Johan Thyberg

Scientific Fraud or Legal Scandal?
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Examination of an Investigation at Karolinska Institutet and the Swedish Research Council

Johan Thyberg
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1 Introduction

The large Swedish daily newspaper Dagens Nyheter (DN) on April 22 2004 reported that a “chief physician is suspected for serious fraud – an earlier professor at Karolinska Institutet is accused of having falsified research results” [1]. The background was that the largest medical university in Sweden, Karolinska Institutet (KI), had written a few weeks earlier to the Swedish Research Council and asked them for help to investigate what was called “possible deviations from good scientific practice”. This request concerned the chief physician and professor referred to in the DN article and one of his earlier doctoral students. Journalists had found out about the case and contacted KI’s newly appointed President, Harriet Wallberg-Henriksson, to receive further information. The same day as DN published the news about research misconduct at KI in big headlines, its President confirmed the matter in a press release. That afternoon the message was spread over the country via the news agency Tidningarnas Telegrambyrå (TT). It was there announced that a large number of serious suspicions were directed against the professor and his earlier student. However, according to the final sentence, KI itself found it “difficult to make a neutral investigation of the charges that had been raised” and therefore had asked for assistance from the Ethical Committee at the Research Council [2]. Nothing was said in the press release about the fact that the person who had raised the charges was a colleague and business partner of the professor. This was revealed the next day, April 23, in another notice originating from the Swedish News Agency TT and published in, among others, the daily newspaper Svenska Dagbladet [3]. There one could read the following: “A representative of the labour union means that
deep personal conflicts flavoured with false accusations and broken promises have led to the situation at KI where two former employees have become accused for scientific fraud”. At hand was thus a conflict between two persons and “suspicions” that KI wanted help from the Research Council to examine.

In the DN article referred to above, written by the journalist Per Snaprud, the name of the accused chief physician was not mentioned. Nevertheless, the information given in the text made it easy for almost anyone to identify him, for example via official registers. Obviously, there were also many at KI and at the hospital where he worked who recognized his identity, and the spreading of rumours immediately started. The article contained several citations of Jan Carlstedt-Duke, Dean of Research at KI, and Kerstin Uvnäs Moberg, professor at the Swedish University of Agricultural Sciences (SLU) and colleague as well as business partner of the accused professor. He too had been contacted by Snaprud but had declined to make any comments until the investigation was completed. In Sweden, as in other countries, there exists a consensus according to which “nobody should be convicted without being heard” and “nobody should be convicted based only on suspicions”. Within the legal system the demands for evidence is likewise high and one often refers to the Latin expression “in dubio pro reo” (when in doubt, for the accused). Even though this principal is not literally included in the Code of Judicial Procedure, it has by practice become a basic rule that no one should be sentenced if it cannot be shown beyond all reasonable doubt that he or she is guilty. Why then did KI and DN choose to make public the “suspicions” against two individuals who till then had not been given the opportunity to defend themselves? After all, the independent investigation KI wanted to have carried out was not yet started. What was the public interest that motivated exposure in a large daily newspaper of “suspicions” originating from a business conflict between two researchers?
State authorities like KI and the Research Council may refer to the principle of public access to official records? However, this is no real excuse since many matters under examination are made secret, at least temporarily. Within legal institutions it is almost a rule that preliminary investigations are given secrecy when an infringement of the law is suspected. In this situation, one does not want to expose someone publicly before it has been found out with reasonable certainty if he or she is guilty. But can suspicions of an economic crime, for example, really affect a person’s reputation and integrity more than if he or she is accused of “serious scientific fraud”, and in reality is deprived of the possibility to continue to do research? How one responds to this question may depend on personal preferences. Anyhow, for most there can be no doubt that it is a personal tragedy for a researcher to be publicly accused of serious fraud and plagiarism. In such situations, as in all cases concerning a person’s guilt, it is mandatory that the investigation be performed in an objective and legally secure manner. The Swedish Rules of Court (SFS 1942:740) regulate how legal cases should be handled. The demands for evidence are set high both in the law text and according to the practice that has developed over time (the guilt should be without all reasonable doubt). What applies when other authorities examine suspected breaches of rules and take actions against individual persons is stipulated in the public administration law (förvaltningslagen, SFS 1986:223). One of the basic paragraphs of this act is that those who are objects of an investigation should be given access to all the material of the case and have the opportunity to comment on it.

The investigation made by the Expert Group for Questions of Misconduct in Research (hereinafter just called the Expert Group) within the Ethical Committee of the Swedish Research Council came to last for more than two years. In December 2004, more than eight months after KI asked for assistance from the Expert Group, three reviewers were appointed to the task of scrutinizing the suspicions of “possible devia-
tions from good scientific practice”. This work was to take more than one year and was described in a 24 pages long report delivered to the Research Council in the end of January 2006. Björn Thomasson, secretary in the Expert Group, made the reception of this document public on January 24. In this acknowledgement it is stated that the two researchers who were the objects of the investigation would be given the chance to comment on the report before the Expert Group put together a final statement to KI. Three days later, January 27, and long before the Research Council had taken any formal decision, a full page was devoted to the case in the newspaper DN. There, two articles appeared, one with the title “ex professor accused of extensive scientific fraud” [4] and one with the title “hot research lured the way to rapid and incorrect results” [5]. The two suspects had probably not yet even received the report before they could read about it in one of the major Swedish daily newspapers. One must ask what interests the Research Council and DN acted for when they chose to publish a written statement making up an integral part of an as yet unfinished investigation?

Another four months later, the Expert Group formulated its “sentence” in the case and concluded that the professor and chief physician Thomas Lundeberg as well as his former graduate student Joakim Carleson had seriously deviated from good research practice. The conclusions were based on the report previously presented by the three reviewers. At this time, the case was returned to KI, the university that had requested the investigation and that had to decide about sanctions. So which were these? In the decision of the KI President, dated June 22, attention was called to what the Research Council had found but no real measures against the two convicted persons were taken (3327/06208). In cases of proven scientific fraud the university usually reports to the journals where the results have been published and declares that one no longer can take responsibility for them. Directly or indirectly it is recommended that the articles should be retracted. None of this was done in this case, at least not initially. Nei-
ther were any steps taken against the doctoral thesis defended by Joakim Carleson in 2001, although it was questioned if the experiments described had been performed at all. This discrepancy between the verdict made and the actions taken (or not taken) is difficult to understand. In an article in Dagens Medicin (Daily Medicine) from June 12 2006, Professor Ola Stenqvist from Gothenburg delivered strong criticism against the investigation performed by the Research Council and the lack of protection of the legal rights of the defendants in the process [6]. Similar remarks had already been forwarded to the Research Council at the time when the reviewers had presented their report. Moreover, in a stated opinion from February 2006, the former Swedish Parliamentary Ombudsman (JO) Bertil Wennergren had questioned the formal basis on which the examination of the Research Council was conducted. He finished his statement as follows: “My conclusion is that the Research Council should terminate its investigation and forward an excuse to Thomas Lundeberg and Joakim Carleson”. However, not even this made the Research Council reconsider what was going on.

A close relative of a graduate student of Thomas Lundeberg contacted me a few days after the first article about research misconduct appeared in the newspaper DN in April 2004 [1]. This person, unknown by me, started to tell about the background of the article and how younger collaborators of Lundeberg had been negatively affected by the investigation that Kerstin Uvnäs Moberg and her representative Kurt Björkholm had initiated and then kept alive at KI since a few years back. At the time of this contact, I had read the fraud story in DN but had no idea about who the accused professor was. Neither did I know who Thomas Lundeberg was. Later I was phoned again by the same person on several occasions, as well as by others who had worked with Lundeberg and wanted to let someone know about their problems. Uvnäs Moberg and Björkholm likewise invited me for a meeting to present their version of the case. The reason why all these
persons chose to get in touch with me was not that I had any specific knowledge about the ongoing conflict, but rather that I recently had published an article in DN in which some of the commercial contacts at KI (the most highly ranked university in Sweden) were criticized [7]. Based on the information given by both sides, I concluded that this was a highly complicated matter. The way in which it had been handled by KI also raised many questions.

Following the second set of newspaper articles about the fraud investigation, I decided in February 2006 to visit the Swedish Research Council and have a look on the documents available in the case. What I found was not only surprising but also disturbing. The process was led by one of the highest jurists in Sweden, Kjerstin Nordborg, a Justice of the Swedish Supreme Administrative Court. As mentioned above, the Expert Group chaired by Nordborg had not taken any notice of the opinions regarding serious deficiencies in the investigation forwarded from outside, among others by a former Parliamentary Ombudsman. Moreover, the highly criticized document produced by the three reviewers was used without adjustments as a basis for the judgement of the Expert Group. The President of KI in her decision pointed out that the Research Council had found both Thomas Lundeborg and Joakim Carleson guilty of “dishonesty in research”, but surprisingly took no other actions. On the other hand, Lundeborg was later forbidden by his employer, Danderyd’s Hospital, to do research with reference to a risk for “loss of trust” (DS rehab 107/06).

Even if KI now considered the case finished, Kerstin Uvnäs Moberg and her solicitor Kurt Björkholm did not. They have continued to deliver official letters in which they call for further investigations of Lundeborg’s scientific work. As late as in June 2007, Uvnäs Moberg wrote both to KI and SLU to require an extended examination of the entire set of questions she and Björkholm had pursued during the last several years (KI 3374/07-608). Just about a month later, the same request was repeated in a petition to the Minister of Education
Lars Leijonborg and the Minister of Agriculture Eskil Erlandsson in the Swedish Government (JB2007/2439 ELT). The demands for an assessment of the infringements of her own research that Uvnäs Moberg requests include, in addition to Lundeberg, about thirty other researchers at KI, SLU, Gothenburg University, the Royal Institute of Technology in Stockholm as well as universities in the USA, Italy, Japan, and China. The call for inquiries also incorporate the leadership of KI, Sahlgren’s Academy in Gothenburg and the earlier principals of SLU, all of which are accused of having neglected to assist with inspections and in some cases to have omitted to respond to letters and other official communications. Finally, Uvnäs Moberg also wants some ten drug and biomedical companies to be scrutinized for intrusion into her research.

Here, it should be pointed out that Kerstin Uvnäs Moberg’s claims that Thomas Lundeberg and others have intruded into and taken over or stolen her research seem to be based on a misconception of the nature of basic research. A fundamental element in science is that researchers by publishing their results (either in print or verbally on a congress/meeting) share them with colleagues and other interested persons all over the world (the findings become part of a common heritage). This is so that knowledge should be spread wide and generate further knowledge, moving the research front forward. If the results are considered to have the character of an invention, they may be patented before being published. They are then protected from infringement and commercial exploitation without payment of license fees or another type of remuneration. However, patent protection does not mean that university scientists are unable to freely use the results in academic research.

To try to understand what the Lundeberg case is basically all about, and how the persons in charge have handled it, I decided in the beginning of 2008 to go through all the documents available at KI, the Swedish Research Council, and other authorities. The picture that
emerged does not really resemble any of the many other cases of suspected scientific fraud (some confirmed, some not) described in modern time. The investigation is characterized by the many unusual official communications and accusations that are found at KI, the Research Council, and the Ministry of Education. They indicate that this is not an ordinary assessment of suspected scientific fraud but something much more complex. The manner in which the inquiry has been performed by KI and the Research Council, and the lack of law and order the two suspected persons have been exposed to, are appalling. The primary purpose of the analysis presented here is not to decide to what extent Thomas Lundeberg and Joakim Carleson are guilty of research misconduct. This cannot be determined solely on the basis of the material available. The intention is rather to scrutinize the investigation carried out for several years by KI and the Research Council. The picture that emerges is a process characterized by lack of objectivity, deficient evidence, and an authority culture in decline. It is evident that a new set of regulations for the evaluation of suspected scientific fraud is needed in Sweden, as well as a new independent unit responsible for this task.

2 Definitions

2.1 What is scientific fraud

Scientific fraud, or misconduct/dishonesty in research as it is officially most often called, is a complex and not very well defined concept. It is also disputed how frequent this phenomenon is, largely because of the lack of reliable methods to detect and measure it. Some indicate that the cases disclosed represent just a few exceptions and that the research society as a whole is trustworthy. At the same time, the opinion is often expressed that those responsible are odd and aberrant persons who act on their own. Others infer that the problem with scientific
dishonesty is widespread and relates to an appreciable part of all research articles published. Perhaps it may even be that all researchers can be considered guilty to some extent. It is then of course important to ask what we mean with scientific fraud. As the science historian Horace Freeland Judson writes in his book "The great betrayal – fraud in science" [8], three components are usually included in this concept: fabrication, falsification, and plagiarism. To be defined as fraud, the action should also have a deliberate intention to mislead the reader or, if this is difficult to prove, be a ruthless disregard of accepted scientific practice. Fabrication means that results have simply been made up and that no experiments were performed. In the case of falsification, the data obtained have been manipulated, for example by omitting measured values or observations that speak against the conclusions one wants to make, or by combining the best parts of different experiments and give the impression that they derive from one and the same test. Plagiarism implies that findings have been copied from the studies of others. Sometimes it may be a complete theft of everything from ideas to experimental setup, results and text formulation. Examples even exist of how researchers have managed to appropriate an entire manuscript from others and tried to publish it in their own name. Another and less apparent type of plagiarism is when scientists fail to cite earlier studies that can be considered to constitute a model for their own work. What is then done is to give the impression that one’s own investigation is more original and novel than it really is.

The types of misconduct described above can all differ in degree of difficulty. Fabrication is always a serious offence but may vary in extent all the way from manipulating occasional values in a series of chemical measurements to making up a large number of patients in a clinical study, including symptoms and laboratory data. At least in its more severe forms, this type of infringement is probably rare. On the other hand, it most likely happens that almost all researchers exclude measurements or disregard observations that deviate. In a similar
manner, it is frequent that formulations or shorter pieces of text are copied word-for-word from publications of others or from the author’s own earlier work without proper citations. It then most frequently concerns things such as the background of a project or description of established methods. In extreme cases it may happen that someone tries to steal an entire work from others, including both text and results. Special problems can also occur when researchers get the possibility to study the findings and ideas of others before publication. For example, this happens in connection with applications for grants and employment, and when manuscripts are submitted to a scientific journal. In these situations, several expert reviewers are normally appointed to judge the documents presented (a process called peer review). Consciously or unconsciously, it may then happen that the examiners grab hold of ideas and information that can be used in his or hers own research. In severe cases, this may be compared with theft of intellectual properties (not yet published concepts and results).

With this background, it is not easy to draw up the boundaries when deciding what should be judged as “misconduct in research”. Some mean that all the types of fraudulent behaviour described above must be condemned and measures taken against them. Otherwise, there is a risk that one starts to stretch the limits for what is accepted. There is also risk that the judgement will not be equivalent from case to case and from one person to the other. The investigation of suspected scientific fraud has by tradition primarily been handled by the research institution itself, which then can easily get caught between two driving forces. One is the demand for a high ethical level in its scientific work. The other is the fear that the organization (e.g. a university) will appear in an unfavourable light and get a bad reputation. For this reason, it is advisable to delegate the examination of these cases on an external and independent unit. In a small country like Sweden, such an entity could preferably be organized at a national
level and be made separate both from the universities and the large
granting agencies. In order to guarantee the function of the system, a
clear set of regulations and a well-educated staff with legal as well as
scientific competence will be needed.

2.2 Motives

What is it then that makes scientists cheat? A component of personal
winning is almost always involved. A contributing force is also the
social rules that distinguish the research society. It is a very competi-
tive environment where the participants compete all the time to be
first with interesting findings and to get results published in the most
recognized scientific journals. Likewise, there is a constant struggle for
research grants and higher positions. In contrast to most other profes-
sions in society, the researcher is supposed not only to create his or
her tasks but also to procure the economic resources required to per-
form the work (via grants of different types). Nowadays, it has further
become more and more frequent that this also includes contributions
to his or her personal salary. Altogether, this means that those who
want to pursue research in an active field all the time are closely ex-
amined and compared with others in the search for funding. Under
the stress this causes, the temptation to take a short cut by fraudulent
behaviour may become difficult to resist.

Another factor of increasing importance is that a growing number
of scientists during recent years have become involved in commercial
activities of different types. This may include engagements in compa-
nies as founder, co-owner, board member, and advisor, or in some
cases even as scientific head or chief executive officer (CEO). A similar
situation may appear if a researcher takes part in a project that his or
her institution has agreed upon with a corporation (usually to be con-
sidered as a business contract). In these cases, there is frequently an
incentive and pressure to attain results that promote the economic development and/or the survival of the company. This may lead to a lure to add to reality in order to obtain positive and exciting findings to present, which may be required for accounts to patent organizations and other authorities, continued economic support from external investors, *et cetera.*

2.3 *Discovery and sanctions*

In most cases, misconduct in research is probably never uncovered, which also means that no sanctions follow. How big the problem is can therefore not be determined. When the fraudulent behaviour is brought to light it may occur: (*i*) within the research group or department itself, (*ii*) in connection with review of a manuscript in an editorial board of a journal, (*iii*) when grant or job applications are evaluated or, (*iv*) from the reading of published articles by colleagues. A complicating factor is that modern research, not least in the natural sciences, has become methodologically more and more specialized and often is carried out in cooperation between several different groups in separate departments. Even if all authors of a scientific report according to established rules are expected to jointly be responsible for all of its content, this seldom functions in reality. For a long time, it has further been a problem that co-authorship often has been assigned on vague grounds. Not least frequent is that senior colleagues (*e.g.* department or group leaders) have had their names added on articles without actively having participated in the study (neither in planning, experimental work, or writing). The reason has then often been that these persons have had control over the economic resources in their position as heads and that this has been used as an argument to include their names on the publication. Another questionable motivation for co-authorship may be that someone has con-
tributed some type of material (e.g. reagents, cell lines, animals, et cetera) without otherwise taking part in the work. Many journals have become aware of this dilemma and today require an account of the manner in which each of the authors has contributed to the study.

So what happens when suspicions of fraud appear in any of the situations outlined above? This is in part a question of the position of the supposed perpetrator. If he or she is a group leader, the dependence makes it difficult for younger collaborators to report their doubts to a higher representative of the institution. The chairman of the department and the president of the university likewise find themselves in an ambiguous situation. They have the ultimate responsibility for the activities and it is unpleasant if fraud or dishonest behaviour is disclosed and exposed officially. This risks leading to suppression of the incident and a lack of proper actions. As will be discussed later on, this is an important reason why the task of investigating suspicions of scientific fraud should be assigned to an external and neutral organization. Like KI, most universities have an ethical council that is given the duty to bring clarity in matters of research misconduct. However, it is finally the president who decides about interventions on the basis of what have come out. The type of measures then taken may include suspension or withdrawal of publications, degrees, diplomas et cetera.

When irregularities are discovered in connection with the review of a submitted manuscript to the editorial board of a scientific journal, the normal procedure in most cases has just been to reject the paper and to point out to the authors what has been found. However, in the assessment of manuscripts as well as grant or job applications, it is not easy to detect fraud. During the last several years, many highly ranked journals (where the most striking cases of fraud have appeared) have therefore worked out new routines and engaged specialists that closely examine the material presented. Special attention is then paid to electronic pictures, a type of illustrations easy to manipulate. One has also to become more active in reporting to the employer
of the responsible researcher(s) when misconduct is detected. The most common way in which deception so far has been disclosed is though probably via the readers of the scientific publications where it appears. Those who detect the faults and report them (often called whistleblowers) may however face difficulties of different types. Hence, there is a risk that many omit to tell what they have found. Unfortunately, it also happens that false or ill-founded accusations are forwarded against a researcher in order to damage him or her, for example from an opponent or competitor. For several reasons, it is thus of utmost importance that suspicions of misconduct are investigated in an objective, legally secure, and professional manner. What it is all about is not only the integrity and working possibilities of individual scientists but also the trust of science as a whole, an activity largely financed via public funds.

3 Short historical account

As Horace Freeland Judson wrote in his book from 2004 [8], scientific fraud is in no way a new phenomenon. It has always existed, more or less as deceitful behaviour has always existed in other parts of society. As a background to the exposition of the present case, some examples of suspected and/or confirmed misconduct given a great deal of public attention will be presented. We start with a few prominent figures and pioneers from the 19th century, against whom criticism has been directed when parts of their work have been examined by science historians. Those included are the founder of genetics Gregor Mendel, the creator of the theory of evolution Charles Darwin, the microbiologist Louis Pasteur, and the father of psychoanalysis Sigmund Freud. Next a few contemporary cases will be described, including the immunologist Thereza Imanishi-Kari and her collaborator the Nobel Prize winner David Baltimore (finally declared innocent), the physicist
Jan Hendrik Schön, the stem cell researcher WooSuk Wang, and the cancer researcher Jon Sudbø. Finally, a couple of Swedish cases are included, the cancer researchers Ulf Lönn at KI and Roger Henriksson (declared innocent after investigation) at Umeå University and the plant biologist Ove Nilsson at the Swedish University of Agricultural Sciences (SLU) in Umeå.

3.1 **A few examples from the 19th century**

At the age of 21 and directly after his studies, Gregor Mendel (1822-1884) became a monk in the monastery of the Augustinian order in Brünn in Austria (today Brno in the Czech Republic). As an important part of his activities, he came to culture leguminous plants in the monastery garden and to study how the colour of the peas is inherited. During the years 1856-1863 he performed experiments with more than 28,000 plants. On the basis of his observations he put forward theories that later came to form the foundation of modern genetics. The results were published 1866 in the annals of the local natural science society. Initially, the article evoked little interest and was almost totally forgotten for more than 35 years. In the beginning of the 20th century, it was rediscovered and created an intensive debate. Some researchers questioned the results and concluded that from a statistical point of view they were too exact. The tests were however easy to repeat and the observations made in the monastery garden were confirmed. From then on, most researchers accepted the genetic rules proposed by Mendel. Together with the ideas on the origin of species published by Charles Darwin in 1859, the genetic theses of Mendel came to form the basis for the developing evolution theory.

One of those who in the beginning of the 20th century took up and re-examined Mendel’s results was the English statistician and geneticist Ronald Fisher. In an epoch-making article from 1918 he intro-
duced analysis of variance as a statistical method to show that human characters are inherited according to the rules put forward by Mendel [9]. In a later study from 1936 he used the chi-square test and found that the data Mendel had presented in his publication were so close to what could theoretically be foreseen that one had to suspect that they had been selected in order to agree with what the author expected [10]. In some experiments, Fisher estimated that the probability was less than 1 in 2,000 that the outcome should be as perfect as it was. The results were simply too good to be true. He tried to find out what this could be due to and noticed that Mendel in an early phase of his work already had his theory ready. One possibility is therefore that he consciously or unconsciously tended to classify the size and colour of the peas (the two properties studied) in order to make the results agree with his expectations. At this time as well as later, other researchers examined Mendel’s work with somewhat varying conclusions. More recent work has settled that Fisher’s analysis was the most correct. Even though few or no seem to believe that Mendel deliberately fiddled with his findings, it must anyhow be noticed that his studies in part contain elements of what, by definition, is called falsification (see chapter 2.1).

Charles Darwin (1809-1882) was contemporay with Mendel. Their respective works on the origin of species and the laws of genetics have formed the foundation of the modern theory of evolution. After many years of studies, Darwin published the first edition of his book On the Origin of Species in 1859 [13]. The ideas he expressed there were revolutionary for their time and aroused resistance in wide circles of society. From fear of causing too strong reactions, he delayed putting forward his ideas of the descent of man from apes. They were published twelve years later [14] and generated massive criticism, not least from the church. Still another year later, Darwin published a work in which he used a comprehensive photographic material to call attention to large similarities in the way humans and animals express feelings like
joy, sorrow, anger, fear, surprise et cetera [15]. This was one of the first scientific studies in which photographic illustrations were used on a larger scale. After Darwin’s death, the book came out in a new edition in which his son Francis included earlier unpublished material. As late as 1998, the book was printed in a third edition with an introduction, detailed comments, and afterwords by the social psychologist Paul Ekman. Like many others in the field, Ekman was originally of the opinion that the expression of emotions was something that humans had learnt and that reflected the culture in which the individual had grown up. However, in his work he could confirm Darwin’s theory that feelings and facial expressions have a biological function, give evolutionary advantages, and are basically the same in different cultures [16].

In his analysis of Darwin’s work, Ekman however found that some of the photographs Darwin had used in the first edition of his book about emotions and facial expressions were manipulated. The same applied to part of the photographic material in the archives Darwin had left behind. For example, he had used photographs taken by a French physician who with the help of electrodes stimulating groups of muscles could force different facial expressions. Some of the pictures had also been transformed into graphic prints, including removal of the electrodes. Likewise, in other cases it was found that the pictures had been retouched or that they were simply drawings made in order to resemble photographs. According to present norms, what Darwin and his collaborators did could be classified as a cross between fabrication and falsification. However, it must be stressed that photography was not an established technique at this time for presentation of research data. Accordingly, no rules had yet been set up in order to guarantee the objectivity in its use. The quality of a photograph was judged in view of how real and clear it looked rather than if it had been generated without dishonest tricks. As mentioned earlier, the situation today is completely different and many scientific
journals make large efforts to ensure that pictures have not been treated in an illegitimate manner.

The chemist and bacteriologist *Louis Pasteur* (1822-1895) has long been considered as one of the giants in the natural sciences during the 19th century. His name is connected with things like pasteurization (heating of milk and other foodstuffs to kill bacteria), the development of vaccines against anthrax, rabies and other infectious diseases, the discovery of pathogenic bacteria like staphylococci, streptococci and pneumococci, *et cetera*. He is generally seen as one of the founders of bacteriology and has by many been regarded as an idol and an inspiring example in his capacity of a discreet, methodological, hard working, and brilliant researcher. Not least in France, he was early given an almost saintlike status that has later lived on. Large concern therefore appeared when the science historian Gerald Geison published a biography in 1995 that gave a partly new and in some respects considerably more negative image of Pasteur [17]. Only little had earlier been known about the details behind the myth that had been created about Pasteur and his achievements. To a large extent this was due to that he himself had been very secretive in nature. For example, no one, not even his closest collaborators were allowed to look at his notes and protocols. Before his death, he had also instructed his family to keep his laboratory books strictly confidential. Only in 1964 did a male relative (the last lineal descendant) hand the books over to the French National Library as part of a large unsorted archive. Another seven years then had to pass before the books were made available for researchers and other interested persons.

Geison devoted twelve years to studying the 102 books with protocols and comments that Pasteur had left behind. Altogether they included about 10,000 pages with a barely legible handwriting and a partly cryptic text. Among others, Geison found that Pasteur had markedly misled other researchers and the public in connection with two official and highly praised performances arranged to demonstrate
the vaccination of sheep against anthrax and the vaccination of a young boy against rabies shortly after being bitten by an infected dog. In the beginning of 1881 Pasteur published an article in which a method for the production of a vaccine against anthrax was described. At this time, the disease frequently affected sheep and caused large economic losses for the farmers. The idea of the method was to weaken the anthrax bacilli by exposing them to the oxygen of the air. In doing so, they would lose their ability to bring about an infection but retain the potential to evoke an immune response that protected against the disease. Other researchers were hesitant to this technique and one of Pasteur’s co-workers instead used potassium bichromate to weaken the bacilli. Later the same year, Pasteur organized a demonstration at a farm outside Paris. He and his staff collected a herd of 50 sheep. Half of these were injected twice in a two-week-period with the vaccine Pasteur supplied. The other half obtained no treatment at all. Another two weeks later, all sheep were injected with a pathogenic strain of bacilli. On this occasion, Pasteur claimed that all the vaccinated sheep would survive, whereas the others would die of anthrax. Two days later, a large number of public authority persons, politicians, farmers, and journalists gathered at the farm. Pasteur was met with admiration and joy when it became clear that 23 out of the 25 unprotected animals had died and the two surviving were about to die. At the same time, all but one of the vaccinated sheep were healthy. Both researchers and others assumed that Pasteur had used a vaccine manufactured via the technique he had described earlier the same year. However, when Geison examined his notes it became apparent that potassium bichromate had been used to weaken the bacilli. It was thus evident that Pasteur had deceived everyone including the researchers in the field. In any case, the judgement Geison passed over this episode was mild. One reason may have been that Pasteur later showed that a functioning vaccine could be produced also with the method he had worked out.
Doubts of a more serious type emerged when Pasteur’s records of the rabies vaccine experiments that had been presented at a meeting with the French Academy of Sciences in October 1885 were studied. On this occasion, he announced that he had one year earlier successfully treated a young boy, Joseph Meister, who had been bitten by a rabies-infected dog with a vaccine produced by a new method. He also declared that he in parallel with the meeting treated another patient also bitten by an infected dog. This news was rapidly spread in France and abroad. Considering the panic connected with the fatal disease rabies (caused by a virus damaging the central nervous system) at this time, it is easy to understand that the message made Pasteur a great hero. The problem was however that these experiments were never described in print. The same applied to several of the animal tests performed before the treatment of Meister. In these experiments, Pasteur had removed the spinal marrow (nerve tissue) from infected animals and weakened it by exposure to the oxygen of the air for several days (the same method used for anthrax bacilli). The vaccination experiments that had been made with dogs (never published) were however difficult to interpret and not at all convincing. In reality, no proofs existed that he had a working vaccine. Moreover, the vaccination procedure used in these investigations was not the same as the one later used for Meister. To make matters worse, it transpired that the vaccine Pasteur had used was not the one he had described himself but rather one produced by a procedure worked out by the physician Emile Roux. Neither of these vaccines had however been adequately tested from a security point of view. Hence, it was not known if the spinal marrow extract used was really free of infectious material (active virus particles). The treatment Pasteur gave to the boy Joseph Meister was therefore ethically doubtful. Fortunately, the patient was not infected either by the dog that had attacked him (85% of those bitten don’t get infected) or by the vaccine he had been injected with.
Summing up, Geison’s studies demonstrate that the official portrait of Pasteur as an ideal for young researchers and a national symbol does not agree with the more ambiguous picture that become apparent during a close examination of his notes and correspondence. The description Geison gives is of a prominent but at the same time imperfect man. Pasteur was a strong, hard-working and ambitious researcher, but also secretive and deceitful. He was driven by exaggerated aspirations and found it difficult to share praise with others. This led to his exploiting the methods and results of colleagues without giving them proper credit.

Sigmund Freud (1856-1939), the father of psychoanalysis, was another man of distinction in the late 19th and early 20th century. His theories about the bases of mental disorders were however already early met by criticism. Some questioned if his step-by-step modified models of different psychic complaints were really anchored in reality and if the technique he described really had a curing effect. Doubts were also forwarded about the correctness of considering psychoanalysis as a science. At the same time, Freud had many faithful supporters and his ideas achieved high impact and wide dissemination. Much later, in the 1980’s and 1990’s, a more systematic examination of his studies was made. Among those who published the most thorough analyses Adolf Grünbaum [18, 19], Malcom Macmillan [20] and Richard Webster [21] can be mentioned. As a whole, these and other researchers strongly criticized the reliability and the scientific quality of Freud’s studies. One of the bases on which the criticism of Freud is founded is the correspondence with his close friend, the physician Wilhelm Fliess. Freud had unsuccessfully tried to get this collection of letters burned. It was published in part in 1950, but only in a strongly censored version. A complete edition appeared first in 1985 [22]. From these letters it is clear that in his texts Freud had given a false view of his work. In a Swedish review including the publications mentioned above, the psychologist Billy Larsson summarizes the assessment of
Freud in the following manner [23]: “If one should sum up how the critical view of Freud that appeared in the 1990’s looks, one can say that it deals with how Freud gives a distorted picture of how his theories arose, what support they have, and the fact that he conceals the lack of real evidence with misleading rhetoric. On all these points, Freud wants to give the impression that what he is presenting is clinically established theories.” A little later on, the verdict continues like this: “All researchers can make mistakes, but in Freud’s case the peculiarities, distortions and untruths are too many to be considered as accidental mistakes. Rather, the errors are deliberate, systematic and tendentious. They are part of a strategy hiding the fact the Freud lacks empirical support for his basic theories; that it is he himself who creates what he later claims to have found.”

3.2 The case of Thereza Imanishi-Kari and David Baltimore

The case of Thereza Imanishi-Kari (born 1943) and David Baltimore (born 1938) is one of the most well known and protracted in modern time. Together with four colleagues, they published an article in 1986 in the highly respected journal Cell that attracted much attention [24]. In this study, transgenic mice (animals that had received a gene from outside) and a variety of methods had been used to follow how antibody molecules are manufactured by so-called B-lymphocytes. The results suggested that the production of antibodies is regulated via a network-like interaction of different cell types in the immune system. This supported a model proposed by the Danish Nobel Prize winner Niels Jerne on theoretical grounds twelve years earlier. The essay in Cell was a collaboration between Baltimore’s laboratory at Whitehead Institute for Biomedical Research outside Boston, responsible for the molecular biology work, and Imanishi-Kari’s laboratory at Massachusetts Institute of Technology (MIT), in charge of the serological work (the antibody analyses). The person who raised suspicions about the pub-
lication and so initiated the ten year long process that followed was Margot O’Toole, a researcher employed by Imanishi-Kari half a year earlier to take part in the follow-up of the findings. However, O’Toole had problems getting one of the analytical methods used in the article to function. When she went through files with old protocols she also found notes that made her doubt that some of the results published in Cell were correct. Among others, she mistrusted that some of the experiments had been done at all and felt that the data might have been made up. Later in the spring of 1986, her suspicions were forwarded to higher chiefs at Tufts University, to which Imanishi-Kari just had moved.

From then on, the investigation machinery began and would continue at different levels for ten years ahead. Most of the interest was focused on Imanishi-Kari and no direct accusations were made to Baltimore. However, because of his participation in the study, his high position, and the fact that he defended Imanishi-Kari, he also came into focus and called in question. Over the years, this affair was frequently debated both in scientific journals and in major American newspapers. The case has also been described in book form. The most detailed account is found in the more than 500 pages long book entitled The Baltimore Case by the science historian Daniel Kevles [25]. In addition, Horace Freeland Judson devoted about 50 pages of his book to this topic [8]. The three principal characters, Imanishi-Kari, Baltimore and O’Toole, all had to pay a high personal prize and their respective careers were seriously affected by the case. In many respects, the investigation turned into a demonstration of the difficulties and pitfalls a process of this type may meet with. Already in the foreword of his book, Kevles declared that Imanishi-Kari never got a fair trial. In his opinion, she was sentenced by the general opinion, which in turn was reinforced by political forces that wanted to make an example to oppose what was considered as a lack of integrity within the science
society. In the end, she walked free of all the charges raised against her.

To recapitulate the story, it all started in May 1986 when Margot O’Toole forwarded her suspicions of fraud against Imanishi-Kari and the *Cell* article from the previous month to Tufts University. A group appointed to examine the case concluded that the article contained a few small errors, but there were no signs of intentional deceit or misleading. Shortly thereafter, an investigation was done at MIT with similar results. In the autumn of 1986, a colleague passed on O’Toole’s doubts to the National Institutes of Health (NIH), where an official inspection was started in the spring of 1987. Another year later, the case was taken up by a Congress committee led by Congressman John Dingell, who became a central figure in the several years long process, or hunting as Kevles compared it with in his book [25]. Among others, Dingell confiscated the laboratory protocols of Imanishi-Kari and handed them over to the Secret Service for analysis. In January 1989, the first investigation at NIH was completed and concluded that the *Cell* article suffered from some erroneous information and omissions, but no evidence for intentional fraud or manipulation was found. Nevertheless, NIH took up the case again in April 1989 based on new facts that had come up in the Dingell committee as well as new information given by O’Toole, this time within a newly established unit with the name *Office of Scientific Integrity* (OSI). Two years later, March 14 1991, a draft of a formal report was sent to Imanishi-Kari and others for comments. Via a leakage, copies of this draft were sent within less than a week to several large newspapers. Already on March 21 it was thus possible to read in Washington Post [26] and New York Times [27] that OSI had declared Thereza Imanishi-Kari guilty of scientific fraud. Shortly afterwards, similar articles appeared in other daily papers and in scientific journals.

Later during the spring of 1991, the newly appointed director of NIH, Bernadine Healy, wanted to make acquaintance with the
work of OSI. According to the testimony she gave to the Dingell committee in August 1991, she became frightened and upset when she discovered the lack of objectivity in OSI’s investigation and how information had been leaked before it was ready. She indicated that also other cases than that of Imanishi-Kari had been handled in a doubtful manner. Legal experts further meant that basic rules for the protection of personal integrity in the American constitution had been violated. Healy was also astonished over the way in which Dingell and his staff had interfered in the work, and the interrogation developed into a heated discussion between the two of them. The internal investigation of Healy led to that the chief of OSI had to resign and a reorganization of the unit started. In the end, the matters earlier handled by OSI were assigned to a new agency within the Department of Health, the Office of Research Integrity (ORI). It was initially given the duty to create a set of rules that should include a clear definition of what scientific fraud entails as well as a just investigation procedure. The new system also gave the accused the right to appeal against a decision and to have his or her case tested according to the norms used in a court [28].

In reply to the preliminary report from OSI, the attorney of Imanishi-Kari wrote an indignant letter in which he strongly criticized them for continual leakages that now again had led to his client being hanged out publicly. He also demanded copies of the many documents referred to in the report that he and his client had not been given an opportunity to see and therefore were unable to comment on. This request was never met and at the end of May 1991 Imanishi-Kari submitted a response to the report draft to Suzanne Hadley, the not yet dismissed chief of the investigation. There she emphasized that, as defendant, she had been deprived the right to defend herself by being refused access to all the material included in the examination. In spite of this, she tried as much as possible to meet the charges raised against her. A few weeks later the new director of NIH, Bernadine Healy, asked OSI to postpone the final report until Imanishi-Kari had
been given access to all the documents allowing her to fully respond to what she had been blamed for. Before this was done, another year passed. When the laboratory notebooks that Dingell had confiscated and permitted the Secret Service to examine were finally handed over to Imanishi-Kari’s lawyer, he asked a forensic expert to evaluate the evidence for manipulation claimed to have been found. The expert in question was authorized by civil as well as military authorities and well acquainted with the methods used by Secret Service. After carefully going through the case, he found that the conclusions made of a fraudulent practice were not justified. In August 1992 Imanishi-Kari’s lawyer wrote an official letter to ORI, the authority that by then had replaced OSI, in which he among others referred to this statement and requested that the investigation should be closed. This was however not done and in a final, more than 200 pages thick report published in October 1994, most of the charges earlier raised against Imanishi-Kari by OSI were settled [29]. In the meantime (April 1993), two new articles had been published by Imanishi-Kari and collaborators. Many immunologists considered them as a confirmation that the findings reported in the Cell article from 1986 were reproducible. Shortly thereafter, yet another paper came out in which other researchers corroborated the original findings. In all three of these publications, the results were however interpreted in a different way than in the Cell article.

