Epilogue

We have seen how students, researchers, lay visitors and university governors used the nineteenth-century Leiden anatomical collections. Let us now turn to the final audience: historians. That is, twenty-first-century historians, one of whom in particular. How have I used the collections, and what might other historians gain from this use? And, besides morbid anecdotes, does it offer anything to non-historians? In other words: what does this book contribute to our present-day understanding of (historical) anatomical collections?

All four chapters have presented new insights on how different audiences used anatomical collections in the nineteenth century. The chapter on students demonstrated how anatomical preparations were *handled*, not just looked a, and that this happened in all medical teaching spaces, not just the anatomical museum. In the subsequent chapter, we discovered that researchers also used their preparations lids-off and hands-on. Moreover, they continued to use old collections for a long time, of which the nineteenth-century afterlife of the Brugmans collection was an example. I have argued that the continuous reinterpretation of old preparations was enabled by a particular feature of preparations: they are made of what they represent. The chapter on lay visitors explained how and why the nineteenth-century path of the Leiden anatomical collections differed from most other types of collections: instead of moving from closed to open, they changed from open to closed – or rather, from easily accessible to hard to approach and interpret without medical knowledge. And finally, the chapter on the university governors demonstrated how the Leiden governors used the collections to connect their present to the university's glorious past – until the preparations lost the connection to their makers, a development that shows that anatomical preparations resist historization more than most other objects do.

Collected together, the four chapters build a book – this book. And I'd like to think that this book, like a proper collection, is more than the sum of its parts; that, if read from beginning to end, it permits its audience – that would be you – to acquire a knowledge of anatomical collections that transcends the insights offered in the individual chapters. If this is indeed the case, I believe that this knowledge can be summarized in two sentences. First: in the nineteenth century, medical audiences continued to use anatomical collections and non-medical audiences stopped using them. And second: these developments are causally related to each other and to the specific properties of anatomical preparations. In this epilogue I intend to reveal this causality by weaving the individual chapters into one story.

The focal point of this story is the Anatomical Cabinet's move to the laboratory complex at the Ruïne in 1860. This move (and the accompanying rearrangement) formed the turning point for non-medical audiences. Afterwards, they could no longer continue to use the collections as freely as they did before. The lay visitors had a hard time even entering the new Cabinet: its location was distant, its building unwelcoming, and its over-all atmosphere closed. Moreover, the rearrangement made it hard for them to interpret the

collections. The stories about unhappy marriages, committed crimes and famous giants had been replaced with 'scientific' anatomical and pathological descriptions. And not just these stories disappeared – the preparations also became detached from their makers. The governors could no longer use them as a status symbol because they lost their link to the past. Anatomical preparations resist historization, a disadvantage not just for the governors, but also for the lay visitors because it is a common path along which objects from institutional collections end up on public view.

But there is more to the move than its consequences, in particular: its causes. Why were the anatomical collections rehoused to a laboratory complex they shared with the natural sciences? The answer to that question is not obvious, especially not if you started this book by reading the epilogue. The move of the anatomy department as a whole should not surprise anyone with minimal knowledge about nineteenth-century science and medicine. It fits perfectly with the well-known rise of the laboratory, birth of scientific medicine, and growth of practical teaching. But why did the department take all of its anatomical collections with it? Why not leave them behind, throw them out, send them away? For often the nineteenth-century rise of the laboratory is presented as not just a rise, but a replacement: the lab instead of the museum; experimenting instead of collecting. In this image, taking the anatomical collections with you to a laboratory building, and into the new scientific medicine, seems insensible. However, as the first two chapters have shown, this image is wrong. Plain wrong. This has been said before by Samuel Alberti, Erin McLeary, Jonathan Reinarz and others. However, besides being wrong, the image also appears to be rather persistent, and hence, I say it again: anatomical collections did not disappear in the nineteenth century – they flourished. The rise of the laboratory did not do away with the need for collections, for two reasons. First, the lab did not *replace* the museum – it supplemented it. And second, collections were not tied to the museum – they were used in many spaces and, if you will, in many ways of knowing.

