7. Transgressions

Imagine lying on a board, your legs tied together, a cloth covering your eyes. Your neck hurts, something is protruding from it. Then you feel fainter. You sense something moving jerkily next to you, you hear screams. A few minutes later, there is another sharp pain by your throat. You are moved to somewhere else, released. You stumble awkwardly onto the grass. You do not know it, but you have just lost 150 ml of your blood.

In 1879, Professor Peter L. Panum was attacked. The aggressor was the Danish Society for the Protection of Animals [Foreningen til Dyrenes Beskyttelse]. It had just published a translation of a pamphlet, in English called *The Torture Chamber of Science*, by the German anti-vivisectionist, Ernst von Weber, containing lurid accounts of suffering animals in scientific experiments.[1] To the activists, Panum was a major Danish representative of such cruel practices. Now they vilified him in pamphlets and newspaper articles, and he replied with passion. Animals were less liable than humans to feel pain, he argued, and animal experiments were needed for the progress of science and medicine. To prove his case, he made the following interesting comparison:

> A couple of years ago, when lamb blood transfusion was en vogue, no one doubted that a doctor was entitled to sacrifice a lamb if he had an ever so weak hope of thereby saving or prolonging (if only perhaps for a short time) a human life […]
>
> Should not a physician, who has, and must necessarily have, the right to treat his sick fellow beings according to his own judgment and conscience

> and without interference, also be allowed to, without interference, decide over an animal's life and health in the interest of humankind?[2]

It is not likely that Panum had changed his mind about lamb blood transfusion since we last met him. Still, he used it as an example of a presumably acceptable procedure to defend his laboratory practices. This raises questions: How were the ethics of animal blood transfusion perceived by contemporaries? Was it seen as something banal – or as an improper transgression of natural and cultural boundaries, a cruel use of animals and a dangerous experiment on vulnerable patients? And how did this compare to the use of animals in laboratory experiments?

As Panum indicates, there was at the time little institutional control of therapeutic and experimental practices. An authoritarian culture reigned in hospitals, asylums and research laboratories. No legally binding ethical guidelines helped doctors decide in morally tricky situations at the sickbed, no explicit rules of conduct guided physiologists in their experiments. Everyday practices were a matter of individual conscience and situated judgement.

So, to answer the question, 'was it worth it?', we have to examine how physicians and scientists in the mid-19th century reasoned about the morality of their transfusion practices. Was the progress of medicine worth subjecting patients to a perhaps dangerous intervention, and animals to painful experiments? This was a complex issue with no clear consensus.

Using animals

There is an interesting paradox, apparent in today's discussions of organ or cell transplants from animals to humans (xeno-transplantation) but relevant also for the 19th century: the animal from which tissues or organs are to be taken should be sufficiently *similar* to humans for it to be medically possible for our bodies to accept the transplant. At the same time, the animal should be sufficiently *dissimilar* to us for us to consider it ethically acceptable to exploit it, kill or molest it, and make it suffer for our sake.[3]

Deliberations in the 1870s about the use of lamb blood for transfusion almost exclusively focused on the first, *physiological*, question: how similar or different is human blood to that of other species? What happens in the human body when non-human blood is introduced and how beneficial or dangerous is it?

Opinions differed. They ranged from finding species-alien blood quite similar to humans' and thus useful (as long as its blood cells were smaller than or the same size as those of human blood), to seeing it as so different that it was poisonous for the receiving organism. Then there were intermediary ideas. The physiologist, Landois, found that blood from animals of the same taxonomic family, such as fox and dog between which he performed reciprocal transfusions, was nominally similar enough.[4] Hasse presented a developmental version of this evolutionary idea in his reply to Panum in 1875. It may be so, he speculated, that the blood of the little lamb is healthier for us than that of the full-grown sheep since young animals are closer to humans than are older ones. This view was ridiculed by Panum as yet another absurdity peddled by an ill-informed village doctor.[5] Still, Hasse was not alone. He was most likely influenced by (but maybe misrepresented) the German scientist Ernst Haeckel's 1866 biogenetic law, regarded as valid until the early 20th century. Commonly stated as 'ontogeny recapitulates phylogeny', it theorized that the stages, which an animal embryo undergoes during development are a chronological replay of that species' past evolutionary forms.[6] Hence, a young lamb could be hypothesised by Hasse as being less specifically a sheep than an older one, and its blood therefore closer to that of humans.