Imanishi-Kari appealed against the decision of ORI, but the judgement anyhow caused her to lose her position at Tufts University. To settle the case according to the new rules that had been inaugurated, an Appeals Board comprised of one researcher and two lawyers was appointed. Here, the proceedings occurred in a court-like manner and each side had the opportunity to present its case and to call and cross-examine witnesses. A new and experienced attorney, Joseph Onek, now represented Imanishi-Kari. After long preparations, the negotiations started in June 1995 and lasted until September. The ses-
sessions lasted 28 days and resulted in more than 6,000 pages of protocol. The decisive point turned out to be the question about the strength of the technical investigations made by Secret Service. Supported by expert opinions as well as testimonies of researchers and other employees at MIT, the defence managed to establish marked weaknesses in these analyses. After completion of the process and the submission of written summaries of the accounts of each side, it took until June 21 1996 before the judgement of the Appeal Board was presented. The two first pages summarized the decision according to which Imanishi-Kari was found not guilty of any of the 19 charges ORI had raised against her [30]. Later in the text, a short summing up of the whole case was given. It was said that much of the material ORI had presented was irrelevant, of limited value as evidence, inconsistent, unreliable, lacked credibility, or was based on unjustified assumptions. A harder criticism of an organisation dominated by legal experts is difficult to imagine. Both the Appeal Board and others also criticized the central role Margot O’Toole, the whistleblower, had been allowed to play throughout the different phases of the investigation. One meant that the persons in charge of a case like this must be neutral in relation to the accuser and the accused. As a final point, it can be mentioned that Thereza Imanishi-Kari after the verdict of not guilty was reinstated on her position at Tufts University and after one year was promoted to associate professor with tenure. She is still active there within the field of immunology and publishes papers in highly respected scientific journals.

3.3 A few other international cases

Jan Hendrik Schön was a young German physicist (born 1970) who after presenting his doctoral thesis at the University of Konstanz was employed at Bell Laboratories in the USA. There he made a meteoric career and in about two years he published, together with the director
Bertram Batlogg and others, more than 60 articles in highly ranked journals like Nature, Science et cetera. Among the discoveries put forward one can find for example the first organic laser, new superconducting molecules, and a transistor made up of a single such molecule. The results attracted great attention and Schön became a superstar of electronics and nanotechnology. Many even mentioned his name as a prospective Nobel Prize winner. During 2001 and 2002 he received three prestigious awards. However, it did not take very long before other researchers started to suspect mischief for reasons, among others, because they were unable to reproduce his experiments. Many also considered that the data presented were too exact and in part violated existing physical principles. Gradually it was also detected that some graphs had been used in several different publications dealing with different issues. In the spring of 2002, Bell Laboratories set up a committee to examine to what extent irregularities had occurred. A problem facing them was that Schön had not kept any laboratory books of his experiments and that raw data had been erased from his computer. In September the same year a report was presented [31] which disclosed that 16 of 24 articles checked contained clear cases of fraud. For example, entire sets of results had been reutilized in several different tests. The same applied to a number of graphs. Alternatively, curves that were said to show measured values from experiments were found to have been generated with mathematical functions. Schön was judged entirely responsible for the manipulations and his co-authors went free. It must anyhow be thought highly remarkable that they could have failed to note what was going on. Schön admitted that he had falsified data but claimed that this had only been done in order to make real observations more clear. The same day as the report was released, he was dismissed from Bell Laboratories. During the coming months, a total of 21 articles were retracted from Nature, Science and four different physical journals.
Another case to attract attention worldwide was that of the South Korean stem cell researcher Woo-Suk Hwang (born 1953). Together with a number of colleagues, he published in March 2004 an article in the journal *Science* in which it was claimed to have produced for the first time embryonic stem cells via so-called therapeutic cloning [32]. In this technique, the nucleus is removed from an egg cell and replaced by one from a somatic cell and the latter is so affected that the new cell will develop the character of an embryonic cell. When the egg cell has been allowed to divide a few times, embryonic stem cells can be isolated from the early embryo (70-100 cells large) and used to create a stem cell line via in vitro cultivation. These cells can then be influenced in order to differentiate into different types of specialized cells in the body and be used in the attempt to treat diseases such as diabetes, Parkinson’s and Alzheimer’s disease. If the somatic cell used in the cloning comes from the patient, the cells used for the treatment will be genetically identical with the patient’s own cells and no immunological rejection will occur. Slightly more than a year later, Hwang and collaborators published a new report in *Science* describing another 11 human stem cell lines produced via therapeutic cloning [33]. These two articles caught attention all over the world and were seen as important breakthroughs on the way to be able to use patient-specific stem cells to cure serious disorders. Hwang himself was also raised to the status of a national hero in South Korea and received several high awards.

Soon, however, criticism started to appear against Hwang and the projects he had led. Initially, the way in which egg cell donators had been recruited was questioned. In violation of existing ethical rules, some donors had been paid and the study had also included young women from the research group itself. At the end of 2005, an increasing number of suspicions about the scientific content of the two articles were presented. A serious turn in the affair occurred on December 15 when one of the co-authors on the publication from 2005, Sung-il
Roh (chief of one of the laboratories Hwang had collaborated with) claimed that that 9 out of the 11 cell lines described in the paper were made up. Analyses revealed that these cell lines all had the same set of DNA, indicating a common origin. Roh further declared that many of the micrographs that had been used to show the cell lines were fabricated and false. Two days later, Seoul National University appointed an internal group to investigate the accusations. In the final report published already on January 10 2006, it was established that Hwang had fabricated data, that no patient-specific stem cell lines were available, and that no evidence could be presented to prove that such cells had ever existed [34]. Another two days later, the editor of Science decided to retract the two articles from Hwang and others. In February, Hwang was suspended from his position as professor and a little more than a month later he was dismissed. Still a few months later, he was prosecuted for wilful deception, breach of the national bioethics law, and embezzlement of about three million US dollars from public research funds. It was also shown that he was guilty of extensive irregularities with donations from companies, organisations and private persons.

The Norwegian cancer researcher Jon Sudbø (born 1961) is another example of far-reaching fabrication of data. He was both a dentist and a physician and highly successful as researcher in Rigshospitalet (the National Hospital) in Oslo with a sizeable number of publications in well-reputed journals and large funds, also from the USA. In October 2005, Sudbø published a clinical investigation in the well-known journal Lancet together with 13 colleagues from Norway, the USA and Finland [35]. They had studied patients from a large Norwegian database and found that treatment with anti-inflammatory drugs (non-steroidal) for long periods decreased the risk of oral cancer in smokers as well as non-smokers. Only three months later, the Norwegian newspaper Dagbladet disclosed that the article was made up and that the patients described in it had never existed in reality [36]. This had
been discovered by the director of the Norwegian cancer registry. A similar type of fraudulent behaviour had been found in an earlier publication by Sudbø and collaborators in the New England Journal of Medicine. In order to follow up this information, Rigshospitalet and Oslo University set up an independent commission led by the KI Professor Anders Ekbom with the aim of making a general examination of Sudbø’s scientific work. A final report, handed over in June 2006, concluded that many of Sudbø’s research articles were characterized by fraudulent practice and especially fabrication of data [37]. Fraud was detected in 15 of the 38 articles he had published since 1993. This also included his doctoral thesis. As a result of the inquiry, a large number of publications were retracted and the dissertation was declared invalid. Moreover, Sudbø’s authorizations as dentist and physician were withdrawn. The commission could not find that any of the many co-authors on the criticized papers had taken part in the fabrication of data. Nevertheless, they were blamed for lack of responsibility and inadequate control of the data they had added their names to.

3.4 A few Swedish cases

Here, a few contemporary cases of suspected or confirmed scientific fraud in Sweden will be described. Ulf Lönn was associate professor at KI and physician at Radiumhemmet (RaH – the Oncological Clinic) and the Karolinska Hospital in Solna. In his research he presented results indicating that the occurrence of more than one set of certain genes (gene amplification) was of importance for the prognosis among others of breast cancer. The findings were published in several articles in well-known international journals together with a number of co-authors. However, a colleague in the clinic began to suspect that something was wrong. The reason was that the results looked too good and the laboratory assistants who took part in the work witnessed about great problems with the analytical methods used. After
receiving a written notice in the beginning of 1996, KI first made an internal investigation of the case. Later it went on and appointed an external group of three professors who examined the suspicions more closely. In February 1997 this group delivered a report in which Lönn was extensively criticised [38]. First, it was stressed that the investigation was complicated by the fact that no primary data had been saved. Lönn claimed that he had thrown them away due to the lack of space, an explanation the reviewers did not believe. It was further established that there existed basic flaws in the way in which some of the analyses had been performed. Most importantly, this applied to PCR (polymerase chain reaction), the method used to study gene amplification. In reality, it was not possible to get the type of perfect results that had been published. It was therefore considered evident that results had been fabricated without any experiments being done.

The expert committee summarized their view in the following way: “The falsifications that we beyond all doubt have found have taken place over a long time and include a large number of samples. It all began already before Lönn started to work with clinical material. Damages have been caused due to both the misleading of other researchers and the inappropriate expenditure of research grants. Even more serious is that the results were published with the purpose of providing prognostic guidance, which means that they indirectly may have influenced the treatment of patients with breast and urinary cancer”. In a long written response, Lönn denied all the charges raised against him. On August 19 1997 the President of KI, Hans Wigzell, made his decision based on the investigation’s findings. The following was stated: (i) “Lönn shows shortcomings in his research and he has not in a satisfactory way been able to verify his results. Therefore, KI cannot stand behind the findings he has published”; (ii) “there is strong evidence that Lönn has deliberately manipulated data, but KI has not found sufficient support to say from a legal point of view that it is beyond all doubt to draw this conclusion” and; (iii) the content of this report will be spread to all interested parties, including the scientific journals that have
published Lönn’s findings as well as the granting agencies that have supported his work”. No direct actions were taken by KI since Lönn was not employed there but by the County of Stockholm (responsible for health care). Later on, he stopped working at the Karolinska Hospital and became a senior physician in oncology at the hospital in the city of Gävle. According to the publication database PubMed, he has not published any scientific articles from 1996 until 2008. This year, his name appeared as number 7 of 16 authors on a multicentre phase II trial of combined drug and radiation therapy of a subtype of lung cancer.

A case that also attracted much attention internationally was that of Professor Ove Nilsson at the Swedish University of Agricultural Sciences (SLU) and Umeå Plant Science Center. Together with a team of collaborators, he published an article in the journal Science during the summer 2005 in which a mechanism responsible for initiating the flowering of plants was proposed [39]. They reported that RNA molecules coding for a protein named Flowering Locus T (FT) are transported from the leaves to small sprouts. In these, FT is then synthesized and interacts with other proteins to influence cellular functions that start the flowering. This discovery was given much attention both in scientific journals and daily newspapers and together with findings from other groups was considered to answer a basic question that had remained unsolved in plant biology since the 1930’s. Many, not least Nilsson himself, talked enthusiastically about the importance the results could produce in agriculture and forestry. However, after some time it was detected that something was wrong and in April 2007 a letter was published in Science in which 4 of the 5 authors retracted the aforementioned article [40]. The blame was laid on the first author, a Chinese guest researcher, Tao Huang, who had not signed the letter to the journal. After he had left the laboratory, his successor had met problems in reproducing the results. Huang’s notes were then checked and it was found that he had omitted certain values in con-
nection with the statistical treatment of the findings. When this analysis was repeated using the original data, it turned out that many of the reported differences between different points of time were not statistically significant. In this situation, it was chosen to retract the article as a whole.

Many praised Ove Nilsson for the fact that he as laboratory chief had reported officially when the irregularities were detected. Nevertheless, the two external reviewers appointed by the Swedish University of Agricultural Sciences, Professor Christer Larsson and Professor Lars Rask, concluded that Nilsson should take greater responsibility for what had happened. In an article published in the local newspaper *Västerbottens-Kuriren* in May 2007 the accused, Tao Huang, likewise criticized him [41]. According to Huang, Nilsson had pressed him and other collaborators to produce results as fast as possible in competition with other research groups. For this reason, there had not been time enough to repeat the experiments in a normal manner. In fact, it was so that the article from SLU in Umeå was published in *Science* together with two articles from other laboratories with a similar content (identification of genes responsible for the flowering of plants). It should further be noted that it was Nilsson who had written the paper and who received the honour for it (elected by *Science* as one of the most important articles in 2005). A remarkable circumstance in the whole affair is that the external examiners signed up by SLU never contacted Huang, the one alone of all the authors who was blamed for the fraudulent behaviour. This is not in accordance with the rules in the public administration law about how a trial of this type should be handled.

Another case from Umeå concerned Roger Henriksson, senior physician and professor of experimental oncology [42, 43]. He functioned as coordinator for a clinical test of a new type of radiation therapy against brain tumours. The study was a cooperation between a group of Swedish researchers and the company Studsvik Medical AB (later
renamed to Hammercap Medical AB) that financed the project and intended to introduce the method commercially. The work resulted in a so-called phase II study completed in 2003. In September 2007, the CEO of Hammercap Medical AB, Kurt Sköld, in a letter to Umeå University directed suspicions of dishonesty in research against Roger Henriksson. The company complained that no scientific publication had come out of the investigation in violation of what was stipulated in the existing contract. Henriksson was also criticized for bias by promoting an alternative treatment in which he was claimed to have economic interests. The medical faculty at the university immediately set up an internal committee that examined the accusations. About a month later, a report was presented in which Henriksson was cleared of all charges. Adverse remarks were instead directed against the complaining company, that was said to have tried to influence the conclusions made and the content of the scientific article supposed to be written. It was further stated that several of the points taken up did not really deal with dishonesty in research. Rather, it was a question of how the deal between the researchers and the sponsoring company had been followed. In an article in the journal of the Swedish Medical Society (Läkartidningen), the Dean of the medical faculty in Umeå, Bengt Järvholm, likewise blamed the complainant [44]. In a reply in the same journal [45], Kurt Sköld expressed disapproval of the examination for one-sided protection of the university researcher. Exactly how this case should be evaluated is difficult to judge based on the documents available. If nothing else, the affair highlights the importance of an external and neutral authority being set to investigate suspicions of scientific fraud.
3.5 Common denominators

To sum up, the cases described above all contain a few details worth observing. For example, suspicions have been directed against only one of many authors on the articles examined. That person is also the sole one that has been found guilty. The others have been freed or merely been criticized for lack of control of the material they have put their name to. Another frequently recurring detail is that original data have not been available, making the investigations considerably more difficult. Alternatively, it has in some cases been shown that the results were entirely made up. It is further noticeable that the fraudulent behaviour was not detected during examination by the journals that published the papers. During this so-called peer review, two to three specialists within the field are usually asked to review the quality and appropriateness of the submitted manuscript. Usually, many of the received manuscripts are rejected due to deficiencies in methodology, incomplete support for the conclusions drawn, or lack of novelty. It is not known how often fraud is identified during the primary examination in the editorial boards, but my own experience from such work suggests that it is rare. Most frequently, it is the readers of the printed articles who detect irregularities and sound the alarm. Unfortunately, it often happens that these whistleblowers are met by negative reactions and are not fully taken seriously. A reason for this is probably that exposure of scientific misconduct involves extra work and loss of prestige both for the journal and the institution in question.

3.6 Comparison with other sectors of society

Deceit and fraudulent proceedings are in no way restricted to the scientific community, but rather exist within all sectors of society. Many remarkable cases have shown up within politics, sports and the business world. No closer exposition of specific cases will be given here.
To remind the Swedish reader it may be enough to mention names as: *Lennart Geijer, Olof Palme* and *Thorbjörn Fälldin*, government ministers hiding facts and giving false official denials in the so-called brothel affair; *Mona Sahlin*, government minister using a credit card for expenses when in duty for private purposes, and; *Gudrun Schyman*, leader of the left-wing party repeatedly claiming tax reduction for expenses she had not paid herself. In trade and industry, it has often been a matter of much larger money, for example in the scandals associated with companies like *Bofors* (bribes in connection with selling of howitzers to India), *Trustor* (taking over the company with its own money and plunder of its assets), *Skandia* (luxury renovation of private apartments and multimillion bonuses to high directors under obscure conditions) and *Carnegie* (overstating the results of the company and insider trading). Even more astronomic amounts have been involved in the international financial scandals that have occurred in companies like *Baring’s bank* (an English bank with old traditions that collapsed in 1995 after losses of more than 800 million £ due to speculations of one of its employees, Nick Leeson), *Enron* (an American energy company that went into bankruptcy in 2001 after disclosure of extensive insider trading, bookkeeping crime and corruption), and *Parmalat* (a large Italian concern in the food sector and one of the largest dairy enterprises in Europe that became bankrupt in 2003 in association with a scandal in which close to three billion € disappeared to tax havens via mysterious transactions). Many also are the doping scandals in the world of sports. One example from later years is the track and field star *Marion Jones* who, after admitting usage of forbidden drugs, was deprived of both Olympic and World Championship medals as well as prize money.
4 The leading actors

As a background to the case of misconduct in research described here, a short description of the main persons involved will first be given. The one accused and exposed to an investigation is Thomas Lundeberg, physician and researcher at Karolinska Institutet (KI). In part, attention has also been paid to his former doctoral student, Joakim Carleson. The charges against Lundeberg have primarily been forwarded by Kerstin Uvnäs Moberg, professor at the Swedish University of Agricultural Sciences (SLU) in Uppsala and earlier active at KI. During many years she collaborated with Lundeberg and also set up companies with him. In her written complaints, Uvnäs Moberg has been assisted by her representative, Kurt Björkholm. These two have together submitted a large number of official reports with accusations against Lundeberg, initially to KI and also later to the Swedish Research Council and the Government. Accordingly, KI was the state authority that first investigated the allegations against Lundeberg. The two who had the main responsibility there were the Presidents Hans Wigzell and Harriet Wallberg-Henriksson together with the Dean of Research, Jan Carlstedt-Duke. Later on, KI handed over the case to the Swedish Research Council and its Expert Group for Questions of Misconduct in Research (in the future just called the Expert Group) with Kjerstin Nordborg, a Justice in the Swedish Supreme Administrative Court, in the chair.

4.1 Thomas Lundeberg

Thomas Lundeberg was born in Stockholm in 1953. He was educated as physician at KI and in 1983 defended his doctoral thesis at the Department of Physiology. The subject of the dissertation was vibratory treatment of chronic pain. Five years later he became associate professor in physiology at KI. In the middle of the 1990’s he was guest re-
searcher at *Istituto di Neurobiologia e Medicina Molecolare* in Rome, an institution led by Rita Levi-Montalcine (Nobel Prize winner in physiology or medicine in 1986). After returning from Italy, Lundeberg worked in parallel as researcher in physiology at KI and as physician at the Rehabilitation Clinic at *Karolinska Sjukhuset* (the Karolinska Hospital). He was certified as specialist in medical rehabilitation in 1997 and in pain control in 1999. In the year between he received a position as senior lecturer at the Department of Physiology and Pharmacology. For 14 years he was responsible for the basic education in physiology of future physiotherapists and during several years also future physicians. Lundeberg has supervised a large number of doctoral candidates up to dissertation and has published about 300 scientific articles in international journals as well as several books in clinical subjects. In addition, he is an inventor of about 30 patents and he has had commissions for the Government concerning alternative/integrative medicine, education of chiropractors and authorization of naprapaths. In August 2001 Lundeberg was appointed professor of physiology at KI. He resigned from this position in 2003 and became senior physician in rehabilitation medicine, first at the Karolinska University Hospital in Solna and later at Danderyd’s Hospital, to which the clinic was moved in 2004. He is married to Lena and together they have four children. The family lives on Lidingö outside Stockholm.

### 4.2 Kerstin Uvnäs Moberg

Kerstin Uvnäs Moberg was born in 1944 and is daughter of Börje Uvnäs (died in 2003 at the age of 90 years). The latter was the first pharmacology professor at KI and an influential person in the medical faculty, among others as Dean and as chairman in the Medical Nobel Committee. He had a strong position outside KI, for example as
chairman in the Swedish Society of Medicine and as President of the International Union of Pharmacology (1966-1972). It was also under his leadership, *i.e.* in the Department of Pharmacology at KI, that Kerstin Uvnäs Moberg started her research career after her medical studies. Her early studies dealt with gastrointestinal hormones and it was in this field she defended her doctoral thesis in 1976. In the mid 1980’s, the hormone oxytocin came up in her research and later on became its main line. Particular interest has been paid to the importance of oxytocin for the positive effects (well-being) provoked by touch. This subject has also been treated in a popular book widely spread, *Lugn och beröring: oxytocinets läkande verkan i kroppen* (Peace and touch: the healing actions of oxytocin in the body) [46]. Via this work and the earlier book published together with the physician colleague Rigmor Robert, *Hon & han födda olika* (She and he born different) [47], Uvnäs Moberg has been seen as a representative of the direction within the feminist movement that emphasizes the distinctive characters of women and men.

It was via her work on oxytocin that Kerstin Uvnäs Moberg started to cooperate with Thomas Lundeberg in the Department of Physiology and Pharmacology at KI in the early 1990’s. According to the database PubMed, between 1992 and 2002 they together published more than twenty scientific articles. Most of these are experimental studies on the effects of oxytocin in rats. Uvnäs Moberg and Lundeberg further collaborated as inventors on several patents concerning the use of oxytocin as a pharmaceutical preparation. The ownership of most of these patents belongs to EntreTech Medical AB, a company the two of them set up together for the commercial development of their research discoveries. In some cases, the costs for patenting were paid by Karolinska Innovations AB (KIAB, a company owned by KI). Also after Uvnäs Moberg became professor in physiology at the Swedish University of Agricultural Sciences (SLU) in 1995, she continued to carry on research at KI for several years, in cooperation with Lundeberg and
his group among others. As will be apparent later on, it is from these research and business relations with Lundeberg that Uvnäs Moberg found starting points for the many allegations against him. At the time of her movement to SLU, Uvnäs Moberg had a position as associate professor and senior lecturer at KI.

A noteworthy detail in the background of Kerstin Uvnäs Moberg is her persistent struggle for a professorship at KI. During the period 1985-1998 she applied for six different professor positions there in varying subject fields. She gained good recommendations on these occasions and was often placed among the three leading candidates. In the end, however, she was never the one recommended by the nomination committee. In several cases, Uvnäs Moberg appealed to the Government or the Higher Education Appeals Board against the decision but never managed to bring about any change in the outcome. In one of these appointments, the case was brought up in daily newspapers and treated in several debate articles in Dagens Nyheter (DN). It then dealt with a professorship in physiology at the Department of Physiology and Pharmacology. The one proposed for the job by KI was the associate professor Peter Thorén from Gothenburg. In her appeal to the Government, Uvnäs Moberg among others stressed that “KI had disregarded existing equality aspects when they chose Thorén” and described the department at which she was herself working and at which she had now applied for a professorship as “a playground for male interests”. About a month later she received whole-hearted support from the journalists Maria Borelius and Annika Dopping in an article in DN entitled “Wrong gender for the professorship” [48]. They here took up such things as the dominance of men among Swedish professors and inadequate investments in research on female biology, an area in which they considered Uvnäs Moberg as a leading person. The article was terminated with a plea to the Government to appoint her as professor. Within a couple of weeks a reply to this article was published by Petra Ulmanen and Kristina Hultman [49]. They con-
curred with the need for more female professors and more research on female biology. On the other hand, they strongly criticised the far-reaching conclusions concerning sex roles drawn by Uvnäs Moberg and others on the basis of experiments primarily carried out in rats. In still another contribution Per Hedqvist and Torgny Svensson, chairman and vice chairman at the KI department where the professorship in question was to be placed, replied to the views forwarded by Borelius and Dopping [50]. Among others, the two former repudiated what they called exaggerated appraisements of Uvnäs Moberg’s merits and her role as a leading world authority within the field of female biology. When the government finally decided in the matter, the position was given to Peter Thorén.

Another appointment that attracted considerable attention concerned the professorship in integrative physiology at KI in the beginning of 1998. The one who attained this position was Harriet Wallberg-Henriksson, the present President of KI and a younger colleague of Uvnäs Moberg. The latter appealed the decision via her representative, the lawyer Toivo Öhman. In his official letter to the Higher Education Appeals Board, he disqualified both the department chairman Per Hedqvist, who four years earlier had co-authored the aforementioned debate article in another appointment matter and passed judgments on Uvnäs Moberg [50], and one of the expert advisers, Dag Linnarsson, who was also active in the Department of Physiology. Öhman further found faults with the way in which the nomination committee had compared the merits of Uvnäs Moberg and Wallberg-Henriksson. However, these views did not gain a hearing and Wallberg-Henriksson was appointed to the position.
4.3  Kurt Björkholm

Kurt Björkholm was born in 1941. He lives in Saltsjöbaden outside Stockholm and has for many years been politically active for the liberal party in the municipality of Nacka and within the district committees for Fisksätra and Saltsjöbaden. Since the late 1980’s he has been running the company Robur Affärsutveckling AB (Robur Business Development). The board consists of a single person, Björkholm himself, with the lawyer Margaretha Nashat as deputy member. Judged by recent annual reports, the company has a low turnover and insignificant profits. The enterprise is directed towards consulting within economy, company administration, business development, and law. It is via this firm Björkholm has acted as a representative of Uvnäs Moberg in a large number of indictments against Lundeberg and others. He has also been engaged in several other corporations, among others as member and chairman of the board.

In view of Björkholm’s very active and sometimes remarkable engagement in the Thomas Lundeberg case, it is interesting to notice his involvement in an earlier police investigation that attracted much public attention. This case concerned a well-known economic criminal, Håkan Hanell, who had been in focus in connection with a large inquiry of economic crimes in the beginning of the 1980’s. He was then sentenced to two years and nine months in prison for having plundered several companies of large sums of money. In the middle of the 1990’s he became of interest again when via the daily newspaper Expressen he accused high police officers and prosecutors of corruption. For example, the press wrote that there had been persons within the police who had leaked information to Hanell about ongoing investigations against him and his father. This among other things had led to a house search that had become spoiled. In the spring of 1999, Hanell again comes in focus during the examination of suspicions thrown against a police superintendent. It then comes out that
Hanell was paid close to one million Swedish crowns (SEK; or about 100,000 €) during the period 1996-1998 for different commissions within this investigation. The costs were meant for travel to a number of places around Europe, stays at expensive hotels, *et cetera*. The money originated from the Section for Internal Investigations in the Police. However, the payments had not been made directly to Hanell himself. As an intermediary he had instead used his agent Kurt Björkholm and Robur Affärsutveckling AB, as well as two other companies controlled by the latter in order not to expose the name Robur too frequently. The many invoices Björkholm delivered to the Police on the letter paper of his company were of a very brief character and without clear specifications. A formulation used over and over again reads as follows: “*We hereby send you our remuneration bill concerning our assistance to you during the period date to date in enquiries within and outside the country regarding ownership and capital conditions in company transactions of legal interest and the economic structures involved*”. The information handed over by Hanell and Björkholm to the Section for Internal Investigations turned out to lack real importance in the examination of suspected corruption within the Police. Moreover, it could be shown that some of the documents that they had presented were falsified. The whole affair was depicted in a long series of articles in the newspaper *Expressen* by the journalists Anders Fallenius and Niclas Lövkvist, one example of which is given here [51]. What had happened attracted great attention and in the end became the subject of an evaluation by the Prosecutor-General. However, it was not found possible to prove that the chief of the Section for Internal Investigations had acted with criminal intention and no legal proceedings were started (700C8-99). The suspicions of corruption within the police and the judicial system likewise never led to any action. The role of investigator that Björkholm undertook in this example partly resembles the one shown in the Lundeberg case. This was made evident in an official letter of September 23 in 2003 to the Dean of Research at KI, Jan
Carlstedt-Duke, where he writes: “I likewise find it unfortunate, not to say remarkable, that I as an investigator within trade and industry have to analyse the internal state of conditions in Karolinska Institutet that ought to have been exposed and finalized long ago”. But is that then not more or less the same I am doing as a writer in this book? In a way yes, and it is up to the reader to judge whether or not I had good reasons to look carefully into the actions taken by KI and the Swedish Research Council in this case.

5 The investigation starts

The case to be described here is complicated and in addition to Thomas Lundeberg includes several other persons with a more or less strong connection to him. The case is more special since it relates not only to research but also to a significant part of patent and business interests shared by the accuser Kerstin Uvnäs Moberg and the accused Thomas Lundeberg. Together with the demands for examination of scientific fraud there are also a number of peculiar reports to the police from Uvnäs Moberg in which serious suspicions are directed towards Lundeberg. The lack of neutrality and objectivity that to a large extent characterizes the investigation is likewise remarkable. As the reader will understand, this is a most unusual story. The feeling one gets after studying the acts available is primarily wonder at the fact that things can be handled this way in a state supposed to be governed by law.

5.1 Suspicions start to be reported to the Police

The first signs that suspicions directed against Thomas Lundeberg are forwarded to different authorities turn up in 2002. On January 14 of this year Kerstin Uvnäs Moberg’s chief, Professor Göran Björnhag,
makes a report to the Uppsala Police citing burglary in her office at SLU. It is claimed that patent documents have been stolen from two files and she also suspects unauthorized intrusion into a computer (0300-K1249-02). However, no damage to the locked office door can be found. Uvnäs Moberg further states that she has a theory about who is responsible and according to the Police mentions Lundeberg’s name. A few days later the Police inspect the room in question. Moreover, the Internet coordinator at SLU examines the computer but finds no signs that it has been invaded illegally. Slightly more than a year later, March 3 2003, the Uppsala Police receive another report from SLU via Professor Stig Drevemo. This time 193 test tubes belonging to Uvnäs Moberg are said to have been stolen from a locked freezer. However, no destruction of the lock is detected, suggesting that the perpetrator had access to a key. According to the person contacting the Police, Uvnäs Moberg believes that the theft can be related to the burglary reported in January 2002 (see above).

A few months later, on July 6 2003, Uvnäs Moberg writes to the Uppsala Police herself to provide supplementary information to the earlier reports. She then states that within her group they have for two to three years faced problems with determining the concentration of the hormone oxytocin in blood samples. In their assays, they have received values five to ten times too high. The difficulties have occurred both at SLU and KI. She claims that some of the samples have been contaminated with oxytocin and suspects that someone has sprayed an aerosol of the hormone into the plastic bags in which the samples were stored. In the next sentence she mentions a report where Lundeberg has described a method for administering oxytocin in the form of an aerosol, and in that way directs suspicions against him. She also suggests that the concentration of oxytocin must have been very high in the bags and that those who work in the laboratory may have been exposed to deleterious amounts of this substance. She then continues to describe the effects of oxytocin in the body, first mentioning
the soothing and relaxing result seen at physiological concentrations. As previously mentioned, these are the effects that interested Uvnäs Moberg in her research and her cooperation with Lundeberg. In the following part of the letter she gives an account of the reactions obtained if someone is exposed to larger amounts of oxytocin, touching upon such things as stress, high pulse and high blood pressure. Further down in the letter the following can be read: “Extended exposure to high levels of oxytocin in the air may lead to very high concentrations in the blood and in the brain. This may in turn provoke stress reactions. The utmost consequence of such stress reactions may be that the individual is hit by cerebral haemorrhage, heart arrhythmia or heart infarction”.

In the next part of her letter to the Police, Uvnäs Moberg reports about a number of incidences that have happened during 2001-2003 and which she relates to the problems with the oxytocin analyses. Here, she also takes up her fears about high concentrations of oxytocin in the air of the rooms in which this work is performed. Among the cases she enumerates appear: (i) a professor who unexpectedly dies of heart infarction; (ii) a laboratory assistant who without warning is struck by a cerebral haemorrhage; (iii) a doctoral candidate suffering from nausea and headache; (iv) a research assistant who suddenly passes away due to a ruptured aortic aneurysm; (v) a laboratory assistant who without prior notice dies of heart arrhythmia; (vi) a doctoral candidate who suddenly dies with liver cancer, and; (vii) a laboratory assistant who has suffered from headache and nausea and in connection with a health control is found to have very high blood pressure. Directly after presenting this list, Uvnäs Moberg goes on to tell how Lundeberg at the same time has tried to take over ethical permissions for animal experiments and research plans from her at the Department of Physiology and Pharmacology at KI. She continues as follows: “There is a lot indicating that the activities of Thomas Lundeberg are directed and backed up by economic interests within the business world. Drug companies in Sweden, the USA and Italy may be involved”. The letter ends in
the following way: “In this connection it may be mentioned that I during the last few days have engaged professional help to set up a profile of the person or persons who stand behind the various forms of destruction and/or sabotage that have been verified to take place against me, SLU, KI, and my co-workers in Uppsala and Stockholm. The profile established has not given any comforting answer but on the contrary strengthens my worries for continued intrusions. Also in this part I would like to come back to the Police with further details given verbally at a meeting”.

The above account of the police reports made by Uvnäs Moberg, directly or indirectly, has been included in order to give the reader an idea of how the situation looked at the time when the first accusations against Lundeberg for research misconduct and other irregularities start to be submitted to KI. The police reports further give an impression of the personality of the person behind five years of official claims for investigations of and actions against a colleague with whom a close collaboration has long existed. Notably, the police investigations led nowhere and were discontinued. According to information from SLU, the file with patent material that was said to have been stolen from Uvnäs Moberg’s office at the university was later found in her home. In a similar manner, the test tubes that were reported to have been stolen later reappeared in the freezer from which they had been removed. How and via whom this happened is unknown. With regard to the problems with the oxytocin analyses, the department chairman felt that Uvnäs Moberg herself had caused them. The animal experiments with oxytocin and other substances that were conducted in her group were, like the work by and large, characterized by a lack of order. The animals had been injected with large amounts of hormone and as far as one could understand this was the reason for the contamination of rooms and equipment. After careful cleaning, the analyses again functioned normally. The plastic bags with test tubes that Uvnäs Moberg believed had been deliberately contaminated with oxytocin were taken care of by the Police and sent to the Swedish Na-
tional Laboratory of Forensic Science for examination. There they could find no support for this theory. On demand from the Swedish Association of University Teachers, that had been contacted by Uvnäs Moberg, a working environment investigation was made. The purpose was to test whether or not any connection could be demonstrated between the cases of death and serious diseases that had been reported from SLU and KI and increased levels of oxytocin in the air. These investigations also yielded no results and were discontinued. The question one must put is if there was any real substance behind the suspicions forwarded to the Police, ultimately dealing with murder on several persons.

5.2 **Coordinated accusations against Lundeberg to KI**

Less than half a year after the first of the police reports described above, June 11 2002, Uvnäs Moberg writes to the Ethical Council at KI and asks for a check-up on Thomas Lundeberg. She refers to common projects and claims that: “Lundeberg in an undue manner, scientifically as well as commercially has exploited my long research on oxytocin and its effects on stress and well-being”. In addition, she brings up questions about invoices that Lundeberg has addressed to a company they own together, EntreTech Medical AB. In her opinion, the costs taken up here concerned experiments made at KI. In parallel, two official letters with complaints directed against Lundeberg are submitted to the chairman in the Department of Surgical Sciences at KI, Lars-Ove Farnebo. One of these letters, dated June 12 2002, is written by Professor Andris Kreicbergs from the Orthopaedic Clinic. It deals with attempts from Lundeberg’s side to commercially exploit cooperation projects, misleading information about ethical permissions for animal experiments, inaccuracies in grant and job applications, as well as various economic transactions. The other petition, dated June 10 2002, comes
from Professor Per Hansson and Professor Zsuzsanna Wiesenfeld-Hallin. It concerns plagiarism in one original article and two textbooks. Three official reports delivered three days after each other and all directed against one and the same person, Thomas Lundeberg, can hardly be a coincidence. It rather looks like a coordinated action. Without informing Lundeberg, Farnebo forwards the two last-mentioned letters to the Ethical Council at KI and asks for an ethical investigation (4998/02-629).

After some time the machinery starts to work. The head of the internal revision, Bo Myrup, is commissioned to examine the accusations from Uvnäs Moberg and Kreicbergs about various economic irregularities. Myrup makes an extensive investigation in which he questions not only Lundeberg, Uvnäs Moberg and Kreicbergs but also several other persons. He further examines a large number of documents in the two institutions Lundeberg belongs to, the Department of Physiology at KI and the Section of Rehabilitation Medicine at Karolinska Sjukhuset (a part of the Department of Surgical Sciences). Myrup describes his findings in a draft from November 21 2002 and in a final memorandum from January 27 2003. He clears Lundeberg from suspicion on four of the six accusations made. The other two are not considered to have anything to do with KI and are not analysed in any detail.

