finding and keeping—were in conflict on several points.

At the time, the museum curator, although a member of the *Société*, was mainly focused on the tasks of conserving anatomical and pathological specimens. The question of the chemical conservation of the pieces was an important concern within the *Société* and for the *Musée Dupuytren.* For example, Deville, secretary of the *Société* in 1846, in his report of that year, dedicated a whole paragraph to the discoveries made by the *Société*'s members of new means of organic conservation (Deville, 1846). He mentioned the research of Jean-Baptiste Pigné and the discovery of creosote, a chemical compound believed to help with the conservation of organic materials. The latter reported on his research during several meetings of the *Société* as well as in letters to the dean of the faculty. In 1843, Pigné notably wrote a letter to Cruveilhier in which he claimed to have discovered creosote.[16] In 1844, he presented the results to the Société. Deville wrote in the 1846 report:

> The preservation of anatomical parts is one of the difficulties that most preoccupy anatomists, and whose solution is still pending in many cases and is of the greatest importance to science. (Deville, 1846)

In addition to the chemical conservation of the specimens, the curator was managing everything related to the "packaging" of the specimens and their associated data (to borrow the term "data packaging" [Leonelli, 2016, p. 34]). This task involved labelling, numbering, writing registers and publishing catalogues. But all of these "packaging" goals, while important for both the *Société* and the museum, could conflict with those of the *Société*'s members who were mainly and maybe for some only concerned with collecting and dissecting the organic parts. To characterise this conflict, it is interesting to evoke the notion of "data friction", introduced by Edwards et al. (2011) and borrowed by Sabina Leonelli to describe personal tensions within contemporary data-driven biological sciences (2016, p. 34). In these biological sciences which collect large amounts of data, scientists may not want to worry about such packaging details:

> Users could play an important role in managing these choices, but in practice, most are content to trust the curators to do so, because they do not want to waste time or energy from their research to deal with data "packaging" choices. (Leonelli, 2016, 34)

Many decades earlier, we find this exact same attitude among the *Société*'s members towards the museum curator and his goals. Palluault tells the story for instance of a debate that took place in 1850 between Houël, the curator of the museum at

[16] *Archives Nationales (Site Pierrefite-Sur-Seine)—Sous-Série AJ—AJ/16/6563—Musée et Collections.*

the time, and other members of the *Société* (Palluault, 1999, p. 103). Houël complained about the impact of the procedure for admitting candidates to the *Société* on the quality of the specimens he would receive. According to him, the increasing length of the reviewing process the specimens went through had dire consequences on their organic state and therefore their relevance as collected specimens. While another member, Poumet, agreed with this concern, stating that referees did not need to destroy the specimens when reviewing them, Houël then received a scathing reply from Paul Broca (1824–1880), another member of the Société:

> Broca: What Mr. Poumet has just indicated is possible indeed but it is long and, moreover, it is necessary to have made a profession of it, a cretinising profession that one cannot require from the members of the *Société*. (quoted by Palluault, 1999, p. 103)

Kohler's description of a "split professional identity" (Kohler, 2007, p. 448) within collecting sciences could not have been stated here in stronger terms in the case of the *Société*. This tension was exacerbated by the contractual and legal nature of the relationship between the museum and the Société, which mandated the members of the *Société* to give away their specimens to the museum. Palluault quotes for instance this moment where Broca denounced this contractual agreement. Broca argued that the medical faculty, which

> is giving free premises to many more or less learned medical societies, cannot arrogate to itself the almost tyrannical right to appropriate the specimens without the *Société* being able to examine and dissect them at leisure. (Palluault, 1999, pp. 102–103)

5.2.3 "Finders keepers, losers weepers": the value of the collected pieces

Who got to own the anatomic specimens was often another topic of friction. It happened that doctors, having given up specimens to the museum's collection, wished to reclaim them by writing to the dean of the Medical Faculty. This is the case for a specimen deposited in 1807 in the Faculty's Anatomy Cabinet (the collection that preceded the museum), a skull with a rifle ramrod traversing it. This piece was reclaimed by its donor, Dominique-Jean Larrey (1766–1842) in a letter to the dean: he stated that he had not intended to include this particular piece in the donations made to the Cabinet and that he would like to have it back to continue his research. The dean refused[17] and the specimen is still found in the collection today. Letters in the archive also give evidence of the dean's refusal, in 1845, to offer specimens to another institution, the *Musée du Val de Grâce*.[18] It seems that once a piece had entered the collection, often by donation (but also by purchase) it was almost impossible to recover it, especially if it was considered rare or particularly interesting.