The parallel question about the *moral* acceptability of making animals suffer for our sake was not explicitly discussed by 19th century transfusionists. Perhaps this was only natural in a largely rural society where animals were kept for their usefulness for humans and not as pets, and where they were slaughtered often in full public view. Still, many doctors doing animal blood transfusion tried to minimize the pain and discomfort of their lambs. Manzini and Rodolfi recommended transfusions from the animal's vein rather than its artery since that was less painful, and Neudörfer chloroformed his sheep 'for humanitarian reasons'. He wanted to avoid frightening the animal, and also prevent it from scaring the patient with its human-sounding cries and sobs.[7] Several physicians underlined that the lamb fared well after the operation: it ate with good appetite and jumped happily about in the field. Hasse gave it nutritious food: grains and soaked peas, and once even took it into his apartment to recover.[8] Still, some animals bled to death (and sometimes they were destined to end up in a stew anyway).

A different kind of treatment awaited animals in the laboratory. Ever since Harvey in the 17th century, physiologists had made painful animal experiments when trying to understand the circulation of blood or investigating the possibility of transfusion. Magendie, Bernard and Brown-Séquard were 19th-

century pioneers in France; German scientists followed suit. I here focus on two of them, since they were involved in the lamb blood controversy: Panum and Landois. Panum, in the early 1860s, emptied his experimental dogs of almost all their blood before introducing the blood of others, sometimes from dogs, sometimes from other species. He also injected them with solutions of rotten meat, leading to painful and lethal effects. Landois in the 1860s and 70s transfused dogs, rabbits, cats and various other animals with blood from lamb and other species, with poisonous blood, or with blood whose blood cells had been killed off by heat. He nailed frogs to boards for them to be transfused and cut up. He subjected dogs to blood from carbon monoxide intoxicated rabbits, and he, Panum and others starved their experimental animals for days before depleting and transfusing them. Animals died in these experiments or were killed for the scientist to investigate the status of their organs and blood.[9]

From the mid-19th century onwards, physiologists could use ether or chloroform to alleviate pain for the animals, but I have found no such usage reported from the transfusion experiments. Some animal experimenters did not employ anaesthesia since the very point was to study pain reactions. One example is the Italian physiologist, Paolo Mantegazza. He was a most vocal critic of lamb blood transfusions to humans but did not hesitate to subject his experimental animals to cruel tests, for example for his 1880 study, *Fisiologia del dolore*, on the physiology of pain.[10]

Thus, there was a clear difference in how animals were treated at the bedside and in the laboratory. I interpret the relative care that transfusing doctors took of the lamb as a sign of them seeing it as somewhat of a collaborator in the transfusion endeavour. The lamb was an instrument of transfusion, the source of the necessary vital fluid. It should be handled with care. In some cases, it was scheduled for re-use a second and a third time; often it should be handed back to its owner who wanted it in good shape. Sheep were precious, not only for their blood, but for their meat, wool, milk. They must not be wasted.

The situation was different in the laboratory, although it seems that lamb, perhaps for economic reasons, were not experimented on in transfusion studies (but their blood was given to other animals).[11] Laboratory practices of the 19th century built upon what medical historians, Cunningham and Williams, describe as a profound change in sensibility on the part of scientists. 'The live animals had to be transformed into and be perceived as simply a neutral object of scientific investigation and not as a perceptive pain-feeling fellow creature being submitted to torture'.[12] Panum's preferred experimental ani-