The questions about ethical permissions for animal experiments are examined by the chief veterinary at KI, Solveig Tjäder. This concerns fracturing experiments on rats made by a doctoral student of Kreicbergs, Jian Li. The experiments have been performed in the animal facility of the Department of Physiology and Pharmacology without a valid ethical permission and thus in violation of the law relating to the protection of animals. Those involved are of different opinions about who was responsible. In this connection it is important to know that the research groups of Kreicbergs and Lundeberg have been cooperating since the middle of the 1990’s. The role of Lundeberg has
been primarily to take care of analyses of neuropeptides and hormones in investigations dealing with inflammatory diseases and wound healing. In this respect, he has replaced earlier collaborators of Kreicbergs, who have moved away and no longer take part in the work. Parts of their common studies are included in a larger EU project in which Kreicbergs is one of the principal investigators. One of the members in his group is Jian Li, who in his doctoral studies is examining the role of the peripheral nervous system in fracture healing. In a discussion with Kreicbergs during the spring of 2001 Lundeberg suggests that, as a part of his project, Li should analyse how the healing process is affected by denervation (destruction of the peripheral nerves next to the fracture). These experiments are supposed to be made in the physiology department, where the needed equipment is available. Opinions about what then happened diverge. According to Lundeberg he took upon himself to prepare a proposal to procure ethical permission and to procure opinions from a veterinarian. After that, he sent on the application to Kreicbergs, the head of the project and the supervisor of Li, for further handling. According to the plans, the experiments should start in January 2002 but since no ethical permission is yet then available, Lundeberg applies for and receives approval from the Ethical Committee on animal research to move an almost expired permission belonging to another doctoral student of Kreicbergs from Karolinska Sjukhuset to the physiology department. The idea is that this should make it possible to house the animals that have already been ordered and to perform preliminary behavioural studies on them. Lundeberg says that he has emphasized to Li that the real experiments (denervation and fracturing) must not start until the ethical permission has been received. On a later occasion, Li tells him that all papers are ready and then starts this latter work.

Kreicbergs' version deviates on several important points from that of Lundeberg. According to him, Lundeberg immediately takes on the task to apply for ethical permission for the denervation experiments.
Shortly thereafter he says that the green light has been given. Kreicbergs also claims that he asked Lundeberg and his secretary several times for a copy of the permission. He then writes that when the document finally arrived a few months later it became apparent that “Thomas Lundeberg just had asked for prolongation of an earlier permission concerning the fracture healing project and a transfer of this permission from the Karolinska Hospital to KI”. This is only partly correct. Lundeberg had asked for transfer of the ethical permission from the hospital to the physiology department but not for any prolongation. A little further down in his letter Kreicbergs writes, “thus experiments that lack ethical permission have been performed in good faith”. In this context it should be noted that Kreicbergs is the principal investigator of the fracture studies, that it is his doctoral candidate who makes the animal experiments, and that Lundeberg neither earlier nor later is involved in this project as a direct collaborator or a co-author. That Lundeberg has taken part in discussions about how Jian Li’s work should be carried out seems rather to have been due to the fact that he was the one who led the regular planning meetings in the laboratory shared with Kreicbergs, who himself seldom took part in these gatherings.

November 5 2002 the chief veterinary, Solveig Tjäder, presents a “report on suspected breach of the law relating to the protection of animals” (4998/02-629). From this document it is clear that 66 rats have been used in the experiments made during the period from December 2001 to February 2002. One third of these (23 animals) died in the experiments, 19 in connection with the chemical denervation and 4 after the fracturing of the legs. The report further depicts the ethical permission problems described above. Otherwise, Tjäder draws no specific conclusions and suggests no specific actions. Two weeks later, November 20 2002, Gustaf Dyrssen formulates a memorandum (4998/02-629) in which he says that he has “tried to summarize the investigation performed by Solveig Tjäder and the conclusions she has arrived
Dyrssen is a lawyer in private practice and is used by the Director’s Office at KI as a consultant in legal matters. Since he is not a member of the permanent staff, he does not fall under the jurisdiction of the Swedish public administration law (according to what he says himself) and can only act on behalf of someone with a lasting position. On whose order and for what purpose he put together this memorandum is not clear. Essentially, no new facts are presented in his report and the only thing added is the conclusion with which Dyrssen ends his letter. “To perform the animal experiments in question without ethical permission may imply a significant breach against paragraphs in the animal protection law that impose a penalty. This question should be reported to the Police and it should be investigated to what extent cruelty to animals has been committed”. For unknown reasons, this document has no addressee and is not signed.

Slightly more than two months after her first official letter, January 10 2003, Solveig Tjäder puts together a new report in this matter, this time together with Jan Carlstedt-Duke, Dean of Research, addressed to the President of KI, Hans Wigzell (4998/02-629). Here they present a more detailed criticism and question whether the Ethical Committee on animal research could at all have permitted the experiments. Otherwise the facts are the same as earlier. Nevertheless, Tjäder and Carlstedt-Duke lay the full responsibility on Lundeberg and suggest that he should be suspended for life from the right to carry out and guide animal experiments at KI. Concerning Andris Kreicbergs they only say that he has fallen short in his supervision of Jian Li and has neglected to ensure that an approved and valid ethical permission was available. No actions against him are proposed. This must be considered a most remarkable document. Tjäder and Carlstedt-Duke do not mention the fact that Kreicbergs is the principal investigator of the project discussed and that it is his doctoral candidate, Jian Li, who alone has performed the experiments. From a legal point of view, there can hardly be any doubt that Kreicbergs was the one who was
responsible for the work and in the capacity as principal investigator should apply for an ethical permission, or at least fully check that such an approval was available before the potentially painful operations on the animals were performed. This is particularly important since the decision of the Ethical Committee often includes additions or changes of different types, for example with regard to housing of animals, narcosis and alleviation of pain. That Lundeberg had partly helped Li with advice seems to have been due to the fact that Kreicbergs did not completely fulfil his duties as supervisor. It should also be noted that Lundeberg, in spite of an extensive publication list, has few common articles with Kreicbergs and not a single one within the field of fracture healing (according to the literature database PubMed). Similarly, Lundeberg is not co-author on any of the four articles included in the doctoral thesis of Jian Li from 2004. In order to get a better perception of the facts behind Tjäder’s standpoint on who was liable for the lack of an ethical permission, I wrote to her and asked if I could study the background material available. Her response was the following: “I have no official notes still here but have handed everything over to the Registrar in connection with the forwarding of the case to the control authority” (the Environmental Office in the district of Solna). When my request was sent on to the Registrar, the answer came that no documents exist in the archive other than the two reports mentioned above (4998/02-629). The questionmarks pile up.

The Ethical Council at KI with Professor Lars Terenius in the chair was the receiver of the original complaints against Lundeberg from the chairman Lars-Ove Farnebo in the surgical department. January 27 2003, the Council makes public a report of the investigation that has been made (4998/02-629). Concerning the charges about economic irregularities, they refer to the investigation made by Bo Myrup, the head of the internal revision. As told above, he came to the conclusion that none of the accusations could be verified. For that reason, the Council decided to dismiss this part of the allegations. With regard to
the issue about ethical permission for animal experiments, it is men-
tioned that this was already handed over to the President at a meeting
on May 11 2002 for consideration and measures. It is said that both
Lundeberg and Kreicbergs can be blamed for not having checked that
the proper permissions were in place before the experiments were
initiated. Nevertheless, the main responsibility is laid on the former.
Otherwise, the Council supports the decision to forward the case to
the Environmental Office in Solna, the official authority handling
questions about animal experiments.

The main part of the report from the Ethical Council deals with the
question of plagiarism. Here, statements are based on an examination
made by Professor Roland Johansson from Umeå and Professor Lars
Oreland from Uppsala. With reference to the article by Lundeberg and
others [52], which the lodgers of the complaint claimed to contain both
text parts and results copied from an article by Kuraishi and collabora-
tors [53], the examiners came to the following conclusion. They deci-
ed that smaller parts of the text in the first-mentioned publication
showed great similarities with sections of the latter. On the other
hand, the agreement in results between the two studies was not con-
sidered close enough to say positively that it was plagiarism. In his
response to the Ethical Council, Lundeberg confirms that he had read
and had been inspired by the Japanese article when it was published.
What especially captured his interest was a new method to inject
drugs intrathecally, i.e. directly into the ventricular system of the brain
(a cavity filled with fluid and connected with the spinal channel), in
order to avoid the blood-brain-barrier (an obstacle for passage of sub-
stances from the blood into the brain). He even contacted Kuraishi
and his chief, Professor Satoh, to get help in learning their technique,
which was later used among others in the study discussed here. As
the examiners write, it is obvious that Lundeberg and his colleagues
have used the Japanese work in part as a model both with regard to
the methodology and when writing their article. Summing the council
say “our collected opinion on this point is that the art of text copying is on the borderline of what good scientific practice allows, but we do not have evidence for fraudulence”.

With regard to the question of plagiarism of pictures with legends in two editions of a textbook about pain and inflammation with Lundeberg as co-author [54, 55], Johansson and Oreland note that “a troublesome overlap exists both in text and graphics which the copyright owners of the originals could take legal measures against”. More concrete this is all about two figures in a book by Nisell and Lundeberg that are said to be identical with figures in two other books. Per Hansson, one of the complainants, is one of the authors of the two books claimed to have been plagiarized [56, 57]. Of course one may wonder for what reason he makes objections in June 2002 about the copying of two illustrations and shorter text segments in books published 1993 and 1999, i.e. nine and three years earlier? Equally confusing is why he directs his criticism only at Lundeberg, whereas the first author of the two books, Ralph Nisell, is passed over in silence. Lundeberg admits in his letter to the Council that the book from 1999 contains citations from Ekblom and Hansson [57] that lack references to the source. This, he says, was due to the publisher moving the references to the end of the book without informing the authors. He further writes that when this was discovered he forwarded an apology to Hansson and Ekblom, which was immediately accepted by the latter. In this matter concerning textbook plagiarism, the Ethical Council basically only refers to the conclusion that this is an issue that should have been taken up with the publishers that own the rights to the books.

Other cases of copying taken up by the accusers referred to grant and job applications as well as the research plan for a doctoral student. In a complementary letter to the Ethical Council on October 1 2002, Andris Kreicbergs points out that Lundeberg in a project proposal to the Swedish Research Council had duplicated a study plan from earlier that year almost word-for-word that he himself (AK) had
earlier written for a student. This text had likewise been used in three grant applications, two to NIH (National Institutes of Health) in the USA and one to the Medical Research Council in Sweden (the predecessor of the Swedish Research Council). Lundeberg was a fellow-applicant in the second application to NIH as well as in the one to the Medical Research Council. All these proposals were however turned down. In still another grant petition to the Research Council from 2001 Lundeberg was the principal investigator and Kreicbergs a fellow-applicant. This had been agreed in view of the Council’s policy to increase its support to younger researchers. In a renewed application from 2002, Kreicbergs claimed that the old working plan had been copied with only small additions. Moreover, his name as a fellow-applicant had been removed and this was done without informing him. In the letter from October 2002 he says that “this was a flagrant attempt from Lundeberg to go behind his back and use the project for his own purposes”. According to a message Lundeberg sent on November 12 2002 to the Dean Jan Carlstedt-Duke, Kreicbergs should have encouraged him to apply on his own and had said that he did not want to be a fellow-applicant since “an old professor is probably nothing the Research Council gives priority to”.

In his letter Kreicbergs also mentions that Lundeberg in several applications has presented himself as a fellow-applicant rather than (more correctly) a co-worker in a EU project in which Kreicbergs functioned as a coordinator. According to Lundeberg this had been done on Kreicberg’s suggestion. Evidently, the opinions about what has been said diverge. The examiners Johansson and Oreland in their report say that there is “some correspondence between methodological procedures and formulations in Lundeberg’s application to the research Council (2002) and an earlier application to NIH from April 1999 by Kreicbergs”. Therefore, the similarity was not the almost complete identicality asserted by Kreicbergs. Otherwise, the auditors mainly concur with the viewpoints of the latter and conclude that “Lundeberg’s actions in this
matter clearly deviate from good scientific practice". In their report, the Ethical Council agrees with this view. No analysis and appraisal of the statements made by Kreicbergs and Lundeberg are found in the reports either of Johansson and Oreland or the Ethical Council. How is it then possible to so openly take sides for Kreicbergs and against Lundeberg?

Allegations about plagiarism are also presented by Kerstin Uvnäs Moberg in her letters from June 11 and November 20 2002 (4998/02-629). She maintains that the research plan for one of Lundeberg’s doctoral students, Iréne Lund, is based on research initiated by Uvnäs Moberg herself. She further blames Lundeberg for having applied for registration of a new doctoral student in February 2002 without her knowledge. She also writes that the attached project plan contains aims, methods and results that exactly overlap with what Lund earlier has shown. In their inquiry, Johansson and Oreland confirm the similarity between the two doctoral projects and in their summary write that “the research program for Magnus Lekman has evidently been put together in a careless manner”. It is however remarkable that they do not make the slightest effort to find out what the reason for the resemblance was. In a similar way, the investigation as a whole is distinguished by an omission to contact the accused to discover their viewpoint. In the introduction to their report, Johansson and Oreland write the following: “our standpoints are based on the listed material sent to us by Ulla Östervall (secretary in the ethical council at KI)”. Among the documents they then enumerate one finds the allegations acts from Uvnäs Moberg, Farnebo and others, but no responses from Lundeberg and collaborators. Equally astonishing is that the Ethical Council in their stated opinion from January 27 2003 (4998/02-629) makes no mention of the official letter with several enclosures that they had received from Lundeberg on July 31 2002. Had they at all forwarded these documents to the examiners?
To return to the “plagiarized” research plan, the background was explained in a report delivered by Lundeberg’s lawyer, Christer Pehrson, to the Research Council during the autumn of 2004. During the year 2000, Iréne Lund wanted to change direction in her thesis work and focus on questions concerning detection and analysis of pain. In the same year the supervisor of Lund, Thomas Lundeberg, was contacted by Magnus Lekman. He had a background as physiotherapist and naprapath and was interested in starting research on pain and pain treatment. It was therefore considered natural that Lekman should continue Lund’s earlier project dealing with the effects of sensory stimulation on the autonomic nervous system and pain. At the same time, they wanted to extend the work in order to better understand the mechanisms behind some of the effects observed in preliminary studies. This had all been arranged in full agreement between Lundeberg, Lund and Lekman. Under these circumstances, it is not surprising that large similarities exist between the study plans of Lund and Lekman. It should also be noted that the latter at the time of his registration as a doctoral student had already performed an investigation on the effects of ear acupuncture on blood pressure and heart frequency. This study made up a supplement to the research plan. Attention should likewise be called to the fact that in the beginning of 2002 Lekman was co-author on a study originating from what had earlier been the main line of Lund. All this is the type of information Johansson and Oreland could have obtained if they had contacted the persons involved. Instead they chose to pass a hard judgement upon Lundeberg in this matter on an incomplete basis. One is again struck by the lack of matter-of-factness and neutrality that characterize the investigation.

It must also be asked what purpose Uvnäs Moberg really had in her accusations. She had a position at SLU and not at KI. Cooperation existed between herself and Lundeberg at the time in question but she was neither supervisor nor assistant supervisor to Iréne Lund. The
same later applies in relation to Magnus Lekman. What surprises is not only that Uvnäs Moberg complains about not having been informed about Lekman’s doctoral plans but also that she consider herself to have some type of sole right to research on oxytocin and its effects on health. In her letter to the Ethical Council at KI from June 2002 this is expressed in the following way: “I maintain that Lundeberg in an inappropriate manner scientifically as well as commercially has exploited my long research on oxytocin and its effects on stress and well-being”. This is something that comes back again and again during the coming years. Uvnäs Moberg asserts that Lundeberg and others steal her research and requests that KI and the Research Council should return it to her and compensate her for the losses she has suffered. These ideas show if anything that Uvnäs Moberg has a distorted view of the essence of science. According to widely accepted norms, we all own the results brought forth at universities and similar institutions and then published in journals or books. The collected research findings can be said to constitute an inheritance that belongs to humanity as a whole. The idea is that the knowledge which continuously accumulates should provide a source for inspiration and a basis for continued research. In reality, it is only when discoveries are patented they are protected from commercial utilization. However, even in this case it is allowed to use knowledge and ideas published in patent texts in academic studies. It is therefore difficult to see what relevance the grievance of Kerstin Uvnäs Moberg really has. It is also difficult to understand why her accusations have been taken up for examination at all.

So what was actually the grave material the Ethical Council of KI had at hand when on January 27 2003 they passed their judgement on Thomas Lundeberg? Not much if one critically looks into the matter. With regard to the alleged economic irregularities, the head of the internal revision, Bo Myrup, exonerated Lundeberg from guilt. In the issue concerning plagiarism in an original article, the investigators Roland Johansson and Lars Oreland judged that scientific fraud could
not be established. The question about copying in textbooks was referred to the copyright owners. Pertaining to the lack of ethical permission for animal experiments, Lundeberg was considered to have the main responsibility although it all dealt with experiments for which the accuser was principal investigator and which his doctoral student had performed. Why Lundeberg had not included Kreicbergs on an application from 2002 to the Research Council and why Lundeberg had mentioned himself as a fellow-applicant and not merely a collaborator in an EU project are explained in different ways by the two mentioned persons. No evaluation of their respective statements is however given. On the basis of these vague proofs the Ethical Council arrives at the conclusion that “Lundeberg’s work is characterized by fraudulence and unacceptable carelessness”. They finalize their stated opinion by suggesting that “an appropriate measure may be to suspend Lundeberg from all research activities until the animal experiment case has been settled in the Environmental Office in the district of Solna”. Two weeks later, February 11 2003, The President of KI, Hans Wigzell, makes a decision based on these findings. The final result is that: (i) the animal experiments are reported to the Environmental Office in Solna (the same day); (ii) Lundeberg is for the time being deprived of the right to lead animal experiments; (iii) Lundeberg’s research work is restricted to one single institution, the Department of Physiology and Pharmacology, and; (iv) Lundeberg’s activities will be closely supervised by the chairman.

5.3 The public prosecutor closes down the animal case

One of the main points in the verdict on Thomas Lundeberg by the Ethical Council and the President Hans Wigzell concerned the responsibility they laid on him with little foundation for the animal experiments performed by professor Andris Kreicbergs’ doctoral student
Jian Li. The Environmental Office in Solna hands over this case to the Regional Public Prosecution Office in Stockholm, where the Chief Prosecutor Mats Bergman is put in charge of the investigation. In a letter to Lundeberg's lawyer Christer Pehrson dated May 19 2004, Bergman says that “Lundeberg is not suspected of crime in the mentioned matter” (C2-11-964-03). He further reports that some additional steps will be taken in the inquiry, including a hearing of Lundeberg but not as suspect. This takes place four months later, September 15. What more is done is not evident from the documents I have seen. In any case, the investigation is dismissed on October 14 2004. The fact that Thomas Lundeberg from the start, even before being heard, is eliminated as suspect strengthens the impression of how remarkably KI handled this animal protection issue. As in other parts of the inquiry of Lundeberg made up to then, the lack of neutrality vis-à-vis the accused and his accusers is more than astonishing.

5.4 New accusations from Uvnäns Moberg and Björkholm

Only a short time passes after the above-mentioned President decision before new suspicions directed against Thomas Lundeberg are conveyed to KI. During the summer of 2003, Kurt Björkholm contacts the chairman in the Department of Physiology and Pharmacology, Bertil Fredholm, concerning Lundeberg. The answers Fredholm received from the latter were however not satisfactory to Björkholm. Shortly after, on September 23, he therefore comes back to the same issue in a letter to the Dean Jan Carlstedt-Duke (re n:o 5463/03-629), questioning whether and where animal experiments described in a patent application have been made, plus accusations of plagiarism in unpublished manuscripts enclosed with the application. Notably, the patent rights belong to the company owned together by Uvnäns Moberg and Lundeberg and the two of them are the inventors behind the patent (in the
order mentioned). What this is all about is thus an internal matter for the company, EntreTech Medical AB, created and possessed jointly by Uvnäs Moberg and Lundeberg. The fact that Uvnäs Moberg approaches KI via Björkholm in these questions is surprising. Anyhow, Jan Carlstedt-Duke rapidly takes up the matter and within slightly more than a week (October 4 2003) hands over a written report to the President Hans Wigzell (5463/03-629). The case later comes up in the investigation KI asks the Research Council for help with and will be described in more detail in this connection (see chapter 6.1). At the end of his letter Carlstedt-Duke proposes the following three measures: (i) that Thomas Lundeberg is reported to the Ethical Committee at the Research Council for inquiry of plagiarism and scientific misconduct; (ii) that Thomas Lundeberg is reported to the State Disciplinary Board with a request that, if the investigation of the Research Council confirms the suspicions of scientific fraud, he is dismissed from his position, and; (iii) that Thomas Lundeberg is suspended from all activities at KI as long as the investigation goes on”. In plain language this means that KI and the Research Council on one part’s behalf examine conflicts within a private company.

5.5 Thomas Lundeberg resigns from KI

During the summer and autumn of 2003, Thomas Lundeberg is in a pressing situation. Kerstin Uvnäs Moberg and Kurt Björkholm call repeatedly for inquiries into his research and the handing out of old experimental protocols. The official attention to the animal experiments that Professor Andris Kreicbergs’ doctoral student Jian Li had performed without ethical permission also led to Lundeberg (who was held accountable by KI) being chased by animal rights activists and journalists. He and his family were also subjected to all kinds of harassments. After discussions with President Hans Wigzell, and
commitments from his side that the year-long and continually ongoing inquiries should come to an end, Lundeberg decided in the beginning of October 2003 to resign from his position as professor at KI. His lawyer, Christer Pehrson, put together a formal letter dated October 8 with this request saying that Lundeberg has become aware that “collaborators have failed to properly carry out their duties and the subsequent reporting to him”. He further adds that he himself has “not properly controlled and followed up the results reported to me”. In spite of this, he does not regard himself as legally responsible for what has happened, but in the situation at hand finds it difficult to execute his obligations as researcher at KI. What collaborators and what duties he refers to is not evident from the letter. Five days later, October 13 2003, Wigzell and the Human Resource Manager Ylva Lindberg decide that “the requested removal from office is admitted from October 13 2003” (the decision letter lacks a registration number).

The day after the granting of the resignation, Thomas Lundeberg sends an E-mail to his colleagues in the physiology department and tells them that he has left his position there. He mentions that for more than 18 months all his forces have been spent in responding to the accusations raised against him by Kerstin Uvnäs Moberg and her representative Kurt Björkholm. With reference to the principle of public access to official records he has also been compelled to hand out unpublished results. He further says that all this has had such a detrimental effect on his and his family’s health that it is impossible to continue. At the bottom of the letter one can read: “The possibility to carry on a meaningful activity no longer exists and my entire family (wife, children, parents, and siblings) have had to endure a lot including the spreading of false rumours. When my 7 years old daughter with tears in her eyes asked me why there was a war at my job, I felt that it had to be enough”. Finally he thanks everyone in the department for some fantastic years and wishes them all good luck. If he believed that the resignation really would lead to a stop of the process this proved a delusion. When
writing, more than five years later, the affair has not yet come to an end. New demands for investigations of Lundeberg and other persons can be found on the tables of several university presidents. The case has even been forwarded to the Government with a request for examination also of the presidents who according to Uvnäs Moberg have not taken the matter as seriously as necessary.

6 The Research Council is called in

6.1 The case is handed over to the Research Council

After the Dean Jan Carlstedt-Duke had delivered his report (5463/03-629), to the President Hans Wigzell on October 4 2003, and Thomas Lundeberg had resigned from his professorship at KI on October 13 2003, it took until March 30 2004 before the next large step in this affair was taken. During the time between there was a shift on the President chair at KI when Harriet Wallberg-Henriksson replaced Hans Wigzell on January 1 2004. As a result, the promise of Wigzell to close the case if Lundeberg quitted was forgotten. Wallberg-Henriksson came directly from a position as main secretary in the medical branch of the Swedish Research Council. By the end of February 2004, Kurt Björkholm had also submitted new information in which Lundeberg was alleged to have plagiarized articles of other researchers in a patent application named “inflammation”. In this situation, Wallberg-Henriksson choose on March 30 2004 to ask for help from the Expert Group for Questions of Misconduct in Research within the Ethical Committee of the Research Council to examine the activities of Lundeberg at KI (5463/03-629). In her letter to the Research Council she shortly describes the allegations that have earlier been looked at by the Ethical Council at KI (see chapter 5.4). She further emphasizes the written statements made by Kurt Björkholm in September 2003 and
February 2004 concerning obscurities in manuscripts attached to patent applications with Uvnäs Moberg and Lundeberg as inventors and their joint company as applicant. As the reason why she turns to the Research Council, Wallberg-Henriksson states that “the range of Lundeberg’s research contacts and other activities is so large that Karolinska Institutet finds it difficult on its own to make a neutral and independent investigation of the charges raised against him”. A contributory cause may also have been that Wallberg-Henriksson wanted to avoid the risk of being considered as unqualified to handle the affair in view of the appeal that Uvnäs Moberg made in connection with the appointment of the professorship that Wallberg-Henriksson herself obtained (see chapter 4.2). Nevertheless, the case would finally come back to her as President of KI for a decision and this was nothing she was unaware of.

The same day as Wallberg-Henriksson wrote to the Research Council regarding Lundeberg, she also asked in a separate letter for an investigation of Joakim Carleson, dentist and an earlier doctoral student of Lundeberg (1295/04-608). This request concerned three articles from 1996 included in Carleson’s thesis of 2001 [58] plus an additional publication from 1996 on which Carleson was a co-author. Lundeberg was among the authors on all four of these studies. The origin of the demand to check Carleson’s articles was a telephone call that the chairman in the board of research at KI, Jan Carlstedt-Duke had received from Indre Bileviciute-Ljungar in September 2003. In June 2003 she had been contacted by Kerstin Uvnäs Moberg and told that an investigation directed against Thomas Lundeberg was in progress at KI, initiated by Uvnäs Moberg and others as earlier described. Bileviciute-Ljungar, who had herself earlier worked in Lundeberg’s research group and defended her thesis there in 1998 [59], then contacted Carlstedt-Duke and made accusations that Carleson had made use of her earlier manuscripts during the work on his dissertation. She was asked to provide a written account of her assumptions and such a
document was handed over three to four months later (sic), February 9
2004. In the meantime Per Wernheim, responsible for computer ques-
tions in the Director’s Office at KI, had been given the task of recover-
ing the manuscripts from an old and defective personal computer. How-
ever, due to various technical problems it took until December 22
before the files could be printed and delivered to Carlstedt-Duke for a
comparison with the articles in Carleson’s thesis. Thus, this happened
seven weeks before Bileviciute-Ljungar left her written report to
Carlstedt-Duke (sic). What contacts the two of them had in the mean-
time is not known.

In a letter dated February 17 2004 attached to the printed files,
Wernheim describes the procedure he had had to use. There he also
says the following. “A comment on the result is that the authenticity of the
data cannot be verified from a technical point of view – this is primarily due
to large discrepancies in the date stamps coupled to the different files”. In the
list of the 49 files printed out Wernheim has made a note for each file
on when it was created and when it was changed. Out of the total
number of 98 dates noted in the list, 63 refer to the year 1904, 26 to the
year 1993 and 9 to the year 2010. In the report Jan Carlstedt-Duke later
gives to the President he writes that “20 out of 49 files and folders were
created or changed during 1993”. One must ask how he knew that? As
just mentioned, 27% (26 out of 98) of the dates referred to the year
1993 whereas 64% 63 out of 98) referred to the year 1904 and 9% (9 out
of 98) to the year 2010. Of all dates connected with the files, 73% are
obviously completely wrong (those referring to the years 1904 and
2010). In this situation it is certainly impossible to say anything about
the correctness of the remaining 27% (those referring to the year 1993).
As in other parts of the investigation, Jan Carlstedt-Duke seems to
interpret facts as best suits his aims and not with the neutral and criti-
cal attitude that is necessary when a state authority examines suspi-
cions directed against an individual.
Another question one must ask when going through Per Wernheim’s list of Indre Bileviciute-Ljungar’s computer files is, is it really from there her “unpublished manuscripts” are printed? All the files are designated “Thomas’ folder”, “Thomas’ folder/Joakim’s I+II” or “Thomas’ folder/Joakim’s III”. In most cases, there follows a specification of what table or what figure the folder bear upon. What the files seem to contain are manuscripts of the three first studies in Carleson’s thesis. In the list one cannot find a single file with Indre Bileviciute-Ljungar’s name or any designation connected with her name. So from where do her unpublished manuscripts originate? No answer to this question has been available from the IT-unit at KI, where the printouts of the manuscripts were made. And for what reason did she have in her computer a lot of files belonging to other persons? There is also reason to wonder what actually happened to her “unpublished manuscripts” before they were finally published in other forms (see chapter 13.4).

During a visit in Stockholm in the beginning of February 2009, I had planned to meet Per Wernheim at KI to try to get answers to my queries concerning the computer files. However, when I searched for his telephone number on the homepage of KI, no information at all came up. I then thought that he might have changed job and instead searched for him on Google. Among the documents I found there was an obituary notice from the newspaper *Svenska Dagbladet*. Per Wernheim had died December 4 2008, 53 years old.

On February 20 2004, Jan Carlstedt-Duke passes his report on Joakim Carleson over to the newly appointed President of KI, Harriet Wallberg-Henriksson (1295/04-608). In this document one finds a few noticeable pieces of information, including the following about the survey of the material: “This detailed examination was done during the Christmas and New Year holidays and Hans Wigzell was kept informed about the results. After discussion we decided that neither Thomas Lundeberg nor Joakim Carleson should be contacted before the details became clearer. On the other hand, I was told to contact the other co-authors to find out how the
studies had been performed”. So, the President and the Dean of Research at KI examine suspicions directed against two earlier employees without informing them about this. Instead, they hear their collaborators’ version of what has occurred. The two accused persons are thus unaware of the ongoing investigation and at risk of being informed indirectly about it through colleagues. More evident violations of what the public administration law says about how individuals exposed to an investigation by an authority should be treated are difficult to envision. Without hearing the accused and without analysing the reliability of Bileviciute-Ljungar’s information, Carlstedt-Duke makes the following conclusion at the end of his report: “strong suspicions exist against Joakim Carleson as well as Thomas Lundeberg for irregularities in research”. On this basis he suggests that the President should hand over the case to the Research Council for examination.

The assessment of Joakim Carleson just described cannot be seen as anything but inferior and does not meet the basic demands of the public administration law (SFS 1986:223). It is clearly indicated there that those who are subjected to actions from an authority should be informed about this and have the right to express their opinion. This deficiency is not excused by the fact that KI later asks the Research Council for help to look further into the case. In his letter, Carlstedt-Duke neglects to mention and evaluate such circumstances as that Bileviciute-Ljungar, when presenting her accusations against Carleson and Lundeberg, was working in the Surgical Clinic at the Karolinska Hospital. She was training there to get a specialist competency as physician under the supervision of Professor Per Hansson and had access to laboratory resources with Professor Andris Kreicbergs. Perhaps not by coincidence, these happened to be two of the three persons, who in a coordinated manner had raised allegations against Thomas Lundeberg at the same time as Kerstin Uvnäs Moberg, in June 2002 (see chapter 5.2). Of course, Carlstedt-Duke ought to have analysed these conditions. He also does not mention the fact that the doctoral projects
of Bileviciute-Ljungar and Carleson were of a similar kind. The former studied arthritis in the knee joint and the latter arthritis in the mandibular joint, both in rats. It is not then surprising if similarities may exist in manuscripts and published articles between the two projects, also considering that the same man was supervisor to both students. He was likewise the person who had the overall responsibility for the writing. Moreover, it must be considered indefensible to compare unpublished manuscripts in one project with published articles in the other. If one wants to accuse anyone of plagiarism, the appropriate course would be to compare the revised and later printed manuscripts in the first project with the published articles in the second. Another fact worth attention, but not at all mentioned by Carlstedt-Duke, is taken up in a letter written by 17 earlier collaborators of Thomas Lundeberg and sent to the Research Council in June 2004 (ref no 312-2004-822). They mention that Bileviciute-Ljungar may have been influenced in her accusations by the close personal relationship she had had earlier with Joakim Carleson and the emotional conflict in which this ended. This is a reminder of the aforementioned and very pronounced lack of neutrality that distinguishes KI’s investigation against Thomas Lundeberg and others close to him.

The most remarkable fact in this story is that neither Thomas Lundeberg nor Joakim Carleson, the two persons accused and later sentenced for scientific misconduct, were never given the possibility to study the contents of, or comment on, the above-mentioned computer files that Jan Carlstedt-Duke had received from Bileviciute-Ljungar. This must be considered as a serious violation of the public administration law (SFS 1896:223). In 17 § the following can be read: “If a case concerns actions of an authority against an individual, the case must not be settled if the one who is applicant, complainant or other part has not been brought up to date about information added to the case by someone else than himself, and if he has not been given opportunity to state an opinion about this information”.

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6.2 The accusations are exposed in the press

On March 31 2004, the Research Council receives the two letters from KI’s President with a request to examine Thomas Lundeberg and his former doctoral student Joakim Carleson. The case is passed over to the Expert Group for Questions of Misconduct in Research within the Ethical Committee. Chairman of the group is at this time Kjerstin Nordborg, a Justice in the Swedish Supreme Administrative Court. The other members are Birgitta Forsman from Lund, lecturer in philosophy, Dan Larhammar from Uppsala, professor of molecular cell biology, Birgitta Strandvik from Gothenburg, professor of paediatrics, and Björn Thomasson, secretary in the group and administrative director in the Research Council. Initially, little happens and it takes until December 7 2004 before the Expert Group appoints three examiners to look closely into the allegations against Lundeberg and Carleson. These are Rolf Andersson, professor in the Department of Medicine and Health at Linköping University, Gunnar Bergenholtz, professor emeritus in endodontics and oral diagnostics at Gothenburg University, and Sighild Westman Naeser, senior lecturer active at the Swedish Medical Products Agency in Uppsala. It then takes more than a year before these three deliver their report to the Research Council on January 24 2006, and another four months before the Expert Group on May 18 2006 submits its stated opinions concerning Lundeberg and Carleson to KI.

Although considerable time passed before the Research Council got started with their investigation, it did not take even a month before Lundeberg and Carleson were hung out in the press. April 22 2004 the major Swedish newspaper Dagens Nyheter (DN) and its journalist Per Snaprud proclaim in big headlines that “a chief physician is suspected for serious fraud” [1]. In an article that stretches over five col-
umns, he mainly describes the information given to KI by Kerstin Uvnäs Moberg and her representative Kurt Björkholm. No signs of critical analysis is found in the article, a thing that typifies also other stories from the “science journalist” Snaprud. On the same day, and after having received questions among others from DN, the President of KI Harriet Wallberg-Henriksson releases a statement to the Press via the Swedish News Agency TT confirming the suspicions of far-reaching fraud against a professor and a doctor of medicine [2]. The same information is also spread on the homepage of KI. Whereas preliminary inquiries about suspected crimes are normally made under secrecy, KI and the Research Council in this case choose to go out publicly with charges about grave irregularities before the requested investigation has yet started. They even allow journalists to read the incomplete and from a legal point of view very doubtful documents in which the claims are formulated. For example, this includes the accounts written by Jan Carlstedt-Duke and described above (see chapter 5.4 and 6.1). The day after the DN article, TT publishes another communiqué in which a professor and representative of the trade union SACO (the Swedish Confederation of Professional Associations) criticizes KI for how the affair has been handled (printed April 24 among others in the newspaper Svenska Dagbladet [3]). In the introduction of the TT notice the following can be read: “The union representative alleges that deep personal conflicts, false charges and broken promises have led up to the situation at KI where two earlier employees have been suspected for scientific misconduct”. This gives some perspective to the sensational writings in DN the day before. The same day (April 23), DN publishes another article by Snaprud entitled: “Still another researcher suspected of fraud”. Here he describes, again without a spark of critical analysis, the allegations against Joakim Carleson delivered by his former colleague and girl friend Indre Bileviciute-Ljungar, as summarized by Jan Carlstedt-Duke (see chapter 6.1).
6.3 The Research Council starts its investigation

Although it took long for the Research Council to appoint experts to examine the two cases, quite a lot happened during these more than nine months. At the same time as the allegations are handed over to the Research Council, Thomas Lundeberg’s legal representative, the lawyer Christer Pehrson, writes to the Ethical Council at KI and asks for access to the documents included in its earlier investigation of the accusations against Lundeberg made by Uvnäs Moberg, Wiesenfeld-Hallin, Hansson, and Kreicbergs in June 2002 (see chapter 5.2). In answer, the secretary of the council, Maria Nyström Peck, says that “several of the documents have entirely or in part been made secret” (5463/03-629). As a ground for this she refers to two paragraphs in the Official Secrets Act concerning information in ongoing investigations in prosecution and police offices. As additional support for the decision, she refers to a judgement in the Administrative Court of Appeal. It is per se true that KI had earlier submitted an animal experiment affair to the Environmental Office in Solna (see chapter 5.2), concerning a doctoral student of Professor Kreicbergs who had carried out potentially painful experiments without ethical permission. The case had been handed over to the Regional Public Prosecution Office but was subsequently withdrawn without any steps being taken. In a letter to Christer Pehrson from May 2004, the Chief Prosecutor Mats Bergman declares that “Lundeberg is not suspected for crime in the case”.

Since the questions the Ethical Council had examined were among the things the President of KI took up in her letter to the Research Council, it must be considered self-evident that Lundeberg’s lawyer wanted to see the documents from this investigation. In the written opinion of the Ethical Council from January 27 2003, nothing is mentioned about a copy being given to the person subjected to the inquiry (4998/02-629). In this situation, Pehrson writes back to Nyström Peck
and points out that Swedish law contains a well-established conception called “partsoffentlighet” (party publicity), which means that those who are parties in a case have the right to see the acts and the information available in the case. With this reference, he asks again to receive copies of the documents within the Ethical Council. An answer arrives about two weeks later, signed by the pro tempore University Director Bengt Norrving as well as Maria Nyström Peck. There one can read the following: “KI holds to the view that the documents in question in accordance with the judgement made in the Administrative Court of Appeal on June 10 2003 are secret according to chapter 5, paragraph 1, first part number 4 in the Official Secrets Act and see no reason to make any exception for Thomas Lundeberg”. This is certainly a most remarkable attitude from the side of KI. As evident from a subsequent letter from Pehrson to the Research Council, the Administrative Court of Appeal makes a similar assessment and sets aside the secrecy decision of KI. Thereby, Pehrson gets access to the documents that were previously withheld from his client in spite of the fact that he was the one under examination. However, due to the delay caused by the actions of KI he had to ask for a respite to submit a declaration on Lundeberg’s account.