[17] This correspondence can be found at the French National Archives: *Archives Nationales (Site Pierrefite-Sur-Seine)—Sous-Série AJ—AJ/16/6563—Musée et Collections.*

[18] *Archives Nationales (Site Pierrefite-Sur-Seine)—Sous-Série AJ—AJ/16/6563—Musée et Collections.*

Furthermore, as evidenced by a letter dated from 1848, doctors would also sell anatomical specimens to the museum; in one letter, the doctor Jean-Baptiste Bourgery (1797–1849) wrote to ask for the money he was due for the anatomical specimens his wife had sold to the museum in the previous years. The amount due was 2889 francs, which was quite a substantial sum for the time.[19] For reference, a labourer could earn 2 francs a day in the nineteenth century (Leborgne, 2019). Considering the value of anatomical specimens, both pecuniary and at a prestige level, the contract agreement with the *Société Anatomique de Paris* was therefore a godsend for the *Musée Dupuytren*, as it brought the museum an important flow of free anatomy and pathology specimens.

However, it should be noted that the *Société* also benefited from this agreement, beyond the allocated room for the meetings: first, having the *Société*'s specimens in the museum also brought the *Société*'s members a form of prestige. Specimens bore the name of their collector.[20] As Susan Pierce has noted in another context: "(…) to give material freely to museums is a meritorious act which conveys famous immortality" (Pierce, 1995, p. 407; quoted by Alberti, 2011, p. 85). This agreement also relieved anatomists from the "hurdle" of curating the specimens themselves. It also gave a place to submit the accumulation of data and information collected, which could then be re-used for educational or scientific purposes. Members of the *Société* could also access new-found anatomy specimens. Indeed, the curator of the museum was likely to initiate research questions within the *Société*. For example, the curator Pigné invited the *Société* to appoint a committee "to examine 18 pieces of prostate disease that were sent to the *Musée Dupuytren* by Mr. Leroy D'Étiolles" (Palluault, 1999, p. 147).

5.2.4 The journey of anatomical specimens in nineteenth-century Paris

Sabina Leonelli has introduced the concept of "data journey" (Leonelli, 2016, p. 13, 2020) as a methodological and theoretical tool to analyse data practices within science and what these practices entail in terms of knowledge production (Leonelli, 2020, p. 5). The metaphor of data journey is especially useful as if it shifts the focus away from the simplistic idea of science collecting "raw" data and helps focus on ways data is continuously created as much as it is collected (2020, p. 8).[21] More has to be said about why the metaphor is helpful in the case of pathology collecting, where human remains themselves are collected, not just data. One obvious reason is, as we have seen, collecting a pathology or anatomy specimen involved creating that specimen as much as it involved finding it. Another reason has to do with how Leonelli defines data (Leonelli, 2015, 2020). Leonelli defines data as mutable: they can be "transformed and modified

[19] Bourgery died from cholera in 1849 (B. 1851, p. 145), probably before getting his wife's due.

[20] One notable exception is the brain of Louis Victor Leborgne, labelled as such. It still bore in addition the name of Paul Broca and the reference to the corresponding publication in the *Société*'s journal.

[21] As Leonelli notes, some parts of philosophy have already moved away from such a simplistic view of science. (See Gitelman, 2013).

to fit different uses as they travel across space, time and social situations" (2020, p. 6). In her words, data can be adapted, modified, and reused by different people:

> (…) from the planning that precedes data production to various ways in which data are mobilised and re-purposed, often with the goal of providing "actionable". (2020, p. 5)

Perhaps going a bit further than Leonelli on this, it seems that this relational view of data (2020, p. 6), by shifting away from the idea of "raw" data, also blurs the distinction between objects and data—Leonelli indeed talks about "data objects" (2020, p. 8). As Strasser and Edwards have commented, "as the frontier between nature and knowledge evolves, so do the data that inhabit this moving frontier" (Strasser & Edwards, 2017, p. 330). Seeing data as objects, and vice versa, objects collected as data, emphasises what I have previously referred to as an epistemic ambivalence or discomfort for the anatomy and pathology collecting.

