# “Dissecting: how does it change the professional practice and the perspective of an osteopath?”

**A Master’s Thesis for the degree of**

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# Author’s declaration of originality

I hereby certify that I am the sole author of this Master’s thesis.
I certify that all literal and paraphrased quotations of works of other authors, published or unpublished, are marked as such and that all resources are duly referenced.
No paper with the same contents has ever been presented before any other examination authority.

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Elisabeth Kober

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# Abstract

Topic: How does a dissection course change the professional practice and perspective of an osteopath

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Key words: Dissection, anatomy, osteopathy, interactive learning, visualisation, precision, three-dimensionality, professional self-esteem

Within the framework of a qualitative study, seven osteopaths, three of them women, were asked about how the experiences gained in the dissection course had changed their professional practice. With the help of an interview outline, interviews were conducted and analysed using qualitative criteria. Two expert interviews with instructors of dissection courses were also recorded.

The results show that the experiences gained in the dissection course were enriching for all of the participants. Improvement of the professional practice, clearer visualisation, greater precision in palpation and better understanding of the constitution of the tissues and the location of organs were mentioned. Acquired anatomical knowledge was questioned and osteopathic models were enhanced. Some participants changed their way of diagnosing and they have started to use certain techniques more frequently. The aspect of increased precision in the osteopathic practice also came up repeatedly.

Five participants could improve their professional self-esteem.

Their view of the patients as human beings did not change because all the participants had already given very respectful treatment to the patient before the course.

The experiences gained during the dissection course were described as a sensitive, interactive way of learning in a team, which is confirmed by the relevant literature.

This Master's thesis represents only a small selection of opinions, but it shows that dissection makes a considerable contribution to enhancing competence in the profession.

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# 1. Introduction

## 1.1. Personal interest

When considering a topic for my Master's thesis, it was important for me to choose something for which I had a personal interest. The importance of anatomy is mentioned repeatedly in the history of osteopathy; yet I feel that during my studies at the WSO (Vienna School of Osteopathy) this high significance of anatomy was not correspondingly reflected. This was probably one of the reasons for me to sign up for the first dissection course of my life. Ever since I have spent many hours in the dissecting room, since the intensive occupation with the human body helps me see things more clearly in my osteopathic practice.

I had observed that working intensely with the anatomy of the human body also changed my way of working in my practice: I am more precise now when it comes to diagnosing. The very specific knowledge I gained concerning the location and nature of the structures helps me choose my techniques more accurately. For instance, I apply more visceral techniques now because I can visualise the location of the internal organs much more clearly, and I feel that I use my hands much more precisely when applying structural, visceral and cranial techniques.

Although I had studied anatomy for years, my dissecting experience led me to look more critically at what I had learned, and also to adapt and enhance osteopathic models. My way of treating the patient had always been defined by great respect – and yet, working on dead bodies has increased this respect even more. As an assistant, too, I have noticed my increased self-esteem as an osteopath.

I decided to take a look at how my colleagues were influenced by deepening their anatomical understanding during the dissection course and observed the same issues with most of them. I also wanted to include the views of two experts who teach dissection courses.

## 1.2. Research question

Does participation in a dissection course change the professional practice of an osteopath? And if so, in what way? What can we say about the view of the patient as a person?

In the medical literature we find a broad range of publications on dissection.

In an article contained in The Anatomical Record, published in 2002, Aziz et al. state that dissection is a fundamental basis for the clinical training of medical students. Miller et al. emphasise the importance of dissection especially for those working with the musculoskeletal system. Furthermore, it has been suggested to offer dissection not only at the beginning but also towards the end of the studies (Miller et al. 2002) or even after several years of clinical experience in a hospital (Pabst et al. 2001).

Contrary to the reasoning of these research articles, in recent years the curricula for medical students in Austria have changed and anatomy courses have been shortened, e.g. in Innsbruck from 26 to 19 units a week per semester distributed over the first three semesters .

In the syllabus for the dissection course at the University of Innsbruck, which is part of the *medizinstudium.2002* curriculum, it is stated that the time dedicated to dissection is not sufficient for the practical anatomical training. The first part of the studies includes lectures on the theory of anatomy and the third semester a 9 units/week dissection course.

Aziz and his co-authors (2002) have collected a series of advantages and disadvantages of dissection courses. The disadvantages, according to them, are the intensity of work, the postmortal changes in the bodies/ anatomical specimens, high cost, aesthetic concerns, etc.

The advantages, on the other hand, include the perception of the body as multi-dimensional, the haptic perception of the human being, the development of sensory skills and abilities, the perception of the morbidity and mortality of humans, preparation for unpredictable differences between individual bodies, etc.

Preparation is seen as an important ritual for medical training as respects memory, communication, and therapy. (Aziz et al. 2002)

Kenesi, for instance, in an effort to underscore the significance of anatomy, described the contributions of anatomy to the medical training in the following way:

Anatomy helps visualise the spatial dimensions;
Anatomy helps improve accuracy and description;
Anatomy helps develop realism. (Kenesi 1984, p. 66)

According to Kenesi three fundamental objectives arise from these three points:

.) Anatomy must prepare students for clinical examination and thus support practical expertise concerning the morphological anatomy of living beings;

.) Anatomy must serve as a basis for medical visual presentation;

.) Anatomy must help develop manual skills when the student performs these operations him-/herself, thus experiencing personal progress and success. (Kenesi 1984, p. 66)

The following is an extract from the teaching objectives of a dissection course:

After attending the course, the student should...

"…*have acquired tactile skills;*

…*be able to describe and explain the interplay of organ systems;*

…*be able to describe the spatial structure of the human body;*

…*be able to describe the sequence of layers in the arrangement of regions and spaces;*

…*be able to describe the locations of the anatomical structures in relation to each other;*

…*be able to identify and understand individual peculiarities and variations in the constitution;*

…*be able to identify aberrances from the healthy state;*

…*etc."*[1] (Brenner et al. 2003, p. 24f)

Literature and reality do not coincide in this respect. There is a consensus in the literature concerning the opinion that dissection makes a valuable contribution to the development of skills which are necessary for the medical profession. Anatomy is repeatedly referred to as a basis for diagnosis and therapy. Others see it as a painful experience which acts as an initiation to a medical profession. (Kenesi 1984, p. 65) However, an increased offer of new subjects at the medical departments of universities seems to make it necessary to reduce the offer of dissection courses. The decrease in quality was accepted because the contents had to be adapted to the reduced number of lessons. By now it has already become evident that the time available to process the theoretical knowledge in practice by working on the human body is not going to suffice. (Brenner et al. 2002)

Osteopathic training faces a similar problem. Dissection courses take up a lot of time; the fact that medical doctors and physiotherapists, i.e. people with very divergent basic studies, receive the same osteopathic training, is also an argument against a dissection course as part of this training. (Raimund Engel 2008, p.c.) And, last but not least, it is not decided yet

whether the Institute of Anatomy of the University of Vienna will continue to act as a venue for courses.
My motivation was to find out what colleagues who are experienced in dissection have to say in this respect.
Eventually I decided to conduct a qualitative social study because interviews facilitate a broad range of opinions.

### 1.3. Overview

The thesis consists of three sections: theory, methodology, and interview analysis including interpretation. In the theoretical part I will look into the history of dissection in the field of medicine and into the significance of anatomy for the field of osteopathy. In the second part I will explain the method of the qualitative study. In the third part I will analyse the interviews and expert interviews and provide an interpretation.

# 2. Theory

I would like to begin this chapter with a short overview of the changeful history of anatomy and dissection in order to show that the cutting open of a human body has always been a very controversial practice.

## 2.1. History of dissection

*"Since God the Almighty created us in His own image and likeness with a body and a soul and commanded that we occupy ourselves primarily with the things that concern God's glory, it is, with regard to the nature of the human body, above all necessary that we get to know ourselves…."* [1] (Jakob Baumann 1551, preface to Vesalius 2004)

Andreas Vesalius plays a key role in the history of anatomy and dissection. He is regarded as the founder of modern anatomy. Vesalius studied at the University of Leuven and in Paris and taught at the University of Padua. He practiced dissection himself and proved that Galen had drawn his anatomical knowledge only from the dissection of animals. His book "De humani corporis fabrica", in seven volumes, published in 1543, is illustrated elaborately. This book was the key anatomy book of the time, and many anatomists continued Vesalius' anatomical research by building on this book. (Steinbichler 2005)

Jakob Baumann translated Vesalius' book from Latin to German and published the translation in Nuremberg in 1551. In 2004, this book was republished with the title **Anatomia**. Baumann characterised anatomy as one of the most elegant arts, stating that only anatomical experiences enable us to help the human body in its entirety. Anatomy teaches us how to understand the substance, the nature and the constitution of all different parts of the human body. (Budde 1998)

Research in the field of anatomy was done even before Vesalius, always in close context with the prevailing circumstances.

### 2.1.1. Dissection in the Ancient World

In the time before Vesalius dissection was a difficult undertaking. In Ancient Egypt dissection did not exist at all, whereas in the time of Homer battlefields presented an opportunity for first anatomical studies. Natural philosophers like Alcmaeon of Croton dissected animals.
Hippocrates banned dissection completely, Aristotle on the other hand can already be called an anatomist; however, he only dissected animals. In the third century BC, dissections in public were organised in Alexandria. Herophilus of Chalcedon and Erasistratus of Ceos were well-known anatomists of that age.
In Late Antiquity, 162 BC, Galen of Pergamon held sessions of dissection and vivisection in Rome; he is considered the most important representative of medical research up to the Middle Ages. He left 200 medical publications, and his works dominated the European medical science for well over a millennium. Since he seems to have dissected only animals, his anatomical descriptions show quite a lot of mistakes. (Steinbichler 2005)
Galen described the study of anatomy as follows: *"Anatomical study has one application for the man of science who loves knowledge for its own sake, another for him who values it only to demonstrate that nature does nothing in vain, a third for one who provides himself from anatomy with data investigating a function…."* (Galen 1956, in Steinbichler 2005, no page given)
Galen wrote a teaching manual for dissection and coined the phrase *Nature does nothing in vain*.

### 2.1.2. Anatomy in the Middle Ages

The inviolability of the dead body preached by the Christian belief impeded the further development of anatomical research. In his book "De civitate dei", Saint Augustine condemns all anatomists and denies their ability to comprehend the true harmony of the human body. This position was very influential for a long time. It was only Pope Sixtus IV (1471-1484) who, via a papal bull, allowed the study of anatomy on human bodies. (Becker 2002)
Dissections, nevertheless, were still limited to animals. It was not until the 13$^{th}$ century that dissection of human bodies was finally started in Bologna. In a dissection at that time, the

body was cut open endways, the thorax and abdomen were opened and the organs exposed. The oldest illustration of a dissection dates back to that time. (Budde 1998)

In the 14th century, in Padua the practice of dissection was obligatory for students of medicine. In France courses of dissections were introduced, and in Bologna public dissections were organised for an expert audience. At that time, the professor sat on a podium and recited Galen's writings, a prosector dissected the body and a demonstrator pointed to the relevant structures. (Becker 2002)

### 2.1.3. Renaissance and Humanism

Then came the before mentioned pioneer of anatomy of the Modern Times: Andreas Vesalius. His writings represent the onset of anatomy as we conceive it today. "Fabrica" was his first comprehensive textbook of human anatomy; it rectified mistakes which had originated from Galen's writings and been carried on for more than a thousand years. The 16th century is also called the golden age of anatomy: at all the renowned universities anatomy was taught and dissections were performed. Anatomical dissections did not take place outdoors any more but in lecture theatres which were especially constructed for this purpose. For a long time, dissections were viewed as an aggravation of the death penalty and were disgraceful for the family of the person concerned. Having paid an entrance fee, everybody could attend and watch these dissections in the "anatomical theatre". It was only in the Age of Enlightenment that normal human bodies were used in dissections, which helped to demystify the act of dissecting. Dissection gained the status of an honourable and beneficial act. (Becker 2002)

Leonardo da Vinci lived and worked in this period of Humanism and Renaissance. At that time, physicians and artists typically had a very close relationship. Leonardo da Vinci investigated 30 bodies for private study and produced very detailed drawings based hereupon.