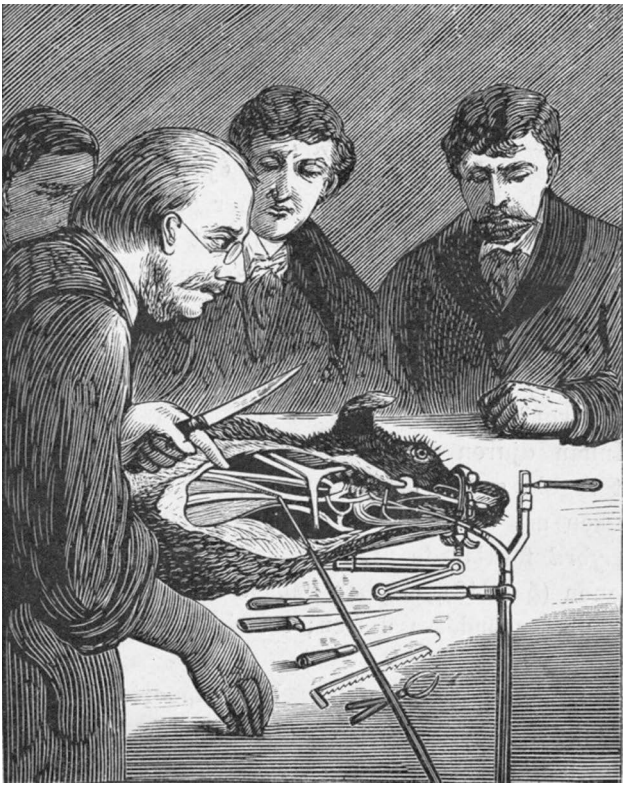

Figure 26. Experiment on a living dog, according to The Torture Chamber of Science (von Weber 1880,1).

mal, the dog, had no particular value, economically or emotionally. It could not be milked or eaten. Stray dogs were ubiquitous, as was another often-used laboratory animal, the rabbit. The animals differed in age and appearance, but this seemed unimportant for experimental purposes. Panum and Landois occasionally noted the colour of the dogs used, their size, if they were young or old, and sometimes, mysteriously, their breed: a Fleischerhund, a Windhund, a Jagdhund, a Pudelhund… Other animals used (cats, rabbits, frogs, guinea pigs) were even more anonymous. Still, we are far from the standardized, commercial lab rats of the 20th century.[13]

I see the animal experiments of the 19th century as expressing what anthropologist, Philippe Descola, calls a *naturalistic* ontology of non-humans, which is another way of seeing the similarity and difference that I noted in the beginning of this chapter.[14] Since the animal body in the laboratory stands for the body of the human patient, it must be similar enough to serve that purpose. This shared physicality between animals and humans guaranteed the transferability of results from animal experiments to humans even if this sometimes was contested, as we saw in a previous chapter.

On the other hand, if animals are to undergo painful, degrading or lethal procedures, they must be *different*. They must have a lower status than humans in terms of ethical dignity since they are supposed to lack a humanlike interiority, what we call a mind, soul or consciousness.[15] Hence, we may, without raising moral concerns, use them, even in cruel ways, as a substitute for humans to produce general physiological knowledge.[16] Their bodies can be carved up, their arteries opened; they can be starved, poisoned and subjected to depletions and injections.

The use of lamb for blood transfusion to humans was, it seems, also based on a naturalistic ontology. The animal's blood was supposedly similar enough to ours. At the same time, the lamb was seen as lacking human subjectivity, the ability to think symbolically and the capacity to dream. Still, it was often treated with care. There was even a view that the animal, just because it was different, might have *better* blood than humans since it lacked our problematic interiority. We can return to the very first transfusions from non-humans to humans in Paris in the 1660s. Their initiator Jean Denis was convinced that the blood of animals was physiologically superior to human blood because animals were morally less disordered. He elaborated this point in a published letter about his first experiment:

> It is easy to judge that the blood of animals must have less impurity than that of men for debauchery and derangement in drinking and eating are not as common as among us. The sorrows, the worries, the fits, the melancholies, the anxiety and generally all the passions that are so many causes of the troubled life of man corrupt the substance of his blood. Instead, the life of the animal is much better regulated and less exposed to these miseries, the dreadful consequences of the sins of our first father.[17]

Experience shows, Denis continued, that it was rare to find 'bad blood' in animals whereas human blood was inevitably corrupted – the result, he reiterated, of man's fallen state.

This religious argument for the moral superiority of non-human blood was absent from the transfusing physicians' 19th century accounts. But it had an upshot in their warnings against using human blood: it might be corrupted by alcoholism, syphilis, gout, or other dangerous afflictions. Lamb blood was different – and healthier.