Like objects or human remains, data are constrained by technologies available and the social or institutional settings (2020, p. 7): think in the anatomy case of the chemical conservation of remains, the storage conundrum, and the contractual relation between the *Société* and the Faculty of Medicine. Leonelli goes as far as comparing data to historical and organic entities. This may seem paradoxical to speak of historical or organic entities for parts collected from human remains; however, the idea is that their "significance and evidential value" are not fixed (2020, p. 7), but instead are part of an ever-changing journey. In fact, similar "journey" metaphors have been used by historians of medical collections. For instance, Alberti referred to the "social (after) life of morbid parts" and their "conceptual journey" (Alberti, 2011, p. 67):

> Before arriving at the museum, specimens followed complex paths involving different kinds of exchanges, and tracking their passage gives us glimpses of key moments and practices. Just as bodies experience transformative processes during life, so after death, body parts are subject to significant physical and symbolic alterations. (2011, p. 67)

Collected remains in anatomy and pathology collections can be understood as data and data sources: they were extracted from a body, touched, dissected, smelled, counted, analysed, and modified to be conserved or to fit different purposes. It is no surprise then that these remains could be damaged in this process—all data can in some ways or another, but it can be more directly obvious for organic remains.

Overall, the metaphor of data journey is especially valuable to articulate within a single narrative the different collecting practices that were described in the case of the *Société*. Focusing on the journey and not the actors notably helps illustrate how collecting sciences such as anatomy and pathology had to disrupt institutional boundaries and the division of labour within science (2020, p. 5). It also shifts the attention to whether a journey was successful, when or whether it ended and the speed at which it went (2020, p. 10). It also explains why these

collections were made public and seen as a common good: they could be re-used as data by different people, who valued what these collections could bring to their knowledge production. As Alberti has argued, visitors of medical museums were "active participants in the construction of meaning" (2011, p. 163).

For all these reasons, I will now suggest a narrative of the journey of human remains collected by the *Société* and the *Musée Dupuytren*. First, specimens were extracted from bodies coming from a variety of sources: sometimes they were legally exhumed bodies from cemeteries or donated by family members; most often, however, anatomical specimens came through collecting strategies conducted in the hospitals by the members of the *Société*—from unclaimed or unidentified deceased patients in hospitals, most likely poor citizens of Paris. Some of these remains went through a peer review system, where the pieces were shown, discussed and their relevance, evaluated. All specimens went through a "packaging" process—involving both chemical conservation and data conservation (labelling, cataloguing, classifying, etc.). That process was not always fast and could end up damaging the remains, a situation which created conflicts between the different people involved in the process. Finally, the remains reached the collection—first the *Société*'s collection and later the *Musée Dupuytren*—where they became objects for the public and the rest of the medical community (most notably students) to discuss and study, or in Leonelli's vocabulary to be "re-used". The access to these specimens was seen as a common good and even attracted foreign students as well. In 1846, one American medical student wrote that the recently established *Musée Dupuytren* was "one of the first places in Paris which the medical tourist should visit" (quoted by Warner, 2003, p. 109). Paris was seen as an attractive medical destination for several reasons (Warner, 2003); one reason was the free—or almost free—access to hospitals and collections alike. Visiting medical collections was seen as one of the ways to gain medical knowledge. One British surgeon thus lauded the public access to such medical museums where "all those [whose] object is science, have free admission to examine every specimen, of every kind, the whole is open to them" (quoted by Warner, 2003, p. 189). Remains could be "re-used" in other ways still: for instance, the curator of the museum would sometimes organise specific anatomy classes based on the collection.[22] The collectors of the specimens were also sometimes launching new research commissions based on a second observation, measurement, or analysis of the specimens. These specimens today continue their journey through time and space—the museum was closed to the public in 2016 and moved in a storage place in a different part of the city. The remains can be studied by researchers in the twenty-first century, with new tools available or other goals emerging. For instance, the brain of Louis Victor Leborgne (1809–1860) (famous for it enabled Broca to identify the speech area within the brain) has been explored by multiple medical imaging in recent times (Dronkers et al., 2007; Konnikova, 2013). The journey of the human remains collected by the members of the *Société* in the museum is thus not over yet, despite the certain loss of value in the eyes of medical researchers for