*"… and one body did not suffice, so you had to proceed from one body to another and to analyse many of them in order to complete a full understanding; a procedure I followed twice in order to see the differences too."* [1] (Leonardo da Vinci 1904, no page given)

### 2.1.4. The Modern Times

In the 19th century, the field of medicine refocused on clinical observations, which were checked and completed by the thorough investigations which took place on the dissection table. More and more hospitals were established, and they offered a lot of material for clinical observations and dissections.
The French anatomist and physiologist Marie Francois Xavier Bichat (1771-1802) was very interested in pathological anatomy. He said that *"several dissections would give you more enlightenment than twenty years of observation of symptoms"*[1]. (Ackerknecht 1977, p. 67)

Nowadays, in Austria body donors make their bodies available for the Institute of Anatomy of the University of Vienna. During their lifetime they agree to place their bodies gratuitously at the disposal of this institute for scientific use and further education. The bodies are conserved in formaldehyde for preservation. Finally, the remains are burnt and buried in an honorary grave at the Viennese Zentralfriedhof cemetery.
*"To read about structures in a textbook is one thing. To observe them, to feel them, and to acquire a three-dimensional idea of their size and position makes up the value of dissection."*[1] (Chumbley/Hutchings 1993, p. 5)
These lines can be found in the preface of an elaborate manual for dissection, and these authors again point out the significance of the work done in the dissecting room.

*"Dealing with the dead immediately brings you back to dealing with the living; it provokes interest in it. The necessity to apprehend a structure in its functioning, to apprehend the functioning on the basis of the characteristic of a structure has always been the real concern. Dealing with dissectible postmortal structure necessarily leads to the attempt to observe this structure in its living context ……. Studying the dead body ……helps us to 'grasp' the human anatomy on the one hand and to become aware of the self-understanding correlation of structure and function in life on the other."*[1] (Neuhuber 1998, p. 621)

### 2.1.5. Summing up

The first approaches to anatomy date back nearly 2,000 years, and its development always depended strongly on the mind-set of the relevant age. The heyday of dissection can be associated with Vesalius, who encouraged the breakthrough of anatomy in the field of medical research and played a key role in its development. Nowadays the practice of dissection is a matter of course for medical students. However, people working in the field of medical therapeutics also need this knowledge. The only way to acquire it is to work and study on the living and on the dead.

Working on the dead body helps to gain insight into the real nature of bodily structures. The act of cutting per se, the searching and finding of a particular structure enables us to fully understand a structure on its own as well as in the context of its function. A two-dimensional illustration of the human body will never be a complete one. By dissecting human bodies we can memorise images which, later on, help us improve our visualisation.

## 2.2. Anatomy in the field of osteopathy

After this short overview of the general history of dissection, I now want to take a closer look at the status of anatomy in the field of osteopathy.

Andrew Taylor Still, the founder of osteopathy, opened up his first school of osteopathy in Kirksville, Missouri, USA, in 1894. Beside books and presentation boards, fresh and conserved preparations were part of the school's equipment for anatomy classes already at that time. (Still 1995)

The way he answered the question of what was necessary for the studies of osteopathy is a good indicator of his attitude regarding the importance of anatomy. *"…I wish to impress it upon your minds that you begin with anatomy, and you end with anatomy, a knowledge of anatomy is all you want or need, as it is all you can use or ever will use in your practice, although you may live one hundred years."* (Still 1995, p. 16)

In *The Journal of Osteopathy* (edition of February 1897), Still made his point of view very clear to his students. He wanted them to leave the school of Kirksville with the most well-

grounded knowledge of anatomy, physiology, and the laws of nature and nature's ability to fight disease. Regarding this knowledge, his school should be the best in the world.

*"Learn them what man is and what disease is and how to cure it…Osteopathy is the very essence of symptomatology, diagnosis, and cure. Learn it, be it, and you will have filled the law."* An osteopath's competence is measured on the basis of his results. And achieving good results is only possible on the basis of good training. "*We want you to know anatomy and physiology by books and dissection …*" (Still 1897, p. 6)

At the school in Kirksville, anatomy was taught in three stages. First the students had six months of anatomical teaching out of the books, then they did dissections for twelve months, and finally they put their anatomical knowledge into practice by learning how to make a diagnosis and how to apply manipulative methods of treatment.

*"The development of an accurate mechanical eye, a delicate sense of touch, and a perfect knowledge of what is normal and what is abnormal, are a level of knowledge of anatomy peculiar to osteopathy and taught in no other school."* (Anonymous 1897, p. 3)

That means that the school in Kirksville had the ambition to teach anatomy at a very high level in order to offer their students the opportunity to develop a skilled eye and a delicate sense of touch for their osteopathic practice.

In another edition of this journal, Still describes the anatomical education at his school very accurately. First anatomy is taught by means of single anatomical parts and a complete bony skeleton, second the students study dissected bodies in detail, and finally each student dissects on his or her own under the supervision of a demonstrator of anatomy. "*Nothing is lacking which can aid in giving the students the best anatomical work."* (Still 1898, p. 212)

In 1900, Rider wrote an article in *The Journal of Osteopathy* with the title "The value of anatomy to the osteopath", in which he emphasises the importance of anatomy for osteopathy. He describes anatomy as **the** basic science of osteopathy, which enables us to correct structural dysfunctions. In Rider's understanding, osteopathy is an application of anatomical findings. (Rider 1900)

### 2.2.1. Still and his anatomical studies

In his autobiography, Still writes that he has always thoroughly studied "The Book of Nature". Very early in his life he gave his attention to the studies of anatomy.

*"The greatest study of man is man."* (Still 2000, p. 84)

In his eyes, dissecting a human body is the best practice for studying the body of a human being.

He exhumed Indians from their graves and salved his conscience with the perspective that by doing his research on a couple of dead persons he would increase his ability to help thousands of living people. Most often, Still worked during the night in order to remain undiscovered. Hidden by the wilderness, he studied and analysed each single bone of the human skeleton until he knew all of them to their tiniest detail. Still was fascinated by the studying of the human body, dissected many Indians and, additionally, experimented with bones until he felt entirely familiar with their structure. (Still 2000)

In the preface to his book "Osteopathy, Research and Practice" he points out that perfect health can only exist in a body in which all components are in the right place. According to him, the osteopath's challenge is to put the body into a new order in a way to enable it to find health again. An exact knowledge of anatomy is the precondition to accomplish this task. (Still 1995)

According to Still, osteopathy builds on the perfection of the work of nature. His thinking that God created man as a perfect creature shows the important place anatomy occupied in his work: the osteopath should only correct the mechanics that led to disease and trust in the result. (Still 1995)

The mechanical work an osteopath can do on a human body is the result of infallible knowledge. *"Man's power to cure is good as far as he has a knowledge of the right or normal position (…)"* I can treat disease only by knowing what health exactly looks like. (Still 1910, p. xi, Preface)

I fully agree with Scheiterbauer, who wrote in the introduction to his Master's thesis that in the eyes of Still the appraisal of God lies in the approval of his creation, which is the human being. (Scheiterbauer 2007, p. 14)

### 2.2.2. Anatomy with Sutherland and Becker

William Garner Sutherland, who was one of Still's students, wrote about the importance of a perfect anatomical picture as a background for osteopathic reasoning.

*"You need the perfect mental picture to guide you, (…) Study the animate human body as well as the cadaver."* (Sutherland 1990, p. 7)

For Sutherland, too, studying anatomy on the living as well as on the dead body represented an important basis for the osteopathic work. The clearer a picture you have of the human body, the better your therapy may be designed.

In his book "Life in motion", Becker described the role Still played in the osteopathic development process. *"Dr. Still's role in this process was his detailed knowledge of anatomy and physiology as it functioned in health for the individual."* (…)(Becker 1997, p. 60)

Still developed a foundation for his new kind of treatment, and this foundation was made of anatomy and physiology. By conducting his intense studies of human bones, for example, he obtained the findings, whereupon he developed his therapy which he also imparted to others.

Later on, he pointed out that it was only this anatomical basic knowledge that enables us to get a clear picture of human health. Therapeutic skills that allow the body to go back to its healthy functioning could be developed on this anatomical basis. (Becker 1997)

In his second book, "The Stillness of Life", Becker described the preconditions for the osteopathic profession as follows: detailed knowledge and experience in the work with structure and function of the body and its physiology facilitate a successful treatment.

The level of anatomical knowledge is, also according to Becker, the basis on which an osteopath can build his or her answer to a health problem. For him, there is a direct relationship between the skill of a therapist and his or her basic knowledge. The achievement of good knowledge is a learning process that should never end. In this regard, Becker agrees with Miller, who supports the idea of a dissection course after several years of osteopathic practice. (Miller et al. 2002)

*"You have to learn enough anatomy and physiology to know your way through the problem to the best of your ability. We never will know the entirety of anatomy and physiology, but we can know a lot more than we know now."* (Becker 2000, p. 102)

### 2.2.3. Anatomy today

The examination of the beginnings of osteopathy showed the historic importance of anatomy for osteopathy and its founding fathers. Time and again, they refer to the importance of an exact knowledge and understanding of the human body's structure and function for good osteopathic treatment. An osteopath has to deal with the healthy tissue in order to be able to recognise when something makes the body ill. Gevitz criticises a purely anatomical approach to the acquisition of osteopathic techniques. *"Although it is understandable that distinctive osteopathic diagnosis and treatment depend on clinicians' knowledge of the body's anatomy, the science of physiology has allowed osteopathic researchers to achieve the most significant understanding of somatic and segmental dysfunction."* (Gevitz 2006, p. 126)

Willard, who teaches anatomy at the College of Osteopathic Medicine in Biddeford, Maine, USA, describes the situation in the United States as follows: in the US, students of osteopathy and medicine spend six months together in the dissecting room, and this is the same for all schools of osteopathy in the US. In these six months, the students dissect a whole body and have an extra class on the brain. (Willard 2007, p.c.)

However, the situation in America is different from Europe because the doctor of medicine (MD) and the doctor of osteopathic medicine (DO) are nearly the same in the United States. It is the classes of OMM (osteopathic manipulative medicine) in the DO studies that mark the main difference between these two medical degrees. (Hurt 2007)

*"The embodiment of a philosophy makes the osteopathic medical profession different from the profession it parallels."* (Gevitz, 2006, p. 121) Osteopathy is also defined as a "parallel profession" to medicine. (Gevitz ibid.)

In Europe the studies of osteopathy are not standardised; each school has its own curriculum. The school of osteopathy on the Chiemsee lake, for example, sends its students to the Institute of Anatomy of Innsbruck. There the students have the possibility not only to look at prepared specimens, but also to touch them. This approach certainly improves the students' idea of anatomical structures; however, they do not have the opportunity to use the scalpel themselves. (Magdalena Junger 2007, p.c.)

At the British School of Osteopathy the students follow a four-year curriculum as a full-time course. The students enrol in this programme directly after their graduation from school, so

they have no previous knowledge of anatomy. The curriculum does not include any dissecting classes. (Fiona Walsh 2008, p.c.)

At the part-time schools in Europe, anatomy does not appear in the curriculum, since the students are either medical doctors or physiotherapists and have already had classes on anatomy in their basic education. According to Engel, no school of osteopathy in Europe offers dissection classes during the training, neither in full-time nor in part-time programmes. (Raimund Engel 2008, p.c.)