Still, was it not too different, too alien? Was it not morally and ethically unacceptable to subject patients to the experience of getting such *strange* blood into their bodies?

Crossing boundaries

To a Mary Douglas-inspired anthropologist, an animal in the sick room is an example of 'matter out of place'. Sheep are outdoor things that belong to animal pens, not indoors in hospital beds. Their presence there means a blurring of established cultural boundaries; therefore their blood becomes an ambiguous fluid: dirty, dangerous and disgusting.[18]

Doctors in the mid-19th century, however, quickly dismissed the issue of disgust, if they brought it up at all. The oxygen-rich blood from the lamb's artery was considered to be *natural* blood and was therefore, 'despite its disgusting animality […] much better than human blood from the veins', Gesellius argued, and many agreed.[19] For example, Robert Barnes, a leading British gynaecologist, who assisted Aveling in the first British lamb blood transfusion (described in chapter 4 above):

> To supply an answer to the vulgar dread that with the blood of animals some noxious vital principle may be imparted, it ought to be enough to remember that man lives upon the flesh and blood of animals; and that it cannot matter whether lamb's blood be taken first into the stomach or directly into the veins.[20]

And, in an interesting twist, Barnes added elsewhere: 'No one would maintain that the blood of animals might not be taken into the human stomach, whilst the idea of swallowing human blood excited horror and disgust.'[21]

Barnes' colleague, Henry M. Madge, the secretary of a committee to evaluate different forms of blood transfusion, nevertheless, did acknowledge the possibility of nausea. To some people, he said, there may be 'something repulsive in the idea of bringing an animal into the sick-chamber and of mixing animal with human blood'. It was thus not simply a question of 'taking lamb in

another form'. To avoid shocking the patient, Madge suggested that the physician use the indirect method and obtain the lamb's blood in an adjoining room to prevent the patient from seeing its animal origin.[22] Also the Italian physician, de Cristoforis, anticipated fear, apprehension and protest, particularly among his female patients, when seeing the bleating and trembling animal at close sight; he therefore opposed its use.[23]

Judging from the published reports, however, there was little such squeamishness. No patient is known to have expressed revulsion towards getting animal blood into their veins. On the contrary, Hasse reported, they begged him to give them this new medication and sometimes more of it than he thought fit. Hasse's direct method, used in the great majority of lamb blood transfusions, meant bringing the lamb and the receiver very close to one another. 'The human hand should be around the neck of the lamb', one physician recommended.[24] Still, I have found no reports of the shock reaction anticipated by Madge. Not even in the (unique) case when a large dog was used instead of a lamb (it being Easter time and no lamb was to be found). That transfusion had to be discontinued because the animal – not the patient – was too unruly.[25]

One may speculate about why the patients did not react with nausea or disgust and refused the transfusion. One obvious reason is that they were too ill. Many were unconscious, close to death. Another possible explanation may be that they just did not understand what was suggested to them. This brings up the issue of what today is called, 'informed consent'.

Accepting transgression

On July 6, 1874, the Turin newspaper, *Gazetta del Popolo*, published a denunciation of four lamb blood transfusions recently performed in the mental hospital of nearby Alessandria. Its author was Professor G. S. Bonacossa, a prominent Italian alienists, now in his seventies. He was upset. He would never, he stated, have permitted such an experiment in his asylum in Turin. It was contrary to the principles of humanity and medical prudence, and that for three reasons: (1) it was useless for the purpose of healing madness; (2) it had not been proven to be without danger; and (3) it was not allowed to perform such dangerous operations without the consent of the sick themselves unless there was an imminent danger to the patients and an almost certainty of restoring their health.[26]

The next day, the newspaper carried a response to Bonacossa. It was written by his Turin colleague, Professor Pacchiotti. He was one of the four psychiatrists behind the transfusions in Alessandria. Pacchiotti argued, first, that nobody thought that a transfusion would cure the mentally ill; it could, however, better than any other remedy, improve their anaemic state. Secondly, he considered the operation to be without danger and added that, if you only did what established surgeons accepted, there would be no progress in medicine. As to the third objection, concerning the necessity of having the patients' consent, Pacchiotti was more evasive:

> Yes, when they can give it. But how many operations are not done on children to save them from death! How many sick people do not accept an operation without having an exact idea of it! How many operations are not made suddenly after serious accidents when it is a question of saving the life of a man! And then again, the four mentally ill [in Alessandria] let themselves be transfused with the blood of a lamb, being quiet like lambs.[27]

It should perhaps not surprise us that patients in 19th century asylums, clinics and military hospitals submitted to whatever their doctors suggested. An authoritarian culture reigned, sometimes with militaristic overtones – what medical historian Andreas-Holger Maehle calls 'medical paternalism'. The patients' position vis-à-vis their doctors was a weak one. 'The ever-widening knowledge gap between medical experts and patients, and the increase in available diagnostic and therapeutic methods of hospital medicine, gave doctors more and more authority in decision-making', Maehle notes.[28]

Some reports of lamb blood transfusion do mention that a transfusion was suggested and accepted. For example, the Swedish doctor, Ivar Svensson, notes that his female patient – being 'as forbearing and compliant as could be imagined' – agreed to whatever he suggested, including an experimental lamb blood transfusion.[29] In most other accounts, however, nothing is said about patient consent; it was an implicit or silent matter. Hospital doctors conferred with colleagues or superiors but not always with patients or relatives; these were generally less educated and from a lower social class. Private practitioners, catering to a more well-to-do clientele, seem to have been more aware of the need for consent, perhaps because the transfusion entailed added costs for the patient. There was a practical need for communication and negotiation.[30]

How consent was obtained differed. In the mental hospital of Brescia, patients were induced to cooperate with the help of various delicacies. In Cincin-

nati, Dr Sittel, convinced from reading Hasse about 'the mighty influence of strange blood' upon the nervous system of his patient, encountered some opposition. He then called upon the services of a professor friend, who 'by his moral influence aided me greatly in obtaining the consent of the patient to the transfusion'.[31]

In other situations, consent seems to have been a done affair; very sick patients grasped at this straw of hope. As reported, for example, by the Swedish doctor, Westerberg: 'The patient was informed about the hopelessness of his condition but when lamb blood transfusion was mentioned, the patient eagerly embraced this suggestion and pleaded insistently for it, no matter how uncertain the outcome would be'.[32] In the very few cases reported where a patient refused a blood transfusion (with human or lamb blood), the physician acquiesced.

Medical paternalism, thus, did not imply cruelty or irresponsibility. 19th century physicians based their decisions upon the age-old principle of *beneficence*: a doctor's duty to act in the patient's interest. It was sometimes thought that knowledge might have a beneficial effect on the patient's health. Thus, it could be useful to tell the truth and seek consent.[33] But this was not necessarily *informed* consent. The predominant doctor-patient relationship, Maehle notes, was one where it 'was regarded as inappropriate to expect medical practitioners to educate their patients about the potential side effects of a remedy and to ask them for their consent before prescribing it'.[34] This was a paternalistic attitude, very different from 20th century notions of *patient autonomy*.[35]

But could the doctors realistically inform their patients about what would happen in a transfusion? This is not certain. Many performed a transfusion for the very first time. They only knew from Hasse's reports how they should proceed and what the effects might be. Hence, they may not have anticipated their patients' quite dramatic reactions once the transfusion got started. Many then followed Hasse's advice to continue the operation until the patients claimed they could not breathe anymore. At this stage, one of the Austrian military surgeon Neudörfer's patients tore the cannula out of his veins; this, however, did not stop Neudörfer from performing further lamb blood transfusions and recommending the procedure when no human donor was at hand.[36]

When reports began to appear about unsuccessful cases of lamb blood transfusion, some doctors refused to perform the operation, despite their patients' urgent demands. Boston physician, James R. Chadwick, reported on one such situation with an interesting twist. His account is worth quoting at length:

> On one occasion, I was persuaded to go sixty miles to transfuse lamb's blood into the veins of a consumptive. I went after repeated solicitations and a distinct disavowal – on my part – of any belief in the curative agency of transfusion in such diseases. On examining the patient, I found, in addition to extensive disease of both lungs, very labored action of the heart, and obtained the history of much pain and distress in the cardiac region and a number of fainting turns during the previous month. The patient was likewise greatly emaciated. I represented to the man the peculiar danger, which would attend the transfusion of blood into his veins, and finally persuaded him to renounce the project.
>
> A month later, however, a more daring surgeon from New York, a German, successfully transfused six ounces of lamb's blood into the patient. My prognostications of the exceptional risk were fully verified by the unusual symptoms subsequent to the operation. There were 'sharp pains throughout the back, chest and limbs' immediately after the operation. On the next day, again 'acute pains in the back'. On the following morning, 'two fainting spells in quick succession' and a pulse of 130. On the fourth morning, 'palpitation of the heart' for half an hour, and again in the afternoon lasting two hours.
>
> Since that date no untoward symptoms have occurred, but the patient has recently published a card in the local journals announcing that his condition has not been improved by the operation and warning others from trying the experiment.[37]

Was it worth it?

Lamb blood transfusion meant unknown dangers, violent reactions, pain. It was such a new and unknown procedure that it was difficult even to inform about it. Doctors sometimes presented it as an established therapy but most often as an experiment. The aim was to find a new way to cure phthisis, to alleviate pellagra, to counter profuse haemorrhage after childbirth or on the battlefield. And, sometimes, it seemed to have worked.

Blood transfusion was not the first or only experiment then performed on hapless patients. Mental patients, in particular, were often used as human guinea pigs. A report in the early 1880s listed treatments employed in asylums in England at the time: 'hypodermic injections of morphia, the administration of the bromides, chloral hydrate, hyoscyamine, physostigma (the poison

from the calabar bean), cannabis indica, amyl nitrate, conium (hemlock), digitalis, ergot, pilocarpine, the application of electricity, the use of the wet pack and the Turkish bath'. In the majority of cases, the drugs merely knocked the patients out for a while but in no way relieved the symptoms. Still, doctors felt that experimenting with one drug at a time might ultimately bring some degree of certainty about what to administer under certain conditions.[38]

Such experimentation at the sick bed was, in the 19th century, not regulated by law but left to medical men, individually and collectively, to deliberate about. As noted by medical historians, there was then 'no precise [historical] moment of moral discovery, no clear or determined march toward ethical imperatives in the practice of experiment', be it on animals or humans.[39] Many 19th century actors possibly agreed with the famous words of Claude Bernard in his *L'introduction à la médicine expérimentale* from 1865:

> So, among the experiments that may be tried on man, those that can only harm are forbidden, those that are innocent are permissible and those that may do good are obligatory.[40]

What category did lamb blood transfusion fall into? Did it do good, was it innocent, or did it only harm the patient?

For many practitioners, the issue was one of *lesser harm*. The physician had to choose between trying an unknown, maybe dangerous but potentially useful, remedy or letting the patient decline and most likely expire. It hurt but it sometimes worked. It did harm but it might do good, and it made future progress possible!

To the Italian alienist Pacchiotti lamb blood transfusion was an easy, safe and successful operation. It was an instance of scientific advance: 'What you today call imprudence is tomorrow the pride of surgery', he argued in reply to his critics and cited as proof some other, previously controversial but later standard, therapies such as the uses of chloroform and ovariotomy. He could have cited (but did not) the 18th century experiments to evaluate the efficacy of citrus fruit in the prevention of scurvy or Edward Jenner's first vaccination trial against smallpox on an eight-year old labourer's son.[41]

A more recent example was that of chloral hydrate, a hypnotic drug introduced in 1869 and used to restrain unruly mental patients. Italian psychiatrists, like Pacchiotti, used it for a variety of indications, albeit with much prudence, given reports of 'chloral poisoning' with serious side-effects – mental irritability, muscular prostration, frequent nausea, and even death.[42] Thus, it was a highly disputed drug. But it was widely used, especially in the Anglo-

Saxon world. Within 18 months of its introduction, around 50 million doses had been dispensed in England alone.[43]

Thus, 19th century experimentation with drugs and treatments was ubiquitous and often drastic. To some doctors, it was their right, indeed their duty, to try out new interventions if they were not obviously harmful.[44] Time would tell if the results would hold. Lamb blood transfusion was an experimental therapy that some physicians, as noted in the conclusions to chapters 4 and 5 above, thought was worth experimenting with until more evidence had been gained. Possible problems would, one Swedish physician assumed in 1874, be ironed out 'while the operation passes through its first year of apprenticeship'.[45] But, as we have seen above, this 'first year of apprenticeship' turned out to be a fairly tumultuous one.