Petitions from collaborators of Lundeberg and from the representative (Ombudsman) of the doctoral candidates at KI

According to the “event list” in the diary of the Research Council, the next thing to happen is that a letter arrives from former collaborators to Thomas Lundeberg at KI. It is dated June 9 2004 and is signed by 17 persons (laboratory personnel, doctoral students, medical doctors, and lecturers). What they express is amazement over “the endless number of reports with accusations against Lundeberg” submitted by Kerstin Uvnäs Moberg and others and state the following: “The undersigned, all collaborators of Thomas Lundeberg for many years, repudiate the very condescending and insulting description in the allegations of the working situation with-
in Lundeberg’s group as well as of Lundeberg himself. We find it very serious that these one-sided views have not been confronted. The blackening that has taken place in the press and on the KI homepage risks creating momentous consequences for the continued work and future of many researchers. The picture of what has been achieved in the group with regard both to scientific production and research education is very negative”. They go on further that the KI report to the Research Council “contains a large number of generalizing, unverified and in some parts directly erroneous statements”. As mentioned earlier (see chapter 6.1), they likewise oppose the picture of the work within the research group given by Indre Bileviciute-Ljungar in the charges against Joakim Carleson. The written statement is ended with the following hope: “We take it for granted that the Ethical Committee within the Research Council will treat the case in a more objective manner than seems to have occurred at KI. We also assume that an independent, open and strong investigation by the Research Council will lead to the end of the many offensive and destructive accusations”. As the story shows, these hopes would not be fulfilled.

A few days later, the Research Council registers a letter from Kerstin Beckenius, representative of the doctoral students at KI. She writes giving complementary information concerning Magnus Lekman, a former doctoral student of Thomas Lundeberg. As mentioned earlier, Kerstin Uvnäs Moberg had claimed in her contacts with KI during 2002 that Lekman’s doctoral plan was to a large extent a plagiarism of the one earlier written earlier for Iréne Lund. This was also one of the items that had been taken up in the investigation made by the Ethical Council at KI (see chapter 5.2). However, no one had noticed the fact that Lund had changed direction in her project and that Lekman had come in to continue the studies she had initiated (with several additions). In that situation it is neither surprising nor noteworthy that a similarity exists between the two plans. What the representative of the doctoral students opposes in her letter to the Research Council is the manner in which the Ethical Council has handled the
question. She wonders how it can be possible that a state authority makes an inquiry of this kind without informing the parties concerned and giving them an opportunity to express an opinion in the matter. If anyone had contacted them it would have been clear that the project plan was set up in full understanding between two doctoral students and their supervisor. Moreover, the department chairman had approved the plan.

The representative of the doctoral students likewise strongly criticize the Ethical Council, an advisory organ under the President, for spreading material from the investigation and thereby making it difficult for Lekman to resume his doctoral studies. She mentions that he has contacted a new potential supervisor, who expressed great interest in his research plan. This person shortly after contacted Lekman and asked if the information he had received from the Ethical Council was correct. This was the very first time Lekman got to know about the allegations. According to Beckenius, Lekman was deeply offended and felt that the Ethical Council had committed a legal assault against him. Since KI is a state authority it has to follow the rules of the Public Administration Law. She demands a redress on behalf of Lekman and that the question of his project plan should be removed from the Research Council’s inquiry into Lundeberg’s research. As we will see later on, the representative of the doctoral students at KI will come back with regard to this investigation. It is worth noting that Lekman eventually managed to find a new supervisor at KI and that he has successfully initiated a new project and has published neurobiological studies as first author in international journals.

The Research Council receives the first statements from Lundeberg’s lawyer

The “event list” in the diary of the Research Council reveals that Thomas Lundeberg’s lawyer, Christer Pehrson, submitted several
statements from September 1 and over the next few months. All in all it is a quite comprehensive material. If all the acts could be stacked up, they would make a pile of about 20-30 cm high. Step by step Pehrson goes through all the allegations that have been raised ever since the report in June 2002 to the Uppsala Police about burglary in the office of Kerstin Uvnäs Moberg at SLU, as well as the investigations they led to. Considerable space is of course given to the accusations against Lundberg made by Uvnäs Moberg and others in June 2002. These led to the examination the Ethical Council at KI made and the results presented in January 2003 (see chapter 5.2). Many of the questions Pehrson takes up in his reports refer to matters that the Expert Group in the Research Council later (April 2005) decides to exclude from the commission given to the examiners. This means that Lundberg and his representative had spent a lot of time and costs on unnecessary work.

Before the Research Council has received all of the aforementioned documents from Pehrson, a letter arrives from Kurt Björkholm (October 29 2004) in which he as a representative of Kerstin Uvnäs Moberg gives the Expert Group his opinions on what Pehrson has stated. Less than a month later (November 23), further comments are forwarded by Björkholm. On the same date, a petition appears from Uvnäs Moberg entitled “comments that sum up how Thomas Lundberg has taken over the research and company activities of Kerstin Uvnäs Moberg”. In a letter dated December 8 2004, Uvnäs Moberg lets the Research Council know that she with immediate effect calls back the petition handed in two weeks earlier. She further says that she will come to collect this document on December 10. Less than a week later the Research Council receives a letter from the president of KI, Harriet Wallberg-Henriksson, in which she refers to Kurt Björkholm and asks the Research Council to include two additional scientific articles from Lundberg’s group in their investigation.
Björn Thomasson, secretary in the Expert Group, towards the end of the autumn writes two letters to Thomas Lundeberg and Kerstin Uvnäs Moberg. In the first they are informed that the real inspection will now begin, and in the other he names the three specialists that have been appointed. This message is likewise sent to Joakim Carleson, the second of the persons KI wants to have scrutinized. It is remarkable that Uvnäs Moberg receives these letters. After all, it is KI that has asked the Research Council to check-up the research activities of Lundeberg and Carleson. Uvnäs Moberg and her representative have per se asked KI to inspect Lundeberg, but it must be considered questionable to include her as a part of the investigation performed by the Research Council. Lundeberg’s lawyer is critical of this and forwards a number of questions to the Research Council in a letter dated February 15 2005. At the same time he asks for copies of the papers Uvnäs Moberg has sent in to the Research Council. After obtaining them he writes again to the research Council and among others says the following. “I note that Kerstin Uvnäs Moberg and her representative are allowed to inform the Research Council in this case without Thomas Lundeberg being told about that and without being given the opportunity to express an opinion”. Björn Thomasson responds to Pehrson on March 7 but is vague and gives no clear answer on the question whether or not Uvnäs Moberg is regarded as a part of, or an intervenient in, the ongoing investigation. Unfortunately, the Research Council has already violated the Public Administration Law at the start of its assignment by not following the paragraph stating that an individual who is under scrutiny by an official authority should be told about the information being submitted and should be given an opportunity to respond to this information is highly remarkable (it is a matter of law and order). These circumstances are especially serious since chairman of the Expert Group, Kjerstin Nordborg, is a Justice of the Swedish Supreme Administrative Court.
Kerstin Uvnäs Moberg reports to the Swedish Economic Crime Authority and the Police

A notable incident in connection with the beginning of the investigation of the Research Council during the autumn of 2004 occurs when Kerstin Uvnäs Moberg sends a notice to the Swedish Economic Crime Authority on October 25. Her letter is addressed to the Chief Prosecutor Kent Madstedt and has the title: “report of encroachment into my home and theft of private as well as company-owned properties”. She therein states that “as a result of events within EntreTech Medical AB and Eustasia AB during the last few years, as well as different accidents at my place of work, I keep parts of the administrative and the research documentation of the companies in my private home”. As described earlier, SLU had during 2002 and 2003 reported to the Police about theft of research material, unauthorized access to a computer and burglary of test tubes from Uvnäs Moberg (see chapter 5.1). The investigations were withdrawn due to lack of evidence. It should here also be mentioned that EntreTech Medical AB and Eustasia AB are biomedical companies that Uvnäs Moberg, Lundeberg and a few other persons started together in 1998 and 2001, respectively (see further chapter 7).

A little further down in her letter to the Economic Crime Authority, Uvnäs Moberg writes the following. “After contacts with the Security Police in Stockholm in matters related to the research fraud conducted by the senior physician at the Karolinska University Hospital in Solna, Thomas Lundeberg, disclosed by Karolinska Institutet, I have been requested to make a written compilation of my research activities. In connection with this I started a few days ago to make an inventory of my entire private and all company-owned research documentation stored in my house. I then found that most of my and the companies research documentation no longer is present in the files where it lately had been kept”. It is further said that information stored on USB sticks and compact discs (CD) as well as personal photos, correspondence and properties are missing. When in touch with
them, the Secret Police confirm that Uvnäs Moberg and Björkholm have been in contact with them but give no information about what.

How someone managed to get into the house is obscure. It is said that either the entrance door or any of the garage doors were most likely used. However no damage to doors or windows could be observed. According to a locksmith it should not be possible to open the doors with a skeleton key. Concerning the time of the burglary, it was claimed that it could have been going on over a long period, meaning that one or more persons had broken into the house on several occasions without leaving any signs. Their intention was said to have been to steal everything from scientific manuscripts to family photos. With regard to the economic value of the lost items, Uvnäs Moberg states at the end of her letter: “As mentioned above, the stolen material represents irrereplaceable research data and in the hands of others it may give rise to large fortunes (billions of SEK) within the drug industry or for companies that buy and sell research ideas. Moreover, parts of the stolen documentation may constitute a risk for society if it comes into the wrong hands”. Concerning whom the offender may be, Uvnäs Moberg says that “more detailed information about the persons that may be interested in the stolen material I would prefer to inform the Swedish Economic Crime Authority about verbally”. A clear indication of whom she means is however given in the very last part of the letter. “The theft of the mentioned integrity documents leads up to an assumption that the offender does not hesitate to carry out the threats earlier forwarded to me and especially in the letter I received on December 21 2003”.

What she refers to here is understood from other documents available in the archives of the Research Council. January 14 2004 Kerstin Uvnäs Moberg and Kurt Björkholm visited the Police station in Täby and reported illegal threats (0201-K11730-04). It seems that Björkholm on this occasion presented himself as a lawyer, a title as far as is known he never has had. The time of the crime is said to be December 20-22 2003 (compare with the date of the letter just mentioned). Later
in the notes of the Police is the following. “Moberg has together with Lundeberg two companies in which Moberg after a dispute now is now on the way to buy Lundeberg out. In order to sell his shares in the companies, the latter has made demands that put Moberg in an unfavourable light. In a letter accompanying the contract, Lundeberg writes that he has collected material to forward allegations to the Police and to issue a summons if Moberg does not accept his requirements. Lundeberg also writes that he in that case would destroy Moberg’s position in the academic world and make here future research impossible”. This is the version written down by a policeman on the basis of what he was told by Uvnäs Moberg and Björkholm during their visit to the Täby Police.

During this visit Uvnäs Moberg and her “lawyer “ make a further report of defamation (0201-K11761-04). What this concerns is an E-mail message that Uvnäs Moberg received on a computer in her home on Sunday, January 11 2004. It told in English that some types of downloading of material from the Internet are illegal. It also claimed that downloading had been made from her computer. This note was signed by “FBI” and came from the address rinasaha@hotmail.com. The Police report finally mentions that “Moberg is afraid that this is a part of a campaign of slander against her, when she at present is in a controversy according to civil law with a shareholder in their common companies. She is also afraid that things may have been hidden in her computer in order to defame her”. The shareholder she has in view cannot be anyone else than Thomas Lundeberg. He has, however, never been contacted by the Police or heard anything about the two Police reports from January 14 2004. When searching for the E-mail address mentioned in the second account, one finds a medical doctor and psychiatrist in Heidelberg, Germany with the name Rina Saha and the same E-mail address (as well as another one belonging to the work place). However, the address seems not to be in use any longer. Whether or not the holder of this address is the person that sent the message signed by “FBI” to Uvnäs Moberg cannot be determined. The two reports Uvnäs
Moberg gives to the Täby Police on January 14 2004 are forwarded to the Regional Public Prosecution Office. Less than a week later, January 20, it is there decided to discontinue the investigations. The reason is said to be that there is no suspicion that any crime liable for public prosecution has been committed. When contacting the Täby Police asking to be able study the documents handed over in connection with her contact with them, I get the answer that these papers have been made secret.

The burglaries, threats *et cetera* that Uvnäs Moberg describes in her reports to the Swedish Economic Crime Authority and the Täby Police are repeated in several of the official letters she and Björkholm have written to the Research Council. Even though his name is not always mentioned, there is no doubt that all the time it is Thomas Lundeberg and his lawyer who are seen as the “threat”. We will come back to these documents later on, but one example from the beginning of 2004 is taken up here. In April-May, Lundeberg’s lawyer Christer Pehrson sends drafts of two reports with supplements to the President of KI and gives KI a possibility to comment on the facts presented there. However, they refrain from doing so. In some way, these reports immediately get into the hands of Kerstin Uvnäs Moberg, probably via one of the higher officials of KI. In his written communications, Pehrson describes the facts and analyses two of the points taken up in the investigation KI started against Lundeberg in 2002 after receiving the allegations from Uvnäs Moberg and others (see chapter 5.2). The final versions of these reports can only be judged as a detailed and in all essentials correct description of what has occurred. One of the accounts deals with animal experiments and the other with “self plagiarism” in a project plan for a doctoral student (see chapter 5.2).

Uvnäs Moberg and Björkholm are of another opinion. On May 24 2004, the latter writes to Pehrson and lets him know that “Kerstin Uvnäs Moberg desists from commenting on the viewpoints you express in the aforementioned documents”. In other parts of the letter, Björkholm
criticizes the reports in general terms and calls Pehrson’s actions as a lawyer in question. The following citation gives an example of what is said. “I note that in your reports to KI you come very close to the threats Thomas Lundeberg has forwarded to Kerstin Uvnäs Moberg in writing”. He also declares that: “in addition, your formulations to KI may be interpreted as if you exert an inappropriate pressure on KI as a medical university and thus also on the State”. These short extracts give a hint of the character of the many Police reports and petitions with suspected irregularities that Uvnäs Moberg and Björkholm for several years have directed against not only Thomas Lundeberg but also a large number of other persons. Lately they have even included the Government in these issues.

7 The ownership of EntreTech Medical AB

As described previously, in the beginning of the 1990’s Kerstin Uvnäs Moberg and Thomas Lundeberg started a scientific co-operation regarding the physiological importance and possible therapeutic use of the hormone oxytocin (see chapter 4.2). In 1997 this led to their submitting, with support from Karolinska Innovations AB (KIAB), three patent applications within the area of wound healing and pain. Next year they established, together with three other persons, the company EntreTech Medical AB to manage the commercial possibilities in their research. That same year they take over the above-mentioned patent applications from KIAB and apply for additional patents in the name of the new company. Over the next few years, some controversies seem to arise within EntreTech Medical AB, but this does not prevent Uvnäs Moberg and Lundeberg from creating still another company in 2001, Eustasia AB. During that year several new patents are applied for in the name of the two companies. In the autumn of 2001, it is further decided that Uvnäs Moberg and Lundeberg will take over the
shares of the other stockowners in EntreTech Medical AB. As described earlier, several things happen during 2002 that sharpens the antagonism between the two, notably the charges of theft and illegal misuse of a computer that Uvnäs Moberg makes to the Uppsala Police and the request for an examination to KI (see chapter 5.1 and 5.2).

In an attempt to find a solution to the situation that has arisen, a buyer is sought for EntreTech Medical AB. In the spring of 2002 Tripep AB, another company originating from research at KI shows interest. The contact with this corporation is established via an accountant in a larger revision firm engaged by KI. According to the offer presented, Uvnäs Moberg and Lundeberg would both receive 6 million SEK cash as well as stocks in Tripep AB to the value of 60 million SEK (this information is taken from a letter written by Lundeberg). Their influence in the new company will however be limited. Lundeberg is prepared to accept the offer, whereas Uvnäs Moberg turns it down. To get out of this stalemate, Lundeberg is about a year later prepared to sell his shares in the company to Uvnäs Moberg. As a service in return, he wants her assurance that the accusations against him to KI, Police and other authorities that have been going on for several years will cease. He also wants a promise that what he considers as harassments to his family will stop. To get this confirmed he asks his lawyer Christer Pehrson to formulate a “special commitment” that Uvnäs Moberg should sign in order to receive the stocks of Lundeberg for the symbolic sum of 1 SEK. In parallel, Lundeberg sends a letter to one of the earlier stockholders and official functionaries in EntreTech Medical AB to explain the situation. This latter person hands over the document “special commitment” to Uvnäs Moberg in December 2003 and seems also to have shown her the other letter on this occasion. She considers the proposal insulting and instead of signing it she visits the Täby Police together with Kurt Björkholm on January 14 2004 to forward charges of illegal threats with reference to the two letters just mentioned (see chapter 6.3).
Experts are appointed and new accusations come in

On December 20 2004 Björn Thomasson writes to Thomas Lundeberg, Joakim Carleson, and Kerstin Uvnäs Moberg to let them know that the Research Council has appointed three specialists for the examination requested by KI (copy for knowledge to KI). As mentioned earlier, the selected are Professor Rolf Andersson from Linköping, Professor Emeritus Gunnar Bergen Holtz from Gothenburg and Docent Sighild Westman Naeser from Uppsala. It will however take until January 24 2006 before they present their report. During the meantime, a number of written communications in the matter arrive. Among others, the lawyer Christer Pehrson delivers several longer statements to refute the accusations made against Lundeberg and, gradually, several new petitions also arrive from Uvnäs Moberg and Björkholm.

One of the first documents to be registered in the Research Council during the spring of 2005 is a new official letter from Kerstin Beckenius, Ombudsman for the doctoral students at KI. The case she takes up refers to a doctoral student, Cecilia Norrbrink Budh, who on October 22 2004 had defended her dissertation dealing with pain after spinal injuries. Norrbrink Budh earlier had had Thomas Lundeberg as one of her supervisors and one week before her disputation she was impeached by Uvnäs Moberg and Björkholm. This meant that one day before the defence of her doctoral thesis she receives a letter from Elisabeth Granström, Dean of Research Education, put together after consultations with the Dean of Research Jan Carlstedt-Duke and the President Harriet Wallberg-Henriksson. It questions in an accusing tone the title and the institutional address given for Thomas Lundeberg. At the time when the studies included in the thesis were made, he was a professor at the Department of Physiology and Pharmacology at KI.
and that is also what is stated in the dissertation. In her letter, Granström demands that Norrbrink Budh during her disputation next day corrects both verbally and in writing (as an errata list) what they see as a fault she has made. A copy of the letter is forwarded to the members of the Examination Board and several other persons. In spite of the indignation caused by the letter, the disputation works out very well. The next week Norrbrink Budh contacts the lawyer Anders Stening who works as a legal consultant in the Director’s Office at KI. He becomes highly upset about what has happened and gets in touch with the President in the matter. Shortly later Norrbrink Budh receives a letter from Granström in which the remaining demands for corrections are cancelled. Kerstin Beckenius ends her petition in the following manner: “As representative of the doctoral students I want the Ethical Committee of the Research Council to judge whether the leaders of KI have acted in an ethically acceptable manner in this case and if the measures taken in the form of the letter with imperative requests were in proportion to what Cecilia Norrbrink Budh was claimed to be guilty of”. The letter is registered in the diary of the Research Council, but then nothing further happens as far as can be judged. A report from a representative of doctoral students with requirements to examine the actions of a President and other high officials at a university is obviously nothing the Ethical Committee of the Research Council cares about.

June 14 2005 a comprehensive documentation (a pile of papers about 40 cm high) arrives at the Research Council from Thomas Lundeborg’s lawyer, Christer Pehrson. In an accompanying letter, Pehrson asks for an acknowledgement of the receipt of these acts. Nothing like that can be found in the diary of the Research Council, or among the documents in the archives (sorted in chronological order). Even more remarkable is that no information at all is found in the diary about the content of the “documentation of 40 cm”. To make things even worse, this “documentation” does not exist in the archives (November 2008). Two months later, August 22, Kerstin Uvnäs Moberg and Kurt Björk-
holm submit a petition in which they comment on and criticize the reports Pehrson handed over to the Research Council in March and June 2005 in response to the accusations made against Lundeberg. Evidently, Uvnäs Moberg and Björkholm are able to ensure that they get access to the writings that come in from Lundeberg and his representative and continuously make written counteractions. These latter letters are included within the material the experts are provided with for their investigation. However, the Research Council never informs Lundeberg about the existence of these documents. The requirements of the Public Administration Law about how an official authority should work seems unknown here.

In her letter to the Research Council from August 2005, Uvnäs Moberg first mentions that she writes to “refute the erroneous information Pehrson has given the Ethical Committee”. She then continues with the following clarification. “In addition I find reason to give a summing-up, attached as a supplement to this letter, that puts the KI investigation into a larger context and demonstrates that it is only a small portion of a far-reaching attempt from the side of Thomas Lundeberg to physically, intellectually and by dishonest actions take over my research”. In her letter Uvnäs Moberg then mainly deals with two articles (she is herself co-author on one of them) in which some overlapping in the results exist and an error has been found in one of the figures concerning the statistical variation (a correction sent to the journal in February 2005). The letter finishes as follows. “Most of the remaining comments which Thomas Lundeberg via his lawyer Christer Pehrson has sent to the committee regarding the plagiarism charges are wrong or misleading”. The supplement that accompanies the letter is 62 pages long and contains headings like: “Thomas Lundeberg’s attempts to take over Kerstin Uvnäs Moberg’s research; the stolen research; what Thomas Lundeberg has made and what he is out for”.

Later during the autumn of 2005, the lawyer Christer Pehrson on two occasions delivers various documents to the Research Council.
These include raw data from experiments, protocols, manuscript drafts and other things that have been requested. A large number of papers of different kinds likewise continue to come in from Uvnäs Moberg and Björkholm in which they comment on the material submitted by Pehrson. For example, a letter from Uvnäs Moberg arrives to Björn Thomasson at the Research Council in the end of September in which it is said that she “has received from a colleague a package containing 4 kg of documents from the lawyer Christer Pehrson, the representative of Thomas Lundeberg”. A little later one can read that “these documents were to say the least very shocking reading”. Then follow seven pages with interpretations and remarks on these acts. In the middle of November, Björkholm writes to the Director-General of the Research Council to request a meeting with the Expert Group as well as the three auditors appointed for the case. The grounds he refers for discussion are the threatening letters sent to Uvnäs Moberg, the collected writings of Christer Pehrson, and new information. Barely a month later, Thomasson writes to Björkholm and turns down the proposal of a meeting. He points out that Björkholm and his client are not at all uninformed of the ongoing process. This is expressed in the following manner. “As we all know, both you and Kerstin Uvnäs Moberg have on more than one occasion visited the Research Council to examine what has come in”.

7 Uvnäs Moberg writes to the Presidents of KI and SLU

In the search for papers that shed light upon the investigation of Thomas Lundeberg, a central document turns up when I visit the Ministry of Education during the autumn of 2008 to view the official communications Kerstin Uvnäs Moberg and Kurt Björkholm have sent to the Swedish Government. Among these papers one finds a ten-page
long letter addressed to the Presidents of KI and SLU, Harriet Wallberg-Henriksson and Ann-Christin Bylund. This note seems to have been handed over personally in July 2005 by Ingemar Arn, a colleague and friend of Uvnäs Moberg. At KI one cannot localize this letter either in the diary or in the archives. A copy however could be obtained from the Ministry of Education. The writing to the two Presidents is made in a personal tone and covers a long period even though the main focus is on the Lundeberg case. Basically, I believe that this letter says most of what needs to be said about the complex of problems Uvnäs Moberg has experienced and is experiencing. Between the lines, there appears a great bitterness over the injustices she feels that she has been exposed to within the academic world. Thoughts are also expressed that hardly can be said to be anything but of a morbid character. Considering the far-reaching consequences the actions of Uvnäs Moberg have had for Thomas Lundeberg, his family and his collaborators, it is nevertheless unavoidable to display some of the content of the letter here.

Already in the two first sentences the confusion that Uvnäs Moberg experiences is manifest: “I write this letter to the two of you since I through my research has been put in a situation in which I don’t know how to behave and what to do. Parts of my life and my future are on the way to be destroyed”. The following remark exposes a thorn that obviously sits very deep in her side (see chapter 4.2), reminding the two University Presidents of this: “As you know, I have been involved in a number of official appointment procedures that have not been completely uncontroversial. They deal with at least four occasions at KI, but also in Uppsala and Gothenburg”. One of the four KI positions this refers to is the professorship in integrative physiology that went to Wallberg-Henriksson, one of the addressees of the letter. The complex of problems connected with the position as professor at KI likewise comes up in several letters directed against Thomas Lundeberg. There is no doubt that Uvnäs Moberg has had great difficulty in accepting the fact that in 2001 he
was appointed as professor in physiology at KI. This event is mentioned repeatedly in official petitions from Uvnäs Moberg and her representative Björkholm in wordings like: “what is noteworthy above all is the internal forces within KI that lay behind the striving to at all costs put the professor’s hat on the head of Thomas Lundeberg” (December 2004) and “was the appointment of Thomas Lundeberg to professor fixed” (November 2006).

The professorship dilemma comes back several times in the letter to the two Presidents and is described as the root of the evil. “Why I mention the appointment issues is not because I question the outcome (which she certainly did at the time it all happened – see chapter 4.2) or want to have the decisions changed. No, but I believe that what I have been and still am subjected to, professionally and also personally from a social and economic point of view, is connected with the appointment affairs. Thus, I think that the negative assessment I was given in connection with the professor applications has created a picture of me as someone possible to assault. This has made it easier to attack me and has made my research an easy prey for unscrupulous individuals, in the widest sense of the word”. Kurt Björkholm repeatedly takes up similar thoughts and in a letter at the end of 2004 to Harriet Wallberg-Henriksson and Jan Carlstedt-Duke he says. “Recently, I have started to wonder if the tangle of undue actions and harassments that Kerstin has met may have its origin in the appointment issue in the beginning of the 1990-ies when Kerstin applied for a professorship in the Department of Physiology and Pharmacology”. In the next few pages of her letter, Uvnäs Moberg tells about her work with oxytocin and gentle touch, the creation of EntreTech Medical AB together with Lundeberg and others, the burglaries at SLU, the disease and death cases among her collaborators, Lundeberg’s “takeover” of her results and ideas, et cetera (see chapter 5.1 and 5.2). This part of the letter is finished with the following words in bold. “The actions I have described are from several aspects devilish assaults on me and what I have accomplished in research. The entire female concept I have worked out based on female physi-
ology, especially breastfeeding, has been cut into pieces at the same time as one has tried to choke my research work”.

In the last third of her letter Uvnäs Moberg deals with the “at least six burglaries” in her home with theft of research documentation among others. In October 2004, these events were reported to the Swedish Economic Crime Authority (see chapter 6.3). About this she here says the following. “Now when I can see clearly on the whole thing, I understand that someone has tried to frighten me out of my wits in order to make me appear crazy and therefore not reliable. The entire process is insidious and has all the time taken place behind my back”. In this part of the letter she also takes up the intimidations she believes that Lundeberg targeted her with and which were reported to the Täby Police in January 2004 under the designation of illegal threats. After receiving it, the Regional Public Prosecution Office dismissed the case within slightly more than a month (see chapter 6.3). The text contains a number of additional notions of theft, threats and pursuit and is finished as follows. “What will the next step be? People working in the field have told me that bringing me back from a lost identity will lead to confrontations. That I write to the two of you is because destructive events of a similar character have occurred both at KI and SLU. It is easy for someone working at KI or SLU to say that what has happened is not so dangerous. But if you put the pictures together and look at what has happened at KI and SLU at the same time, the image of what has happened becomes much more unpleasant and clear, and in all its improbability also more probable”. It is not known to what extent Harriet Wallberg-Henriksson and Ann-Christin Bylund ever responded to this letter or contacted Uvnäs Moberg in any other way to discuss what she had taken up.

Lack of critical analysis and adequate reactions

What is so striking in the survey of the Lundeberg case is the lack of critical analysis that both KI and the Research Council show vis-à-vis Kerstin Uvnäs Moberg and her representative Kurt Björkholm. At KI
this applies not only to the two Presidents, Hans Wigzell and Harriet Wallberg-Henriksson, but also in great measure to the Dean of Research, Jan Carlstedt-Duke, and the members of the Ethical Council chaired by Lars Terenius. One of the few who has made a neutral and careful evaluation of the charges presented is the Internal Accountant, Bo Myrup (see chapter 5.2). At the Research Council both the Expert Group led by Kjerstin Nordborg, a Judge in the Swedish Supreme Administrative Court, and the three auditors appointed to carry out the investigation requested by KI, show a bias similar to the one mentioned above. An unpleasant part of this affair is the circulation of a number of rumours, in part confirmed, according to which high officials in charge of the Lundeberg investigation have been exposed to queries by private detectives and pressures of various kinds. It is however difficult to obtain direct evidence for this type of information. A partial idea of how it may have come about is given by the following citation from a letter Kurt Björkholm sent to KI in December 2004. “It is now up to the leaders of KI to show determination before the information I still have to dispose of should be handed over to other persons and authorities, that will have to take over where I must stop if KI adopts a passive attitude”.

Against this background, it is a relief to experience the frankness of Thomas Lundeberg’s wife when she writes to Björn Thomasson at the Research Council in June 2005. Among many other things is the following: “My husband is chased by a paranoid woman, Kerstin Uvnäs Moberg”. The letter as a whole throws light upon how the family during several years has had to endure threats, harassments and suspicions due to the many allegations raised by Uvnäs Moberg. In contrast to the inept way in which high officials at KI and the Research Council have handled these, it appears that police and prosecutors have managed them in a more down-to-earth manner. Even though Lundeberg has been pointed out as suspect in several reports to the Police, the Swedish Economic Crime Authority and the Secret Service, he has
never been considered as such by them and has not been questioned or contacted by them. Moreover, all these investigations have been withdrawn without prosecution or any other sanctions.

10 Uvnäs Moberg writes to the Swedish Bar Association

Kerstin Uvnäs Moberg and Kurt Björkholm are not content with directing a number of allegations just against Thomas Lundeberg. As we will see later on, a large number of other persons will meet the same fate. One of the first is Lundeberg’s representative, the lawyer Christer Pehrson. July 15 2005 he is reported to the Disciplinary Committee of the Swedish Bar Association for having violated its code of conduct during his mission for Lundeberg. After this date, a total of nine written statements and other acts arrive from Uvnäs Moberg and Björkholm. To meet the charges, Pehrson likewise submits a number of documents. February 22 2007 the Committee makes a decision in the case (D-2005/1131). First they briefly describe the background, without bringing up anything not said here earlier. Thereafter, a summary of the criticism directed by Uvnäs Moberg is given. She claims that Pehrson in his writings to KI and the Research Council has presented misleading and false information that has damaged her. She also says that he has contacted the chief legal adviser at SLU behind her back, which has led to serious consequences for her at her place of work. Another item taken up is the insulting agreement or “special commitment” that Pehrson has put together to make possible the transfer of Lundeberg’s stocks in their joint company over to her. Uvnäs Moberg further states that Pehrson has passed on disparaging and unwarranted statements about her including that she acted with hostility against Lundeberg and his family. She also says that Pehrson’s actions are
economically motivated and that he in co-operation with Lundeberg and others use her research for their own enrichment.

Christer Pehrson denies all the accusations made against him. He also says that his work for Thomas Lundeberg started in the summer of 2003 and initially concerned the transfer to Uvnäs Moberg of Lundeberg’s stocks in EntreTech Medical AB and Eustasia AB. Later, his tasks also came to include the investigations made by KI and the Research Council. He further declares that the reports he has delivered support Lundeberg’s case and that they reject the conclusions made by the examiners and the Expert Group appointed by the Research Council. Concerning the “special commitment” in connection with the planned stock transfer, he says that it was in response to the persecution Lundeberg and his family were exposed to at this time. He also denies that in his contacts with the legal adviser at SLU he should have expressed himself in an offensive manner about Uvnäs Moberg. In other parts, he describes her allegations as too imprecise to be possible to respond to. The Bar Association’s judgement and decision in the case is short and concise: “The investigation shows that Christer Pehrson has not violated the code of conduct for lawyers. The allegations will therefore not lead to any measures”.

11 Lundeberg accuses Uvnäs Moberg

At the end of 2005, Thomas Lundeberg has been compelled to spend a large part of his time over the last four years to respond to allegations from Kerstin Uvnäs Moberg and others made to KI, the Research Council as well as several different institutions within the legal system. As we have seen, the latter have withdrawn the cases without directing any suspicions towards Lundeberg. In the KI investigations, Lundeberg has been cleared on some points and criticized on others. When the accusations continued to flow in, KI chose in March 2004 to
ask for help from the Research Council to check the irregularities that had been claimed. This process took more than two years. During this time Lundeberg and his representative, the lawyer Christer Pehrson, could note that Uvnäs Moberg and her representative, Kurt Björkholm, kept themselves informed about the reports Pehrson submitted as a part of the defence. In a number of petitions, Uvnäs Moberg and Björkholm continuously commented on material presented by Pehrson. However, the Research Council did not correspondingly inform Lundeberg about these communications. Accordingly, he was never able to react to them.

In this situation, on December 5 2005 Thomas Lundeberg submits an official letter with allegation against Kerstin Uvnäs Moberg to the Public Prosecution Office in the County of Stockholm (seven pages plus enclosures). There he goes through all the earlier reports from Uvnäs Moberg against himself and sums up in the following manner. “I believe that each individual action described above in section 2-3 constitutes, if not false information or false charges, then at least contribution to these crimes. I further think that these actions taken together can be taken as harassment or mobbing”. January 18 2006 the Chief Prosecutor Eva Finné in the Prosecution Office of Stockholm decides not to start any preliminary inquiry saying that the information provided did not give sufficient reason to believe that a crime warranting public prosecution had been committed. Via his representative, the lawyer Per Gotthard, Lundeberg appeals against this decision. March 24 2006, the deputy Chief Prosecutor Astrid Eklund sends the following message to Gotthard (ÅM 2006/0747). “When going through the case, I find that I share the prosecutor’s opinion that a preliminary investigation should not be started. Thus, there is no reason to change the decision. The prosecutor’s decision is therefore maintained”.

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The expert report goes to the press

On January 24 2006 the three auditors, Rolf Andersson, Gunnar Bergenholtz and Sighild Westman Naeser, submit their report about “Possible departures from good scientific practice in the research of Thomas Lundeberg and Joakim Carleson at Karolinska Institutet” to the Expert Group at the Research Council. The secretary of the group, Björn Thomasson, the same day publishes a message in which this is mentioned. There he also says that “Thomas Lundeberg and Joakim Carleson will be given opportunity to respond to the report before the Expert Group puts together the final verdict of the Research Council to Karolinska Institutet”. This could be interpreted as if the auditors’ report will be put aside until the defendants have had a chance to express an opinion and until the Expert Group thereafter has arrived at a definite position. However, this does not turn out to be the case. Already three days later, January 27 2006, the large daily newspaper Dagens Nyheter (DN) has a full page that on the top is started with a heading in large and bold letters: “ex professor accused of scientific fraud on a large scale”. The article is signed by Knut Kainz Rognerud and mentions things like “plagiarized articles, fictitious patent applications, questionable animal experiments, and experiments that never have been made”. Further down the same page one finds an article by Karin Bojs, the head of the scientific office at DN, according to whom “hot research tempted to rapid and faulty results” (heading). In the introduction of her text Bojs writes: “Of course also Sweden would experience a big scandal of scientific fraud. The research world is so full of competition and prestige that some dishonest and impatient persons sooner or later will cross the border”.

In contrast to DN, other media await the decision of the Expert Group in May 2006 before they report about the investigation of the Research Council. One exception is the Swedish Medical Journal (Läkartidningen) that takes up the case a few days after DN. It is not surprising that Thomas Lundeberg gets upset by reading about the
report in DN when there has hardly been time for him to receive it in his own hands. In view of what has happened, the representative of Lundeberg, the lawyer Per Gotthard, on February 2006 sends a note to the Swedish Parliamentary Ombudsman in which he opposes “the decision by the Administrative Director at the Research Council to make internal working material public in violation of § 9, chapter 2 in the Freedom of the Press Act”. The basis of the complaint was that Thomasson both at an occasion in 2003 and in the just mentioned “press release” had declared that Lundeberg would be given an opportunity to express an opinion about the examiners’ report before the Export Group made its final judgement. Gotthard therefore means that the report sent to Lundeberg should be considered as a draft of an official authority decision according to the Freedom of the Press Act (§ 9, chapter 2) and that it is not an official act since it has not been finally dispatched. He further claims that the report also according to the guiding principles of the Research Council is not to be regarded as public. In the working rules for the Expert Group settled by the Board of the Research Council on September 29 2004, it is said in paragraph 8 that the appointed examiners should have the status as “co-opted members” in the Expert Group and in paragraph 12 that “working material is not public until a decision in the case has been made”. In this context it is interesting to note that the report by the auditors is not signed and probably has been sent to the Research Council as an attachment via E-mail. It is difficult to see that there could be any doubt that Thomasson has broken valid rules by handing out the report to press and others before the defendants have had a chance to comment on it and before a final verdict has been made by the Expert Group.

The Parliamentary Ombudsman swiftly takes up the case and on March 9 2006 decides not to take any measures with reference to information obtained by telephone by the new Administrative Director in the Research Council, Jan Stålhammar. What he has said is that the examiners are independent employees and that their statement is a
document that stands by itself and becomes public as soon as it has arrived at the Research Council. When I contact Stålhammar in December 2008, he does not remember exactly how he expressed himself but also admits that there was hesitation within the Research Council about what status the examiners should be given. Via his representative Per Gotthard, Thomas Lundeberg calls for an answer from the Parliamentary Ombudsman in question and in a new formal letter dated March 20 2006 maintains that the report should not have been made public before the defendants had been able to state an opinion. They further purport that the way in which the Expert Group has handled the case in large raises questions and asks the Ombudsman to examine it from a wider perspective. In support of this request they enclose a formal opinion dated March 14 2006 from the Doctor of Laws and the former Parliamentary Ombudsman Bertil Wennergren. At the beginning of his note he refers to an earlier statement in which he claims that the Research Council has exceeded the rights given to it by the Government by creating an Expert Group to investigate suspicions of scientific fraud. According to the guiding principles of the Research Council, the statements of this group should not forestall the inquiries made in a disciplinary issue or a request for prosecution. They also claim that no appeal can be made against the decisions of the group. In his note Wennergren makes another judgement and means that statements from the Expert Group of the Research Council can be appealed against.