In Munich, Professor Breul organises dissection classes for osteopaths.

In Vienna, students and alumni of the WSO have the opportunity to attend dissection classes. First these classes were organised as week-long seminars, now they are split up in three specialised courses with different focuses: peripherals, inner organs and nervous system. Each course lasts three days and can be booked separately.

# 3. Methodology

Methodology is the study of research methods. This chapter provides the rationale for selecting a specific method for my purposes. I chose to apply qualitative social research, a research method which focuses on collecting data regarding social facts. In the present thesis, such facts were collected by means of interviews.

## 3.1. Qualitative social research

I decided to apply qualitative social research as a research method for this thesis.

For a long time social research was dominated by a quantitative approach; *"people and things were tested and measured without previous assessment of their quality."*[1] (Mayring 2002, p. 9)

Qualitative social research lets people have a say without providing the limitations of a questionnaire with a choice of given answers.

Since no comparable investigation has been done before, it was important to get a wide range of information for this study. The advantage of the qualitative interview is that it facilitates a broad spectrum of answers from which a variety of perspectives can develop.

### 3.1.1. The basic principles of a qualitative study

According to Mayring (2002), the five basic principles of a qualitative study are: a *subject-centred perspective* of the research, an emphasis on the *description* and *interpretation* of the research subjects, studying the subjects in their *everyday* surroundings and a *generalisation process* regarding the results. (Mayring 2002, p. 19)

1. Subject-centred perspective

The human being, which is at the centre of human sciences, is both the starting point and the aim of the investigation. (Mayring 2002)

The present study focuses on colleagues who have had experiences with dissection and its influence on their work and who were willing to share these experiences.

2. Description

The basis for any analysis must be an accurate description of the study object. (Mayring 2002) In this case, the object of research is my colleagues' work experiences after participating in a dissection course; they were asked to describe their experiences as accurately as possible.

3. Interpretation

Everything a person says has an underlying subjective intention that may mean different things to different observers. At first, these meanings must be interpreted, taking into consideration that our *"own preconception always influences the interpretation"*[1]. (Mayring 2002, p. 29)

4. Everyday surrounding

In a laboratory situation, a person reacts in a completely different way from how he or she would react in an everyday situation. This is why the interviews should take place, if possible, in the everyday surroundings of the interviewee. (Mayring 2002)

For the present study, the interviews were conducted in a setting that is familiar to the interviewees.

5. Generalisation

For each specific case, reasons that support the findings have to be provided; that is, arguments have to be given to indicate why these results are also valid for other situations. (Mayring 2002)

In most cases, the experiences were similar for all the subjects involved, and so it was no problem to make generalisations.

## 3.2. Research design

*"Qualitative evaluation research aims at scientifically monitoring changes in work practice and at evaluating their effects by describing the ongoing practice processes openly, case-centred and subject-centred."*[1] (Mayring 2002, p. 63)

In my case, the evaluation design was influenced by my own experience: after my participation in a dissection course my work practice had changed. After the course, I registered strong improvements regarding the precision of my palpation, my confidence in terms of an accurate understanding of anatomy, the clarity of my mental image of

untouchable structures and my knowledge of how to direct my palpation in order to reach the relevant structures.

After investigating the topic of questionnaires, I decided on a qualitative study using interviews. Questionnaires are characterised by a rigid scheme of questions; the direction an interview takes, however, is decided by the interviewee – even though the general direction is given. One advantage is that the interviewee can provide his or her opinion very subjectively; in the course of the interview, the greater context of the topic develops. The openness of the answers depends to a large extent on the relationship of trust between the interviewer and the interviewee.

Since the study is about newly gained experiences and also about feelings, closed questions did not seem to be an adequate instrument. It was important to give the interviewees the chance to talk freely about their experiences, which at the same time "*enables the interviewees to be more honest, reflective, accurate, and open than they would be answering a questionnaire or closed-ended survey questions.*"[1] (Mayring 2002, p. 69)

Qualitative research does not provide a great number of comparative figures. Rather, it focuses on a small number of interviewees that may give many different answers. The results can only show a small section of the topic, which, at a later stage, may be dealt with on a larger scale with questionnaires.

### 3.3. Data collection method – the problem-centred interview

As a data collection method, I chose to use the problem-centred interview. This term designates all open-ended, half-structured interviews. "*This can be an expert interview, where the interviewee is a specialist in a certain field, or an interview where the aim is to identify the views and opinions of the interviewee.*"[1] (Hopf/Weingarten 1979, p. 15)

The interview is characterised by open-ended questions, meaning that the interviewee can answer freely without having to choose from pre-defined answers. The interviewer identifies the research problem and prepares an interview outline, which is helpful in leading back to the research problem through the course of the interview. This outline consists of a number of topic-related questions with a certain order and serves to structure the interview. At the same

time it provides a certain standardisation that allows for the comparison of various interviews. (Mayring 2002)

## 3.4. Process of the problem-centred interview

### 3.4.1. Problem analysis

Working in a dissecting room is everything but ordinary. The room, the cadavers, the smell, the use of the scalpel and hands add up to create a very sensitive scenario. But the experiences that we gain by dissecting can only be made under these circumstances. When I returned to my practice and to my patients, I realised that many things had changed; it was these personal experiences following my work in the dissecting room – which I have mentioned in the Introduction chapter – that have motivated me to conduct these interviews: I wanted to hear how my colleagues felt about that. In order to gain a better overview, I also asked questions regarding the activity of dissecting itself. The following section lists the questions of the interview outline that I used during the interviews.

### 3.4.2. Interview outline

List of questions used for the interviews

A) Questions regarding the experiences in the dissection course

Why did you take part in a dissection course?
What were your experiences when dissecting?
Was it difficult to cut into the cadaver?
Did you have a crucial experience during the course?
In some way dissecting provides for an exceptional situation. How did you experience this situation without taking into consideration the researching and cutting?
Was there anything especially impressive?
I was interested to find out why somebody with a completed degree in osteopathy takes part in a dissection course. Just as interesting as the experiences related to the tissue were the conditions of working on the dead body and the feelings that come up while doing it.

B) Questions regarding the changes after dissecting

How did the course change your work practice? Can you give a concrete example?
Did the course change anything in your way of diagnosing? If yes, what?
Was there a change in your choice of technique?
Which field of treatment showed the greatest change? The structural, cranial or visceral field?
What did dissecting change about your ability to visualise structures?
Did you question the anatomy you have studied? What do you rely on now?
Did you start doubting explanatory models of osteopathy?
Did all this have a lasting impact on your work?
Did your view of the patient as a human being change in any way?
How did your self-image as an osteopath change?
Would you participate in a further dissection course in the future? / Why have you participated various times in a dissection course?
Do you think it would be good to include dissecting in the osteopathic training?
Additional question for the participant who is a medical doctor: how did you experience dissecting during your studies? How was it different from this course? Is this difference something typical of osteopathy?
The key question was aimed at finding out about the differences “before dissecting and after dissecting”. By participating in this course, did the colleagues find what they were looking for? If yes, in which areas of their professional practice is their newly gained insight helpful? And what about outside the medical field? Has something changed there, too?

### 3.4.3. Pilot phase

The circumstances for my first expert interview were favourable, as Professor Frank Willard was staying in Vienna for a lecture. I was able to cope with the technical problems that had arisen, and so I could start actually conducting the interviews.
In the following chapter I will introduce my interview partners and describe the place and circumstances of the interview.

The two experts act as representatives of the interconnection of the fields of anatomy and osteopathy: one of them is an anatomist who teaches students of osteopathy in dissecting; the other one is an osteopath who offers and holds dissection courses for osteopaths.

### 3.4.4. Conducting the interviews

1. Expert interviews

My two expert interviewees were Frank Willard, PhD, Professor for Anatomy at the College of Osteopathic Medicine in Biddeford, Maine, USA, and Fred Scheiterbauer, MSc DO, lecturer of dissection courses for osteopaths at the Institute of Anatomy of the University of Vienna.
After a lecture he was holding in the framework of the Master's course at the Vienna School of Osteopathy, Professor Willard took the time to answer my questions. The interview took place in the school. This was in May 2007 and it was my first interview. The language used during the interview was English.
At the beginning of June 2007 I interviewed Fred Scheiterbauer in his practice in Obertrum.

2. Interviews

Since an interview requires a relationship of trust between the interviewer and the interviewee, I decided to choose colleagues who I know well as interviewees.
I selected seven osteopaths with several years of practical experience; six of them are originally physiotherapists, one is also a medical doctor. In order to ensure a gender balance, four of my interviewees were male osteopaths and three were female osteopaths. All of them had participated in one or more dissection courses held by Todd Garcia. Todd is an American osteopath who is in charge of a number of dissection laboratories in the United States where students of different universities learn dissecting.
It was easy to establish contact, since I had participated in one of these courses in 2006 and had spent one week in a dissecting room together with 21 colleagues; one interviewee was a participant of a 2004 course. We had worked on different dissection tables, which helped in identifying the different approaches.

First contact was established by telephone: I first explained the topic of my Master's thesis and then asked them if they would be willing to be interviewed. They were all willing to share their experiences in an interview right away.

### 3.4.5. Recording

I explained that, with their consent, the interview would be recorded, their opinions and experiences would be used in this thesis but remain anonymous, and that they might be quoted directly – also, of course, anonymously.
I conducted all seven interviews between 16/06/2007 and 13/07/2007. Three of them were conducted in Vienna, two in Tyrol and two in Salzburg. Four of the interviews took place in a practice, two in the Osteopathic Centre for Children, and one in a hotel room.
The first interviews lasted about 20 minutes, the last three about 30 minutes. This difference in length was due to the development of my style of questioning. Since there was only one specific device available for the transcription, whose tape size had to be taken into account, the interviews had to be recorded with a dictation machine. Hence, the recording device had to be passed back and forth between me and the interviewee. This process was explained at the beginning of the interview. It also gave me time to think about my questions.
During the first interviews I focused strongly on the questions from the question outline; at a later stage, I was able to have more of a free conversation instead of a session of simple questions and answers. With the last three interview partners, I was more successful than with the first ones in getting them to give me very detailed answers. However, the assessment showed that I could use all of the interviews for my research.

## 3.5. Data preparation

### 3.5.1. Transcription

Writing down an interview word for word is called transcribing. A transcription is the basis for an elaborate interpretative evaluation. In my transcription technique I chose to convert the spoken language into standard written German; however, dialect expressions were also taken

into consideration when it helped to maintain the emotional content of the statements. I used transcription codes, the most common ones being:

| | |
|---|---|
| … | pause |
| Mhm | filler words |
| Yes | emphasised |
| (laughs) | description of a non-linguistic activity |

### 3.5.2. Development of descriptive systems

Following the transcription, this is the next step in material preparation.

*"By constructing descriptive systems, the material is organised according to general terms that form category systems. The categories are developed theory-based in relation to the concrete empirical material."*[1] (Mayring 2002, p. 100)

The collected data is organised according to different categories. These are chosen in such a way that the information from the interviews can be assigned clearly. The various category systems are listed in the Evaluation chapter.

## 3.6. Evaluation

### 3.6.1. Qualitative content analysis

The texts are edited according to theory-based category systems. The available material is divided into units and then analysed step by step.

This results in a sort of summary that includes the key contents.

*"It is not just about extracting and structuring what is on the audio tapes, but about profound, proactive and imaginative investigation."*[1] (Kaufmann 1999, p. 113)

Kaufmann views the researcher as somebody who wants to discover something new and who evaluates the material passionately. At a later stage, the organisation and elaboration is done without passion; the hypotheses are supposed to be set in motion through the collected data.