Overstepping boundaries

Lamb blood transfusion was, to many, an irresponsible transgression. It was criticized and ridiculed. When Hasse presented his results at the German Surgical Society's Congress in Berlin in April 1874, the quip went around that it took three sheep to perform a transfusion: the donor, the recipient and the easily fooled doctor![46]

Still, the therapy caught on – and the mockery became more caustic. Panum castigated Hasse and Gesellius as charlatans and lamb blood transfusion as a psychological mystification.[47] In Italy, the celebrated scientist and politician, Paolo Mantegazza, used his contacts with the periodic press to publicly denounce the transfusionists as pre-modern 'alchemists' – daydreamers imagining that the transfused lamb's blood would multiply in the receiving body.[48] His disciple, Enrico Morselli, argued that there was 'something pathological in the psychology of certain enthusiasts for transfusion'. They had willingly let themselves be mystified and misled by the theatrical cleverness with which Hasse and Gesellius had staged the matter, 'helped as it was by the publishing company of the Imperial theatres of Petersburg (!)'[49]

And in Austria, a failed lamb blood transfusion led to a media scandal. It was seen by some as a storm in a glass of water, by others as a serious incident. It concerned a Dr Fieber, an electrotherapist, who at Vienna's General Hospital and with the help of his brother, a surgeon, had tried, and failed, to perform a lamb blood transfusion to a suffering woman, a famous opera singer. A lamb had been procured but would not give any blood and the patient's veins could

not be found. The lamb succumbed from the attempts, but the patient was no worse for the incident.

This event, having the ingredients of a celebrity scandal, made quite a stir in the Austrian press. It was called a 'Transfusions-Komödie' and the *Wiener Medizinische Presse* published a satirical 'Chinese Transfusion Story' – a mock letter from a fictitious Dr Tschin, telling of a farcical, tumultuous and failed attempt to perform a lamb blood transfusion in the exotic General Hospital of 'Pecking'.[50] More seriously, the *Wiener Medizinische Wochenschrift* demanded that the hospital administration intervene against Fieber to restore the reputation of the hospital.[51] Other medical journals, however, reacted strongly against this proposal. They found it ridiculous that exaggerated newspaper reports about a trifling incident should lead to disciplinary proceedings; after all, the patient (but not the lamb) had survived. Most of all, it seems, they feared a precedent that would affect the freedom of action of hospital physicians, damage the reputation of the medical profession, and lead to unnecessary disciplinary investigations. As it turned out, no disciplinary action was initiated by the hospital.[52]

Thus, lamb blood transfusion elicited curiosity and controversy, enthusiasm and sarcasm. It is noteworthy that most doctors who tried it, did so only once or twice. A handful performed up to a dozen lamb blood transfusions, and only the Italian alienists and Hasse himself were more ambitious: Manzini and Rodolfi transfused some fifty patients (most of them more than once) and Hasse at least sixty.

By late 1875, reports were largely unfavourable. The attacks and the ridicule in the press, the devastating critique by the physiologists and the discouraging findings of many physicians who had tried transfusion made doctors reluctant to attempt the therapy. It had gradually become de-legitimized. It was now seen as a hazardous play with patients' life and health, an experiment not worth trying. Several physicians regretted having attempted it at all. They swore to never do it again because of the pain and distress that their experiment had caused their patients. 'It is not allowed to endanger a patient's life in order to restore his intellectual faculties', as one Italian alienist warned.[53] And the German doctor Schmidt prophesized that lamb blood transfusion would soon 'like a legion of other remedies invented against [phthisis] fall into oblivion and be counted among the products of human aberration'. His patients, initially reported cured, had soon thereafter died.[54]

After the first year of apprenticeship, thus, doctors and (surviving) patients, Landois concluded, were 'waking up with a heavy head from their ini-

tial intoxication with the therapy. The fervour was replaced by a sobering-up.'[55] Or, as another critic expressed it, the initial 'Loblied' for animal blood transfusion was now swiftly turning into its opposite: a 'Schwanengesang'.[56]