According to the terms of reference set up by the Board of the Research Council September 29 2004, the Expert Group should consist of “a chairman with competence as a judge, three fixed members each representing a separate scientific field, and as additional members the specialists needed for each individual case”. Against this background, Wennergren points out that Stålhammar hardly can have said what the Parliamentary Ombudsman quotes in his memorandum. Notably, the Expert Group appointed their examiners on December 12 2004. At this time
the rules that had been established just slightly less than three months ago must have been valid. Therefore, Wennergren refers to the paragraph in the Freedom of the Press Act saying that “if an organ that is part of or connected to a state authority or a similar type of organization has handed over a document to another organ within the same organization, or has prepared a document later to be handed over, the document should not be considered as received or established unless these organs act as if they are independent from each other”. Hence, Björn Thomasson and the Research Council had no excuse either to make it public that the report had come in or to expose it to the press and others. The correct acting should have been to wait until Lundeberg and Carleson had had time to respond to the report and the Expert Group as a whole had taken a definite position in the case.

In his stated opinion Bertil Wennergren also takes up other secrecy rules that could have been applied. Among others he refers to chapter 9, § 17 in the Official Secrets Act which deals with secrecy with regard to the protection of personal as well as economic conditions of the individual. According to his opinion, there is no doubt that a researcher who has been reported to the Research Council with suspicions of scientific fraud has as great a need of secrecy as a researcher who is the subject of a preliminary investigation in a criminal case. Both his personal and his economic conditions can be seriously damaged if he is seen as guilty of circumstances that have not yet been finally investigated and these are made public. Wennergren further points out that the case handed over to the Research Council by KI contains material that has been declared secret (with reference to a legal investigation) and which not even Lundeberg himself as a party has been given access to. The statement of the former Parliamentary Ombudsman concludes in the following manner. “In addition to what I have above declared as wrong, I would like to add that I consider it injudicious to initiate publication in the press of a report that contains several not yet fully scrutinized assertions of blameworthy behaviour. In such situations,
discretion should always be regarded as a point of honour. To neglect to exercise this is in English called malpractice and in Sweden to act against the objectivity principle. As evident not only from this legal statement but also from my former one, the Research Council has developed an unsuitable order. In my opinion, the Parliamentary Ombudsman should take up all that has been revealed in a general examination”.

One month after the lawyer Per Gotthard had delivered his second official letter to the Parliamentary Ombudsman, an answer was received from the Ombudsman Kerstin André saying “what has been said concerning the handling of the expert report does not give me reason to make any investigation beyond what has earlier been made in the case with the registration number 785-2006”. Concerning the requests for a more general analysis of the Research Council’s handling of suspected scientific fraud it is only said that “the question of how suspicions of misconduct in research at universities and other higher schools should be examined is at this time subject for preparation within the Government Offices”. Obviously, the prior and the present Parliamentary Ombudsman have divergent views of how the official authority in question has acted in the KI case. It would seem that the Ombudsman has not made herself properly acquainted with the case but has just uncritically accepted the information given by the Research Council. In this way, law and order has been put aside.

12.1 Reactions to the expert report

We will later come back to a survey of the expert report. First, a few examples will be given of the reactions it causes. On February 17 2006 two professors at KI, Bo Rydqvist and Mats Ulfendahl, write to the Expert Group at the Research Council and seriously criticise both the content of the report and its conclusions (312-2004-822). They find that it contains a number of factual errors and subjective judgements and
that the tone and the mode of expression are markedly insinuating. They point out that the emotionally charged word “plagiarism” is used throughout even when referring to the copying of text sections from the authors’ own, largely unpublished material. The two professors then continue for seven pages to go through the report in detail pointing out its deficiencies. The letter is concluded in the following manner. “We cannot in this report find any clear evidence of deliberate fraud or lack of fulfilment of the requirements for good scientific practice”. Rydqvist and Ulfendahl send a copy of their note to the Research Council to the President of KI, Harriet Wallberg-Henriksson, who had requested the investigation. In an accompanying letter they declare: “We find here a very inferior inquiry with a total lack of scientific attitude. As scientists we are shocked over the way in which the Research Council has handled the case. As researchers working in Sweden we are also worried about the consequences and the obvious risk of lack of law and order. Who will be pointed out in the next scientific witch trial”? A similar criticism of poorly supported conclusions and irrelevant wordings is forwarded in a letter that I myself send to the Research Council February 21 2006, unaware of the aforementioned communication (312-2004-822). The same day, a number of former collaborators of Thomas Lundeberg again write to the Ethical Committee at the Research Council (312-2004-822). They start by a reminder of the hopes of an objective investigation based on facts they expressed in their letter from June 2004. They then express discontent that no attention has been paid to their views. “We find the picture the examiners depict of Thomas Lundeberg’s research activities at the Department of Physiology and Pharmacology very misleading. The report contains a number of unfounded statements and gives a very biased and negative image of the work”. The note ends with the following. “We, who have all been members of Thomas Lundeberg’s research group, do not recognize this picture. The statement of the examiners has to too large an extent favoured opinions expressed by other parties involved in the case. We had expected the Research
Council to perform an open, independent and knowledgeable inquiry, including not only the charges raised against Thomas Lundeberg but also the purposes that may lay behind many of the allegations”.

As mentioned above, the previous Parliamentary Ombudsman and former Justice of the Swedish Supreme Administrative Court, Bertil Wennergren, on February 26 2006 writes a legal note in which he analyses what the law says about the duties of the Research Council. The activities of the Council are regulated by one law and one regulation. The law (2000:662) only contains three paragraphs and the main message is that “to give support to basic research of the highest quality within all scientific areas there should be a Research Council”. Otherwise it is only briefly mentioned how the members in the Board of the Research Council should be elected, and that the Government will give more detailed instructions about the work and the internal organization of this state authority. The regulation in which the directives of the Research Council are given (2007:1397) is similarly short. Nothing is said here about the examination of suspected fraud or the establishment of an Expert Group responsible for this activity. The only thing said concerning ethics and morals is that the Research Council should “take initiative to ensure that ethical questions are observed in research and to provide information about research ethics”. Against this background, Wennergren wonders how the Research Council will handle the case in question (at this time the Expert Group has not yet completed their work). Will they treat it as a case of “providing information about research ethics” (§ 1, point 10 in the regulation with instructions for the Research Council) or as a case of what the Council in its own publications calls “scientific dishonesty”? In view of what the auditors appointed by the Expert Group had recently presented, it had to be assumed that it was the latter alternative they intended to follow. This has later been confirmed, as described.

According to Bertil Wennergren, the Government’s instructions for the Research Council do not say anything that allows the Council to
take decisions that interfere with the personal or economic conditions of an individual. No one can doubt that the measures the Council later takes will have such consequences. Wennergren further states that the Research Council has not been given any authority to issue binding orders on its own. The investigation of the accusations against Thomas Lundeberg and Joakim Carleson demonstrate an act of interference in their conditions. The manner in which the inquiry was carried out resembles the preliminary investigation in a criminal case and cannot, in Wennergren’s opinion, be considered to conform to the duties and the powers that the Government’s regulations give the Research Council. The task to “take initiative to ensure that ethical questions are observed in research” cannot be understood to include disciplinary obligations. Wennergren also points out that “dishonesty” is something that can cause economic gain or damage for different parties. This obviously applies in the present case which includes patent questions. “Dishonesty” is regulated by the criminal code and should according to Wennergren not be treated as a disciplinary issue but be reserved for judgement by a court.

Bertil Wennergren ends his legal statement in the following manner. “My conclusion is that the Research Council should close the case by removing it from the cause list and forward an excuse to Thomas Lundeberg and Joakim Carleson”. The fact that a person with his background and expert knowledge in legal issues expresses himself in this manner should be a point to be especially noted by the Ethical Committee of the Research Council and its Expert Group for Questions of Misconduct in Research. The other written communications they received in the beginning of 2006 should likewise have made them think about reviewing their policy. When looking into what happened later on, nothing indicates that this happened. Even if they were only regarded as personal accounts, and not a question of basic criticism of the way in which the Research Council acted, it was a duty to study and consider them.
13 What has the experts found

Rolf Andersson, Gunnar Bergenholtz and Sighild Westman Naeser are the specialists called in to the Expert Group of the Research Council in order to closely examine Thomas Lundeberg and his former doctoral student Joakim Carleson. Considering the scope of the case and the very large number of documents that had been submitted, the report presented on January 24 in 2006 is surprisingly short, only 24 pages long. In the introduction they define their commission and say that it has been decided together with the Expert Group to include all the issues taken up by the KI President in her two official letters to the Research Council. However, after having looked through the material from KI, as well as the other documentation in the case, and after a discussion with the Dean of Research at KI, Jan Carlstedt-Duke, the three examiners ask for permission to restrict the assignment to questions concerning fabrication of research data. The Expert Group approves this limitation on April 19 2005, i.e. more than a year after the time when KI requested help and four months after the appointment of the auditors. During this more than a year long period that passed before the Council markedly reduced the scope of the inquiry demanded by KI, the lawyer of Thomas Lundeberg was engaged in making extensive and costly investigations in issues that were later not at all handled by the examiners or the Expert Group.

13.1 How was the investigation carried out

In their report, the auditors say that they have taken notice of “all written material collected in the case at KI, including investigations, leadership decisions, reference texts, and correspondence”. Exactly what it is they refer to is not clear and among the documents available in the archives
of the Research Council one cannot find much that comes directly from KI. On the other hand, the files contain a very large collection of papers submitted by Kerstin Uvnäs Moberg and her representative Kurt Björkholm. In February 2006 when I visit the Research Council to go over the case, I ask to see the complete documentation from KI that the auditors have had access to. The only thing Björn Thomasson, the secretary of the Expert Group, then does is to refer me back to KI. However, there also are little more than the short reports from Jan Carlstedt-Duke to the President. Similar to the situation in the Research Council, the KI archives hold many documents from Uvnäs Moberg and Björkholm, some citations from which have been given earlier. Here, yet another one is given so the reader may have an idea of how the flow of information worked and how the personal contacts appeared during the investigation carried out at KI before the case was handed over to the Research Council. In a letter from December 2004 to the President Harriet Wallberg-Henriksson and the Dean Jan Carlstedt-Duke, Kurt Björkholm writes the following. “I have now been occupied with research and company activities in which KI directly or indirectly is a part for more than two years, and initially I want to forward my thanks to the Dean Jan Carlstedt-Duke for always being willing to help with discussions in a pleasant atmosphere and to assist in the investigations”. Björkholm obviously regards things as if Carlstedt-Duke is helping him in the inquiries he is himself carrying out. As has been evident earlier, there is also no doubt that Uvnäs Moberg and Björkholm, both at KI and the Research Council, have actively interacted in and not only attempted but also managed partially to direct the examination of Thomas Lundeberg and Joakim Carleson. The rule that says that the auditors in a case like this should take a neutral position vis-à-vis the accuser and the accused has not been followed. This will be further discussed later on.

So exactly what information the examiners have obtained from KI is not clear. This puts the two investigated persons in the situation
that they do not fully know what it is they are being accused of. Much of the information the auditors have received from KI has been presented verbally to them by Jan Carlstedt-Duke. No complete written documentation of what has been said during these talks has been possible to obtain. Other persons who the auditors have interviewed include Bertil Fredholm and Stefan Eriksson, successive chairmen in the Department of Physiology and Pharmacology, the institution at which Lundeberg and Carleson earlier worked. Among those interviewed besides Lundeberg, one also finds several other KI persons with connection to the case. Among those who are said to have declined to be interviewed is Joakim Carleson, one of the accused.

In the beginning of their statement, the examiners further mention the different rules and regulations that have been used to assess the breaches considered to have been committed. There they first mention a Medical Research Council report from 1996 with “guidelines for ethical evaluation of research on humans”. Notably, the work to be scrutinized did not contain any experiments on humans. Other sources they refer to are: the Medical Research Council’s “guidelines for good medical research” from 1996; the “rules and regulations for research education” settled by the KI President in November 2001; KI’s “rules for work with animals” decided by the Dean in 2002; KI’s guidelines for “planning, carrying out and documentation of experimental research” from June 1998, and; “regulations and general advice concerning sorting out of documents within the research activities of state authorities” fixed by the national Archives of Sweden in 1999. Of the ten scientific articles from Lundeberg and others that are examined by the auditors, one was printed in 1995, four in 1996, two in 1997, one in 1998 and two in 2002. Thus, the rules and regulations cited, for the most part came into function only after the research examined and criticized in the investigation had been completed.

In addition to the ten scientific articles by Lundeberg and others, the auditors mention a number of other documents they have scruti-
nized. Besides the communications obtained from the lawyers of the two accused, they bring up the petitions submitted by Kerstin Uvnäs Moberg and her representative Kurt Björkholm as well as letters from Andris Kreicbergs. What is most noticeable in the list of documents is not what is listed there but what is lacking. Björn Appelgren, supervisor of Joakim Carleson during the later part of his doctoral studies, has informed that during a meeting with the examiners he among others showed a number of X-ray pictures that revealed how the perfusion of the jaw-joint that was a part of Carleson’s studies had been carried out. Like Jan Carlstedt-Duke from KI, the auditors question whether these experiments were at all carried out. At the same time, they neglect to mention a word about the X-ray photos and the other documentation that had been handed over in order to prove that the tests really had been performed. In a similar manner, the examiners omit many other things in their written statement that speak in favour of the accused. In this context, it may be interesting to note the large number of earlier collaborators of Thomas Lundeberg who wrote to the Research Council in June 2004 (see chapter 6.3) hoping for an “independent, open and strong investigation”. Some of them came back with a new letter slightly less than a month after the publication of the auditors’ report noting with disappointment that their points of view have not been taken into consideration.

Following the introductory description of the scope of the assignment and the way in which it had been executed, the examiners give an account of their conclusions in four chapters. They start with a general analysis of the animal research of Thomas Lundeberg and continue through the experiments on which two patent applications are based. In the next part they evaluate three studies included in the doctoral thesis of Joakim Carleson. Finally, they take up a few additional publications in which Lundeberg is a co-author. The ten articles analysed have a total of 22 (twenty-two) authors. Of these it is only Lundeberg and Carleson who are discussed as responsible for the
inaccuracies the examiners allege they have found. The others are not mentioned at all, in spite of the fact that it since long has been established that all authors of a scientific article have a common responsibility for all its content. Likewise, it is only Lundeberg who is in focus concerning the patent applications examined. Uvnäs Moberg is also an inventor of the patents and it is their joint company that owns them. It is difficult in the report to find any attempts of a comprehensive and neutral analysis of the questions at issue.

13.2 Lundeberg’s animal experiments

This chapter in the auditors’ report makes a very confusing impression. What is the purpose of it and where does it lead? What they present here is a very general description of the work in Lundeberg’s laboratory and the different routines that exist in a scientific department. After more than 40 years of employment at KI, including a number of years as head of a large animal facility, I dare to say that the description the examiners give of Lundeberg just as well could have been given of almost any other researcher and professor at KI or other universities. The auditors also distinguish themselves by presenting a number of emotionally charged opinions about Lundeberg as a person. He is almost being regarded in the character of a Dr Jekyll and Mr Hyde. One moment he is a “charismatic person”, “an outstanding experimentalist, talented and rich in ideas” and then suddenly “a reserved and retiring person who is difficult to get to know”. Supposedly, the assignment of the examiners was to find out whether any clear evidence for scientific misconduct exists. A personality analysis is hardly justified in this context and it was not for their psychological expertise they were selected. Moreover, they have only recently briefly met Lundeberg.
As far as the animal experiments are concerned, the account is delivered in a sweeping and meaningless tone similar to that of the rest of the chapter. For a very large proportion of the professors at KI using animal experiments in their work, it is a fact that the professor him- or herself only seldom appears in the animal facility. Hence, he or she does not know the details of what goes on there. If this also applies to Lundeberg cannot be judged from the description given by the examiners. They ask for lists of purchases of animals, test protocols and other documentation that “could have helped to show that the experiments had really been performed”. It is, per se, noticed that material from the animal facility that was stored in a container during a reconstruction had by mistake been discarded. In spite of this they criticize Lundeberg for not being able to present these documents. Notably, the studies analysed later in the report were mainly published in 1995-1997. This means that that the experiments were probably made one or several years before. The auditors cite regulations adopted by KI in 1998, which rule that documents should be saved for at least ten years. The problem is that the regulations they refer to had not yet come into force when the studies in question were completed. An auditor in a case like this should, like the prosecutor in a criminal case, act in a neutral manner and present the facts that speak for as well as against the defendant. The three examiners in this investigation seem to be unaware of this next to self-evident guiding norm.

13.3 Experiments on which patent applications are based

The next part of the report deals with two patent applications. These are in the text referred to as PCT/SE01/00854 “A drug against climacteric disorders” and PCT/SE02/01560 “Inflammation”, respectively. In the approved and published versions found in the patent database Espacenet they are designated as WO-0178758 [60] and WO-03017922
The first patent has April 18 2000 as priority date (submission), April 18 2001 as international registration date, and October 25 2001 as publication date. For the second patent the corresponding dates are August 31 2001 (submission), September 2 2002 (international registration), and March 6 2003 (publication). Kerstin Uvnäs Moberg and Thomas Lundeberg are stated as inventors of both patents (in the order mentioned). Applicant and owner of the first patent is their joint company, EntreTech Medical AB, whereas the two inventors themselves applied for the second patent. The Swedish Patent and Registration Office has stipulated how a patent application should be put together [62]. As a whole, the instructions are brief. In chapter 2, § 6 it is said that “in a special section a more detailed description of the invention should be given, if required with a description of how it is performed or built, with reference to a drawing”. Shortly later in the same paragraph it is written that “the invention should be so exemplified that the demands of a patent are sufficiently well-founded”.

It is difficult to understand why these two patent applications are included in the examination of the Research Council. Kerstin Uvnäs Moberg and Thomas Lundeberg plus the company they own together stand behind the applications. If Uvnäs Moberg has found inaccuracies in the documentation enclosed with the applications, she should in the first place have contacted the patent agent to make a correction. Or she should have contacted the Patent and Registration Office and demanded that the patents be withdrawn due to serious flaws. This never happened. The patents still exist in the database Espacenet (January 2009). According to information from the Swedish Companies Registration Office, the board of EntreTech Medical AB in 2001 consisted of four members. Two of these were Uvnäs Moberg and Lundeberg and they have both signed the annual report for 2001 (together with the Chairman and the CEO). Later, successive changes in the composition of the board indicate that Lundeberg has either been outmanoeuvred or has voluntarily retreated. In the beginning of 2003
the number of board members has been reduced to three, two of whom are still Uvnäs Moberg and Lundeberg. At the end of this year the third member opted out and the two alone now made up the board. The next change took place in the beginning of 2004. Uvnäs Moberg became the sole member of the board with Lundeberg as a deputy. He was later replaced in this position by Kurt Björkholm, i.e. the representative of Uvnäs Moberg in the contacts with KI and the Research Council. At present (January 2009), EntreTech Medical AB still has a one-person board with Uvnäs Moberg as permanent member and Björkholm as deputy.

The first time that Uvnäs Moberg and Björkholm approached KI concerning the patent applications seems to have been in July 2003. Björkholm then contacts the chairman in the Department of Physiology and Pharmacology, Bertil Fredholm, to receive information about some experiments that according to the applications have been carried out at KI. Dissatisfied with the answer he receives, about two months later Björkholm writes to the Dean of Research, Jan Carlstedt-Duke. He then takes up again the question where certain experiments have been made, by whom, and with what ethical permissions. He further claims that two manuscripts used in the work with the application concerning climacteric diseases (WO-0178758) in essential parts are almost identical with two articles published by other authors [63, 64]. The two manuscripts had been forwarded to the patent attorney who assisted in putting the applications together. So what it comes down to is two manuscripts that have never been published in a scientific journal but were used as partial basis when explaining two inventions in two patent applications. After examining the material, Carlstedt-Duke summarizes his observations in a memorandum that is delivered on October 4 2003 to the then President of KI, Hans Wigzell (see chapter 5.4). A few months later this note, together with the allegations presented by Indre Bileviciute-Ljungar, will make up the main basis for the request of “an investigation of possible deviations from good
scientific practice” that the newly appointed President, Harriet Wallberg-Henriksson, sends to the Research Council on March 30 2004 (see chapter 6.1). Carlstedt-Duke’s report about the two manuscripts mentioned above says: “There is no doubt that the documentation of the experiments has been directly plagiarized from published articles. A non-graduated Chinese collaborator of Thomas Lundeberg, who works as a technical assistant under his supervision, has produced these documents”.

One may wonder on what grounds Carlstedt-Duke expresses himself in this disparaging manner about a female Chinese immigrant. The person in question has a physician’s degree and has defended her doctoral thesis in her homeland. In the middle of the 1990’s she was invited to Sweden to work at KI and Huddinge University Hospital. Later she decided to stay on and now works here as registered physician in the fields of neurology and rehabilitation with, among others, stroke patients. According to persons who worked close to her at the time in question, she was not to be looked upon as an unqualified technical assistant, but rather as a competent and independent researcher. It happens that physicians with a degree from abroad often have to work under supervision before their authorization as Swedish physicians is considered. Moreover, neither Carlstedt-Duke nor the three examiners appointed by the Research Council seem to understand very well the rules that are valid for a patent application. Nothing indicates that they consulted experts in this complex area, and if so what resulted. Nor have the company and the patent attorney that assisted EntreTech Medical AB with the patent applications obviously been contacted. In view of the significant role the two patents have in the report of KI to the Research Council this is certainly quite remarkable.

The statements Kerstin Uvnäs Moberg and Kurt Björkholm give to KI and Jan Carlstedt-Duke give the impression that Thomas Lundeberg has been going behind the back of Uvnäs Moberg in the patent issues. When in January 2009 I interview the patent attorney who, in
collaboration with the two inventors, worked out the two patent applications, another picture appears. During the working sessions they had together, Uvnäs Moberg was usually present whereas Lundeberg was often unable to be there because of his duties as a senior physician. Therefore, Uvnäs Moberg should have been better informed than Lundeberg about how the work with the patent applications progressed and what was written in them. As judged by the priority dates, these descriptions were put together during 2000 and 2001. According to the patent attorney, Uvnäs Moberg at this time never raised any objections of the type she and her representative started to forward to KI during the summer 2003. This “process” against Lundeberg in turn occurred about one and a half years after that she filed successive police reports (later withdrawn by the police or the prosecutor) and requests for investigations at KI started her “process” against Lundeberg.

Before the survey of the auditors’ report is continued, there is reason to take a look at the normal procedure in a patent application. First, it must be stressed that such a text is written in a very special language. To be able to manage this a special education and experience is required, not least in the pharmacological field. When a patent application is to be prepared, the inventor or his/her company therefore usually contacts a patent attorney with the necessary legal competence. The researcher and inventor hands over the background material to the attorney who then puts the application together. This material may have the character of a scientific manuscript but it must not have been published. Once the application has been submitted to the patent office and a priority date has been received, it is possible for the researchers to publish their results if they so wish. However, this is far from always the case. Because of competition from others, it sometimes happens that the inventor or his/her agent wants to obtain a priority date as soon as possible. In order to make this easier, it is not required that the application first submitted is complete. According to
patent attorneys, it is not even strictly necessary that the examples presented in the preliminary application have been carried out. Instead they may be what are called “writing-table examples”. This possibility can be used if the applicant has a well-founded idea about what results will be obtained but has not yet had time to perform the experiments. This follow-up is made during the priority year, and is added to the application in order to strengthen the claims made. Alternatively, the claims are modified (including a possible extension) or withdrawn depending on the outcome of the tests made.

The two patents in question, “use of substances with oxytocin activity against climacteric disorders” (WO-0178758) and “use of substances with oxytocin activity for the preparation of a pharmaceutical composition against inflammation” (WO-03017922), have as their publication dates October 25 2001 and March 6 2003, respectively. After these points in time, or actually already half a year earlier, no changes in the patent descriptions have been made. What stands there is therefore the same as when Uvnäs Moberg and Björkholm contacted Jan Carlstedt-Duke in July 2003 and when the President of KI in March 2004 wrote to the Research Council to ask for help with investigating the suspicions of scientific misconduct against Thomas Lundeberg. The documents I have used when analysing the auditors’ report are the published patent texts (available in the patent database) and the articles that are said to have been plagiarized. They are also the only documents that are of real interest in this context.

The patent application concerning oxytocin and climacteric disorders

The first of the two examined patents has the designation PCT/SE01/00854 or WO-0178758 and the title “use of substances with oxytocin activity against climacteric disorders” [60]. Its submission and priority date is April 18 2000, which means that the experiments and examples that are enclosed are from before this time. One question taken up by Kerstin Uvnäs Moberg (one of the inventors), Jan Carlstedt-Duke at
KI, and the three examiners of the Research Council is where the experiments described have taken place. In the patent text one only finds a single statement about this and it refers to “example 6”. There it is said that the rats were stored for 30 days in the animal facility of the Department of Physiology and Pharmacology at KI. Nothing is mentioned about whether or not it was also there that the experiments were performed. At the time of the auditors’ report six years or more had passed since the basic data of the patent were worked out. Different ways have been tried to get information from Lundeberg about where the tests were conducted, among others by asking for purchasing lists and research protocols. He has however had difficulty in presenting such papers and points to the fact that documents from the animal facility by mistake were thrown away during a rebuilding (see chapter 13.2). He further claims that parts of the experiments were performed in China and Italy, where he since before had had collaborators. These were paid to do tests later used in the preparation of the two examined patents. Lundeberg showed documents supposed to confirm these circumstances, among others, invoices sent to EntreTech Medical AB for investigations made for “the menopause patent” (applied for and owned by the company) [60]. These papers refer to a cost of 48,000 SEK for three different series of experiments carried out by Luigi Manni and Giulia Greco at CNR in Rome (see further below). However, no full clarity was reached about where the particular experiments had been performed and the auditors express this in their concluding remarks as follows: “it remains unclear what experiments were made where, when and by whom”.

Concerning the content of the description in the first patent, “A drug against climacteric disorders”, the examiners say only one thing: “Extensive plagiarism of text from published articles exists without reference to the source”. The Expert Group in their verdict from May 18 2006 concurs with the reasoning and the conclusions of the auditors. So this is the type of evidence used by a committee in the Research Council
led by a Justice of the Supreme Administrative Court in an investigation that for the charged person is as least as serious as a court proceedings. No specification at all is given of what is plagiarized or from where. The only thing the examiners say in their report to support their sweeping and unspecified accusation of plagiarism is the following. “The obscurities earlier pointed out and in detail described in the investigation of Jan Carlstedt-Duke have been confirmed by us”. However, this actually only refers to the question about where the experiments have been performed and not the content of what has been reported. It may here be worthwhile to recall what Harriet Wallberg-Henriksson wrote when in March 2004 she asked the Research Council for help in examining Lundeberg. She there explains her request in the following manner. “Karolinska Institutet finds it difficult to make on its own a neutral and independent investigation of the charges raised against Lundeberg”.

If we go back to the note Carlstedt-Duke gives to the KI President on October 4 2003, he there deals with the patent application, ”a drug against climacteric disorders”. Carlstedt-Duke claims that it there specifically states that “the experiments have been performed at the Department of Physiology and Pharmacology “. From where he has received this information is unclear. In the patent text available in the patent database it is only said that: ”the rats were kept for 30 days in the animal laboratory of Department of Physiology and Pharmacology” with no mention of where the experiments were carried out. In his note Carlstedt-Duke further takes up a preliminary manuscript with the title, ”The effect of oxytocin, estrogen and anti-estrogen in a rat model for hot flush”. He has probably received it from Kerstin Uvnäs Moberg who, together with Thomas Lundeberg and still another person, is indicated as author. As earlier mentioned, Uvnäs Moberg and her representative had been in contact with Carlstedt-Duke shortly before his report was written. In it he claims that large similarities exist between this manuscript and an article published in the journal Maturitas in 1998 by other authors [63]. Perhaps he failed to note that this article is cited in the patent
text. He also seems to be poorly informed about the rules that are valid during the working out of a patent text and in what way they differ from the rules for publication of a scientific article.

According to patent attorneys nothing prevents an earlier publication may be taken as a model for an investigation used to gather data for the description of an invention. If it is urgent to obtain a priority date, the experiments do not even have to be carried out before the application is submitted. The tests then get the character of so-called "writing-table examples". In these one provides the expected results that later during the "priority year" should be verified in an appropriate manner. Exactly what is said in the manuscript Carlstedt-Duke refers to is therefore strictly without interest, at least from a legal point of view, and for the Research Council. If something should be queried, it is not what stands in the never published manuscript but what is found in the patent text. When Carlstedt-Duke deals with the manuscript, he initially points out that permission for the animal experiments has been obtained from the Ethical Committee at KI (no such committee actually exists, it has its meetings at KI but it does not belong to KI). Nothing like that can be read in the patent text. He then goes on and says that Figures 1 and 2 in the manuscript are identical or very similar to the corresponding article published by others [63]. No such similarity exists if the article and the patent text are compared. Figure 1 in the patent text is a diagram that shows the concentration of insulin in the blood after a subcutaneous injection of oxytocin or sodium chloride as a control. The experiment was performed on rats that had had their ovaries removed in order to obtain a menopause-like state. The same animal model was used in Figure 2, but here the concentration of cortisone and growth hormone in the blood after injection of oxytocin was shown. In the published article Carlstedt-Duke refers to, oxytocin was never used and no determinations of hormone levels in the blood were made. The only thing measured in the article was how the skin temperature of the rats was af-
fected by estrogen and estrogen-like substances. In one of the six examples described in the patent, the skin temperature of the rats is recorded to observe how oxytocin influences an experimental heat reaction (an animal model of climacteric heat reactions). The other five examples in the patent take up and measure completely different things. The similarity between the article in Maturitas [63] and the patent text is almost non-existent. One may ask how the identity of the manuscript handed over to Carlstedt-Duke by Uvnäs Moberg was checked.

The situation is more complex for the second manuscript that according to Carlstedt-Duke Lundeberg had sent to the patent attorney. Who the author or authors of this paper were is not indicated. It dealt with the effects of oxytocin on bone density and bone remodelling in rats with removed ovaries (the same menopause model as above). Like the manuscript discussed above, it was never published and has only been used to describe the invention. According to Carlstedt-Duke, this document is “a direct transcript of large parts” of a published article in which the effects of prometazin are studied (an antihistamine used in connection with allergic problems) [64]. What has been done in this publication is the same type of tests as in example 6 in the patent “a drug against climacteric disorders”. As Carlstedt-Duke states, the method descriptions given in this part of the patent show large similarities with the article he refers to. This is not, per se, conspicuous since the studies are of the same type. Rico and collaborators in their article [64] examine the effects of prometazine on the brittleness of the bones (osteoporosis) that is obtained in a rat model of climacteric problems, whereas the patent text follows the effects of oxytocin on the same process. With regard to the results Carlstedt-Duke says that the values given in “Lundeberg’s text” are almost identical with those found in the published article. This is a serious accusation and could be a sign of plagiarism. One must however ask why Carlstedt-Duke talks about “Lundeberg’s text” (Uvnäs Moberg is also an inventor of
Jan Carlstedt-Duke writes the following on page 4 in his report: “The results in Lundeberg’s text are shown in a table with identical format and content as the table in the published article. All the parameters found in the published article, except for the number of animals and their starting weight, are also found in Lundeberg’s table and with nearly identical values, in spite of the fact that animals of different age were used. The values are so close that only a single digit differs in each value between the two tables. There is no doubt that the values given in Lundeberg’s table have been copied from the article with a systematic change”. What it is Carlstedt-Duke really means is difficult to understand when comparing Table 1 in the article by Rico and collaborators [64] and Table 2 in the invention description of WO-0178758 (“use of substances with oxytocin activity against climacteric disorders”) [60]. And this is the only valid comparison that can be made in this context. In contrast to what Carlstedt-Duke says, the table in the published article includes a lot of parameters that are not found in the table of the patent. In the former case the number of parameters is 16 and in the second case 11. For example, the patent lacks information about such things as the number, the thickness and the distance between the bone trabeculae. For these measurements Rico et al. [64] used thin sections of the thighbone (femur) prepared with the help of a so-called microtome and studied in a microscope. No such studies are mentioned in the patent text.

That the reported values should be almost identical in spite of differences in the age of the animals is also incorrect. In the published article 100-day-old rats were used and in the patent example 120-day-old rats of the same strain (Wistar). Accordingly, the initial weight of the animals was higher in the patent experiments (about 275 g) than in the article (about 250 g). On the other hand, there was no difference in the length of the thighbones of the rats in the two studies (about 34
mm). This is in accordance with old observations from the Wistar Institute in Philadelphia, the institution from which the animals used originate. A study from there printed as early as in 1925 reveals that the growth in length of the thighbone in female rats ceases at the age of 100 days [65]. Both in the work from Rico et al. [64] and in the patent, the fifth vertebra in the loin backbone was also removed for examination. In the first-mentioned study it weighed about 250 mg and in the second about 270 mg (in control animals with their ovaries preserved). Contrary to what Carlstedt-Duke writes, it is not so that almost all parameters have identical values in the two studies. They lie close to each other when this should be expected and differ when that is to be expected. Therefore, it is incorrect to declare that experimental values have been copied from the published article to the patent. In his letter to the President, Carlstedt-Duke claims that Lundeberg had admitted that “data have been falsified” and as an excuse said that he had received the table from his collaborators. When I phone Lundeberg to check this statement, the answer is that it is not true.

As far as one can judge from Carlstedt-Duke’s report, he never contacted Lundeberg’s Chinese collaborator to listen to her points of view. As mentioned earlier, he however talks about her competence in a disparaging manner. I have personally been in contact with the person in question and from her I received a copy of a letter written to Björn Thomasson, secretary in the Expert Group of the Research Council. She asserts that this letter has been posted but it has not been registered at the Research Council. Its content concerning the investigation of the Research Council and some of the persons involved is quite revealing. But who cares about a female immigrant with a limited knowledge of both Swedish and English?

The patent application concerning oxytocin and inflammation

The second patent application the auditors take up in their report is designated PCT/SE02/01560 or WO-03017922 [61] and has the title
"use of substances with oxytocin activity for the preparation of a pharmaceutical composition against inflammation" (from here on called "inflammation"). This document is not touched upon in the note that Jan Carlstedt-Duke gave to the KI president Hans Wigzell in October 2003. Instead it is brought up by Kurt Björkholm in a letter to KI dated February 26 2004. This is just a month before the newly appointed President of KI, Harriet Wallberg-Henriksson, asks the Research Council for help to investigate the allegations against Thomas Lundeborg. According to Björkholm, “Lundeborg” has plagiarized foreign authors in the examples given in the patent description. Here, the reader should be reminded that we again deal with a patent on which Uvnäs Moberg and Lundeborg (in the order mentioned) stand as inventors and are the applicants and holders of the patent. According to the patent attorney who took part in the preparation of the text, Uvnäs Moberg was the one with the greater time and opportunity to participate in this work. As with the patent discussed earlier, she was therefore better informed than Lundeborg about the wording of the patent text.

What is it then the auditors say in their report? Yes - the following! “During the survey of the inflammation application, the examiners found what KI had already seen, namely that the patent examples (7-15) contain text passages concerning different types of anti-inflammatory effects that are directly copied from published studies by other authors. This copying is more or less word-for-word. The examiners notice that no references to the published methods are found. Also with regard to the results, large similarities are found with the published originals in which other chemical substances have been given to the animals, even if the numerical values in the tables differ slightly”. So this is the type of clarity and objectivity with which a state authority like the Research Council “sentences” a Swedish researcher to what later seems to be a lifelong exclusion from a civil service profession. In the auditors’ report it is not in any way specified exactly what it is in the patent text that constitutes “effects directly cop-
ied from the published works of other authors” or which authors and what published works it refers to. Likewise, nothing is said about how the Council has assessed and partitioned the responsibility for the inaccuracies detected between the two inventors and patent holders. Here again, is reason to remind ourselves about what Harriet Wallberg-Henriksson wrote to the Research Council requesting help with the examination of Lundeberg. Karolinska Institutet finds it difficult to make on its own a neutral and independent investigation of the charges raised against Lundeberg”. How does the Research Council respond to this declaration? Yes, by referring to KI where the documents specifying the “plagiarism” are impossible to obtain.

The only thing said about KI in the “inflammation” application is that ethical permissions for the animal experiments were received from there (the Ethical Committee on Animal Research in Northern Stockholm holds its meetings at KI in Solna and handles applications from there). The question of where the experiments have been performed is uncertain. Lundeberg has stated that laboratories in both China and Italy were paid for doing tests. He has also presented documents that in his opinion confirm this (see above). However, according to the auditors he has not been able to show protocols and original results as support, and partly to explain this he has referred to computer breakdown. The researchers Lundeberg cites in this context are Long-Chuan Yu and Luigi Manni. They have both worked in Sweden with Lundeberg and he supervised their studies leading up to a Swedish degree as doctor of medicine. According to information I have received, Dr. Yu is today a well-established physiology professor in Beijing and Dr. Manni works in a neurobiological institute in Rome belonging to CNR, the Italian Research Council, where Lundeberg worked as a guest researcher in the mid 1990’s (see chapter 4.1).