For illustration see the following **model of structuring qualitative content analysis**:

1. Designing the category system

2. Data analysis: Indexing data

3. Data analysis: Editing and retrieving data

4. Preparation of results
(Mayring 2002, p. 120)

1) The category systems

**The course**

Reason for attending the course

The first time

Crucial experience

Exceptional situation

Experiences during the course

**Changes in the professional practice after course participation**

General

Diagnosing

Choice of technique

Visualisation

Questioning anatomy theory

Lasting impact

View of the patient as a human being

Self-image as an osteopath

Future participation in dissection courses

Dissection courses as an integral part of osteopathic training

2) Indexing data

In the interview transcriptions I highlighted relevant text passages in different colours. Each category was assigned a different colour. Subsequently I analysed the text passages of the different categories.

3) Editing data

For each interview I compiled an evaluation sheet, trying to prepare a summary of the statements for each category. In a number of cases, that is, whenever I had the feeling that something of particular importance was said, I used direct quotations.

4) Preparation of results

In a next step I linked each of the evaluated interviews to my research question and found that the answers differed substantially from one another.

Eventually I compared the interviews to find out about similarities and differences.

# 4. Evaluation of the expert interviews

## 4.1. Evaluation of the expert interview with Prof. Frank Willard, PhD, Professor for Anatomy at the College of Osteopathic Medicine in Biddeford, Maine, USA

"Do you ski?", Professor Frank Willard asked during the expert interview on the significance of dissecting for osteopaths. Following my affirmative answer, he gave the following example: "*Practicing osteopathy without ever having dissected is like skiing down a very steep slope after reading about skiing technique."*[1] (Willard 2007, p. 2, lines 7-9)

This analogy is very clear. Professor Willard teaches anatomy and frequently holds lectures in Europe.

As I have already mentioned above, students of osteopathy in the US participate in a six-month dissection course together with medical students. And Frank Willard is convinced that it is absolutely necessary for osteopaths to have taken a course in dissection. He said that the physiology of the connections in the human body could only be fully understood by experiencing real anatomy.

According to him, based on the theory from the anatomy books everybody has his or her own mental images of anatomy, which are often very different from the anatomic reality.

*"They are obsessed with something which they have read about somewhere, a small ligament, a small connection. If they had ever dissected before, this would seem trivial to them, but they stick to this mental image and make something out of it that does not exist as such."*[1] (Willard 2007, p. 1, lines 8-10)

Later on treatment is based on these mental images, which are often inaccurate. Professor Willard thinks that a structure can only be fully understood if you actually touch it with your own hands.

Thanks to his many years of experience with students, Frank Willard recognises if a student has dissected before just by their way of asking a question! This is a very clear indicator of how strongly dissecting influences the future osteopath's sense of anatomy.

Professor Willard also addressed the often confusing usage of anatomical terms. As an example he mentioned the word LIGAMENT. In terms of the musculoskeletal system, the ligament is a strong structure that connects two bones. However, the same term is also used

for structures in the abdominal region. Only the practice of dissection reveals the difference between the two: the ligament in the abdominal region does not show any commonness at all with the ligament of the extremities. Somebody who has not personally reached into the abdomen to dissect free the ligament would think that this ligament resembles the ligaments of the musculoskeletal system. *"There is a difference between reading about something and really touching it, knowing how it really feels!"*[1] (Willard 2007, p. 1, lines 21-22)

In an answer to my question if dissecting a fresh cadaver is closer to reality, he stated that it is often more difficult to identify individual structures in fresh cadavers. Now I can confirm this, since I have had the unique opportunity to work on a fresh specimen after having worked numerous times on preserved specimens. Fixation causes a clearer definition of the structures in the body. Nerves and vessels, for instance, can be exposed much easier. Furthermore, it is much more dangerous to work on a fresh cadaver. If one of the students has a wound, he or she could even suffer a fatal infection.

According to Professor Willard, some experiences regarding the tissue can only be gained by dissecting. In his view, it is only possible to get an appropriate idea of the structures by touching them. Only then one can feel what the tissue is made of and how it is structured – and thus get a complete mental image. A picture in an anatomy atlas does not show, e.g., what a fascia is made of or how it feels. Without the experience of dissecting, the student will never fully understand this.

This takes us back to the analogy with skiing that was mentioned above. Just like in skiing, where the feeling for balance and coordination derives only from doing it, the student learns to understand the three-dimensionality and functionality of the body only by dissecting: *"Moving organs, how they look, where they are situated exactly – these are things that are hard to recognise from the illustration in a book…"*[1] (Willard 2007, p. 2, lines 10-11)

And just like skiing can be learned, one can also learn to understand the functionality and three-dimensionality of the body.

The courses in the United States focus on one section of a whole body; they start with the arms, legs and back, then continue with the head, thorax and abdominal region. In some courses the students also dissect a brain and its various parts.

My question regarding whether dissecting is important for the competence of an osteopath received an elaborate answer: in Professor Willard's view, one can learn osteopathic manual techniques without having dissected, but there is a problem when it comes to diagnosing.

How do you diagnose what you do not know exactly? Somebody who has not dissected before does not have the necessary precise understanding of the structure and consistency of tissues in the body. *"That means that there are things that they are not sufficiently familiar with to diagnose them accurately."*[1] (Willard 2007, p. 2, lines 23-24)

In his view it is essential for an osteopath to understand disease. But how does a disease feel? The osteopath should have the ability to recognise and understand disease. Only then will he or she be able to find health. And this is the actual aim of our work.

*"Still spoke about how the body can find health, not disease. Osteopaths should find health. In order to find health, you have to be able to find disease and to help the body to return to a state of health."*[1] (Willard 2007, p. 2, lines 30-32)

If one cannot identify disease, one cannot find the way to health either. This lack in knowledge turns osteopaths into technicians. According to Professor Willard, osteopaths in Europe are very good technicians, but their diagnostic abilities are not quite as good – a fact that he traces back to a lack of dissecting experience.

## 4.2. Evaluation of the expert interview with Fred Scheiterbauer, MSc D.O., lecturer of dissection courses for osteopaths in Vienna

With regard to my first question whether dissecting is important for osteopaths, Mr Scheiterbauer states that the experience of dissecting is important for all people who work in the field of body therapy. He believes that it is not possible to work on a body without having touched it before, without having seen and understood its interconnections on a specimen.

A.T. Still, the founder of osteopathy, had already considered dissecting to be a vital element in practicing osteopathy. Mr Scheiterbauer's statement "*Those who are familiar with anatomy have everything that is needed to be a good osteopath"*[1] shows the importance of dissection. (Scheiterbauer 2007, p. 1, lines 11-12)

It is about grasping – in the true sense of the word – what is behind the picture that we can see in the anatomy book. Anatomy books can only provide abstract images; only touching something gives us an impression of how it really is. In Mr Scheiterbauer's view it is furthermore of great importance to compare various specimens in order to get a clear mental image.

When asked what the learning objectives of dissecting are, Mr Scheiterbauer said that anatomy in itself is the objective. For teaching purposes, we always have to use classifications in the field of anatomy, e.g. the muscular system, the nervous system. But the students never get to see how these systems are connected.

*"Whenever I am working on a specimen, I can see how the muscles and vessels are interwoven. Then I can also visualise embryology, (...). You can see many more connections, and the body's structure becomes much more logical. This is an important learning objective: to understand anatomy as it really is, and not how it is described in the book."*[1] (Scheiterbauer 2007, p. 1, lines 28-33)

He described the human being as a unit of functional systems, and we can see only on the specimen how interwoven these systems are.

Fred Scheiterbauer believes that dissecting knows various stages of development that influence the focus of the work on the specimen. At the beginning, extensive structures are appropriate; for working with the musculature no tools are needed, and in this case it is about actually touching the structure. Finding the adequate way to reach a certain structure is also of importance. According to Mr Scheiterbauer, dissecting is like finally meeting somebody in person after having heard about them, gotten a letter from them and had an image in your mind of how they would look.

Asked about the limitations of dissecting he replies that a formalin-preserved cadaver can only be a model of a human being. A fresh specimen can also convey shapes but has only little to do with a living human being.

*"For me, one limitation is that the dignity of the human needs to be respected. Dissecting should be done in a loving way (...). It is about moral limits and emotional limits, which also have to be respected."*[1] (Scheiterbauer 2007, p. 2, lines 20-23)

When I addressed Professor Willard's view that the difference is mainly visible in the field of diagnostics, he agreed, saying that in his work as an osteopath he had different images in his mind and that he felt more with his fingers than before.

Mr Scheiterbauer holds the view that, if the aim is to rely on the basic principles of osteopathy, dissecting should be part of the training.

In answer to the question regarding an osteopath's gain in competence, he says that improved diagnosing does increase a therapist's competence. An improved understanding of the coherences can also improve the efficiency of therapy.

About his motivation to hold dissection courses Mr Scheiterbauer said: *"My motivation to continue holding dissection courses is to make students really understand how human beings are structured. Otherwise anatomy is as if explaining to the blind what colours look like. (...) [O]nly at the moment when I really see it, do it, touch it, a whole new world opens up. That's why it is so important to me!"*[1] (Scheiterbauer 2007, p. 3, lines 11-15)

### 4.3. Summary

For the experts, the great importance of dissecting is clear. The paths to choose in order to reach the structures, the three-dimensionality, the interconnections between the different systems, the touching of the structures – all of these experiences support the importance of the dissecting practice.

An exact understanding of the structure and consistency of the tissues in the body is essential for an accurate diagnosis. It is imperative that the osteopath understand pathological changes in the tissue in order to be able to remove them during the treatment. Manual techniques can be learned, a precise diagnosis, however, can only be made through first-hand experiences with the tissue. And it is exactly this precision that is crucial for the therapist's competence.

Currently, the WSO offers Mr Scheiterbauer's dissection courses to students and alumni; many osteopaths use this opportunity and participate in his courses.

# 5. Evaluation of the interviews

## 5.1. Interview A

**The course**

Reason for attending the course

As a reason for her participation in the dissection course, Interviewee A, female, mentions her interest in the inside of the human body; for once, she wanted to see the connections, such as the fascial system, in the human body and not just in a book.

The first time

For her, cutting was difficult at first; it was the thought that this used to be a human being that made it so difficult. It was helpful for her that the man who was lying on the table had been given a name. *"(...) I also thanked him for donating his body for this purpose."*[1] (p. 1, line 14)

Crucial experience

The thickness and firmness of the uppermost layer was surprising to her; it took her long to get through to the muscles.

Exceptional situation

For her it was not an exceptional situation, she did not have any psychological concerns. Her fascination for anatomy was so dominant that she could distance herself easily from 'the other aspect'.

Experiences during the course

A made the experience that the body was completely connected by the fascial system, which was much more interwoven than she thought; the individual structures blend into one another. This had always been depicted differently in the anatomy books.

**Changes in the professional practice after course participation**

General

After participating in the course, A felt that her visceral approach had improved.

Diagnosing

Her diagnosing has become more precise as she is much more aware of the positions and the connections of the organs in relation to each other.

Choice of technique

Immediately after her participation in the course she started working more on a visceral level. "*(…) that, in my fingers, I had the feelings of holding the organ itself in my hand and that I was closer to the organ itself."*[1] (p. 2, lines 24-25)

As regards structural techniques, she realised that she could not treat one muscle in isolation. There was no change regarding her work in the cranial field.

Visualisation

For A, the mental image of where structures lie has changed strongly after seeing e.g. how deep the ventricular system lies in reality or how the diaphragm is integrated in the abdomen. Due to the experiences in the dissection course, she is now also able to better visualise chains of lesions.

Questioning anatomy theory

Unlike A learned repeatedly from anatomy theory, there are no clear-cut borders in the human body.

Lasting impact

A reports that she has forgotten a lot, but she also thinks that some things have become natural for her which she has integrated in her work.

View of the patient as a human being

A thinks that, right after the course, she had had a clearer image of the human being; in the meantime, however, she has forgotten about that or it has become natural for her.