Why then is this incorrect image so persistent? It seems to me that the present-day presentation of historical anatomical collections misguides us. The few collections that are easily accessible to the lay public (and that includes us historians) all display inertia. We see body parts safely sealed away in glass jars, neatly arranged on shelves, enclosed in glass cases. The average public anatomy museum screams: do not touch. This has given us the idea that anatomical collections are static entities, that the preparations they contain are finished objects, and that audiences are only meant to gaze at preparations from a safe distance. We find it hard to imagine this could have ever been otherwise. Indeed, it is hard to imagine an anatomical collection as a lively, bustling, dynamic place if you are standing, say, in the Hunterian Museum's crystal gallery, awing the stilled lives surrounding you. But we should not just imagine what might have been while looking at the past's material remains; we should, instead, combine these remains with other historical sources to construct the most plausible story about what actually happened back then – as I have aimed to do in this book. The first two chapters of this book tell us that, in the nineteenth

century, anatomical collections were not static. They were moved around, rearranged, extended. Their contents changed continuously, not just through the acquisition of new preparations, but also through the use, and subsequent damage, of existing ones. Preparations were meant to be *used*, and reused, and used again; reinterpreted; redissected. Lids were taken off jars; body parts were taken out of the fluid, passed around the class, cut up and put under the microscope. Anatomical collections and the preparations they contained were dynamic entities. Once we understand them as such, it becomes clear that they were not threatened by the laboratory, practical teaching or scientific medicine.

The chapters on students and researchers have shown how both of these audiences used the collections in an active way. They make it understandable why the anatomy department held on to its thousands of preparations throughout the century. The first chapter has shown how anatomical collections suited practical teaching. The collections were needed in the teaching laboratories as empirical material: the students required preparations to redissect or to experiment on. And the collections were also essential to prepare students for their practical training in the dissection hall. Handling preparations helped them learn their facts and overcome their fears – steps that had to be made before students could start dissecting. None of these functions lost their relevance as the century progressed, hence the collections were needed just as much in the new building as they had been in the old.

Yet, the continuous need for anatomical preparations does not fully explain why the anatomy department took *all* of its collections with it, including many eighteenth-century preparations. These preparations were made in answer to earlier ideas on the body and disease – how could these old parts be used in a new medicine, with its own theories? This was clarified in chapter 2, where it was shown that researchers could continuously reinterpret preparations, because preparations were made of what they represented. The new classification system, adopted after the move, would never have worked if the preparations had not enabled reinterpretation – they needed to be reinvestigated, redescribed and reinterpreted in order to be adapted to the new system. In addition to researchers, students also benefited from the flexibility of the preparations: their professors could easily use the old collections to teach them new medicine. Reusing old collections was not just convenient, it was necessary. Preparations were not only made of what they represented, they were also made of scarce materials. The supply of bodies (and the available time) was nowhere large enough to create new collections from scratch every time medical theories changed, especially not when it came to pathological preparations. Hence, researchers and teachers had to make do and mend with the old preparations available, This is why the anatomy department took all of its collections with it to the new building.

But with all of the preparations needed in the new building, and all of them allowing reinterpretation and rearrangement, they became inaccessible and unusable for the non-medical audiences. The ease with which the preparations could be reinterpreted, in other words, was a blessing for researchers and students, but a curse for non-medical audiences.

The latter lost the collections – and they never really got them back. Today's collections are open to lay visitors in principle, but very hard to access in practice. And rather than university governors employing the collections as status symbols, only senior hospital staff members can use the collections to show the continued excellence of the medical curriculum.

I have focused on the nineteenth-century Leiden anatomical collections, but the dynamic view of anatomical collections and preparations can and should be transported to other times and places as well. It may even offer insights into other types of collections, in particular natural history collections.

Throughout the book, I have slipped in examples from anatomical collections outside Leiden, most of them in Western Europe, some in the United States. These examples served to show that other collections were used in similar ways as the Leiden ones. Of course, many local differences exist. For example, the chapter on students made mention of Scottish anatomy teacher Robert Knox, who hesitated to let students handle preparations. From what I have seen, it seems that other British anatomy teachers shared his concerns and were more reluctant than their continental counterparts to let their students handle preparations. Further research is needed to identify and explain such differences; comparative histories would be particularly useful for this. In the case of British medical teachers, I would suggest their hesitance relates to the British educational system, which had many private anatomy courses and few institutional ones. Because they were 'on their own', anatomy teachers had limited money and means to build collections; probably more limited than their continental counterparts. At the same time, an insufficient collection immediately implied loss of income: students would turn to other, better-equipped teachers. No collection, no income; and hard-to-acquire preparations: no wonder the Brits were afraid of handling damage, and tended to keep students from touching their precious preparations.