[22] This is mentioned in an American physician letter in 1848, cited by Warner (2003, p. 102).

these types of collections. This change in value does not make medical collections outliers, as it can happen to all data being collected:

> (…) what is used as data by a given group at a given moment in time and space may not retain that function at a later time, either because the group shifts attention to other objects as sources of evidence or because the journey to new research situations fails. (Leonelli, 2020, p. 6)

Indeed, values and functions can shift, but the journey can also end. One possible ending for the journey of medical parts in a museum is the burial, cremation or the return of the bodies, a decision that has been made by different institutions, for both epistemological and ethical reasons.[23] It should be noted that no new specimens are collected from bodies and added to the *Musée Dupuytren* nowadays. However, adjacent museum collections can be added under the responsibility of its curators. Overall, the "data journey" metaphor is useful in avoiding an anachronistic reading of medical collections as losers in the history of medicine. The values attached to the specimens and their collecting have shifted, as it can happen to all data in science, collecting or experimental sciences alike. Instead, the journey highlights the function and the role these collections played in knowledge production in the nineteenth century, with all the difficulties it involved then.

6 Conclusion: anatomy as a collecting science

Anatomy in nineteenth-century Paris overall resembles the family picture given by Robert Kohler of collecting sciences. However, a careful comparison of anatomy collecting with Kohler's framework helps in identifying specific features that make anatomy and pathology collecting stand out and not just because of the special nature of human remains. Much like with other collecting sciences, anatomy collecting was mainly characterised by the materiality of the objects (the anatomical specimens) collected. The main goal behind finding and gathering anatomical specimens was to give an epistemic ground to anatomy. In the case of the *Société Anatomique de Paris;* this epistemic justification might have been, at least rhetorically inspired by Auguste Comte's positivism. However, the materiality of human remains was such that simply collecting specimens was not possible: it involved some experimental skills. One does not just "find" a body part but creates it via dissection. Collecting anatomical specimens therefore was not totally distinct from experimental practices. This sets the anatomy field apart from other collecting sciences. This tension was reflected in the specific moral economy of anatomy and pathology: anatomists claimed authorship and credit on the specimens—much like scientists claiming authorship on scientific data obtained in a laboratory setting. The moral question of the provenance of bodies, however, was not acknowledged by the anatomists, who most likely collected anatomical parts mostly from the unclaimed bodies of

[23] For instance, in the case of Germany, see Weindling (2012). On the fate of medical collections in general, see Knoeff and Zwijnenberg (2015); for the British case, (see Alberti, 2011, pp. 196–213).

the poorest members of Paris society, whose family did not have the means to pay for the funerals. This unfortunately aligns with the way human experimentation was conducted in the nineteenth century. The admission procedure to the *Société Anatomique de Paris* consisted in the evaluation of a specimen brought by the candidate: a "good" specimen was necessary to become a peer. However, specimens were also considered as a public and common goods as they were put on display in the *Musée Dupuytren.* This public display in turn gave some form of prestige to the anatomists and the specimens acquired new values when being studied by visitors. Much like other collecting sciences, there is a lot of evidence of conflicts arising especially concerning the "keeping" side of collecting practices. The management and ownership of specimens all sparked controversies. Detailing the journey of anatomical and pathological specimens and their data—from the *Société Anatomique de Paris* to the *Musée Dupuytren*—has illustrated the heterogeneity of collecting practices in nineteenth-century anatomy in Paris, from finding to keeping specimens. These practices—such as the peer review of collecting, the public value of these collections as well as the tensions that arose as a consequence can all still be found in modern-day data-driver or data-oriented sciences. The concept of data journey, initially introduced by Sabina Leonelli to discuss data practices within contemporary data driven biology was helpful to study this historical case. The concept of data frictions (Edwards et al., 2011) was also useful in highlighting the fierce tensions created by two opposite goals—creating specimens versus collecting them. This demonstrates a continuity in practices in collecting or data sciences through the ages, which in turn helps in shifting away from reading the decline of medical collections as a sign of a failed science that would have been "losing" from the start.

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