Self-image as an osteopath

Due to an increased understanding of anatomy she became more secure and thus more confident in her work.

Future participation in dissection courses

A would definitely like to participate in a further course, since – after getting a general impression – she would like to deepen her knowledge of specific areas.

*"I have a pretty good idea of what it looks like as a whole, and now I would like to go into more detail."*[1] (p. 5, lines 9-11)

Dissection courses as an integral part of osteopathic training

She thinks that this would be a great idea; it seems important to her that the students themselves dissect, as that is key to an increase in knowledge. Furthermore, dissecting makes the students go back to studying their anatomy books.

## 5.2. Interview B

**The course**

Reason for attending the course

Interviewee B is male; his reason for participation in the course was his great wish to dissect instead of just looking at specimens. He had attempted it a number of times before, but it never worked out. In the books everything appeared one- or two-dimensionally; he wanted to see the body three-dimensionally and find out how everything is connected.

*"I wanted to see the human being as a whole and discover the body step by step and layer by layer."*[1] (p. 1, lines 16-17)

The first time

B did not have any problems cutting, since the course instructor had prepared them well.

Crucial experience

He experienced that at the beginning his colleagues were very cautious; towards the end, however, they seemed intoxicated, almost as if obsessed. Also crucial for him was the leave-taking, which he felt was very touching and personal. As regards anatomy, he had always thought that the structure of a ligament was more like a shoe lace that runs from A to B. In the course however, he realised that these structures are also flat, and that all the structures of the body are interwoven and connected.

Exceptional situation

B felt that the course was an exceptional situation; throughout the week, he was very sensitive towards stimuli from the outside world. *"Well, I was totally captivated and fascinated all day (...) I felt like I was from another world, from another planet (...)."*[1] (p. 2, lines 21-24)

He mentions this regarding the way in which he was introduced to anatomy in that week, the cautiousness and attentiveness in dealing with the cadavers, and also the group dynamics, which increased the awareness of all his senses.

Experiences during the course

B was very impressed when he found out how far you have to go in order to reach the facet joints in the lumbar spine. He was fascinated by the number of layers and by how interlinked these layers were. Moreover, he was surprised that these layers were located so deep inside in the body of an old and certainly not very muscular woman. This experience differed from

what he had figured, namely that it would be enough to cut through a few muscles to reach the joints.

**Changes in the professional practice after course participation**

General

Since his dissecting experience on the lumbar spine he doubts techniques that claim to affect the region in-depth. Also, the course was an incentive for him to go back to dealing more with anatomy.

Diagnosing

B had always been very careful when it came to diagnosing; the dissecting experience encouraged him to speak of possibilities, since there are so many different variations.

Choice of technique

Since he participated in the course, B increasingly tries again to integrate all fields of osteopathic treatment and to work more e.g. with visceral treatments.

When treating organs, he feels a bit more insecure now, since he has seen how deep organs may lie inside the body, and he doubts that our hands can even feel tissue tensions in such depth.

He feels confirmed in his structural treatments of the musculoskeletal system.

His cranial work was not influenced; he did not pay much attention to this form of therapy during the course.

Visualisation

His three-dimensional visualisation has changed; on the one hand he feels more insecure when it comes to the internal organs, on the other hand he feels stronger regarding other areas.

Questioning anatomy theory

As mentioned in the category “Crucial experiences”, B realised that his mental image of certain structures had not corresponded to reality.

Lasting impact

The course had a lasting impact on B, who made advances in his practical work, also due to his improvement of visualisation.

View of the patient as a human being

The miracle of the human being had always fascinated him, and the course had strengthened this perception.

Self-image as an osteopath

Dissecting supported his assumption that there are still gaps in his knowledge, which supported him in his self-critical image as an osteopath and in his stance that our profession calls for incessant learning.

Future participation in dissection courses

He definitely wants to participate in another dissection course, since the training did not enable him to study anatomy as accurately as he would have wished.

Dissection courses as an integral part of osteopathic training

B would prefer that osteopaths study anatomy together with the medical students, since anatomy is the basis for our profession. Regarding the point of time within the training, he would prefer to do the dissection course towards the end.

### 5.3. Interview C

**The course**

Reason for attending the course

Interviewee C is male and originally a medical doctor. He was curious to see the difference between an osteopathic and an orthodox medicine dissection course.

The first time

It was not the first dissecting experience for him and he did not have any problems with it.

Crucial experience

*"What I (...) liked was the opportunity to investigate even the smallest differences in tissues, to experience this complexity."* (p. 2, lines 11-13)

Exceptional situation

As a doctor he is always confronted with death; he has thought about it sufficiently, and thus he did not experience dissecting as an exceptional situation.

Experiences during the course

Compared to the orthodox medicine dissection course he found this course very humane.

*"It was impressive that every day there was room for every kind of questions and dialogues."*[1] (p. 2, lines 2-3)

He was touched by the flowers in the dissecting room and the way the group took leave of the remains at the end of the course. He also felt ambivalent: on the one hand he thought it was

impressive to use dissection techniques to create structures that you can find in the book; on the other hand, in his view, these structures do not have much in common with the real osteopathic practice.

**Changes in the professional practice after course participation**

General

Regarding structural treatments, he can now visualise more precisely what is located where and what he is feeling with his hands. Apart from structural treatments he does not relate to the course anymore.

Diagnosing

It has become easier for him to diagnose when working on a structural level.

Choice of technique

*"The biodynamics courses taught by Tom Shaver have had greater influence on my choice of technique than the anatomy course."*[1] (p. 4, lines 1-2)

Visualisation

He realised that when the visualisation is wrong and the intuition is right, the technique works. (He said this laughing.)

Questioning anatomy theory

No, he did not question any of the anatomy theory he had known. However, he was surprised, e.g., by the diaphragm when he had it in front of him three-dimensionally and by how it felt to touch it – although he had already seen it 30 years ago.

Lasting impact

C sees that his results are improving, but since he does not experience the different influences consciously, he cannot attribute any of them to the dissection course.

View of the patient as a human being

His view of the patient as a human being has not changed.

Self-image as an osteopath

The dissection course did not have anything to do with his self-image.

Future participation in dissection courses

Yes, he would like to dissect more frequently, because in his view, anatomy is an essential part of an osteopath's work.

Dissection courses as an integral part of osteopathic training

The human body is the basis of an osteopath's work, and the mental image of its three-dimensionality is an essential part of it; hence, in his view, a dissection course as part of the training would make sense.

Differences between the dissection courses during the medical studies and this latest course

The objectives of the course in the framework of the medical studies were very narrowly defined; it was more like a game with rules than working with the body.

Back then they had tried to deal with the situation of being faced with cadavers by making fun and fooling around.

The osteopathic dissection course, on the other hand, provided room to follow one's own interests and to seriously engage in the work. C enjoyed working with people who had a real interest in the course, unlike during his university studies. Furthermore he thinks that this is a typical aspect of osteopathy. In osteopathy, the practitioners are encouraged to stay curious; in his view, this is not the case in orthodox medicine.

## 5.4. Interview D

**The course**

Reason for attending the course

Interviewee D is female; she had previously taken part in a dissection course, which she remembered as a positive experience. It was conveyed to her that *"without taking part in a dissection course you should not practice osteopathy."*[1] (p. 1, lines 6-7)

The first time

It cost her quite an effort to cut; she had trouble to really engage in the course, also because of the smell.

Crucial experience

To her it was fascinating how the course instructor created the atmosphere, how natural it was to work on the cadavers; for instance, a morning meditation was held among the cadavers.

Regarding the dissecting, her interest focused on the pelvic region with the female genital organs; she found it fascinating to see the interconnections, e.g. how the labia majora are interconnected with the pelvic floor.

Exceptional situation

D was emotionally exhausted; to counterbalance, she went cycling for 20 km every day.

Experiences during the course

She was fascinated by how differently work was done at the three different tables. She herself was at a table with a very cautious team. *"I had a strong feeling that I need someone to tell me what to do (...)."*[1] (p. 3, lines 8-9) Quite to the contrary, the colleagues on the neighbouring table, e.g., detached the head, which to her seemed more like arbitrary cutting. She realised that the body knows many variations and that she should give increased trust to what her hands feel.

**Changes in the professional practice after course participation**

General

When she is working, D does not have the images of the dissection course before her inner eye; she does have a clear mental image, however, of the various individual positions and courses of structures.

Diagnosing

She cannot say whether the ability of her hands, and thus the quality of her diagnosis, has changed following the course.

Choice of technique

D works almost exclusively on a biodynamic level. She believes that her way of working has not changed. *"(...) I can follow more clearly where the self-healing forces of the body are at work, and can then write it down, can diagnose, where this corrective work happens."*[1] (p. 4, lines 22-23)

Visualisation

The dissection course did not change her power to visualise; before the course she had already been able to visualise things clearly.

Questioning anatomy theory

On the one hand, she did question anatomy theory, since they spent an entire morning looking for an anatomic structure which they had learned about (ligament of Treitz) and which was not where they had assumed it would be.

On the other hand dissecting confirmed the models which show that all structures are very strongly interwoven with each other.

Lasting impact

In terms of diagnosing and treatment the course did not provide any crucial insights.

View of the patient as a human being

The course supported and confirmed her very respectful treatment of the patients.

Self-image as an osteopath

For a long time, she suffered a low self-esteem regarding her osteopathic abilities; but this had had already improved a few years back; the dissection course did not have an influence in that respect.

Future participation in dissection courses

This was already her second dissection course; at the moment she does not want to participate in a further course; however, she does not exclude it as an option for a later time. In her view it makes sense to prepare for dissection courses in terms of the anatomy.

Dissection courses as an integral part of osteopathic training

According to D it would be good, by all means, to offer a dissection course already during the osteopathic training. Since one week of dissecting is very exhausting, her wish would be to break the course down to into a few modules dealing with smaller areas of the body that are offered throughout the training.

### 5.5. Interview E

**The course**

Reason for attending the course

The interviewee is male; he participated in the course in order to improve his knowledge of anatomy and to better understand how the interconnections work within the body.

The first time

He had to force himself to do the first cut because what was lying before him was a whole human body.

Crucial experience

He did not have a crucial experience, but the less the body was recognisable as a whole, the more he realised that this was a human being who had lived, who had had a story, and this story finally led him here.

Exceptional situation

E had the impression that the group grew together in the course of the week. His feeling was that there was a sense of profoundness, that everyone felt touched because they were able to work on somebody who was willing to donate his/her body for this purpose.

Experiences during the course

He was most impressed by the continuity of the tissue, by the fact that the whole body is connected through connective tissue. For E it was difficult to dissect free entire layers, he had underestimated the way it took to get there, and some of the structures lay much deeper than he would have thought from what he had seen in the books.

**Changes in the professional practice after course participation**

General

The dissecting experience confirmed some of the studied models and did not confirm others; hence, for him work became easier in the first case and harder in the latter.

Diagnosing

The course did not change anything in his way of diagnosing.

Choice of technique

The decision whether to choose structural, visceral or cranial osteopathy has not changed for E, since this depends on the patient history and examination.

What has changed, however, is the technique he uses, because he doubts whether some of the techniques reach the region they are supposed to. Due to the dissection course he also realised that in some cases he needs to put a stronger focus on the use of projection in order to reach a certain structure.

Visualisation

The dissection course had enhanced his knowledge of anatomy, which is why now it is easier for him to visualise structures and their location, even when they lie rather deep inside the body.

Questioning anatomy theory

In class he had heard of a clearly distinguished single structure that is supposed to connect the pericardium with the sternum – when dissecting, they could not find anything resembling that description. The models of dissolving old scars with certain techniques or, e.g., the palpability of the left triangular ligament could not be confirmed in the course.