Several of my examples on handling practices outside Leiden came from secondary literature. In the last decade, nineteenth-century anatomical collections have received a fair share of attention in the history of science and medicine. Some of the studies mention student handling and researcher reinterpretation, but only in passing – they usually do not take the dynamic, hands-on character of collection and preparation use as a basic principle for *all* of their research on the collections. Yet, as I have argued, these practices are crucial to not only acknowledging, but also *understanding* the continued use of anatomical collections in research and teaching and, subsequently, its decreasing use by non-medical audiences, This applies not only to Leiden, but to other cities as well.

In particular, the active handling and continuous reinterpretation by researchers should be taken as fundamental. Even more so than student handling, it can be assumed to transcend local differences. The reason is that these practices stemmed for a large part from the material properties of preparations. As I explained above, their reuse was enabled by the preparations being made of what they represented; and forced by the preparations

being made of scarce material. (Note that the scarcity, as hypothesized above, might have limited student handling in some cases.) Preparations have these material properties regardless of the time and place in which they were made – although the availability of raw material may vary between countries and centuries, an abundance of body parts of all varieties and pathologies can be found nowhere but in utopias (or, if you think about possible causes for that abundance: dystopias). Hence, historical research on anatomical collections should in general assume that these collections and the preparations they contain are dynamic entities; this should be a starting point of the research.

The idea of a collection as a dynamic entity holds not just for places other than Leiden, but also for periods other than the nineteenth century – which brings us to the relevance of all this to non-historians. Thinking about anatomical collections and preparations as dynamic helps us become aware of the fact that they are still being created. When we think about anatomical collections as body parts rendered permanent, put in jars, displayed in glass cases, we tend to assume that their heydays are over. However, medical professionals still collect bodily tissue – and lots of it. Tissue banks, collections of frozen embryos and commercial cell lines are just a few examples. Often, these collections contain material taken from people still alive, which comes with a whole new range of issues, in particular issues of ownership. We can get an impression of these issues from a passage in Nicole Krauss' first novel, *Man Walks into a Room*. The man in the title is Samson Greene; at three-quarters into the story, he walks into a laboratory room to reclaim his brain tumour. The following dialogue unfolds:

> [The lab technician] backed up against the counter. 'We don't keep it that long,' she whispered.
>
> 'What do you mean you don't keep it? Why don't you keep it?'
>
> 'The tissue disintegrates. We throw it away after a few weeks. We keep a small piece in paraffin. And the slides, those we keep. Those we keep, basically, forever.'
>
> Samson struggled with the idea of his tumor disposed with the rest of the hospital's bloody trash, bone chips and butchery, used syringes and cruddy bandages. … But there were the slides … and he would have to content himself with those.[1]

Samson settles for the slides:

> 'Give me my slides,' he repeated.
>
> She had wet, black pupils, the eyes of a small woodsy animal. Her teeth were large. When her mouth was at ease the front teeth strayed rabbitlike below the upper lip.
>
> 'I can't', she said, the lip quivering.
>
> 'But you can,' he assured her … 'They belong to me.'[2]

[1] Krauss 2007, 186–187
[2] Krauss 2007, 187

Krauss shows that ownership problems come not only with keeping, but also with throwing away bodily material: Samson is disappointed when he finds out his tumour was considered waste. But he regains himself and manages to convince the technician – or rather: to scare her enough – to give him 'his' slides back. In real life, things are not always settled that easily; rules are often murky, but it generally seems to be the case that, once you've left a piece of your body in the hospital, it is very hard to get it back – or to get a share of any profit that is made from it afterwards.[3]

Of course, historical anatomical collections differ in various respects from these contemporary ones. Nevertheless, some of the insights we gained from studying the Leiden collections can be usefully transferred to tissue banks and the like. For the preparations in these new collections are still made of what they represent; and hence, they can be reinterpreted again and again. This is an important observation in these cases. Once we realize this, we become more aware of how tempting it is for medical professionals to collect as much bodily material as possible: it is scarce, and you never know when it might come in handy. And even if it is not used, it is kept. It lingers in hospitals and laboratories, waiting for new research questions or new instruments that make it needed. These objects hardly ever turn useless – we need to understand that to grasp how unlikely it is that these collections will ever disappear. As Krauss' lab technician puts it:

'And the slides, those we keep. Those we keep, basically, forever.'

[3] A great deal of literature is available on these issues. I have found Dickenson 2009 to be a good starting point. See Lawrence 1998 for a historical introduction. See Skloot 2011 for a case study of the HeLa cells (cancer cells taken without consent from an Afro-American woman), which have been turned into a cell line stil widely used in biomedical research. See Geesink and Steegers 2009 for an overview of (the lack of) regulations on use and ownership of bodily material in the Netherlands.