In this context it is interesting to note that Thomas Lundeberg has several patents together with Luigi Manni. Among them are two worldwide patents dealing with the use of the hormone CCK-8 and
analogs thereof for treatment of pain caused by nerve injuries [66] and of inflammation [67]. The first, WO-0066150, was submitted in May 1999 and the second, WO-03047612, in December 2001. Thus, these two patents were of relevance more or less at the same time as the two patents taken up in the auditors’ report. Moreover, the working out of the first patent was made in cooperation with Karolinska Innovations AB, a company owned by KI. The second patent [67] concerns treatment of inflammation and shows similarities with the patent called “inflammation” discussed by the examiners. The basic difference between the patents is that one of them uses oxytocin and related substances [61] and the other CCK-8 and analogs [67] to prevent inflammation. In the description of both inventions, rats injected with carrageenan (a polysaccharide extracted from red seaweeds) have been used as the main animal model for inflammation. There can be little doubt that the Rome laboratory possesses the knowledge and the resources needed to carry out the experiments described in the two patents dealing with inflammation. After all, we are talking about an institute of good reputation that can count at least one Nobel Prize winner among its researchers. In their report, the examiners have not presented any evidence to show it untrue that some of the experiments described in the patent applications were made in Rome. The inability to hand over experimental protocols was explained by Lundeborg as due to computer breakdown and disappearance of documents in connection with a laboratory reconstruction. In this case, the auditors again have not presented any evidence of falsehood.

So which are all the examples of plagiarism that the examiners say exist in the patent application “inflammation” without any specifications? To find out, one has to go back to the letter Kurt Björkholm wrote to Jan Carlstedt-Duke at KI in February 2004. It says that Thomas Lundeborg was responsible for examples 7-15 in the patent application “inflammation” and that these examples have been copied from articles published by other authors. He further lists four articles from
which transcription is said to have been done [68-71]. In a reply from Carlstedt-Duke dated March 11 2004, two additional publications are added to the list [72, 73]. As mentioned earlier, it is not wrong to use animal models described in the literature in a patent application. To be able to receive a patent it is however necessary that the discovery or the invention described is novel. There must exist something in the experiments not earlier reported and not self-evident. Below, the nine examples containing what Björkholm, Carlstedt-Duke and the examiners from the Research Council call plagiarism will be shortly gone through.

Example 7 uses a rat model in which cystitis (inflammation of the urinary bladder) is induced with diluted hydrochloric acid. The description of how this is done is taken almost word-for-word from a study by Wang and others [68]. The first three experimental groups are the same as in this work, whereas the animals of the fourth group are treated with oxytocin instead of electrical stimulation. The results reported in the application refer to the frequency of emptying the bladder before the induction of cystitis and three weeks after. These measurements were made in the same manner as by Wang and collaborators. In the patent the frequency before the irritation with hydrochloric acid was 10.7±2.8, 12.1±2.3 (the combined control groups, 2 and 3) and 11.2 ±2.7 emptyings in 17 hours (mean value with standard deviation). In the study by Wang and others, the corresponding values were 11.0±2.1, 10.8±2.4 and 12.0±2.1. What otherwise comes out of the patent text is that the cystitis animals had twice as high a bladder emptying frequency after three weeks as animals that had not been exposed to hydrochloric acid. Moreover, oxytocin gave a statistically significant reduction of the emptying frequency in animals with cystitis (P<0.05) without affecting the total volume of the urine. In Wang’s work it was reported in a similar manner that electrical stimulation reduced the number of bladder emptyings (P<0.04). There is no question about that formulations in the method description of the patent
text have been taken from the literature. On what grounds it is claimed that the results have been plagiarized is not clear from the reports either from KI or the Research Council. The statement lacks real evidence.

Examples 8-10 in the patent describe the effects of oxytocin in different animal models of inflammation. In example 8, pancreatitis is induced by intravenous injection of caerulein (an analog of the hormone cholecystokinin, CCK), a method previously reported in the literature. In examples 9 and 10, cystitis is again induced in rats, but this time with the help of xylene, a hydrocarbon used as solvent, or cyclophosphamide, a cytotoxic agent used in the treatment of cancer. In example 11, guinea pigs are given a subcutaneous injection of the enzyme collagenase to cause skin inflammation. These four examples (8-11) were in all essentials done as described by Griesbacher and Legat [69]. The main difference was that oxytocin was used as the experimental drug to test its effect on the inflammatory process. The results section uses similar formulations as in the latter work but the values given differ to a varying extent. In example 12, an allergic rhinitis is induced in rats by injection of egg albumin in the paws. The animals are treated with oxytocin locally in the nasal cavity to observe its effects on an allergic attack induced after a renewed exposure to egg albumin (sneezing and itching of the nose). The set-up of the experiments is the same as used by Sugimoto and others [72]. Example 13 reports the effects of oxytocin on the rash and itching that appear in naked rats (a specific genetic strain) given a low magnesium diet. The method description follows the one of Neckermann and collaborators [70]. The results of the oxytocin treatment were registered by clinical observations and a semiquantitative estimation of the effects.

Example 14 illustrates an inhibitory effect of oxytocin on the production of the inflammatory substance TNF-alpha in lungs and airways exposed to an irritating agent (Sephadex). The methodology is described in the same way as in a study by Finsnes and others [73]. An
earlier work by this group is also cited in the text. In the results section it is said that the production of TNF-alpha increased significantly three hours after the start of the allergic attack and that oxytocin inhibited this reaction. The effect reached a maximum after 24 hours, when the level of TNF-alpha in the animals treated with oxytocin was 32% of that found in untreated controls. No direct comparison between the findings reported in the patent text and in the article Carlstedt-Duke mentions in his letter from March 2004 can be made. Example 15 uses an inbred strain of rats named as BN. The animals are made sensitive to egg albumin by a subcutaneous injection. Two to three weeks later, the animals are anaesthesized and over five minutes an aerosol of oxytocin is sprayed down into the airways (sodium chloride is used as a control). This treatment is repeated after 17 hours and another 4 hours later the animals are exposed to egg albumin via the airways during 5 minutes. The biliary passage is exposed in the sleeping animals and bile is collected during two one-hour-periods to later be analyzed for its content of LTE4, an inflammatory mediator. The experimental set-up is the same as in a study by Xu and others [71]. Earlier observations from this group likewise formed the basis for analyzing the bile content of LTE4. However, the results from the two studies cannot be compared directly.

To sum up, there is no doubt that that the experiments described in examples 7-15 of the patent "inflammation" or WO-03017922 [61] have prototypes in studies published by other authors [68-73]. This is not per se anything strange. It is also fully clear that the descriptions of the methods have been taken almost word-for-word from these latter publications. This type of practice is serious but cannot a priori be considered as scientific fraud. Formulations in the methodology have been copied but a more central question is whether the results have also been plagiarized or fabricated (made up without doing any experiments). This is impossible to judge just by comparing the patent text and the articles mentioned above [68-73]. Concerning the question
of where the different experiments taken up in the two patent applications have been carried out, Thomas Lundeberg says in a document presented to the Research Council that through him EntreTech Medical AB has received help with this by laboratories in Beijing, Xian and Rome. The researchers responsible are said to have been Long-Chuan Yu, Gao Hontyu and Luigi Manni, and they were fully paid from the company for their work. As far as one can judge from the auditors’ report, this information was never checked. So there is no evidence that Lundeberg is not telling the truth. According to the basic principle that no one should be sentenced if it cannot be shown without any reasonable doubt that he or she is guilty, he should therefore not be sentenced.

It would also be interesting in this context to know whether or not other authors have later verified the anti-inflammatory effects of oxytocin described in the patent experiments. If a search is made in the database PubMed using oxytocin and inflammation as search words, about 40 articles published in 2002 or later are found, i.e. after the submission of the patent application “inflammation”. Among these are several that report a protective effect of oxytocin against inflammation in different rat models of such diversity as tissue and organ damage in connection with sepsis (blood-poisoning), bacterially induced nephritis, kidney ischemia (lack of oxygen), burn injury of the skin with subsequent effects on the stomach, and acid-induced colitis. It has also been shown that oxytocin inhibits the production of inflammatory mediators in cultured human monocytes (a type of white blood cells) and macrophages, and promotes the healing of foot wounds in patients with diabetes. It is evident from examples 1-6 in the patent application that oxytocin has an anti-inflammatory effect. Kerstin Uvnäs Moberg was the one responsible for these experiments. Large parts of the results put forth there were later also published in an article with her as the senior author [74]. So the results reported in examples 7-15 in the patent application “inflammation” are in good agreement with
what other researchers found later. In the lack of real evidence for plagiarism or fabrication of data one should be careful to dismiss them in the manner done by Jan Carlstedt-Duke at KI and later by the examiners appointed by the Research Council.

13.4 *Three studies in the doctoral thesis of Joakim Carleson*

Another major task given to the Research Council in March 2004 by the President of KI was to check three articles included in the doctoral thesis of Joakim Carleson [75-77]. These studies deal with experimentally induced arthritis in the jaw-joint of rats. They were made during the time Carleson’s supervisor was Thomas Lundeberg, and the latter is a co-author on the publications, together with five to six other persons. The three articles were all published in 1996 and the experiments described in them must have been made before the introduction of the rules for research the examiners refer to in the beginning of their report (1996-2002). The latter do not seem to have had an opportunity to interview Carleson and according to the diary lists of the Research Council he has not delivered any material to them. Carleson’s inability to take part in the investigation was partly because at this time he was living and working in England. Possibly also, he was not interested in taking part in the process. What was questioned by KI, and what the Research Council had been asked to check, was whether or not the experiments and the analyses described in the three articles had really been carried out. The idea of the tests was to induce arthritis in the jaw-joint by injection of an irritating substance. Later on samples of the joint fluid were taken at intervals and analysed for their content of various neuropeptides by RIA (radioimmunological analysis).

Both Jan Carlstedt-Duke and the auditors of the Research Council question whether the injections described in Carleson’s thesis are technically possible. It is true that this involves a joint cavity of small
size but compared with many other operations in medical research it does not seem exceptional in any way. It is not mentioned whether the examiners have the competence to be judges of this type of skill. One way to try to deal with this question could be to look at the publications in the scientific literature that cite Carleson’s work. When searching the database Science Citation Index in January 2009, I found 7 citations of the first article by Carleson [68] and 16 of the third [70]. Neither Carleson himself nor Lundeberg is found in the author lists of these papers. The second of Carleson’s studies was not found in this search. Totally, this corresponds to 20 different publications that refer to these two thesis articles of Carleson. They are from between 1997-2008 and most of them deal with studies of inflammation in the jaw-joint. Seventeen of the papers concern rats, one rabbits and two humans. They originate from different universities in Europe, Japan and USA (in some cases more than one paper from the same research group).

What are it then that has been carried out in these investigations and in what way do they cite the studies from Carleson’s thesis? In the latter, inflammation of the jaw-joint was induced by injection of substance P [75], interleukin-1 [76] or a suspension of heat-killed mycobacteria [77] into the joint cavity (injection volumes of 10-50 µl). In most of those studies of the jaw-joint in rats that cite Carleson, the joint inflammation was caused by injection of a suspension of heat-killed mycobacteria into the joint cavity (injection volumes 20-50 µl). In their report, the auditors say that “the technique used for perfusion of the joint cavity is very briefly described”. Notably, the description of the methodology is of a similar length in all the studies that cite Carleson. Moreover, it is often in this section they refer to him. Most frequently, however, it is in the introduction and the discussion that his work is quoted, and then as examples of some of the first studies pointing out a connection between inflammation of the jaw-joint and neuropeptides. This is even referred to in investigations of jaw-joint inflamma-
tion in man. It should also be noted that some authors have confirmed the findings of Carleson that indicate an increased expression of neuropeptides on the side where no injection of mycobacteria has been made (the contra lateral control side).

One thing surprisingly not taken up by the examiners is that during a meeting at the Research Council Björn Appelgren, supervisor of Joakim Carleson during the last part of his doctoral work, showed X-ray pictures taken in connection with injection of contrast into the jaw-joint in order to demonstrate how the technique works. That not a word of this is mentioned is one of several examples of how facts that may speak in favour of the accused have been deliberately withheld. In the statement submitted later by the Expert Group, the X-ray pictures are briefly mentioned but are not considered to strengthen the experimental model (the reason why is not explained). Two earlier colleagues of Carleson and Lundeberg in the Department of Physiology and Pharmacology, Professor Bo Rydqvist and Professor Mats Ulfendahl, reacted critically to the auditors’ report as earlier mentioned (see chapter 12.1). In a letter to the Expert Group of the Research Council of February 17 2006, the question of the jaw-joint perfusions was also taken up. There, Rydqvist writes that he and Professor Lars Gustafsson have tested (on dead animals) the possibility to inject and perfuse the jaw-joint in the manner described in Carleson’s thesis. Both of them noted that this was fully possible after only short training. So it can be of note that a number of researchers around the world cite the studies on jaw-joint inflammation in rats published by Carleson together with Lundeberg and others. These researchers have used the same type of operation as Carleson and they confirm his findings. According to Jan Carlstedt-Duke as well as the Expert Group of the Research Council, it is basically impossible to carry out the experiments in the manner described by Carleson. Have they been equally impossible to perform by all the other researchers who describe carrying out the same procedure?
As in earlier parts of their report, the examiners also come to the conclusion that plagiarism has been enacted. However, it is not supposed to be earlier published studies by other authors that have been copied but preliminary manuscripts from Lundeberg’s own group dealing with knee-joint inflammation in rats. These manuscripts were handed over to Jan Carlstedt-Duke in the autumn of 2003 by Indre Bileviciute-Ljungar, a former graduate student of Lundeberg. In 1998 she defended her doctoral thesis concerning the role of the nervous system in inflammatory processes in rats [59]. She also acted as Carleson’s instructor in his early days in the laboratory. Parts of her work dealt with the knee joint in rats and Carleson later made similar studies on the jaw-joint. As described earlier, there are several things connected with the contacts between Carlstedt-Duke and Bileviciute-Ljungar that should be taken into consideration (see chapter 6.1). Bileviciute-Ljungar turns to Carlstedt-Duke and presents allegations of plagiarism after being told by Uvnäs Moberg about the ongoing investigation of Lundeberg. At this time she is working close to Per Hansson and Andris Kreicbergs, two of the three professors who with Uvnäs Moberg accused Lundeberg of fraud in June 2002.

Another circumstance, mentioned in the official letter a large number of earlier collaborators of Lundeberg sent to the Research Council in June 2004, is that Bileviciute-Ljungar and Carleson not only worked closely together within Lundeberg’s research group but also developed a close personal relationship. This liaison abruptly came to an end in connection with the international pain congress in Vancouver in 1996. This was the same year when Carleson completed and published the three investigations in his thesis discussed here. During the aftermath of the break-up of the relationship, the mood and the working climate in the laboratory was tense according to several witnesses. It became necessary to see that Bileviciute-Ljungar and Carleson worked in separate rooms in order not to damage the atmosphere too much. In the letter there is disagreement with the description
Bileviciute-Ljungar gives of the work in the group, and the feeling that her viewpoints may have been influenced by the emotional conflict with Carleson. Neither Jan Carlstedt-Duke at KI nor the Expert Group of the Research Council and its examiners have discussed in their investigation the credibility of those whose testimonies have been used to convict the two accused persons. The statements of Bileviciute-Ljungar can be challenged by anyone properly informed in the case. Once again the lack of neutrality is most remarkable. This is especially surprising in view of the fact that the investigation of the Research Council is led by one of the highest lawyers in Sweden, Kjerstin Nordborg, a Justice of the Supreme Administrative Court.

What is it then specifically that the auditors say in their report about plagiarism in Carleson’s articles? “The examiners have been able to confirm the observations of Jan Carlstedt-Duke that similarities in the text occur between the unpublished manuscripts of Indre Bileviciute-Ljungar concerning the knee joint and the published articles I-III in the dissertation of Joakim Carleson concerning the jaw-joint. There are also similarities in the results. In particular this applies to work III. Here one finds sections and formulations that are almost identical with text in the unpublished manuscript of Indre Bileviciute-Ljungar with the title ‘Early changes in substance P-neurokinin A-calctonin gene-related peptide- and neuropeptide Y-like immunoreactivity in cerebrospinal fluid, plasma and knee joint perfusates in Freund’s adjuvans induced poly- and monoarthritis in the rats’. This is evident in the introduction and the description of the methods as well as in the discussion. Also the results agree. Table 1, for example, shows if not identical so at least very similar peptide levels as in Table I-IV in Bileviciute-Ljungar’s manuscript”.

When I asked the Research Council if I might see this manuscript, they were unable to find it among the files either in the Carleson or the Lundeberg case. According to Bileviciute-Ljungar it was later revised and published. When searching the database PubMed no publication with the same title can be found. On the other hand there is an
article from 1993 with a similar title that is evidently the revised and printed version of the preliminary manuscript [78]. Next year, 1994, another article with a similar content appeared in the same journal [79]. If there is anything Carleson’s studies should be compared with it is these articles. It frequently occurs within a research group that an old manuscript is used as model when a new study in the same field is put together. Both background and aims are by definition similar. It is also quite normal that a defined set of questions is studied in a series of investigations. Even if it is inappropriate to exactly reuse old formulations in the description of background and methods, this can hardly be considered as a deliberate misleading of the readers. It is however serious if results are plagiarized from earlier studies by others or the authors themselves, or just fabricated without doing any experiments.

According to the auditors it is Joakim Carleson’s article in Archives of Oral Biology [77] that shows the greatest similarity with Indre Bileviciute-Ljungar’s manuscript. Since it has not been possible to obtain a copy of this document from the Research Council, the comparison made here must be restricted to her articles from 1993 and 1994 [78, 79]. As already mentioned, it is only these that are relevant when looking for plagiarism. Later on a comparison will anyhow be made with the unpublished manuscript that finally was obtained from KI. The description given by Carleson [77] of the background and objectives is much more extensive than the corresponding sections in the work of Bileviciute-Ljungar [78, 79]. Not even the references show much of overlap. When it comes to the methodology, Carleson studies the jaw-joint of rats and Bileviciute-Ljungar the knee joint. To induce inflammation, Carleson uses an oil suspension of heat-killed mycobacteria that is injected either intradermally at the base of the tail (0.05 ml) or directly into the jaw-joint (0.01 ml). The control animals are given the same volume of physiological saline. After 12 hours or more, the animals are anaesthetized and the jaw-joint perfused (rinsed) with 0.1
ml saline (injected with a fine syringe and then withdrawn). In parallel, samples are taken of the cerebrospinal fluid within the cavities of the brain (0.08-0.15 ml) and of the blood (1.5-4.5 ml). The collected samples are frozen and later analysed for their content of different neuropeptides using radioimmunological assays (RIA). In the two studies of Bileviciute-Ljungar, 0.05 ml of Freund’s complete adjuvans (an oil suspension of killed mycobacteria) is injected into one of the knee joints. Alternatively, three other irritating substances are used. At varying times later on (2, 6 and 24 hours later), the animals are anaesthetized again. In the first investigation [78], both knee joints are perfused and 1.5-2.0 ml fluid is collected. In the second [79], both knee joints are perfused and in addition samples are taken of the cerebrospinal fluid and the blood. As in Carleson’s article, radioimmunological assays are used to determine the content of neuropeptides in the collected fluids.

The description of the methods in Carleson’s work [77] is longer and more detailed than in the two reports of Bileviciute-Ljungar [78, 79]. The similarity between Carleson’s and Bileviciute-Ljungar’s texts in this section is not evident. On the other hand, there is no doubt that the methods sections in the two latter publications contain large parts with identical text. As said later, this can hardly be considered as a fault. It is natural that the same methodology may be repeated in several investigations from a research group and it may be difficult to describe it in different terms each time. The auditors write in their report that Carleson’s work [77] “contains parts and formulations that are as good as completely identical with text in Bileviciute-Ljungar’s unpublished manuscripts. This can be seen in the introduction and methods parts as well as in the discussion”. As mentioned earlier, it is not the unpublished manuscripts that should have been used in the check. They are “non-documents” and not even available in the archives of the Research Council. Basically, it is not possible to plagiarize something that has never been printed. Moreover, the identity of the two un-
published manuscripts has never been verified. When the articles later published by Bileviciute-Ljungar [78, 79] are used in comparison, no signs of plagiarism are found.

And what about the findings? According to the examiners, the results presented by Carleson [77] are almost identical with those put forward by Bileviciute-Ljungar. Carleson has a larger table in which the results are given as measured concentrations of four different neuropeptides (substance P, neurokinin A, CGRP, and neuropeptide Y) in cerebrospinal fluid, blood plasma and joint fluid. Samples were taken 1 and 12 hours after the induction of inflammation by injection of heat-killed mycobacteria either intradermally or directly into the jaw-joint [77]. Bileviciute-Ljungar reports her observations in four and two tables, respectively. The times after the inflammatory stimulation that she studies are 2, 6 and 24 hours [78, 79]. This means that there is not a single observation point that is identical in the works of Carleson and Bileviciute-Ljungar. How is it then possible to make any comparison? Since the auditors say that Carleson has plagiarized Bileviciute-Ljungar also in the results, perhaps the values he gives are after all the same as hers? In the study from 1993 [78], Bileviciute-Ljungar made measurements only on the joint fluid. If one looks on the values she obtained after stimulation with Freund’s adjuvans (the treatment that corresponds with the one used by Carleson), one can say that the values presented by Carleson are of a similar magnitude but certainly not identical. What he also demonstrates is that the findings differ distinctly depending on whether it is a polyarthritis (intradermal injection of killed bacteria) or a monoarthritis (injection into a joint cavity) that has been induced. It is hardly surprising that the neuropeptide levels are similar when the experimental conditions are similar. Carleson and Bileviciute-Ljungar both used male rats weighing 250-300 g and injected similar volumes of heat-killed bacteria, even though in different joints (the jaw-joint and the knee joints).
When Carleson’s results [77] are placed next to those published by Bileviciute-Ljungar in 1994 [79], and the groups that most directly correspond to each other are compared, the conclusion is that the auditors’ statement about plagiarism cannot be verified. There is no close similarity between the findings and absolutely nothing that can be described as identical. To exemplify how the values look in the respective studies it can be seen that Carleson [77] 1 and 12 hours after the injection of killed bacteria into the jaw-joint found the level of substance P in the cerebrospinal fluid to be <0.1 and 14.1±19.1 fmol/ml (mean and standard deviation). In Bileviciute-Ljungar’s work [79] the values obtained at 2 and 6 hours (the best matching time points) were <0.1 and 113.1±54.8 fmol/ml. The corresponding values in blood plasma were 0.6±0.8 and 0.8±0.3 fmol/ml for Carleson [77] as compared with 0.6±0.3 and 2.6±1.1 for Bileviciute-Ljungar [79]. And so on, point for point and value for value. In the first of Carleson’s articles [75], the times when samples were taken were the same as in Bileviciute-Ljungar’s work, 2, 6 and 24 hours. In spite of this, the similarity in the measured values is if anything smaller than in the third article [77]. There can only be one conclusion. When comparing the published articles of Joakim Carleson and Indre Bileviciute-Ljungar, it is not possible to find any signs of plagiarism.

In addition to the poorly supported standpoint that perfusions of the rat jaw-joint are impossible to perform, the examiners claim that no members in the staff of the department have been able to verify that they have seen Joakim Carleson carry out the animal experiments and the subsequent analyses described in his thesis articles. Moreover, he has been unable to show protocols and raw data from his work, because more than ten years have passed since the experiments were done. Even if the requirements to file old results have become stricter recently, it would probably be difficult for many researchers at KI and other places to present a full documentation of experiments made during the first half of the 1990’s. In the same manner, it is unlikely
that any of the personnel in a laboratory remembers what happened 8-10 years ago or more. According to information, Carleson mainly worked and made his experiments in evenings or nights. Professor Bo Rydqvist, who at the time in question had his laboratories close to those of Lundeberg’s group, has confirmed this. He has also said that on some occasions he found Carleson performing animal experiments in a laboratory upstairs, where that type of activity was not permitted. He had reminded Carleson to move to the premises in the basement designed for such work. In the official letter Rydqvist together with a colleague submitted to the Research Council in February 2006, he also takes up the hesitation expressed by the examiners about the competence of Carleson to perform the peptide analyses. It is there said that Rydqvist “had received material from an investigation in which Joakim Carleson was responsible for the peptide analyses from Professor Peter Thorén (earlier chairman in the Department of Physiology and Pharmacology) in February 2006”. In a telephone call, Thorén confirms that he has collaborated with Carleson in experiments, but this never led to any scientific publication. As a part of the project, peptide analyses had been made on samples of rat brains and Carleson had handed over to Thorén computer printouts of the results. The analyses had been made in the peptide laboratory at the Karolinska Hospital managed by Lundeberg. Thorén could however not say with certainty whether it was Carleson or someone else who had carried out the analyses.

As in the case with Thomas Lundeberg, the auditors judge Joakim Carleson in their report although they have never met him and base their characterization of him on opinions obtained from unnamed persons. What relation these had to Carleson is not evident but of course it could be something of relevance. From the official statement it is clear that the examiners have interviewed Indre Bileviciute-Ljungar, a person with a very complex relation to Carleson. As said above, it is also mainly on the basis of material submitted by her (and not available in the archives of the Research Council) that they sen-
tence Carleson. In the description the auditors give of Carleson as a person, a number of disparaging terms are used. At the same time, it is mentioned that he has been described as “an excellent and knowledgeable lecturer in physiology”. So which should one believe and what is the justification for a subjective personal analysis in this context? All that should have been done was to examine some scientific publications and judge whether or not it is possible on the grounds of facts to confirm the suspicions of plagiarism and/or fabrication of research data. Even if the auditors here and there express some uncertainty, there is no doubt that they pass a hard judgement of misconduct. In view of the devastating consequences such a sentence has for a researcher, it is more than disappointing to see the poor basis on which the decision rests.

*Can Indre Bileviciute-Ljungar be considered as a reliable witness?*

To briefly recapitulate the above survey, Indre Bileviciute-Ljungar, after meeting Kerstin Uvnäs Moberg and being told about the ongoing investigation, contacted Jan Carlstedt-Duke to cast further suspicions on Joakim Carleson and Thomas Lundeberg. Carlstedt-Duke then asked a computer technician for help to recover unpublished manuscripts from a non-functioning computer. This took several months and the time when these documents were created could never be fully determined. Carlstedt-Duke reported on this in the official statement he wrote to the President of KI a few months later (1295/04-608). There, he refers to the statements he has received from Bileviciute-Ljungar, both verbally and in a letter she put together in February 2004. This was about six months after she had first made known her suspicions, and one and a half months after the unpublished manuscripts were printed out from the defective computer, if it can be certain that it was from there they were printed (see chapter 6.1). Neither Carlstedt-Duke nor the Expert Group of the Research Council or their auditors ever discussed the reliability of Bileviciute-Ljungar’s testi-
mony. One wonders whether the investigators at the Research Council have really read and analysed her manuscripts. In any case, no copies of these are available in the Council archives. Can it be possible that they have merely taken part of the statements of Carlstedt-Duke and accepted them without checking themselves?

In the letter Indre Bileviciute-Ljungar wrote to Carlstedt-Duke in February 2004, there are passages which should make the reader doubtful. Word-for-word she writes the following concerning the unpublished manuscripts and their further fate. “After rejection, I rewrote these articles. I went through the statistics to be able to do a better correlation analysis between different tissues in the same rat. Among others, this included a renewed check of experimental protocols in order to choose the analytical values where no or only a minimal error had been made. For example, some rats were excluded since it was suspected that the values obtained from them could be wrong due to presence of blood, insufficient amounts of some fluid, death of the animal during the experiment, et cetera. The background of this evaluation was that it was not possible to obtain all three fluids (blood, cerebrospinal fluid and joint fluid) from every animal. The aim was to make the groups more homogeneous than earlier with regard to the number of animals and to carry out a more correct correlation analysis comparing different tissues in the same rat. This led to the same results going through a new statistical analysis with a new assumption, leading to that some results being omitted. Data from the aforementioned articles were written down and sent for publication again.” This led to the two articles discussed above [78, 79], the only articles published by Bileviciute-Ljungar that match the three examined articles in the doctoral thesis of Joakim Carleson.

With this background, it must be considered irresponsible to regard Indre Bileviciute-Ljungar as a stickler for the truth as did Carlstedt-Duke, the Expert Group and the examiners of the Research Council. What she did with her articles rejected by one or more scientific journals sounds like the definition of the type of misconduct
called trimming or falsification. This means that the results obtained in an experiment are classified either as typical/correct and included in the statistical analysis or as atypical/wrong and excluded. Bileviciute-Ljungar does not explain how she was able to come to this judgement. One wonders if she really had made notes in her “preliminary protocols” about each rat and to what extent problems had occurred during sampling of joint fluid, cerebrospinal fluid or blood. One also wonders whether or not Carlstedt-Duke and the auditors of the Research Council studied the “preliminary protocols” to judge what type of criteria had been used when omitting certain values before the renewed statistical analysis. This could have given them an idea of the reliability of Bileviciute-Ljungar. When one reads her two articles discussed above, there is nothing about the many problems mentioned in her letter to Carlstedt-Duke that made it necessary to exclude a number of animals when the results from the rejected manuscripts were recalculated and later published in other journals [78, 79]. On the contrary, all animals that were injected in one of the knee joints with an inflammatory agent later also appear in the tables where the results are presented.

The comparison made by Jan Carlstedt-Duke between Indre Bileviciute-Ljungar’s unpublished manuscripts and Joakim Carleson’s published articles likewise raises questions. He maintains that the third article in Carleson’s thesis [77] is “almost identical” with one of Bileviciute-Ljungar’s unpublished manuscripts. In his report, Carlstedt-Duke writes that in the third study [77] “62 rats have been changed to 80 rats”. The number of animals mentioned in Carleson’s article is correctly 80. But from where the number 62 comes is more difficult to understand. In the two papers Bileviciute-Ljungar publishes after having eliminated “atypical” findings, the number of animals is said to have been 122 and 115, respectively [78, 79]. From her letter to Carlstedt-Duke dated February 9 2004, one gets the clear impression that no new animal experiments were made after the rejection of
the two initially submitted manuscripts. The only thing she did was to exclude certain animals/results and make a new statistical analysis. How is it then possible that the number of animals in an individual study is almost doubled at the same time as three rejected manuscripts are transformed into four published articles (data taken from Bileviciute-Ljungar’s letter)? This could perhaps be explained if it was that the same results were used in more than one paper. Alternatively, some results could have been just made up. A hint of what the explanation might be is obtained by as closer examination of the results Bileviciute-Ljungar report in her articles from 1993 and 1994 [78, 79].

In these studies she describes the occurrence of four different neuropeptides (substance P, neurokinin A, CGRP and neuropeptide Y) in synovial fluid (perfusate) from the knee joint at three different times (2, 6 and 24 hours) after injection of four different inflammatory stimuli into the joint cavity (Freund’s adjuvans, carrageenan, substance P and interleukin-1-alpha, or sodium chloride as a control). The results are presented in several tables as mean values with standard error based on measurements of samples from 6-10 animals [78, 79]. An excerpt of the findings from the two articles is given in Table 1. It is there seen that the values in all measurements (60 points) are identical or close to identical in the two studies. The statistical chance of obtaining such closely related results in two independent experimental series in which the mean values are based on measurements of samples from 6-10 animals must be considered as almost non-existent. Hence, there is reason to believe that this could be a case of falsification and scientific misconduct. This is of course highly disturbing in view of the fact that Jan Carlstedt-Duke at KI as well as the Expert Group of the Research Council and its examiners portray Indre Bileviciute-Ljungar as a reliable principal witness, whose testimony constitutes the main basis for the sentences given to Thomas Lundeborg and Joakim Carleson. Unfortunately, we see here again an example of the almost total lack of neutrality and professional attitude
that characterizes the investigations both at KI and at the Research Council. How was it possible to impose a hard and, for the individual, devastating judgement on Thomas Lundeberg and Joakim Carleson, and at the same time completely miss all the discrepancies connected with the studies of Bileviciute-Ljungar? It seems as if one made everything possible to find mistakes (often non-existent) made by the two accused persons while remaining blind to see the weaknesses of the witnesses used as support for the conclusions made.

*Indre Bileviciute-Ljungar’s “unpublished manuscript” and Joakim Carleson’s thesis article do not at all show identical results*

As mentioned above, I finally managed to obtain copies of Bileviciute-Ljungar’s “unpublished manuscripts” from the archives of KI. It is difficult to judge, however, whether these manuscripts derive from the files in the discarded computer or elsewhere (see chapter 6.1). One of them deals with problems similar to those in the third of Carleson’s thesis articles [77]. This substantiates the fact that the aim of Carleson’s project was to verify whether the contribution of the peripheral nerve system in knee joint inflammation demonstrated by Bileviciute-Ljungar also appears in the jaw-joint. The method involved injecting a suspension of heat-killed bacteria into the knee and the jaw-joint, respectively, in order to induce a “monoarthritis”. In other animals the injection was instead given intradermally at the base of the tail.
Table 1. Extract of results from Indre Bileviciute-Ljungar’s two published articles [78, 79] *

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>Substance P</th>
<th>Neurokinin A</th>
<th>Neurokinin A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concentration in joint fluid (fmol/ml mean±sd)</td>
<td>[78]</td>
<td>[79]</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>&lt;0,1</td>
<td>&lt;0,1</td>
</tr>
<tr>
<td>2 hours</td>
<td>&lt;0,1</td>
<td>0,8±0,5</td>
<td>1,0±0,6</td>
</tr>
<tr>
<td>6 hours</td>
<td>&lt;0,1</td>
<td>&lt;0,1</td>
<td>&lt;0,1</td>
</tr>
<tr>
<td>24 hours</td>
<td>&lt;0,1</td>
<td>&lt;0,1</td>
<td>&lt;0,1</td>
</tr>
<tr>
<td>Freund’s adj</td>
<td></td>
<td>5,9±0,7</td>
<td>5,9±0,7</td>
</tr>
<tr>
<td>2 hours</td>
<td>10,0±4,5</td>
<td>3,5±1,0</td>
<td>3,4±1,0</td>
</tr>
<tr>
<td>6 hours</td>
<td>1,7±1,1</td>
<td>3,5±1,0</td>
<td>3,4±1,0</td>
</tr>
<tr>
<td>24 hours</td>
<td>4,9±1,3</td>
<td>6,5±1,1</td>
<td>6,5±1,3</td>
</tr>
<tr>
<td>Carrageenan</td>
<td></td>
<td>6,7±0,5</td>
<td>6,9±0,7</td>
</tr>
<tr>
<td>2 hours</td>
<td>1,8±1,1</td>
<td>1,4±0,5</td>
<td>1,4±0,6</td>
</tr>
<tr>
<td>6 hours</td>
<td>1,9±1,1</td>
<td>6,1±1,4</td>
<td>6,0±1,5</td>
</tr>
<tr>
<td>24 hours</td>
<td>0,5±0,3</td>
<td>6,7±0,5</td>
<td>6,9±0,7</td>
</tr>
<tr>
<td>Substance P</td>
<td></td>
<td>2,3±1,4</td>
<td>2,3±1,4</td>
</tr>
<tr>
<td>2 hours</td>
<td>9,7±5,3</td>
<td>3,7±0,6</td>
<td>3,5±0,7</td>
</tr>
<tr>
<td>6 hours</td>
<td>3,5±1,5</td>
<td>3,7±0,6</td>
<td>3,5±0,7</td>
</tr>
<tr>
<td>24 hours</td>
<td>3,6±2,6</td>
<td>1,6±0,8</td>
<td>1,5±0,9</td>
</tr>
<tr>
<td>Interleukin 1</td>
<td></td>
<td>6,5±0,8</td>
<td>6,2±0,6</td>
</tr>
<tr>
<td>2 hours</td>
<td>1,8±1,0</td>
<td>6,5±0,8</td>
<td>6,2±0,6</td>
</tr>
<tr>
<td>6 hours</td>
<td>1,1±1,0</td>
<td>4,6±1,0</td>
<td>4,6±1,2</td>
</tr>
<tr>
<td>24 hours</td>
<td>-</td>
<td>3,1±1,6</td>
<td>3,7±1,8</td>
</tr>
</tbody>
</table>

* The results for two of the neuropeptides studied are given here. Close to identical results were reported also for CGRP and neuropeptide Y in the two articles.
This gives rise to an inflammation in many joints of the body, a “polyarthritis”. After 2 and 24 hours in the knee joint study and after 1 and 12 hours in the jaw-joint study, the animals were anaesthetized and samples of the joint fluid were taken on both sides by perfusion. In parallel, cerebrospinal fluid and blood samples were also taken. The samples were finally analysed for their content of four different neuropeptides, substance P, neurokinin A, CGRP (calcitonin gene-related peptide) and neuropeptide Y.