Lasting impact

For E, the course had a very lasting impact: he reflects on certain techniques, consults his anatomy books more often and discusses anatomy more frequently with his colleagues than before the dissection course.

View of the patient as a human being

Since anatomy makes up only a part of the human being, nothing has changed in his view of his patients.

Self-image as an osteopath

His increased knowledge due to the dissection course certainly raised his self-confidence. However, this does not show so much in his work but more in the discussions with colleagues and doctors and in the talks he gives.

Future participation in dissection courses

Since there is still much left to learn and to understand, he has already registered for another course.

Dissection courses as an integral part of osteopathic training

E is under the impression that more and more osteopaths leave the path characterised by structure and function and that anatomy and physiology do not play such an important part anymore either.

In his view, dissection should definitely be part of the osteopathic training, since osteopathic work, as defined by the WSO, is not really possible without this knowledge.

## 5.6. Interview F

**The course**

Reason for attending the course

Interviewee F is male. He had already participated in two dissection courses before this one. His reason for participating was that he wanted to get a three-dimensional mental image of the various parts of the human body and to answer newly found questions.

The first time

Due to the previous course participation, cutting was not a problem for him.

Crucial experience

The instructor's way of answering questions established a direct connection between the lifeless body and the living patients. His crucial experience took place during the week after the course, when he suddenly had a moment of revelation – his way of palpating had changed.

Exceptional situation

During the course he had dealt with living and dying and with how close the living and the lifeless objects are. As a result of working on a dead person, in this week the topic of dying was very present for him.

Experiences during the course

During this week, F worked a lot in the area of the feet, dissected free the tendons around the ankle joint and made a film about the movements. He could perfectly see its form and functions; also, he was impressed by the glistening, smooth feel of the synovial tendon sheaths. Regarding the internal organs he discovered that the abdominal region was much more enclosed, much more compact, than he had imagined. He also examined how far the hand can reach between liver and diaphragm until it meets resistance.

**Changes in the professional practice after course participation**

General

The palpating, the feeling of tissue has changed, since he had thoroughly examined the connective tissue during the course. *"Quite a few things have changed in the models that I used before; they have developed."*[1] (p. 5, lines 22-24)

The models that developed focus more on fluids and decongestion of tissues than on trigger points.

Diagnosing

F's diagnosing has not changed due to the dissection course.

Choice of technique

Due to the changed mental images, the quality of the various techniques has changed, but not the choice of one technique over another.

This is most obvious in visceral osteopathy. As an example, F mentions that he palpates much further under the diaphragm than before.

Now he searches more deeply to see if there is something there. Before he thought that he had reached the end and did not even try to go further.

Regarding structural osteopathy, especially his work on the connective tissue changed. However, as far as cranial treatment was concerned nothing changed for him.

Visualisation

F has developed a better understanding of the interrelation between the different areas, of where a structure could really be, and of how he can reach it during treatment. For him it had always been easier to study anatomy when he could see the anatomy illustration from all sides. *"(...) here, this is possible in its maximum form!"*[1] (p. 7, line 23) Touching, seeing, and removing parts to see what is behind them provides for a kind of understanding that is stored in the brain much better than the mere looking at an illustration in a book.

Questioning anatomy theory

According to F, during that week it was less about questioning anatomy theory, and more about the further development of anatomy models. In his view each model is important in its own right and is powerful in a certain field; however, it is just a model.

Lasting impact

F's experiences during the dissection course have a strong lasting impact: his memory of structures has become better, he can visualise their location better, and he is much more accurate in treating the problem area.

He sees it as an ongoing process and not as something that takes place in one week and then it is over. Something develops in the time after; and from time to time this development needs new 'input'.

View of the patient as a human being

F questions what kind of differences there are in the frequencies of living and dead tissue. This has changed his view of the human being as a whole.

Self-image as an osteopath

Through the intense study of a part of his profession, his self-image has improved. *"Self-image in a sense that now I have the feeling of having learned something of importance, something I need, something that helps me; and with that I can be a bit more professional than before."*[1] (p. 9, lines 20-23)

Future participation in dissection courses

F had already taken part in a few courses and he will always be going back to dissecting, because there is an abundance of information, and not everything can be learned in one week. There are always new questions that come up; also there are so many variations that one can

only recognise in comparison, when doing it repeatedly. The impressions from the dissection course can only be processed in the time following the course; after some time has passed he feels the desire for more 'input'.

Dissection courses as an integral part of osteopathic training

In F's view there should be a dissection course as part of the osteopathic training, since, according to him, it is a part of it: *"I think that work in the dissecting room is very important for a certain groundedness of osteopathy. In a profession where much work is done on structures that are not tangible, that are quite far away from what you are holding in your hand, that are sometimes even on an energetic level, there might be a certain danger to lose track of the basis, the structure as such. The thorough study of the structure provides such a basis and supports the further development of what else there is next to the structure."*[1] (p. 8, lines 13-24)

## 5.7. Interview G

**The course**

Reason for attending the course

Interviewee G is female. She completed the osteopathic training at the osteopathic school on Chiemsee lake. The training there included the attendance of so-called 'anatomy days' in Innsbruck, where she could see and touch anatomical specimens. But those were only parts, not a whole body. *"...because the anatomy books never provide you with the whole picture of a human body, (...) you never see how one tissue blends with another and how they are really connected, how they are interwoven."*[1] (p. 1, lines 3-7) She had always attached great importance to anatomy and wanted to know everything in detail and realised that even the books are not consistent with each other. She wanted to see for herself what kinds of variations there are, how the individual parts are linked within the body, and how she can get to those structures.

The first time

*"It was pretty difficult, because for the first time you really realise that this used to be a human being..."* (p. 2, line 11)

She had difficulties cutting in the beginning, because she was now confronted with a whole human being, as opposed to the specimens of individual body parts. It was a great effort for

her to cut with the scalpel, especially until the skin was gone. Finally she was able to focus on her medical work, but in the beginning she needed help from the assistant.

Crucial experience

Up until the course, G attached only minor importance to connective tissue; important to her were the vertebrae, organs, muscles and the primary respiratory mechanism. Dissecting made her realise that in reality all of the connective tissue forms a unity, that the fibres go from one structure to the next, throughout the whole body. She was fascinated by this as well as by the way of going through the individual layers.

Exceptional situation

*"It is an exceptional situation... that you hurt a human being even when they have already died, it is still a human being and I feel I'm hurting them. I take away their dignity by taking them apart like that."*[1] (p. 4, lines 15-18)

For her, the situation was also exceptional physically, due to the heat, the stuffy air and especially due to the smell. Even after the course she still had the smell of formalin in her nose and could hardly eat because her hands smelled so strongly of it. After the course she went walking for hours in order to collect other experiences, she touched all kinds of things with her fingertips. She was emotionally tense and noticed that one of the colleagues on the table next to hers – where in her view they did not work as carefully – dropped out and did not want to cut anymore for the rest of the week.

Experiences during the course

Since on her table work was done with much respect and care she felt better with time. She was very impressed by the community that was formed by the colleagues on her table and that it is possible to work with a scalpel on so little space. They all shared their experiences; when they found something special, they were all allowed to look and investigate where they wanted. Working her way into the individual layers gave her a feeling for different structures that she had never seen like that in a book.

## Changes in the professional practice after course participation

General

Now, G attaches much greater value to the connective tissue and the interrelations. She is much more accurate when it comes to identifying what else could be influenced by a given local situation. Since G was able to try on the dura mater if a traction continues downward,

she has much more feeling for this structure. Due to experiences like these she further internalised her holistic thinking; she now has a real image before her inner eye.

Diagnosing

The way she looks at things and feels them has changed and has become much more holistic. She used to do her mechanical tests, now she relies more on her feeling of where it takes her, across all the connections that she has comprehended during the course. *"I feel that I can be much more differentiated with my hands and go in layer by layer, only because I have just learned that there are so many layers (...)."*[1] (p. 7, lines 9-11)

Choice of technique

She combined and mixed all the techniques that she has learned about in her own way, since she feels more and is better at recognising the connections. Due to her experiences with connective tissue much has changed regarding structural treatment; she now uses structural techniques for the fascia more often. In her visceral work she relies more on her hands than on what it says in the anatomy book. She uses less purely visceral techniques since she can achieve a lot through the attachment structures. Also, she integrates more of the dural system in her cranial work.

Visualisation

She had a very impressive experience on the spine when they tried to dissect free a transverse process. As this lies much deeper than she had thought, she hesitates to say she can feel it when working on a patient ever since. Actually she thought that her mental image of the organ system would change more, but it was more regarding the structural field that her power of visualisation improved. *"...wow, that is wrapped up so strongly, I wonder if I can really change something as an osteopath ... ."*[1] (p. 10, lines 24-25)

Questioning anatomy theory

G did not question her models, but experienced that the illustrations in the books and her mental images look different from reality. One nerve does not only split into two big nerves, but also many small nerves emerge from the main branch of a nerve; and this stabilises the nerve.

Lasting impact

Her experiences are still with her, she still has accurate images before her inner eye, although the course took place over a year ago.

View of the patient as a human being

G is more aware of the individual body with all its possible varieties. Now she reflects more on the connection between the body and the psyche.

Self-image as an osteopath

She has become more secure in defending her professional view since she studied anatomy intensively and her view is not just taken from a book.

Future participation in dissection courses

Currently she is not planning to participate in a further course, as it was a psychological burden; also, she feels that she has gained enough experience.

Dissection courses as an integral part of osteopathic training

G also had good experiences seeing and touching specimens without cutting. Hence in her opinion it would be good to be able to see and touch more specimens on one topic. The cutting itself is not essential.

# 6. Commonalities and differences between the interviews

In a next step, each category will be analysed as regards the commonalities and differences between the individual interviews.

## 6.1. The course

### 6.1.1. Reason for attending the course

When asked for the reason why they had taken part in a dissection course, four of the interviewees answered that they wanted to gain a better understanding of the connections within the human body and to see the body as a whole. Four interviewees said that they wanted to see the body in its three dimensions in addition to the illustrations in the anatomy books.

One participant wanted to experience the difference between the dissection course at the beginning of his medical studies and the one he attended now as an osteopath. One osteopath was even told that she could not practice osteopathy without having dissected.

These answers give the impression that the interest in the human body, which is studied by means of dissection, goes along with an ambitious deepening of the existing knowledge. The fact that the participation in the course was voluntary gives a special status to its participants; having dissected entails a benefit to the ego. The participants put themselves into a situation that is exhausting, sometimes experienced as disgusting, and this makes them feel somewhat ‘heroic’.

### 6.1.2. The first time

For four participants cutting was difficult at first. They had to overcome their reluctance as they were confronted with a whole body and they were very aware of the fact that this had been a human being before.
For two other participants it was not their first dissecting experience, and they did not have any problems with the situation. For one colleague, the introduction given by the course instructor was very helpful.

### 6.1.3. Crucial experience

The answers to this question were very diverse. The interviewees named either crucial anatomical experiences or they tried to verbalise different feelings. Regarding anatomy, they described the firmness of structures, the consistency of ligaments, the multiple layers of tissues, the interconnections in the pelvic region, the unity of the connective tissue and the path to follow to get through the different tissue layers.
The feelings described concerned the framework of the course, the morning meditation and the leave-taking. Thoughts were mentioned that came up regarding the human being lying on the dissection table and his or her former life, and one participant reported having observed a state of ‘intoxication’ in his colleagues while they were dissecting. One participant had his crucial experience in the week after the course while working in his practice: suddenly he had a moment of revelation and started to palpate differently.

### 6.1.4. Exceptional situation

There was a wide consent in answering this question, since five participants experienced the course as an exceptional situation, both emotionally and physically. The interviewees mentioned high sensitivity, emotional exhaustion, and there was a sense of profoundness. They also talked about the feeling of taking away the dignity of a human being and about the heat and the smell of formalin, which left a lasting impression. The various stimuli for the hands were experienced very intensely. One colleague reflected a lot on the topic of living and dying during the week of the course.

For two of the interviewees the course did not represent an exceptional situation, since one of them is a medical doctor and confronted with death frequently and the other one was so fascinated by the human anatomy that everything else was secondary to her.

#### 6.1.5. Experiences during the course

Three colleagues mentioned having experienced the human body as a strongly interconnected entirety consisting of individual interrelated layers. For some of the interviewees, four of them to be exact, the way it takes to get to a certain structure was experienced as much longer than expected. One participant studied the anatomical structures of the foot intensely and was impressed by their form and function. The colleague who is a medical doctor found the osteopathic dissection course much more humane compared to the one he attended during his medical studies. He was fascinated by the way in which certain preparation techniques could expose certain structures. The description of the various approaches at the different dissection tables ranged from ‘cautious’ to ‘arbitrary cutting’. One colleague mentioned the community feeling and the cautiousness at her table; the sharing of experience was something very positive for her.

### 6.2. Changes in the professional practice after course participation

#### 6.2.1. General

The answers to the question about how the practice had changed after the dissection course were very different. Two colleagues mentioned having a better idea and more precise mental images of structures and interrelations. One had the feeling that her practice in the visceral area had improved after the course, whereas another interviewee tends to doubt certain structural techniques ever since. Models he had worked with before started to change. Some models were confirmed, which facilitated his work practice, and others had to be rejected, which made it more difficult.

One colleague noticed that he advanced in his palpatory skills; a second one also talked about an improved sensitivity, in her case especially in respect to the dura.

Some mentioned an improvement in thinking holistically, that is, looking closely at how and where a local problem can possibly impact other structures.

### 6.2.2. Diagnosing

The answers given were characterised by adjectives like more precise, easier, but also more cautious. Seeing the position and connections of organs and realising the great variability of anatomy helped to reach this change in diagnosing. Two colleagues reported that nothing had changed in their way of diagnosing. One interviewee was not sure if her manual skills, and therefore her diagnosing, had improved.

### 6.2.3. Choice of technique

In this category there were always two participants giving similar answers. Two reported that they had broadened their panoply of techniques to all fields of osteopathy, which means that they work more in the visceral area now. They felt more secure about their structural treatment, since they found themselves confirmed in their practice by the clearer understanding of anatomical interrelations. For these two as well as for a third interviewee, nothing has changed in their cranial approach.

Two other colleagues work almost exclusively with the biodynamic craniosacral therapy; the course did not influence their choice of technique.

For two participants it was not the choice of technique that had changed, but the technique itself. The quality of the individual techniques improved; these participants started to question more often if their techniques really reached the region they were supposed to.

Two participants reported that they worked more with the connective tissue now.

One participant described that she was more confident now when it came to combining different techniques in her own way, since she felt more and recognised relevant coherences better.

One colleague mentioned a better integration of the dural system in her osteopathic practice.

### 6.2.4. Visualisation

In this category, five colleagues chose a similar answer: they talked about a change of their visualisation. Seeing and touching the human anatomy directly improved their visual mental image of the form and position of structures considerably. The way to get to certain structures seems clearer now, and the understanding of the integral functioning seems better.
One colleague feels somewhat insecure now regarding visceral treatment, but more confident in the other fields.
One participant had already had a good idea of the position and the aspect of structures, so for her the course brought no change.
Another one realised that when the visualisation is wrong and the intuition is right, the technique works anyway.

### 6.2.5. Questioning anatomy theory

Four of the interviewees affirmed that they questioned anatomy theory. That was due to the discrepancy between the mental image of certain structures and the reality seen on the human body. Several structures were only found partly or even not at all the way it had been taught. Models concerning the palpability of certain ligaments in the abdominal region could not be confirmed by dissection either. Two colleagues were surprised by the position of the diaphragm; nevertheless they did not question anatomy. One participant spoke more of a development of models than of questioning the theory.

### 6.2.6. Lasting impact

When asked about the durability of the impact of the dissection course, the participants, again, gave very differing answers, ranging from a very strong lasting impact to no lasting impact at all. One colleague did not think that the course had dramatically changed either her diagnosing or her way of treatment. Another one stated having forgotten a lot but having integrated certain experiences naturally in her work practice. One interviewee spoke of better results in his practice; however, it was not possible for him to directly relate this improvement to the course.

The four colleagues who experienced a lasting impact of the course spoke of a strong lasting impact. They defined this effect by an improvement of their professional practice due to a clearer visualisation of structures, very exact mental images even a long time after the course and a precise idea of the anatomical positions of structures.
One colleague said that he was more accurate in treating the problem area now and explained that the week of the dissection course had set an ongoing process in motion that, from time to time, needed new input. Another participant deals much more with anatomy now, debates about it with colleagues and reflects more on certain techniques.

### 6.2.7. View of the patient as a human being

The answers to the question whether the dissection course had changed the view of the patient were again very diverging. Two colleagues did not experience any changes at all, and they explained that anatomy represented only one part of the human being.
One colleague has a more figurative perception of the human being now, another one found his perception of the ‘miracle of the human being’ confirmed by dissecting.
The course supported and confirmed one colleague’s respectful treatment of the patients; she felt encouraged in her approach.
One of the interviewees found himself confronted with the question of differences in the frequencies of living and dead tissue. This changed his view of the patient as a whole.

### 6.2.8. Self-image as an osteopath

With this next question I wanted to find out if the dissection course had changed the participants’ self-image as osteopaths, that is, the professional self-esteem of the participants.
The increase in knowledge helped four colleagues (two male, two female) to raise their osteopathic self-confidence. Two of them, one man and one woman, experience this new self-confidence more in regard to defending their professional view in the debates with colleagues and medical doctors as well as, in one case, in the talks he gives. Now they have a stronger feeling that they exactly know what they are talking about. More confidence in their professional practice and increased expertise were also mentioned. For two colleagues the

course had no influence on their professional self-image, which had already been very strong before.
One interviewee reported that his self-criticism had become even stronger as dissecting made him aware of persisting gaps in his knowledge.

### 6.2.9. Future participation in dissection courses

Five of seven participants absolutely want to go back to dissecting: they are either already signed up for the next course or planning to practice dissection on a regular basis. Reasons for this are the wish to take a closer look at specific areas, to find answers to questions that have arisen, or to come clear with this abundance of new information. They also want to take part in such a course again because anatomy is viewed as an integral part of the osteopathic profession.
Two colleagues are, at least for the moment, not planning to participate in a further course: for one of them it had already been the second course, and for the other one the psychological burden was very heavy.

### 6.2.10. Dissection courses as an integral part of osteopathic training

My question if dissecting should become an integral part of osteopathic training was answered in the affirmative in unison. One colleague, for whom dissecting was a great psychological burden, proposed that students be offered the possibility to see and touch specimens without necessarily having to cut.
Another colleague, however, attributes great importance to the act of cutting and would find it great to integrate dissecting in the training.
One participant wishes that anatomy be taught to osteopathic and medical students together.
Two colleagues emphasise the importance of a dissection course, taking into account the tendency of many osteopaths to completely abandon the path characterised by structure and function. In their view, dissecting would support a certain groundedness of osteopathy, and osteopathic practice, as defined by the WSO, is not really possible without this knowledge.

# 7. The interviews in relation to my research question

## 7.1. How does the experience of dissecting change the professional practice and the perspective of interviewee A?

After the dissection course, interviewee A felt that her professional practice had improved especially in the visceral area. The course changed her idea which she had gotten from the anatomy book; now she had a much clearer mental image of the structures than before, which made it possible for her to increase the contact with the organs. The interwovenness of all structures of the human body helped her understand that we never treat only one individual muscle but always a whole system that is strongly interconnected. In the anatomy courses she had heard about clear-cut borders; dissection taught her that there is no such thing as clear borders.

She became much more precise in her diagnosing because it is a lot easier for her now to visualise the location of the organs and their interconnectedness.

Her cranial practice also changed because she had seen, for example, how deep the ventricular system is located inside the skull. Her visualisation has improved in the structural area because she has learned how the whole body is interconnected via the fascial system, in the visceral area through the improved knowledge about the organs and their location, and in the cranial area through the newly gained knowledge about the location and the constitution of structures. Thanks to this improved visualisation she feels that her hands have better control even of structures which lie deep inside the body.

Regarding a lasting impact of the course, she was not sure if she had forgotten about a few things that she had learned or if she had integrated them naturally into her practice. The same applies to her view of the patient as a human being; she could visualise the body better after the course; this improved view is now either integrated or forgotten.

Her enhanced understanding of anatomy has given interviewee A more confidence in her practice as an osteopath and thus more self-esteem.

She would like to attend another dissection course in order to be able to look more closely into more specific areas. *"I can visualise pretty well now how a structure looks; now I would like to go into more detail in many areas."*[1] (p. 7, lines 12-14)

### 7.2. How does the experience of dissecting change the professional practice and the perspective of interviewee B?

For interviewee B the dissection course was an important impulse to look more closely into anatomy again. One of his key experiences in understanding how far one has to reach in order to get to a facet joint at the lumbar spine makes him doubt whether the techniques which claim to treat this exact area are at all able to do so. The image he had had of this area before changed completely since he dissected it; and this subsequently changed his way of working with these structures. He had always been very cautious expressing his osteopathic diagnosis and his experiences in the course supported his habit of talking about possibilities, considering that there are so many different variations.

Since he attended the dissection course, B has increasingly tried to integrate all areas of osteopathic treatment. In his case this means that he works much more with visceral treatments, even though the course really diminished his confidence in this area. The reason for this is the location of the organs deep inside the body and his doubt whether the hands are at all capable of reaching and sensing a tissue tension at such a location.

However, his impression of the musculoskeletal system was completely different; in this area he felt that the course confirmed his practice. His cranial practice has not changed; it was not a priority for him during the week of the course. His capacity of visualising structures improved; his spatial, visual way of seeing changed. He also found that in some areas the mental image he had of certain structures did not correspond with the real situation. *"(…) it became very clear to me during the dissection course that you have to take into consideration that maybe the course of certain structures is simply different from the way you find it in anatomy books."*[1] (p. 6, lines 13-16)

B is very self-critical as an osteopath and dissection supports him in this respect as it confirms his persisting gaps in knowledge.

He also feels that our profession is a constant learning process. He wishes that anatomy would be taught together with the medical students and that only afterwards the distinct professional trainings would take separate directions.

B found himself confirmed by the course in his view that structures cannot be seen separately but that the whole body is interwoven and interconnected. The dissection course had a lasting impact on him; he advanced in his professional practice – also thanks to his improved

capability of visualising structures. *"(…) and this was my idea, a ligament is always a round structure, well, just like a shoe lace, and connects point A with point B, but that's not the way it is."*[1] (p. 10, lines 1-3)

His view of the patient as a human being has not changed; the miracle of the human being had fascinated him already before the course; however, the course supports him in his view of how fascinating this construction is.

### 7.3. How does the experience of dissecting change the professional practice and the perspective of interviewee C?

Interviewee C is a medical doctor and osteopath and his professional practice changed only in the structural area. He has a more precise idea now of where certain structures are really found and of what he feels with his hands. He also has a clearer idea of the possible connections between structures, which improved his diagnosing in this field. This, he feels, is his only conscious connection with the course that is still left.

Since C works a lot with biodynamic cranial osteopathy, in his opinion a course in this field influences his choice of technique much more. Asked about how dissection changed his visualising ability, he replied: *"Through the very interesting revelation that when the visualisation is wrong and the intuition is right, the technique is successful."*[1] (p. 4, lines 6-7) This statement was accompanied by laughter.