A comparison of Carleson’s printed article [77] and Bileviciute-Ljungar’s “unpublished manuscript” reveals, as indicated by Jan Carlstedt-Duke, considerable similarities in the text, and in some sections, such as the introduction and the methods, are almost identical. Since the studies were very close in outline this can in part be understood. When it comes to the results, Carlstedt-Duke in his statement to the KI President of February 20 2004 says: “In spite of the fact that a larger number of rats are studied, at other time points, in another joint, and with a different technique, the findings reported in the table are almost identical with those found in Indre Bileviciute-Ljungar’s manuscripts. The results are so alike that each value in the table usually differs in only one digit”. From where this conclusion is drawn is impossible to understand. To demonstrate the reality, Table 2 shows the results from the “monoarthritis” part in Carleson’s article [77] side by side with the corresponding part in Bileviciute-Ljungar’s “unpublished manuscript”. No obvious similarities between the findings exist. Since the disposition of the studies is comparable, it is not surprising that some trends are similar. However, to claim like Carlstedt-Duke that the results are “almost identical” is a statement that lacks support. That the Expert Group of the Research Council and its examiners concur with this proclamation is a sign that they never examined the issue but just accepted what they had been told by Carlstedt-Duke. It is difficult to get any impression other than that both KI and the Research Council have accepted the use of dishonest manoeuvres to sentence Carleson and Lundeberg.
Table 2. Extract of results from Joakim Carleson’s thesis (JC) article [77] and Indre Bileviciute-Ljungar’s “unpublished manuscript” (IBL)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Hours JC</th>
<th>Hours IBL</th>
<th>Monoarthritis JC</th>
<th>Monoarthritis IBL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSF</td>
<td>1</td>
<td>2</td>
<td>&lt;0,1</td>
<td>&lt;0,1</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>24</td>
<td>14.1±19.1</td>
<td>17.1±17.1</td>
</tr>
<tr>
<td>Plasma</td>
<td>1</td>
<td>2</td>
<td>0.6±0.8</td>
<td>0.6±0.3</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>24</td>
<td>0.8±0.3</td>
<td>0.3±0.3</td>
</tr>
<tr>
<td>P – right</td>
<td>1</td>
<td>2</td>
<td>10.0±6.5</td>
<td>10.0±4.5</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>24</td>
<td>7.6±0.3</td>
<td>6.5±1.1</td>
</tr>
<tr>
<td>P – left</td>
<td>1</td>
<td>2</td>
<td>6.5±0.3</td>
<td>5.6±0.4</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>24</td>
<td>8.8±1.5</td>
<td>8.3±1.6</td>
</tr>
<tr>
<td>CGRP</td>
<td>1</td>
<td>2</td>
<td>19.1±4.3</td>
<td>17.1±4.3</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>24</td>
<td>28.5±7.9</td>
<td>20.5±2.9</td>
</tr>
<tr>
<td>Plasma</td>
<td>1</td>
<td>2</td>
<td>6.8±0.9</td>
<td>5.8±0.9</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>24</td>
<td>7.6±2.7</td>
<td>8.6±2.7</td>
</tr>
<tr>
<td>P – right</td>
<td>1</td>
<td>2</td>
<td>5.6±2.4</td>
<td>4.6±2.1</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>24</td>
<td>7.2±0.9</td>
<td>6.1±0.8</td>
</tr>
<tr>
<td>P – left</td>
<td>1</td>
<td>2</td>
<td>4.8±0.9</td>
<td>4.4±0.9</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>24</td>
<td>7.7±0.8</td>
<td>6.7±0.8</td>
</tr>
</tbody>
</table>

SP, substance P; CGRP, calcitonin gene-related peptide; CSF, cerebrospinal fluid; P, joint perfusate. The values are given as fmol/ml.

13.5 Other studies in Lundeberg’s research

After finishing the treatment of the three articles from Joakim Carleson’s thesis, the examiners report continues with several studies in which Thomas Lundeberg is one of the authors. In some cases these are articles that KI had originally asked to be examined and in others articles for which “suspicions of possible deviations from good scientific
practice have been forwarded during the investigation”. The source of these allegations for some reason is not mentioned. In at least two cases, it refers to information given by the representative of Kerstin Uvnäs Moberg, Kurt Björkholm. On December 13 2004, the KI President wrote to the Expert Group of the Research Council and asked that they in their inquiry should include two articles KI had been informed about by Björkholm (5463/03-629). According to him the originality and authenticity of the results could be questioned. This request arrived at the Research Council more than eight months after Wallberg-Henriksson had called upon them to ask for help with an inquiry into Lundeberg’s research. There is not much doubt about who have directed the investigation both at KI and the Research Council.

In the beginning of this paragraph, the auditors take up an article dealing with inflammation in the jaw-joint of rats [80] as well as two articles regarding inflammation in the elbow joint (tennis elbow) in rats [81, 82]. These articles are compared with each other and with an “unpublished manuscript” of Indre Bileviciute-Ljungar. This latter “non-document” corresponds to the article from 1994 discussed earlier [79]. The examiners say that “the studies authored by Lundeberg et al. 1996 [80] and Haker et al. 1998 [82] have text sections that are identical with each other and with another of Indre Bileviciute-Ljungar’s unpublished manuscripts” (the one matched by [79]). No specification of which the “identical” text sections are is given. The introductions do not contain any conspicuous similarity and the references given there differ. The methods descriptions show some overlapping parts that can be explained by the fact that the same inflammatory stimulus was used in part and that the same neuropeptides were analysed in blood, cerebrospinal fluid and in perfusates from the inflammatory area. These are the same peptides that have been a major point of interest in a number of inflammatory studies from this group. To what extent is it then possible to find signs of plagiarism of results in the two articles [80, 82]? Samples were in both cases taken after 2, 6 and 24 hours. If
one looks at the neuropeptide levels measured at these times after stimulation with carrageenan, one finds for example that the values for substance P in blood plasma are $0.6\pm0.1$, $0.5\pm0.3$ and $1.6\pm1.9$ fmol/ml at the three times in the study from 1996 [80], to be compared with $2.3\pm1.4$, $1.9\pm0.3$ and $1.6\pm1.7$ fmol/ml (mean and standard error) in the study from 1998 [82]. A similar comparison of the concentration of neuropeptide Y in joint perfusates reveals that the values are $73.8\pm7.9$, $35.2\pm8.1$ and $21.2\pm7.2$ in the article from 1996 [80] as compared with $59.6\pm7.7$, $37.4\pm6.5$ and $31.8\pm3.4$ fmol/ml in the article from 1998 [82]. Also in other parts of the two studies no prominent likeness can be found and in some cases the concentrations differ markedly. Therefore, it is not possible to claim that results have been copied from one study to the other.

As mentioned above, the auditors also declare in their report that there are text sections in the two articles just discussed that are identical with the corresponding sections in Bileviciute-Ljungar’s “unpublished manuscript”. If a comparison is made between the article published by Bileviciute-Ljungar in 1994 [79] and the two mentioned articles [80, 82], nothing is found that indicates copying from the latter study. With regard to the work of Haker and others from 1997 [81], it seems as if the table originally printed there was mixed up with the one belonging to the study printed in 1998 [82]. A correction was printed at the same time as the latter article was published. The mix-up is evident since the inflammatory stimuli used in the table first printed are not the ones mentioned in the text. In the study from 1997 [81], the elbow joints were injected with substance P or interleukin-1 to induce an inflammation whereas Freund’s adjuvans or carrageenan was used for this purpose in the study from 1998 [82]. In the article published in 1994 by Bileviciute-Ljungar all four of these substances were used [79]. No clear similarities exist between the results in this latter paper and in the two papers of Haker et al. [81, 82]. It is thus
impossible to come to any other conclusion than that the examiners lack evidence for the criticism they impose.

*Articles reported by Kurt Björkholm long after the start of the investigation of the Research Council*

As mentioned earlier, Kerstin Uvnäs Moberg and her representative Kurt Björkholm continuously kept themselves informed about the progression of the Research Council’s investigation of Thomas Lundeb erg and what defence he and his lawyer submitted. They wrote refutations of the statements that arrived from Lundeb erg and also forwarded new accusations against him during the investigation. Thus, the KI President on December 2004 writes to the Expert Group in the Research Council and asks them to include in their inquiry two additional publications about which Björkholm has expressed suspicions. These referred on one hand to an article in *Brain Research* (BR) from 2002 describing how opioid antagonists counteract the analgesic effect of the hormone oxytocin after injection into a certain part of the brain of rats [83]. The second article is from the same year and printed in *European Journal of Neuroscience* (EJN). It shows how oxytocin contributes to the pain-relieving effect of massage in rats [84]. According to the report of Jan Carlstedt-Duke at KI from December 7 2004, there are large similarities between the results presented in these two papers. It should however be noted that the second article [84] is considerably more comprehensive and about twice as long as the first one [83], nine as compared with four pages in print.

What the auditors take up in their statement is something also pointed out by Carlstedt-Duke, namely the resemblance between some parts of Figure 5 in the EJN article [84] and Figures 1 and 2 in the BR article [83]. To assess the pain threshold, the experiments described in these illustrations use a method in which the time it takes before the rats withdraw the hind paw after exposure to a hot-plate (52°C) or
mechanical pressure from a wedge-shaped pusher is measured. In both studies the same treatments were evaluated for their effects on the pain reaction (oxytocin in combination with two different opioid antagonists in varying concentrations). In the BR work [83] the hind paw withdrawal reflex was studied at six different points after the start of the treatment (0-90 minutes). In the study printed in EJN in a similar manner it was analysed how the withdrawal reflex was influenced by the drugs but only at one point, 20 minutes after the onset of the treatment. In addition to the two opioid antagonists, beta-funaltrexamine (β-FNA) and nor-binaltorphimine (nor-BNI), used in the BR article, also a third, naltrindole, was also used here. A comparison of the figures in the two articles confirms the observations made by Carlstedt-Duke and the examiners of the Research Council. The results for β-FNA and nor-BNI in the EJN articles seem to be identical with those obtained at the point 20 minutes in the time curves given in the BR article. In an official letter sent to the Research Council in March 2005, Lundeberg says that the values referred to derive from the same experiment and admits that in the EJN article [84] they ought to have cited the article in BR [83] (accepted for publication in November 2001).

It is obvious that in this study the authors had used results to a limited extent from another study of their own closely related in time. Such a procedure is fully acceptable if it is mentioned that some values derive from a different investigation. This has been overlooked not only by Thomas Lundeberg but also by the nine other authors of the article, among them Kerstin Uvnäs Moberg. As mentioned earlier, the rules in force for scientific publications (the “Vancouver rules” for submission of manuscripts to biomedical journals, originally agreed on in 1978) says that all authors together have a joint responsibility for the content of an article. Kerstin Uvnäs Moberg (or her representative Kurt Björkholm) obviously detected the mistake made in the EJN article [84] in not referring to the BR article [83]. However, she did not
inform her co-authors about it so that a correction could be sent to the journal. Instead she decides to forward allegations via her representative against one of her co-authors, Thomas Lundeberg, to KI. If one takes a closer look at the extent of the “double publication” of results, the following is found. In the EJN article [84], four out of six parts in Figure 5 deal with the effects of β-FNA and nor-BNI. This corresponds to 20 mean values with standard errors, which in turn match 20 out of 240 mean values with standard errors (slightly more than 8%) in figures 1 and 2 in the BR article [83]. The overlap between the figures in the two papers is no larger than that. The mistake was to forget to refer to the BR article in the EJN article and to mention which values came from there. How seriously one should look on this oversight is a matter of judgement. Most people probably would not consider it as an example of strict scientific misconduct.

Jan Carlstedt-Duke and the auditors of the Research Council also take up some other points concerning the studies published in BR [83] and [84] EJN. One refers to standard errors being indicated in different ways in the figures of the two articles. After checking, Lundeberg admits that this is the case, and together with the first author of the EJN article submits a correction that is printed in the journal. It is there explained that the lines which represent the standard errors of the means have an erroneous length (too short). Carlstedt-Duke further adversely criticises the statement in the BR paper that “all experiments were conducted according to the guidelines of the Animal Ethical Committee of Karolinska Institutet”, although these experiments had been made in China. It is highly surprising that he as Dean of Research and the one with the primary responsibility for animal testing at KI makes such a statement. In the beginning of the 2000’s I was myself the responsible manager of animal experiments in a KI department, appointed by the Swedish Board of Agriculture. At the time, I was also a deputy member in the Ethical Committee on Animal Research in Northern Stockholm. On one occasion, a doctoral candi-
date who was confused contacted me. When applying for permission to defend her doctoral thesis, she had been asked to display a Swedish ethical permission for animal tests made abroad within the framework of an international cooperation. Most probably, similar demands have been put to others. Hence, there should be no reason to be surprised if in a study performed in China and involving a KI professor it is indicated that the animal experiments were carried out according to the ethical rules applied at KI.

The auditors engaged by the Research Council to examine the possible scientific misconduct complete their official statement of January 24 2006 with the following “Conclusion”. “Neither Thomas Lundeberg nor Joakim Carleson has in spite of requests to do so been able to present documentation that strengthens where, when and how the research in question has been carried out. This circumstance together with the other large deficiencies that have been demonstrated lead to the conclusion that the research investigated has not fulfilled the demands on research according to good practice”. Their report goes on to the Expert Group for Questions of Misconduct in Research that is going to take the final standpoint in the matter on behalf of the Research Council. In parallel it is also handed over to the press that hang out the accused publicly on the basis of what the auditors have said (see chapter 12).

14 The judgement and the report of the Research Council

The examiner’s report is also forwarded to the two accused persons, who are given an opportunity to express their opinion about its content. During a meeting with the Expert Group on April 7 2006, Thomas Lundeberg makes his comments. In a written statement dated April 15 2006, submitted by the lawyer Christer Pehrson, the criticism is further specified. Lundeberg here mainly gives standpoints that earli-
er during the investigation have been expressed in a number of official notes and reports. Notably, the auditors for the main part seem to have ignored this information during the writing of their account. What are condemned in particular are the sweeping character and the lack of specifications in their judgement which have made it difficult or impossible for Lundeberg to respond to or defend himself against the accusations. Joakim Carleson likewise meets the Expert Group on April 7 but never sends any written statement in response to the auditors’ report.

The Expert Group of the Research Council on May 18 2006 submits two reports to Karolinska Institutet, one concerning Joakim Carleson (312-2004-821) and one concerning Thomas Lundeberg (312-2004-822). They briefly mention their meetings with the two but in all essentials dismiss the arguments put forward. As a whole, the Expert Group adopts the criticism forwarded by the examiners. To sum up, the judgement delivered is that both Joakim Carleson and Thomas Lundeberg “have violated good scientific practice”.

In its reasoning, the Expert Group never seriously responds to the criticism against the manner in which the investigation was carried out by Thomas Lundeberg and his lawyer Christer Pehrson, the KI Professors Bo Rydqvist and Mats Ulfendahl, and the former Swedish Parliamentary Ombudsman and former Justice of the Supreme Administrative Court Bertil Wennergren among others. The most remarkable fact is that Lundeberg has not been continuously informed about and given possibility to see and respond to the many official letters with accusations against him that have been submitted during the progress of the investigation, primarily by Kerstin Uvnäs Moberg and her representative Kurt Björkholm. In another unlawful procedure neither Thomas Lundeberg nor Joakim Carleson were ever allowed to see the unpublished manuscripts submitted by Indre Bileviciute-Ljungar and used by the examiners as a major evidence for scientific misconduct. It is also shocking that copies of these docu-
ments are not available in the archives of the Research Council. The manner in which the Expert Group expresses itself is characterized by sloppiness and a lack of specifications similar to that of the auditors. This is evident from the following statement. “The duties of the Research Council have been to analyse the questions and circumstances that Karolinska Institutet wished to have examined. A considerable part of the material submitted to the Council by other persons concerns disputes and personal controversies, or expresses support for one part or the other. This has on the whole been considered irrelevant for the investigation and has therefore not been taken into account”. When the President of KI, Harriet Wallberg-Henriksson, on March 30 2004 wrote to the Research Council and asked for assistance she said that “Karolinska Institutet finds it difficult on its own to make a neutral and independent investigation of the charges raised against Lundeberg”.

Unfortunately, this “neutral and independent investigation” never came about. To a large extent, it seems as if the Dean Jan Carlstedt-Duke invited the auditors to KI and told them his version of what it was all about. No documents that spell out what was said during these meetings are available in the archives of the Research Council. To the contrary, it is fully clear from their report that they accepted the conclusions of Carlstedt-Duke. Accordingly, it is to him they refer when they present their judgement. No signs can be found of an independent, neutral and critical evaluation of facts from the side of the examiners. The Expert Group chaired by the Justice of the Supreme Administrative Court, Kjerstin Nordborg, follows the examiners and in no way appears to have carefully studied the case. Like them, the Expert Group uncritically swallows Indre Bileviciute-Ljungar’s testimony presented to them by Carlstedt-Duke. If one lifts the cover just a little, this turns out to be a witness whose statements cannot be confirmed and whose integrity may be questioned. The Research Council fails to see this and instead takes her information as conclusive evidence for the guilt of Carleson and Lundeberg. At the same time, the
Expert Group dismisses information from other parties, and without any explanation classifies it as biased accounts that are “considered irrelevant for the investigation”. And this is supposed to be an inquiry against two individuals carried out by a state authority under leadership of a Justice of the Supreme Administrative Court. The competence of Swedish authorities is obviously no longer what it was earlier claimed to be.

15 The decision and sanctions of KI

As soon as the Justice Kjerstin Nordborg and the Administrative Director Björn Thomasson as representatives of the Expert Group for Questions of Misconduct in Research have signed the official statement and sent it on to KI, the case is declared completed on behalf of the Swedish Research Council. It is returned to the table of the President of KI, Harriet Wallberg-Henriksson. She now faces the task of making a final decision in the investigation that started in June 2002 when allegations against Thomas Lundeberg were submitted to the Ethical Council of KI. One of the three accusers was Kerstin Uvnäs Moberg, who since then has been driving a process against Lundeberg by continuing to forward large numbers of complaints against him to KI, the Research Council, the Police, the Swedish Security Service, and the Swedish Economic Crime Authority. What makes the situation notable is the fact that Uvnäs Moberg is the person who in March 1998 approached the Higher Education Appeals Board to forcefully question the decision of KI to appoint Harriet Wallberg-Henriksson as professor of integrative physiology. So how is her decision going to look? Will it go in the direction that Uvnäs Moberg persistently and in a most conspicuous way has worked for, or will it go against her? Can anyone claim that Wallberg-Henriksson does not find herself in an
awkward challengeable situation or that her decision cannot risk being influenced by these circumstances, consciously or unconsciously?

The judgement of the KI President is taken on June 2006 after reporting by the Administrative Director Bengt Norrvina and in the presence of the University Director Rune Fransson (3327/06-208). Dean Jan Carlstedt-Duke from the Board of Research and Dean Elias Arnér from the Board of Research Education are also present. In the words of the decision it is first mentioned that on March 30 2004 the President had asked help from the Research Council, in two separate letters, with the examination of Joakim Carleson and Thomas Lundeberg on suspicion of scientific fraud. It also says that the internal investigation at KI was led by Jan Carlstedt-Duke, who had delivered a report to the President on October 4 2003 with subsequent additions on February 7 and 20 2004. These official statements have been discussed earlier (e.g. chapter 5.4, 6.1, 13.3, 13.4, and 13.5). At this time, Carlstedt-Duke formed the following opinion about Lundeberg, which Wallberg-Henriksson quotes in her judgement. “The conclusion is that what it is all about is scientific fraud for the purpose of personal gain”. With regard to Carleson, the view of Carlstedt-Duke is: “The first and second studies in Carleson’s thesis as well as one article published outside the thesis have to a varying degree plagiarized the manuscript of Indre Bileviciute-Ljungar”. The next paragraph continues as follows. “The third study in Carleson’s thesis appears to be an almost complete plagiarism of Indre Bileviciute-Ljungar’s manuscript”.

In the next part of her decision, Harriet Wallberg-Henriksson gives an account of the conclusions of the auditors and the Expert Group of the Research Council. The statements made by these instances have also been discussed earlier (see chapter 13 and 14). In the President’s report their sentence on Lundeberg is summarized in the following way. “The nature and the frequencies (of the infringements) are of a character that makes the Expert Group to judge that Thomas Lundeberg has violated good scientific practice” and further that “Also Karolinska Institutet
has a responsibility for deficiencies in routines and controls in research education". Concerning Carleson the following assessment is made. “The Expert group finds that Joakim Carleson in the reporting of his scientific work does not fulfil the demands that are put on scientific reporting. In his thesis he has also used text authored by others in an unacceptable manner. The Expert group therefore finds that Joakim Carleson with respect to the points mentioned has violated good scientific practice”. Unfortunately, the problem is that the so-called evidence presented by the auditors and the Expert Group of the Research Council does not withstand a critical analysis (see chapter 13 and 14). To use a well-known metaphor, one could say that it collapses like a house of cards if touched.

This, however, is something that Harriet Wallberg-Henriksson seems not to have the slightest understanding of when she makes her decision. On the contrary, she seems to fully accept both the internal check-up made by Jan Carlstedt-Duke at KI and the inquiry made by the Research Council. As mentioned earlier, this latter investigation for the main part follows the information and the conclusions received from Carlstedt-Duke. Thus, it is not possible to find anything that justifies characterizing the examination of the Research Council as “neutral and independent”, as originally requested by the President of KI when she turned to them in March 2004. What she writes in her judgement from June 2006 is the following. “The state of things exposed in these investigations is very serious and unfortunate. The suspicions and observations made in the internal inquiry are confirmed in the report of the Expert Group. Incidents of this type may affect the trust of the public in research and in Karolinska Institutet. The criticism directed against Thomas Lundeberg and Joakim Carleson can be summarized in two main areas: on one side plagiarism and other types of incorrect handling of scientific texts, and on the other defective and in some cases non-existent documentation of the research process and its results. In addition, the Expert Group criticizes Karolinska Institutet for inadequate routines for the control of research education and research”. There may be reason to ask what could “affect the
trust of the public” most. Is it the dishonesty Lundeberg and Carleson are claimed to be guilty of but deny, and which has never been proven in an adequate manner? Or is it the challengeable, legally insecure, and largely incompetent manner in which the investigation has been handled by KI and the Research Council that will upset the man in the street? These are questions that should be examined by the Parliamentary Ombudsman or the Office of the Chancellor of Justice in order to avoid corrupt legal practice.

Which then were the sanctions Harriet Wallberg-Henriksson imposed on the basis of her hard sentence on Lundeberg and Carleson? Nothing very particular it turned out. Concerning the more senior of the two the President says: “Thomas Lundeberg is no longer employed at Karolinska Institutet. Based on labour legislation no measures against him can therefore come in question”. With regard to the junior of them, Joakim Carleson, exactly the same is said. But this is not the end, and the President continues as follows. “However, there is reason to more thoroughly examine the consequences for Joakim Carleson’s doctoral thesis in the light of the criticism directed against him. The question is if reasons exist to cancel the decision to approve the thesis and as a result the doctor’s degree.” As far as one can judge from the diary of KI on the web, no such decision has been made up to now (January 2009). The last thing mentioned about KI’s sanctions is the following. “The additional step taken by KI in this case will be to inform the scientific journals in which Thomas Lundeberg’s and Joakim Carleson’s research results have been published about the report of the Expert Group as well as this decision”. Up to December 2008 this had not yet been done (see further chapter 17). Considering the weakness of the evidence the sentence of the President is based on (see chapter 13 and 14), it cannot be considered justifiable to take such steps as to call back Carleson’s dissertation or to suggest retraction of published articles.
16 General comments about the investigation

16.1 Challenges to the persons in charge at KI

When on March 30 2004 KI’s President Harriet Wallberg-Henriksson turned to the Research Council and asked for help to investigate suspicions of scientific fraud she said that “the range of Lundeberg’s research contacts and other activities is so large that Karolinska Institutet finds it difficult on its own to make a neutral and independent investigation of the charges raised against him”. For that reason, it should have been of utmost importance both in the internal investigation at KI and the one later carried out at the Research Council to thoroughly analyse possible challenges. No indications that this happened can be found in the reports either of KI or the Research Council. On the contrary, it is evident that such an investigation was never made. Nevertheless, challenges are easy to find in the case and as earlier described this also applies to the KI President (see chapter 15). More serious objections can be raised against the main witness on whom both KI and the Research Council base much of their criticism against Thomas Lundeberg and Joakim Carleson. That witness is Indre Bileviciute-Ljungar, also a former doctoral student in Lundeberg’s research team. During the first half of the 1990’s she had a love affair with Carleson who was responsible for ending it in 1996. By chance, this was the same year when the three thesis articles included in the investigation of the Research Council were completed and published. During the time after the separation between Bileviciute-Ljungar and Carleson, the working atmosphere in the laboratory was said to be negatively affected according to several unanimous testimonies. It was even necessary to make sure that the two of them worked in different rooms. In other respects also, there are many question marks around the statements of Bileviciute-Ljungar (see chapter 6.1, 13.4 and 14). It may even be that she is the one who ought to be examined for possible
misconduct in research. That she was instead allowed to be the one on whom large parts of the evidence against Lundeberg and Carleson rests cannot be seen as anything else but scandalous.

The person whose statements should have been reviewed most carefully is Kerstin Uvnäs Moberg. This however was not done at all. It was she who, via an allegation forwarded to the Ethical Council at KI in June 2002, started the ball rolling. Later on she kept it going by the submission of large numbers of accusations against Thomas Lundeberg to KI, the Research Council, the Police, the Swedish Security Service, the Swedish Economic Crime Authority and, last but not least, the Government (see further chapter 17). Uvnäs Moberg has a complicated relationship with KI, and has without success applied for several professor positions there without success. This includes the professorship in integrative physiology given to Harriet Wallberg-Henriksson (see chapter 4.2). In all cases referred to, Uvnäs Moberg appealed against the decisions but never managed to bring about a change. In at least one case her indignation may be understood. It referred to a position for which the Minister of Education, Carl Tham, and the Government had contributed funds as part of a drive aiming at increasing the number of female professors (as the under-represented sex). One of three women that had been recommended by KI to the Research Council, the authority that worked out the proposal for the disciplines of the planned positions, was Uvnäs Moberg. When it came to appoint the holder of one of the two positions allocated to KI, it was however not she but Harriet Wallberg-Henriksson (not earlier proposed) who was chosen. The relationship between these two was therefore tense and of such a character that the latter should perhaps have avoided concerning herself with the accusations against Lundeberg.

Kerstin Uvnäs Moberg and Thomas Lundeberg began their cooperation in oxytocin studies in the beginning of the 1990’s, and this resulted in a number of common scientific articles. In order to start
commercially developing their discoveries, they submitted three patent applications in 1997 with the assistance of Karolinska Innovations AB. The following year they set up the company EntreTech Medical AB together with three other persons. They delivered additional patent applications in the name of this company and in 2001 established yet another company, Eustasia AB. However, after some time cracks began to show, both in the research and the business contacts, and in June 2002 Uvnäs Moberg forwards her first allegations against Lundeberg to KI (the Ethical Council). Among others these concern invoices sent to their joint company and a patent application about cholecystokinin that Lundeberg submitted and which according to Uvnäs Moberg resembles an earlier patent application regarding oxytocin they have written together. The reader is by now probably aware of the almost paranoid character of all the accusations against Lundeberg that Uvnäs Moberg and her representative Kurt Björkholm have delivered over a long succession of years (Table 3). Nothing of this is taken up and discussed by either KI (Jan Carlstedt-Duke) or the Research Council (the Expert Group and its auditors). This causes both surprise and puzzlement. Of course it should have been made clear how the information obtained from Uvnäs Moberg was evaluated. In the absence of this, suspicions of a hidden agenda that will not bear the light of day easily arise. Such fears are strengthened when the veiled threats that occur in different statements are revealed. One example taken from a letter sent by Kurt Björkholm to the President and the Dean of KI (probably in December 2004) cites in the introduction: “Even if KI and I together have made some progress in the Lundeberg investigations, I must call attention to that much remains for KI to resolve”. A little later on he continues in the following way. “As the events around the KI investigation have developed, with elements of police, tax and economic crime inquiries as well as the involvement of the security service, the internal conditions of KI from the Presidency of Hans Wigzell have become known in wide circles of society (remember that it is Uvnäs Moberg
and/or Björkholm that has contacted all these authorities without any real result). Many persons in positions with great responsibility wait for KI to take hold of its history and clean up in those parts that do not belong in a state-owned medical university with a high international reputation and an association with the Nobel Prize. If KI is of another opinion, the matter must be transferred to other investigating authorities, which probably would not be in the interest either of KI or of society”. At the end of the letter another warning of a similar type is spelled out. “It is now up to KI to show determination before the information I still dispose slips through my fingers to other persons and authorities that will have to take over where I finish my KI investigation if KI holds a passive attitude”. Neither KI nor the Research Council make any comments to this type of message or any of the many other peculiarities found in the correspondence from Uvnäs Moberg and Björkholm. How should this be interpreted? It is easy to get the impression that the two of them are treated with kid gloves in order to prevent the presumptive “bomb” from bursting.

According to the Public Administration Law (förvaltningslagen) an employee in an official authority (which both KI and the Research Council are) is not allowed to take part in the handling of a case if he or she is challengeable. The law text gives examples of what a challenge is. In a broad sense, it can be said to be anything that may affect the trust for his or her neutrality in the case. The law further says that anyone who knows of any circumstance that may imply a challenge against him or her has to voluntarily make that known. With regard to the Lundeberg-Carleson case, the two main officials at KI have been the President Harriet Wallberg-Henriksson and the Dean Jan Carlstedt-Duke. As described earlier, circumstances exist that Wallberg-Henriksson ought to have reported and which should have been a reason for her to avoid concerning herself with the case. In 1998 in connection with the appointment of a professor in integrative physiology at KI, Kerstin Uvnäs Moberg appealed through her lawyer Toivo Öhman against the decision to appoint Wallberg-Henriksson
Table 3. Allegations from Kerstin Uvnäs Moberg (KUM) and her representative Kurt Björkholm against Thomas Lundeberg and others

<table>
<thead>
<tr>
<th>Point of time</th>
<th>Receiver</th>
<th>Content</th>
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</thead>
<tbody>
<tr>
<td>2002-01-14</td>
<td>Uppsala Police</td>
<td>Burglary SLU, theft of patent acts, computer intrusion</td>
</tr>
<tr>
<td>2002-06-11</td>
<td>Ethical Council KI</td>
<td>Theft and exploitation of research, etc</td>
</tr>
<tr>
<td>2002-11-20</td>
<td>Ethical Council KI</td>
<td>Registration of students</td>
</tr>
<tr>
<td>2003-03-03</td>
<td>Uppsala Police</td>
<td>Burglary SLU, theft samples</td>
</tr>
<tr>
<td>2003-07-06</td>
<td>Uppsala Police</td>
<td>SLU &amp; KI, poisoning oxytocin, disease and deaths</td>
</tr>
<tr>
<td>2003-09-23</td>
<td>KI</td>
<td>Patent, animal exp, plagiarism in unpublished manuscript</td>
</tr>
<tr>
<td>2004</td>
<td>Security Service</td>
<td>Lundeberg, research fraud</td>
</tr>
<tr>
<td>2004-01-14</td>
<td>Täby Police</td>
<td>Illegal threats and slander</td>
</tr>
<tr>
<td>2004-02</td>
<td>KI</td>
<td>Patent, plagiarism</td>
</tr>
<tr>
<td>2004-10-14</td>
<td>KI</td>
<td>Wrong title and address for Lundeberg in dissertation</td>
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<td>2004-10-25</td>
<td>Economic Crime Authority</td>
<td>Theft of documents, CD, USB-sticks, etc from KUM’s home</td>
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<td>2004-10-29</td>
<td>Research Council</td>
<td>Comments to letters from Lundeberg’s lawyer</td>
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<td>2004-11-23</td>
<td>Research Council</td>
<td>Lundeberg’s takeover of KUM’s research</td>
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<td>Research council</td>
<td>Withdrawal of the former official letter</td>
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<td>2004-12</td>
<td>KI</td>
<td>Inquiry of Lundeberg</td>
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<td>2005-07</td>
<td>KI, SLU</td>
<td>Letter to the Presidents of KI and SLU</td>
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<td>2005-07-15</td>
<td>Bar association</td>
<td>Charges against Lundeberg’s lawyer</td>
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Table 3 - continuation. Allegations from Kerstin Uvnäs Moberg ...

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<tr>
<th>Date</th>
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<th>Event Description</th>
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<tr>
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<td>Research Council</td>
<td>Comments to official letters from Lundeberg’s lawyer</td>
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<tr>
<td>2005-09</td>
<td>Research Council</td>
<td>Ditto</td>
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<td>2005-11</td>
<td>Research Council</td>
<td>Request for meeting with the Expert Group</td>
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<td>2006-02-15</td>
<td>KI</td>
<td>Charges against KUM’s own student for fraud</td>
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<tr>
<td>2006-03-03</td>
<td>KI</td>
<td>Ditto</td>
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<tr>
<td>2006-08-20</td>
<td>Government, KI</td>
<td>Inquiry of Lundeberg</td>
</tr>
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<td>2006-09-11</td>
<td>Government, KI</td>
<td>Ditto</td>
</tr>
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<td>2006-11-13</td>
<td>Government</td>
<td>Criticism of KI</td>
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<td>2007</td>
<td>SLU</td>
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<td>Uppsala Police</td>
<td>Charges against KUM’s own student for theft of tissue</td>
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<td>Gothenburg University</td>
<td>Charges against former co-workers of Lundeberg etc</td>
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<tr>
<td>2007-06-25</td>
<td>Ethical Council KI</td>
<td>Charges against 27 scientists and some 10 companies, etc</td>
</tr>
<tr>
<td>2007-07-30</td>
<td>Government</td>
<td>Request for inquiry of KI and SLU</td>
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</table>

SLU, the Swedish University of Agricultural Sciences
What was claimed in her appeal was among others the following. “As described above, Uvnäs Moberg has, in all the respects normally considered during the assessment of scientific skill, considerably stronger merits than Wallberg-Henriksson with regard to the number of years as active researcher, the number of publications, and the number of supervised students. The numerical differences are remarkably large and in addition she is not only held in high esteem as a pedagogue but also has a considerably longer experience of teaching and in more fields than Wallberg-Henriksson”. The latter responded to these comments in an official statement. When one reads Uvnäs Moberg’s appeals, one cannot fail to notice the rage and indignation she felt at this and other earlier professor nominations at KI. The same fury has been expressed in several official notes submitted by Uvnäs Moberg and her representative in the case described here, which deals with something completely different. It cannot be excluded, and must even be considered likely, that before her decision in the Lundeberg-Carleson case Wallberg-Henriksson worried about the possibility that Uvnäs Moberg would take up the old appointment affair and claim lack of neutrality in case of a negative outcome from her point of view. Therefore the possibility that this may have affected the decision, consciously or unconsciously, cannot be excluded. There was also perhaps other information of a more personal character that Uvnäs Moberg had procured and that could possibly be used as a means of bringing pressure on Wallberg-Henriksson.

With regard to Jan Carlstedt-Duke it is more difficult to judge if any circumstances of a challengeable nature existed. It is however difficult not to feel distrust when Kurt Björkholm in a letter to the KI President thanks Carlstedt-Duke “for always offering help under pleasant conditions and assisting with investigations”. This is not the tone that otherwise characterizes Björkholm’s statements. It is also remarkable with what obligingness Carlstedt-Dukes has taken up the allegations coming from Uvnäs Moberg and Björkholm. These have usually been
handled promptly and have resulted in memorandums to the KI President proposing far-reaching measures. If the accusations were well founded, then Carlstedt-Duke’s way of acting could be seen as an example of administrative efficiency. However, as discussed earlier, the evidence presented to prove the guilt of Lundeberg and Carleson does not withstand closer examination. The question marks become difficult to straighten out when the conclusions, as in Carlstedt-Duke’s letter to the KI President from October 4 2004 (5463/03-629) recommend: (1) that Thomas Lundeberg is reported to the Ethical Committee at the Research Council for inquiry of plagiarism and scientific misconduct; (2) that Thomas Lundeberg is reported to the State Disciplinary Board with a request that, if the investigation of the Research Council confirms the suspicions of scientific fraud, he is dismissed from his position, and; (3) that Thomas Lundeberg is suspended from all activities at KI as long as the investigation goes on”.

And for what reason did Carlstedt-Duke sit down with the chief veterinary of KI, Solveig Tjäder, on January 10 2003 and rewrite the report about animal experiments she had first written on November 5 2002 (4998/02-629). In this earlier statement one can read that the doctoral student Jian Li had made operations on rats for which no ethical permission was available. Li at this time had Professor Andris Kreicbergs as supervisor and the experiments that Li had made were an integral part of a project for which Kreicbergs was the principal investigator. Lundeb erg was not directly involved in this project but had collaborated with Kreicbergs in other studies. Notably, Tjäder’s report had already been rewritten once earlier. This was on November 20 2002 and the person responsible was Gustaf Dyrssen, a lawyer in private practice working as a legal consultant for the Director’s Office at KI. In the so called “summary” of Tjäder’s note made by Dyrssen (equally long or longer than the original) Lundeberg is made responsible although it was not his doctoral student who had carried out the experiments and nor was it one of his projects. Dyrssen concludes his
note as follows. “The examiners conclusion is therefore that Lundeberg most probably and intentionally has tried to mislead Kreicbergs and therefore it is primarily Lundeberg who should be made responsible for the situation that resulted”. In the next sentence regarding the legal consequences that completes the letter Dyrssten writes: “To allow the animal experiments in question to be performed without permission may imply a more than slight crime against paragraphs in the animal protection law that lead to punishment. This matter should be reported to the police, and in this context it should also be examined to what extent cruelty to animals has been committed”. To have this noted was probably the main purpose in letting Dyrssten “summarize” Tjäder’s letter. Who gave him this task is not clear. It can also be remarked that his statement, although it has a registration number (4998/02-629), lacks a signature

In the next rewriting of Tjäder’s letter, the one that Carlstedt-Duke assisted with on January 10 2003 (4998/02-629), the Lundeberg’s guilt is stressed even further. The final sentence reads as follows: “It can however be considered as beyond all doubt that Thomas Lundeberg has the main responsibility for the performance of the experiments and the President is therefore urged to suspend Thomas Lundeberg from the right to execute or supervise animal experiments at KI for all future”. Another month later, February 11 2003, the then President of KI, Hans Wigzell, reports the animal experiments to the Environmental Office in Solna (4998/02-629). In the end of his letter it is said that: “Karolinska Institutet asks the supervising authority to examine to what extent Thomas Lundeberg, Andris Kreicbergs or anyone else has broken the animal protection law, any other applicable law, or has otherwise acted in an unacceptable manner. The institute further requests that – if crimes have been committed – the supervising authority takes the necessary steps for the further handling of the case. Finally, we wish to advise that the President has decided to suspend Thomas Lundeberg from the right to lead experiments and that all animal experiments must be conducted in close co-operation with other researchers in the department”.