Even though he did not question anatomy theory, he was surprised, e.g., about the look and the feel of the diaphragm. If he could take the time, he would spend more time in the dissecting room in order to expand his understanding of anatomy, which according to him is a very important pillar for osteopathic practice.

Interviewee C, too, was able to improve the results of his osteopathic practice; however, he could not tell to what extent this improvement was owed to dissection.

In his opinion the course had nothing to do with his self-image as an osteopath; his view of the patient as a human being has not changed either.

Asked an additional question about the differences he saw between the dissection courses at university and the courses he attended during his osteopathic training, he replied that in his

opinion osteopathy encouraged people to stay curious, which was not the case in orthodox medicine.

C considers practicing dissection on a regular basis at the Institute of Anatomy because he feels that the aspect of the three-dimensional organism, which is the core of anatomy, is an essential part of the professional practice.

### 7.4. How does the experience of dissecting change the professional practice and the perspective of interviewee D?

Interviewee D has a clearer mental image now of individual structures and their course. She cannot tell exactly whether her ability to use her hands and consequently her diagnosing have changed since the dissection course.

Since her practice is almost exclusively biodynamic, she thinks that her work itself, her treatment technique, has not changed. However, she feels more confident about what her hands feel and she can identify better where the body is active. Her visualisation skills were already very good before the course; she could not observe any considerable changes in this respect, however, in a certain way the experiences she made in the course did have an impact. As far as anatomy is concerned, she found out that there is a myriad of variations as to possible locations of structures; however, she was also confirmed in the model of the interwovenness of structures. She had a great interest in the female pelvis and looking more closely into this area helped her gain greater understanding of various interrelations. D found it impressive to look at prepared specimens and to work her way from the uppermost through to the lowest layer. As far as the lasting impact of the course on her diagnosing and treatment is concerned, she said that it had not been a crucial experience for her.

Her very respectful treatment of the patient was supported and confirmed by the course.

In the past her self-confidence concerning her osteopathic practice had been very low, but it had already improved several years before and the dissection course did not help in this respect.

### 7.5. How does the experience of dissecting change the professional practice and the perspective of interviewee E?

Interviewee E made two very diverging experiences in his practice after the course. On the one hand it became more difficult for him because he found that some of the osteopathic models with which he had worked previously were not adequate for use in practice. On the other hand it became easier for him because he found himself confirmed in many of his ideas. His diagnosing did not change after the course. What changed is the technique which interviewee E applies in a certain area, i.e. visceral, structural or cranial: now he questions whether part of his techniques even reaches the area he wants to treat. Since many structures are located much deeper inside the body than he had thought, it became clear to him that he had to make an increasing use of projection in order to reach a certain structure. The dissection course deepened his anatomical understanding, thus making it easier for him to visualise the structures, their interlinkage and their location.

He feels it is necessary to become active oneself instead of relying on what is taught by others. In his case dissecting had a very lasting impact; he thinks about certain techniques, looks things up in the anatomy book more often and talks more about anatomy with his colleagues. Nothing has changed about his view of the patient, since anatomy accounts only for a part of the human being. The improved anatomical understanding has increased his self-confidence – not so much in his professional practice but rather in debates with colleagues, with medical doctors and during lectures he gives.

He cannot imagine osteopathic practice without this understanding of anatomy, which he sees as the basis of our profession.

### 7.6. How does the experience of dissecting change the professional practice and the perspective of interviewee F?

Interviewee F is male and has already attended several dissection courses. In the week after this dissection course he experienced a sudden revelation while working in his practice, and ever since he uses his hands in a completely different way. And not only that, but also his way of feeling tissue has changed considerably because during that week he worked intensely with the connective tissue.

He has changed models he had been using; he has enhanced them in a way that he focuses more on fluids and decongestation of tissues than on trigger points.

As far as diagnosing is concerned, nothing has changed for him. The choice of a specific technique has not changed either; what has changed is the quality of the individual treatment techniques. He made most changes in the visceral area; here he tries to go deeper. In the structural area he could improve especially his treatment of the connective tissue; in the cranial area he made no changes. F developed a greater understanding of the interrelatedness of different areas, the exact location of a structure and how to get there. Ever since he learned how to touch a structure, to remove and to look behind it, his visualisation of anatomical structures has become much clearer.

F did not question anatomy theory so much; he rather enhanced it. After all, all models have their strong and their weak points. The lasting impact for him showed in a way that he can remember structures more easily, he can visualise their location better and his professional practice is much more accurate. In his opinion, the course set a process in motion which continues to develop even after the course and needs new input every now and then.

His holistic view of the human being has changed by dealing more intensely with different frequencies on the living and on the dead body.

His self-esteem in respect to his professional practice has changed; he got the feeling of once again having learned something important that he likes putting into practice, which allows him to be yet another bit more professional.

F wants to continue to practice dissection because new questions keep coming up and there are many variations which can only be appreciated by comparing them.

For him, too, an understanding of anatomy is an important basic skill, and only intense work with the structure strengthens this basis.

### 7.7. How does the experience of dissecting change the professional practice and the perspective of interviewee G?

Interviewee G pays much more attention now to which other areas can be influenced by a local incident. Practicing dissection changed her way of looking at interconnections and she focuses a lot more on the connective tissue. Her previously rather local way of looking and palpating became much more global and now she can visualise much better how she has to extend her projected palpation in order to reach deep into the body. Since she feels more and understands interconnections better, she has enhanced her treatment techniques. The experience she has made with the connective tissue also changed her structural techniques. For treatment of the organs she now does not exclusively apply visceral techniques to improve the motility of the organs; instead she increasingly works with the attachments. The course taught her to rely much more on her hands than on the pictures in the anatomy book. In the cranial area her practice changed according to her improved understanding of dural interconnections.

Her visualisation of organs has not changed as much as her visualisation of structures in the musculoskeletal system.

She did not question anatomy theory; instead she made the experience that the inside of a human body does not look like it is demonstrated in the anatomy book. And even though she attended the course one year ago, she remembers very clearly what she saw, which suggests that dissecting had a lasting impact on her.

Thanks to the experiences made in the dissecting room, G increasingly sees the individual person with his/her possible variations; and she has also started to reflect on the connection between body and psyche to a greater extent.

She feels much more confident defending professional opinions because she has dealt intensely with anatomy and does not have to defend an opinion she has read in a book. G has also made very good experiences just looking at and touching specimens; she feels that the act of dissecting is not absolutely necessary.

# 8. Summary

How does dissecting change the professional practice and the perspective of an osteopath? This was the central question asked in this thesis; the results are manifold. The experiences made in the dissection course enriched the osteopathic practice of all the participants.

Most questions received answers that reflected a great variety of opinions; consent among the participants existed concerning dissection as part of the osteopathic training. All of them affirmed that their professional practice had improved, even though it was not clear in all cases to what extent this improvement was due to the dissecting experience. The ability to visualise clearly, increased precision in palpation, an understanding of tissue constitution and the location of organs, and realising the interconnectedness of all structures – all this led to a change of the participants' therapeutic practice. However, a loss of confidence, doubts and a lack of a lasting impact were also mentioned.

The issue of diagnosing, which covered large part of the expert interviews, was evaluated very differently. Even though great importance was given to this issue in the expert interviews, two colleagues reported that nothing had changed for them in this area.

The rest of the answers contained affirmations of greater precision and increased facility in diagnosing.

Asked about changes in their choice of technique, the interviewees gave three different kinds of answers. Some increasingly use all fields of osteopathic techniques, two hardly work with structures any more and thus hardly anything has changed for them, and the third group reported having made changes to certain techniques.

There was wide consent concerning the improvement of visualisation: almost all of the participants reported having a clearer mental image and a better understanding of the interconnections within the body as a whole.

The questioning of anatomy theory, but also the enhancement of osteopathic models, were aspects that were mentioned repeatedly.

Dissecting is seen as the initiation of a process which keeps developing, following the motto "the more you know, the more you know what you don't know".

All the participants had already given very respectful treatment to the patient before; hence the aspect of their view of the patient as a human being hardly changed for them. Expressions

like the ‘miracle of the human being’ and the holistic view of the human being were mentioned when speaking about this aspect during the interviews.

The self-image as an osteopath improved for five out of seven participants. The other two participants had already had a high professional self-esteem before the course. The interviewees reported an increase in professionalism in their practice and an enhanced position in the interdisciplinary field.

Almost all colleagues are determined to continue dissecting in the future because they see anatomy as an essential part of their practice as osteopaths.

Two colleagues feel that a dissection course as part of the osteopathic training would make a considerable contribution to the enforcement of the principle of structure and function, which is taught at the Vienna School of Osteopathy. After all, for them, anatomy is one of the pillars of the profession of an osteopath and dissection its practical implementation.

This thesis represents only a small selection of opinions; however, maybe it can make a contribution to securing a position for dissection as part of the osteopathic training.

A large part of the answers confirms international statements on dissection. Rizzolo and Stewart state that the resolving of problems in the dissecting room serves the development of clinical practice, that it improves interaction with medical doctors and patients and that it promotes self-reflection and integration of cognitive and affective abilities. Dissection is viewed as a mediator between the individual medical fields regarding anatomy. The ‘rhythm’ of clinical practice is compared with the rhythmical course of events in the dissecting room, that is, observation to discover facts, interpretation of findings to make a differential diagnosis, and set-up of a treatment plan: dissecting involves observation in order to be able to distinguish known from unknown structures, interpretation for appropriate identification, and preparation of the various structures for differentiation. (Rizzolo/Stewart, 2006)

During the interviews, participants also spoke about a direct link between the dissecting experience and an enhancement of their professional practice. It was also mentioned repeatedly that the course helped to improve their self-confidence in their interaction with colleagues and medical doctors, e.g. in expert debates.

Dissection creates a teachable moment. Secondary sources like books, atlases and computers are used in combination with the primary source, which is the human body. Dissection integrates all the senses and thus all the teaching methods. It is a very student-centred and active kind of learning. (Rizzolo/Stewart, 2006)

The participants of this study attribute their increased experience especially to the integration of the sense of touch and spatial vision, that is, 'grasping' the contents in the literal and figurative sense of the word.

The psychology of learning describes various theories of learning; here I want to mention only social constructivism. According to this theory, learning is based on sensory physiological, neuronal, cognitive and social processes. (Wikipedia, 2008)

The theory of social constructivism, described by Lev Vygotsky (1978), defines learning as a social process which gives priority to sharing experience and doing research in a group. New knowledge is not just memorised but acquired via interactive experiencing, discussion and reflexion together with the colleagues. (Marrone/Tarr, 2005) This theory describes best what is done in the dissecting room and the experiences of the interviewees correspond largely with these theories.

In another study on dissection it was found that students dedicate on average 33 % of their time spent in the dissecting room to dissecting itself, 27 % of the time to studying the dissected material and the rest of the time to other things; the active time thus varies between 0 % and 82 %. This shows that a dissection course provides no uniform learning experience but much rather shows many different facets. (Winkelmann, 2007)

These numerous facets are also reflected in the interviews, where I also found active and more passive participants.

In a study among medical students, Lempp identified the learning outcomes of dissecting that were not linked to anatomy. Apart from dealing with the emotional confrontation with the dead body they mentioned teamwork, respect for the human body, getting familiar with the body, application of practical skills, integration of theory and practice, preparation for their clinical practice and appreciation of the importance of dissection in the history of medicine. Lempp uses all these aspects as an argument in debates on the practice of dissection and underscores the learning effect for the students in addition to learning anatomy. (Lempp 2005)

What all the articles and studies have in common is that the hands-on experience made in the dissecting room greatly contributes to the medical training. Moreover, many experiences that are not directly related to applied anatomy are described as very positive. Maybe the study at hand can make a small contribution in this debate about the meaning and the purpose of dissection.

[1] *Translated from German into English by the translators of this thesis.*

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