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The Environmental Office in Solna handed the case over to the Public Prosecutor for a criminal investigation. In May 2004, in reply to a written inquiry, Lundeberg’s lawyer Christer Pehrson receives a message from the Chief Prosecutor Mats Bergman at the Public Prosecutor Office in Stockholm (C 2-11-964-03) which contains the following: “On request, I just want to let you know that Lundeberg is not suspected of any crime in the case mentioned above. I have, as I said, given instructions for some further measures, including a questioning of Lundeberg, but not as a suspect”. Another half year later, October 14 2004, the Chief Prosecutor takes the following decision: “No reason exists to suspect that Lundeberg has committed a crime. Therefore, no preliminary investigation should be initiated”. Apparently, a number of high officials at KI, including the chief veterinary, the legal consultant, the Dean of Research, and the President, had misjudged the situation. As discussed earlier (see chapter 5.2) the whole story is remarkable and it may be suspected that irregularities have occurred in the handling of the case by KI. There is no logical reason to view Lundeberg as the one responsible for procuring an ethical permission for animal experiments made by a doctoral student of Professor Kreicbergs within a project for which the latter is the principal investigator.

A large question mark must also be placed for the manner in which Carlstedt-Duke handled the documents and the other information he received from Indre Bileviciute-Ljungar, and which in his letter to the KI President of February 20 2004 (1295/04-608) he presented as strong evidence of plagiarism in the first three thesis articles of Joakim Carleson. As mentioned earlier, the love affair between Bileviciute-Ljungar and Carleson was ended at the time these studies went into press. The tension between them was then so marked that it affected the atmosphere in the laboratory as a whole. Things went so far that Lundeberg as the group leader had to arrange that they worked in different rooms. According to information I have received, Carlstedt-Duke was not unaware of these problems, but in his report he does
not mention them with a single word. If he did not know about the situation, Bileviciute-Ljungar should have informed him, which she evidently did not (at least it is not mentioned anywhere). Moreover, as specified above (see chapter 6.1 and 13.4) there were other reasons to look at her statements with suspicion and carefully check their credibility. Carlstedt-Duke did not do so. It must also be considered as a sign of lacking competence to use unpublished manuscripts (the integrity of which was never checked) in an investigation of possible plagiarism. Can it be possible to plagiarize a non-existent publication?

16.2 Demands for neutrality at the Research Council

The KI President Harriet Wallberg-Henriksson in March 2004 addressed the Research Council and requested a “neutral and independent investigation”. But how aware was she of the circumstances exposed above? And what did the situation at the Research Council become? Those who given the responsibility were the members of the Expert Group for Questions of Misconduct in Research that stood directly under the Board of the Research Council. At the time in question, this group was made up of the Justice in the Supreme Administrative Court Kjerstin Nordborg (chairman), Docent Birgitta Forsman, Professor Dan Larhammar, Professor Birgitta Strandvik and the Administrative Director in the Research Council, Björn Thomasson. With regard to Justice Nordborg (one of the highest jurists in Sweden), it can again be noted that she missed the basic demand to look after that the investigation was carried out in agreement with: (i) the Constitutional Law (neutrality and matter-of-factness); (ii) the Public Administration Law (giving the accused access to incoming material) and; (iii) the Archives Law (filing documents of evidence). This oversight strongly contributed to the lack of law and order in the investigation. Here, a major responsibility rests also with Björn Thomasson, who chiefly dealt with
incoming and outgoing mail and should have seen that a diary was kept according to existing regulations. As has been exposed during discussions he consciously neglected to give Thomas Lundeberg information about and access to official letters that were submitted by Kerstin Uvnäs Moberg and her representative during the course of the investigation. Birgitta Forsman is a senior lecturer in philosophy. Her role in the inquiry is unclear, but she has of course the same liability as the rest in the group.

Dan Larhammar is professor of molecular cell biology in the Department of Neuroscience, Unit of Pharmacology, Uppsala University. He is the member of the Expert Group who professionally lies closest to Lundeberg, whose work largely deals with the role of the nervous system and different neuropeptides in the process of inflammation. There is however an important difference between the two of them. Lundeberg can be seen as a representative of alternative or complementary medicine. His research has devoted considerable interest to the use of acupuncture as well as laser and vibratory methods in the treatment of pain. In contrast, Larhammar has gained a reputation and an image as a “Swedish chief sceptic” [85]. This refers to his very marked and active resistance to alternative methods and drugs in medicine, among them acupuncture. As a part of this “educational work” he has functioned as chairman in the association Science and Education, the Swedish Sceptics and has been an author in its magazine Folkvett (common sense). He has also criticized alternative medicine in the Swedish Medical Journal [86] and other publications. Larhammar’s homepage at Uppsala University (www.anst.uu.se/dla05000) has contained a number of essays about what he calls “pseudoscience”. Many of his opponents consider him aggressive, and in 2006 he was elected Årets Folkvätte (the Gnome of the Year) by the association SARA (the Swedish Aids Group Against Racism). Whether or not the motivation should be seen as honourable is up to the reader to decide. It reads as follows: “He receives the prize for his persistent work as gate-
keeper and for the manner in which he confines the personnel of the medical service within the barriers of mechanistic science. Through his active engagement in the association Science and Education, the Swedish Sceptics, a Swedish offshoot of the international sceptics movement, the aim of which is to taunt things one considers as pseudo- or non-science, he has initiated a witch-hunt on upholders of an alternative view on health”. On the Internet address www.suntliv.nu it is also possible in one and the same article to read about Larhammar and Lundeberg as representatives of contradictory views regarding alternative or complementary medicine [87]. The web site in question has been produced by AFA Insurance AB and is meant for personnel in the health care system. Against this background, it must be considered likely that Larhammar already had a negative view of Lundeberg before the investigation had started. The Research Council was informed about this possibility by Lundeberg but evidently took no notice. Accordingly, nothing is remarked about this in the report of the Expert Group (including Larhammar as a member). Neither there nor in the statement of the auditors, is the word challenge ever mentioned. To observe the Public Administration Law, Larhammar should have informed the chairman of the group about the circumstances mentioned above. Better still, he should have refrained from taking part in the handling of the case.

The third of the science representatives in the Expert Group was the paediatric professor Birgitta Strandvik. Several persons have expressed hesitance about her status to the Research Council (and other authorities), as did Thomas Lundeberg and his lawyer Christer Pehrson. In a letter dated June 20 2006 addressed to the Chairman of the Board of the Research Council, Bengt Westerberg, they called attention to the fact that Strandvik, without proper references, had published the same results in more than one scientific journal, one of the offences that Lundeberg likewise was accused of. Strandvik’s case concerned three articles of which she was the senior (responsible) author. They deal with the role of polyunsaturated fatty acids in the
diet of pregnant female rats for different health parameters of the offspring [88-90]. According to a letter from the Administrative Director Jan Stålhammar (who succeeded Björn Thomasson), the chairman of the Board, Bengt Westerberg, and the Director-General, Pär Omling, in the Research Council, decided that a foreign expert should investigate the suspicions. The one delegated this task was Professor Lars Vatten from Trondheim in Norway. In his report, dated September 20 2006, he declared that a table with essentially identical results was found in all three of the articles. This table showed the fatty acid composition of the phospholipids in blood serum at the age of three weeks in the offspring. He further reported that there was a double publication regarding the weight development of the animals in two of the studies [88, 90]. In his discussion, Vatten says that the same results assuredly have been presented in more than one publication which, according to him, is a violation of established practice. However, he hesitates about whether the offence is serious enough to be classified as scientific misconduct or should rather be seen as an example of “sloppiness”. In his opinion it is up the Research Council to decide this.

A correction by Birgitta Strandvik was printed in the September 2006 issue of American Journal of Physiology [91], but not in the other journals concerned. This happened about three months after Thomas Lundeborg via his lawyer Christer Pehrson had informed the Board of the Research Council about the conditions later confirmed by Professor Vatten. In the correction it is said that the material shown in Table 1 and 2 already earlier has been published in the article in British Journal of Nutrition [88]. But it was not mentioned that the same material was also published in Clinical and Experimental Immunology [89]. Strandvik’s explanation was that the three articles had been submitted more or less at the same time and therefore it had not been possible to refer to the origin. However, a simple check indicates that this is not true. The first article [88] was originally received by the journal on September 9 2003, came back after revision on February 13 2004, and
was accepted for printing six days later. When the second study [89] was originally submitted is not indicated but it was not accepted until May 4 2004, almost three months after the acceptance of the first article. During this time, Birgitta Strandvik and her co-authors had all the chances in the world to let the journal know that the second study [89] contained results originating from the first one [88]. This possibility was even more pronounced with regard to the third article [90]. It took until October 28 2004 before this work, after revision, was approved for publication. Strandvik’s excuse is embarrassing and points to a tendency to use untruths in stressed situations. It is likewise compromising to see how the authors tried to hide the facts that Strandvik admits in her correction. In the first study [88] the fatty acid composition of the phospholipids is given as mean and standard error, in the second [89] as median and range, and in the third [90] as mean and standard deviation. In this way, the numbers given in the three articles are not identical and make it difficult for the reader to realize that it is exactly the same result in all three cases. To choose to present the results in three different units must be considered remarkable. It could hardly have had any other purpose than to conceal the identity of the results in the three articles from the readers. For this reason, the explanation of Strandvik appears even more troublesome. She not only lied when she said that the aspect of time had made it impossible to refer to the origin [88] in the two latter studies [89, 90], but the authors had also tried hard to disguise the identity of the results in the three articles.

According to a letter of February 14 2007 from Professor Calder, Chief Editor of the journal where the material was first published [88], it is obvious that the results in the above-mentioned tables are the same in all three articles. According to the rules applied by the *British Journal of Nutrition*, the authors themselves own the rights to their articles and can use material from them in other publications, but only if the source is indicated. Strandvik and collaborators did not do this.
Professor Calder also noticed points between the three studies that do not agree although the results in the tables are the same. In the first study [88], female rats in the offspring were picked out at three weeks of age (ten per group) and then used in the subsequent analysis. In the second study [89], nothing is mentioned about the separation of female from male rats in the offspring. Professor Calder interpreted this to mean that rats of both sexes were tested. In the third study [90], three-week-old rats of both sexes were used for the measurement of the fatty acid content of the serum phospholipids, but the sexes were separated in the later parts of the investigation. In spite of these differences in experimental set-up, the results in Table 2 are the same in all three articles.

How then do the double and triple publications of Birgitta Strandvik [88-90] compare with the double publication [83, 84] for which Thomas Lundeberg is made responsible and convicted (see chapter 13.5)? In Strandvik’s case the one and the same table with 63 values was used in three different articles. No cross citations between the articles were made, although this was not impossible due to time aspects, as claimed by Strandvik. Moreover, the results were given in three different units in the three papers, indicating that the authors wanted to conceal their identity for the readers. In the Lundeberg case, a part of a figure in one study [84] included 20 means with standard deviation originating from a figure in another study [83]. There, these 20 values referred to the measuring point 20 minutes in a number of time curves that totally embraced 240 values. Both these studies were part of a collaboration between Lundeberg’s group at KI and a laboratory in China. Lundeberg and the doctoral student who was the first author on the first-mentioned article [84] gave the following explanation. The values that partially overlapped between the two papers (20 of 240 values, i.e. only slightly more than 8%) belonged to the part of the study performed in China. When the results collected there were sent to Stockholm to be incorporated into the larger part of
the study carried out at KI, the existence of the small overlap with parts of one figure from a study recently published in cooperation with the same Chinese group was not apparent. If Kerstin Uvnäs Moberg, who was one of the authors on the article [84], had told her co-authors about the duplication she had discovered, the journal could easily have been informed and a correction printed. Instead, Uvnäs Moberg chose to report the matter to KI (via her representative), from where it is later forwarded to the Research Council. Although Lundeberg has given a reasonable explanation for the duplication of about 8% of a part of a figure in one study [83] in a figure in another study [84], the Research Council convicts him. Concerning the double- and triple-publication made by Birgitta Strandvik, a member of the Expert Group that finds Lundeberg guilty, the Research Council in a letter from October 26 2006, after considering the report of the Norwegian examiner, says: “After an overall judgement, the Research Council does not find reason to question the suitability of Birgitta Strandvik to express herself as a medical expert in matters of good scientific practice”. The letter is signed by the Director-General Pär Omling and the Administrative Director Jan Stålhammar. The decision indicates that the Research Council finds it acceptable that its Expert Group for Questions of Misconduct in Research contains members who are guilty of scientific misconduct.

The actions of the Research Council in this matter cannot be seen as anything else than an aggravating example of lacking neutrality and camaraderie. One of its own that has even admitted wrongdoing is considered not guilty whereas another person is condemned for a much smaller fault. In a leader from January 15 2008 in the newspaper Dagens Medicin (Daily Medicine), the Chief Editor Per Gunnar Holmgren comments on the case in the following way. “Last year Professor Birgitta Strandvik was found to have triple-published research results in different journals. In spite of this she remains as a member in the Research Council’s Expert Group for Questions of Misconduct in Research. Now Bir-
Birgitta Strandvik is once again examined for scientific misconduct at the same time as she will represent the Research Council next week in a debate at Karolinska Institutet about scientific fraud. With what credibility will Birgitta Strandvik appear there? How will her appearance affect the authority of the Research Council?"?

16.3 The Research Council has not acted independently

In December 2004 the Expert Group for Questions of Misconduct in Research in the Swedish Research Council appointed three experts to assist in the investigation of Thomas Lundeberg and Joakim Carleson. These three were Professor Rolf Andersson from Linköping, Professor Emeritus Gunnar Bergenholtz from Gothenburg and Docent Sighild Westman Naeser from Uppsala. Andersson is a pharmacologist, Bergenholtz an endodontologist, and Westman Naeser a former cytopathologist, now working in the Swedish Medical Products Agency. In the report from the Expert Group dated May 18 2006, not a word is mentioned about the basis on which these persons were chosen. Via his lawyer, Thomas Lundeberg on November 19 2004 had expressed a wish that the examiners should have legal competence. This was motivated by the character of the investigation KI requested on March 30 2004, including such things as ethical permissions, economic irregularities, job applications, and patent applications. In a letter from Björn Thomasson, Lundeberg’s request was dismissed with reference to the guiding principles for the Expert Group set up by the Board of the Research Council. He says there that the Expert Group “does not find any reason to deviate in this case from the rule that the auditors should have scientific competence within the specific field brought to the fore in the demand for an inquiry”. However, this explanation does not agree with the guiding principles which say: “in addition, as special members of the group are appointed those experts within the field in question that are re-
quired”. No strict limitation is made to scientific qualifications, which is rather the interpretation made by Thomasson and/or the Expert Group. It is of course not only scientific know-how that is needed to analyse questions of the type presented by KI, including ethics in animal experiments, economic matters, job applications, and patent applications. Did Andersson, Bergenholtz and Westman Naeser have any expert knowledge in these matters? In his letter, Thomasson points out that the Chairman of the Expert Group is a Justice of the Supreme Administrative Court. What that legal expertise meant (or did not mean) has been illustrated earlier. It was, per se, later decided to restrict the examination of the auditors, but not until April 19 2005, i.e. four months later. In between, and after the appointment of the auditors, it had been accepted that the investigation should include all items taken up by the President of KI in her letters to the Research Council.

Once again, the reader is reminded that Harriet Wallberg-Henriksson, when she turned to the Research Council in March 2004, asked for a neutral and independent inquiry. That this did not come about is a sad fact. In the report of the auditors from January 24 2006, nothing is said about the challenge and the lack of reliability of several of the accusers and witnesses. In this way, the objectivity of the investigation was bypassed. Furthermore, the experts chose to base their judgement on rules and regulations that in several cases had not yet been introduced at the time when the studies in question were performed. There are also statements which indicate that the auditors in several instances did not make an independent examination but just accepted what Jan Carlstedt-Duke expressed in his statements. In particular, this concerns the information received from Indre Bileviciute-Ljungar. The auditors say that they have been able to confirm Carlstedt-Duke’s observations of similarities in both text and results between the third of Carleson’s thesis articles and the “unpublished manuscript” of Bileviciute-Ljungar. How this was done is not clear. No
copy of the latter document can be found in the archives of the Research Council.

If the examiners had made their own check, they should have noticed that the similarity in the results was not at all as striking as maintained by Carlstedt-Duke. It is also highly remarkable that they, like Carlstedt-Duke, never made a comparison between Carleson’s articles and the articles eventually published by Bileviciute-Ljungar. After all, this is a necessary comparison to make if one wants to claim plagiarism. They would then have detected the most questionable revision she had made in her rejected manuscripts before submitting them to new journals. This may even constitute a case of fraudulent behaviour. The examiners seem to have been blind to the dubiousness connected with the statements of Bileviciute-Ljungar, and have entirely concentrated themselves on finding inaccuracies in the studies of Carleson and Lundeberg. And why did they never take the step to check the literature for citations of the latter papers (e.g. via the database Science Citation Index) to see if any support for the findings presented in Carleson’s thesis exists there? The one-sidedness in the investigation and in the criticism appears to be boundless. It seems as if they were out to convict the two accused persons at any price, rather than make an unbiased and fair judgement. What makes things even worse is that the Expert Group, which is supposed to have the expertise required for a competent and legally secure investigation, has accepted uncritically the auditors’ statements. The worst perhaps is that the evidence the judgement is based on has not been possible to throw light on. The Research Council has not been able to exhibit any copies of the “unpublished manuscripts” that both the auditors and the Expert Group refer to as evidence of plagiarism in their reports.

In a similar manner, the Registrar of the Research Council have let me know that they cannot find any copies of the documents that the auditors bring up in their report with the following formulation. “Indre Bileviciute-Ljungar has submitted documentation that includes infor-
mation about joint perfusions and compilations of data from experiments carried out during the period August 1991 to October 1992. This documentation also includes print-outs of statistics, extraction protocols and RIA results per animal, as well as the unpublished manuscripts printed out from an old computer”. These must be the same documents that Jan Carlstedt-Duke mentions in his report to the KI President from February 20 2004 (1295/04-608). This material was later used by both the Expert Group and Harriet Wallberg-Henriksson as support for the correctness of the revision Bileviciute-Ljungar had made of her “unpublished manuscripts” before they were published. Jan Stålhammar at the Research Council claims in a letter that according to the earlier Secretary in the Expert Group (Björn Thomasson) the documents in question were returned to Bileviciute-Ljungar after the completion of the investigation. However, when I have asked her for copies, she has referred me back to the Research Council. Even more remarkable is that the Registrar of KI is also unable to disclose these documents. Thus, what is presented as important evidence for the guilt of Lundeberg and Carleson, both by KI (1295/04-608) and by the Research Council (312-2004-821 and 312-2004-822), does not appear to even exist!

16.4 The hidden agenda

After going through KI’s and the Research Council’s investigation and conviction of Thomas Lundeberg and Joakim Carleson, one must ask the reason for all the deficiencies brought to light. The ultimate responsibility rests on the KI President, Harriet Wallberg-Henriksson, and the Director-General of the Research Council, Pär Omling. At KI the Dean of Research, Jan Carlstedt-Duke, is also accountable. At the Research Council, the Chairman in the Expert Group for Questions of Misconduct in Research, Justice Kjerstin Nordborg, and the Secretary of this group, Administrative Director Björn Thomasson, can in a simi-
lar manner be held responsible for what has occurred. It is difficult to believe that all the shortcomings found in the investigation can be explained by isolated blunders and neglect. The mistakes are too many and too regularly occurring to be due to mere chance. Something that may have contributed, consciously or unconsciously, is all the challenge-like relations that have been observed. What is also a cause of confusion is that the several years long inquiry was initiated by three evidently coordinated reports containing different allegations against Lundeberg submitted to KI on June 10, 11 and 12 in 2002. The authors were the professors Kerstin Uvnäs Moberg, Andris Kreicbergs, Per Hansson, and Zsuzsanna Wiesenfeld-Hallin. Slightly more than a year later, in September 2003, Indre Bileviciute-Ljungar contacted Jan Carlstedt-Duke and came to be a witness that played a major role in convicting Lundeberg and Carleson.

According to Bileviciute-Ljungar herself, her complaint was made after she met Uvnäs Moberg and was told about the ongoing investigation of Lundeberg. At this time Bileviciute-Ljungar worked under Per Hansson in the Karolinska Hospital as a part of her specialist education as a physician. At the same time, Andris Kreicbergs was providing her with premises and resources for her research. Considering what has been described earlier, it is unavoidable to get the impression that a network of persons has been driving a partly hidden agenda in order to throw suspicions on and damage Lundeberg. What then comes to mind are things like Uvnäs Moberg’s allegation campaign against Lundeberg (see chapter 19) is still ongoing; Kreicbergs’ accusations against Lundeberg for the lack of an ethical permission for animal experiments performed by Kreicbergs’ own student; and the crashed love affair of Bileviciute-Ljungar and Carleson. As is evident from other documents in the investigation, there were disturbances in the relations between Lundeberg on the one side and Hansson as well as Wiesenfeld-Hallin on the other. In the case of Hansson, this e.g. concerned his views on acupuncture and its usefulness as a treatment
method. With Wiesenfeld-Hallin the problem was a dispute from the mid 1990’s caused by contradictory findings about the effects of the neuropeptide galanin on pain. It was this among others that she took up in her report together with Hansson to the Ethical Council at KI in 2002 (see chapter 17).

17 The principle of equal treatment

A basic rule in Swedish as well as EU law is the principle of equal treatment. The first chapter in the Swedish Constitution deals with the form of government. In its second paragraph it is said that “the official power shall be executed with respect for the equal value of all people and for the freedom and dignity of the individual”. In the ninth paragraph this basic principle is further developed. “Courts as well as administrative authorities and others that carry out tasks within the official administration shall in their activities pay attention to the equality of all in the eyes of the law and observe matter-of-factness and neutrality. Law (1976:871)”.

As described earlier in this book, these fundamental rules were not followed in the examination of Thomas Lundeberg and Joakim Carleson carried out by Karolinska Institutet and the Swedish Research Council. As revealed in chapter 16.1, 16.2 and 16.3, the main persons both among those in charge of the investigation at KI and the Research Council, as well as among the witnesses, hold imputations of a critical character that were never considered in the judgements. These circumstances have seriously damaged the request for neutrality in the handling of the case. In a similar manner, the material studied shows large defects, and what is presented as evidence often lacks a factual foundation. For example, neither KI nor the Research Council are able to display essential parts of the “unpublished manuscripts” and the other documents provided by Indre Bileviciute-Ljungar and referred to as major evidence for plagiarism (see chapter 13.4 and 16.3). The Re-
search Council was unable to produce anything at all of these so-called proofs. It therefore seems likely that the Research Council examiners have just reproduced what they were told by Jan Carlstedt-Duke, and that they never themselves carefully inspected the exhibits. As mentioned earlier (see chapter 6.1), it so happened that the two convicted persons, Thomas Lundeberg and Joakim Carleson, never were shown this material or given the opportunity to comment on it.

Lundeberg’s lawyer Christer Pehrson on June 20 2006 wrote to Bengt Westerberg, Chairman of the Board in the Research Council, and pointed out that one of the members in the Expert Group, Birgitta Strandvik, was guilty of one of the offences his client was accused of. He referred to her publication of the same material in more than one journal without quoting the source. In Strandvik’s case it dealt with a triple publication and a much larger amount of data than in the two articles of which Lundeberg was one of the authors. An external auditor confirmed that Strandvik had published the same results in three different articles (and journals), but it was left to the Research Council to decide how serious the fault was. She was cleared of suspicion of fraud and the Research Council did not see the offence as any reason to question her participation in the work of the Expert Group (see chapter 16.2). In Lundeberg’s case about 8% (20 out of 240) of the values in a figure from one study had been used again in another, due to misunderstandings with a collaborator in China, where the experiments in question had been carried out. This can be compared with Strandvik’s publication of one and the same table with 63 values in three different articles and no information to the readers. She later confessed to this, but told just one of the journals. Lundeberg was convicted for his offence by the examiners of the Research Council and its Expert Group with Strandvik as one of the members. As told above, the Director-General Pär Omling and the Administrative Director Jan Stålhammar at the Research Council did not express any criticism of Strandvik in their response to the letter from Lundeberg’s
lawyer. So obviously the Research Council did not comply with the principle of equal treatment, a basic paragraph both in Swedish and EU law. Their actions here show a disregard for law and order. The effects of this faux pas on their credibility have been discussed in a leader in *Dagens Medicin* (Daily Medicine) by the Chief Editor Per Gunnar Holmgren (see chapter 16.2)

The two persons who made the allegations on June 10 2002 and initiated the investigation roundabout against Thomas Lundeberg were Zsuzsanna Wiesenfeld-Hallin and Per Hansson (see chapter 5.2). Later they took part in the actions directed against Lundeberg. Those called *whistleblowers* who draw attention to suspect research fraud are usually other researchers who have read published articles and found oddities that later may be shown to be examples of fabrication, falsification or plagiarism. Science is a very competitive field both locally and internationally. Researchers struggle to make novel and important discoveries, to have their articles published in high impact journals, to receive grants for continued work, *et cetera*. In that situation two obvious risks appear. One is that you use a fraudulent behaviour in an attempt to gain advantages. Another risk is that suspicions of fraud are reported in order to damage rivals and opponents. As far as Wiesenfeld-Hallin and Hansson are concerned, there is reason to reflect on what motivated them. Like Lundeberg, the two latter worked at KI and within the same field, pain research. Moreover, they had both had controversies with Lundeberg due to conflicting results and/or irreconcilable views in specific questions. Therefore, it was certainly no neutral persons who forwarded the first allegations against Lundeberg to KI.

According to an old saying, people who live in glasshouses should not throw stones. This was possibly something that Zsuzsanna Wiesenfeld-Hallin and Per Hansson had forgotten at the time in question. On the Internet one can find home pages that list publications which, via computer-based text searches, have been found to show signs of
plagiarism. This may possibly but not necessarily indicate fraudulent proceedings. KI and the Research Council convicted Lundeberg for having copied text from his own never published manuscripts to other articles (it was a question of very closely related projects). By searching the home page just mentioned for the names Wiesenfeld-Hallin and Hansson something much worse was found, namely signs of plagiarism in earlier published articles by the authors themselves. I will here go through one example each for the two accusers of Lundeberg. The aim is to try to clarify what it all concerns and to what extent it can be seen as a deliberate acting or not.

In 1991 Zsuzsanna Wiesenfeld-Hallin published an article in Neuropeptides together with, among others, Tomas Hökfelt [92]. The journal volume in question is a supplement from a scientific symposium. The essay deals with the effects of the substance PD134308 on nerve reflexes in rats and has the appearance of an original article with description of methods and results in separate chapters. In the introduction it is said that the effects of PD134308 were studied using two experimental models that are mentioned with reference to an article in PNAS (Proceedings of the National Academy of Sciences of the USA). In the text of the results section, no quotations at all are given. On the other hand, the legends of the three figures and the table contain the following note: "Reproduced with permission from Proc. Natl. Acad. Sci. USA". What article or articles in PNAS this refers to is not mentioned. The reader cannot feel anything else than confusion. On reading the discussion, there is still no answer. Here one finds two references to PNAS but neither of them contains the material found in the figures and the table. Closer examination of the reference list reveals a PNAS article with a title similar to that of the paper in question. This turns out to be the publication cited in the introduction when mentioning the two experimental models used. However this is the only place where this reference is given.
If the comparison is further made between the PNAS article [93] and the article in Neuropeptides [92] it can be noted that the authors are the same on both papers, with Zsuzsanna Wiesenfeld-Hallin as the first author and Tomas Hökfelt as the last. The latter had submitted the PNAS article in his capacity as a member of the academy. If one then examines the figures and the table in the article in Neuropeptides it is found that they are identical with the corresponding parts in the PNAS article. Thus, the article in Neuropeptides is an exact copy of parts of the PNAS article, at least with regard to the results presented. In the text some attempts have been made to vary the language slightly. In other ways too the authors have actively tried to hide from the readers that this is just a replica of findings published earlier; for example by omitting to mention in the figure and table legends from which PNAS article the findings have been taken. What was then to be won by this duplication? Among others the authors receive another article to add to their publication lists and their curricula vitae in grant and job applications.

Concerning Per Hansson, the second of the two original accusers of Thomas Lundeberg, the web address directed attention to a paper from 1999 published together with Eva Kosek and Jan Ekholm [94]. This article reveals large similarities with one published four years earlier in another journal [95]. If one compares these two publications, it is easy to see that a prominent resemblance exists and large pieces of text are identical. Not least in evidence is the overlap where the aim of the two studies is presented in the end of the introduction. In the first paper [94] the following is said:

*The study addressed the following questions:*

1. Do PPTs in different tissues in the same body region differ?
2. Does induced skin hypoesthesia influence PPTs in muscle, bone and muscle with underlying nerve?
3. Do repeated PPT assessments in the same site influence subsequent PPTs?
In the four-year-previous paper exactly the same is said in the same place. Thus the examinations undertaken in the two studies are exactly the same. Was it to hide this that the 1999 article never cited the 1995 article? However, the descriptions of the test objects in the methods sections show marked differences. In the study from 1999, 15 plus 10 healthy women had participated whereas the study from 1995 involved 16 female patients with chronic muscular pain.

In the investigation from 1999 [94], the mean age in the first group of 15 healthy test subjects was 36.8 years with a range of 20-54 years. Notably, this seems to be the same group of women the two co-authors had used in a study published four years earlier [96]. It was actually said to have only 14 persons included, but the mean age was also here 36.8 years with a range of 20-54 years, i.e. exactly the same figures as in the study from 1999. This can hardly be a mere chance. But the time difference between the investigations, four years, how does this agree? Had all the studies been performed in 1995 but some parts saved and not published until four years later? If one continues to look, it is found that the same persons (mean age 36.8 years with a range of 20-54 years) evidently were used in still another article [97]. All the three studies in which these subjects were used are of a similar character and the same type of tests have been performed. However, nothing is said in the first-mentioned article [94] about the same individuals being used in two other studies, published three and four years earlier, respectively. Since both the mean age and the age range were the same, the investigations must have been carried out at the same time and then have been published in three sets over a time period of four years.

In the study from 1995 [95] 16 patients with chronic muscular pain had been included. They had a mean age of 45.5 years with a range of 29-59 years. In an article published the next year [97], 14 patients with chronic muscular pain had taken part. The mean age and the age range were again the same as in the study from 1995 [95], 45.6 years
and 29-59 years. In addition, both studies included three patients on anti-depressive treatment, with the same drugs in the same doses (30 mg imipramine, 25 mg amitriptyline, 10 mg clomipramine). Such a coincidence can hardly occur by chance, but again nothing is said in the article from 1996 about the patients being the same as in the study from 1995.

What has been measured in all of the above-mentioned reports is what is called "pressure pain threshold" or PPT, i.e. the threshold for pain upon pressure against arm or leg. If you look on the two articles that in the database were indicated as possible examples of plagiarism, the first was from 1995 and performed on patients with chronic muscular pain and the second from 1999 and made on healthy test subjects. A comparison of Figure 1 in the two studies reveals two bar diagrams of very similar appearance. The only real difference is that the values for PPT throughout are about three times higher for the healthy women than for the patients with chronic muscular pain. This indicates that the patients have a much higher sensitivity to pain and must be considered as an important observation. It is therefore difficult to understand why the 1995 study is not quoted in the one from 1999. And why do the authors not mention the difference noted between healthy women and those with chronic muscular pain?

When one then looks at the two other papers in the journal Pain [96, 97] to compare the results with those in the articles just discussed [94, 95], problems appear. In the two latter studies, the real values for PPT in kPa have been given. In the other two studies the results are instead presented as "normalized PPTs". The value used for each observation is the natural logarithm for the value measured in kPa. Moreover, for each such logarithm value the authors have first subtracted the logarithm for the "precontraction value" obtained in the corresponding group. In this way it becomes difficult or impossible to compare the results of the different investigations although it is the same subjects that have been studied and in the same manner. What
motivates the authors to do this? In the reports where the natural logarithm was used, it is said that this was done since the PPT values normally vary considerably both in healthy persons (100-500 kPa) and in patients with chronic muscular pain (50-150 kPa). But the same problem must have existed also in the two other studies. After all, the same subjects were used and the same type of measurements made.

To sum up, it is difficult to get any other idea than that the authors at the same time has made a series of measurements both on a group of patients with chronic muscular pain and on a group of healthy subjects. Over about four years then, the results have been portioned out in four different articles, with identical text sections in part and with overlapping findings, but without proper cross-references (with one exception). The result has become four articles with two figures each of limited scope and a considerable repetition of both text and observations. A more normal and straightforward behaviour would have been to publish the material in a single and more solid paper. It can hardly be doubted that this is all about a more extensive and repeated publication of one and the same material than what Thomas Lundeberg was accused of and convicted for.

18 Actions against other persons

In June 2002 Kerstin Uvnäs Moberg submitted her first allegations against Thomas Lundeberg to KI. This has been followed by a long succession of other accusations, not only to KI but also to a number of other official authorities. Moreover, the reports did not stop appearing when on June 22 2006 the KI President decided that Lundeberg was guilty of scientific misconduct. New requests for an enlarged examination of Lundeberg have continued to come in not only to KI and the Research Council but also to the Government (see chapter 19 and Table 3). But it is not only Lundeberg and Carleson who have been the
victims of the suspicions of Uvnäs Moberg. Several other persons have also got into trouble. A few examples will be given here.

18.1 Interference with a doctoral dissertation

In the beginning of the 2000’s, Cecilia Norrbrink was a physiotherapist working with the rehabilitation of patients with spinal injuries in the unit “Spinalis” at the Karolinska Hospital in Solna. She became interested in doing research within her field and started to cooperate with, among others, the physiologist and physician, Thomas Lundeberg, who also became her supervisor as a doctoral student. As soon as the allegations against Lundeberg started to arrive during the summer of 2002 (see chapter 5.2) the situation turned complicated. It meant that Lundeberg had to step back as official supervisor. Not least important was that the accusations had been forwarded by other physicians in the hospital, including Per Hansson and Zsuzsanna Wiesenfeld-Hallin, whose research overlapped with that of Lundeberg. Conflicts had also occurred between these two and Lundeberg, among others, because of conflicting results in some projects. Nevertheless, Norrbrink had confidence in Lundeberg and unofficially continued her cooperation with him up to her dissertation for the doctoral degree in October 2004.

In a thirteen page-long memorandum, Cecilia Norrbrink described a long series of events during the latter part of her time as a doctoral student in the Department of Public Health Sciences at KI. In spite of all attempts from different persons to put a spoke in the wheel, she managed to successfully defend her thesis on October 22 2004. All the problems she sets forth in her note can be related to the fact that her research had been carried out in collaboration with Lundeberg and that he was a co-author on her thesis articles. Here I will relate just a part of what Cecilia wrote about the week before her dissertation. It
should be observed that these are the views of one party and others may see things differently. However, there are also several official documents that speak for themselves. After half a year of interventions with the selection of articles to be included in the thesis from the chairman Danuta Wasserman, problems with the dissertation committee about getting permission to defend the thesis, the calling in question of ethical permissions et cetera, everything was finally ready and the date for the thesis defence had been fixed for October 22 2004.

What happens next?

The last days before a doctoral dissertation are usually distinguished by a marked tension. One has to prepare a presentation of several years of research and to read further in order to be able to respond convincingly to the questions from the opponent, the dissertation committee and the audience. In this atmosphere, Cecilia Norrbrink at 1 pm on October 21, the day before her thesis defence, receives a letter from Elisabeth Granström, Dean of Research Education (5222/04-514). The letter is dated October 19 and demands measures that Cecilia must take both before and after the dissertation. What it is all about is that she in three articles in which Thomas Lundeborg is a co-author, she has given his address as the Department of Physiology and Pharmacology at KI. In two of the articles she has also indicated his title as professor. At the time Lundeborg had left his position at KI one year earlier (at his own request). In her letter, Granström says that the leaders of KI look seriously on this and that she together with Harriet Wallberg-Henriksson and Jan Carlstedt-Duke had decided the day before what steps had to be taken. These are quoted here word-for-word from Granström’s letter. “Before your dissertation you should make an errata list in which you correct these errors. You should also verbally present these corrections to the audience. The errata list should be sent to all that have received your thesis. Moreover, you should print the corrections and paste them into the already printed copies of your thesis: all copies delivered to the library and all that you send out from now on. You shall send a
correction to the Journal of Rehabilitation Medicine and ask them to have it printed as soon as possible. With regard to the two manuscripts, you should immediately correct the information about Thomas Lundeberg, and all correspondence with the journal before publication should be cc:ed to me”. A copy of Granström’s letter was sent to eight persons, including the dissertation committee and the chairman of the dissertation.

This is really all a puzzle. There is no question about that Lundeberg was still employed as professor at KI at the time when all the studies in Norrbrink’s thesis were carried out. It is per se true that portions of the finalising of the results and the completion of the manuscripts were done after October 2003, when Lundeberg ended his employment at KI. This however can hardly be considered as a reasonable explanation for the demands put forward. Besides, at the time of writing her thesis, Cecilia had contacted the Department of Learning, Informatics, Management and Ethics (LIME) at KI to inquire how to proceed. She had then received the answer that one should use the institution and the title valid at the time the studies were performed (i.e. exactly what she did). It is also questionable whether the title “professor” is something you can lose when an academic appointment comes to an end. Many examples exist of professors that have ceased to work at KI e.g. to join the drug industry. In any case, they usually continue to call themselves professors and I have never heard that KI has opposed this. The indignation shown by Harriet Wallberg-Henriksson, Jan Carlstedt-Duke and Elisabeth Granström over the fact that Lundeberg was named professor in the thesis is almost impossible to understand. What was the reason that they acted as they did?

As in many other cases described here it was Kurt Björkholm, the representative of Kerstin Uvnäs Moberg, who was behind the peculiar behaviour of the KI leaders. Björkholm and Uvnäs Moberg had obviously looked at Norrbrink’s printed thesis and become upset. As a result Björkholm writes a letter to the Dean of Research Jan Carlstedt-Duke on October 14 to protest what he sees as incorrect information
about the affiliation and the title of Lundeberg. At the same time he asks KI to correct this. This was just one week before the dissertation. As we have seen before, Carlstedt-Duke immediately takes care of the report from Björkholm, contacts the President and the Dean of Research Education, and together they go into action. It seems as if they do so without reflecting on the justification of the demands made. As on many other occasions during the Lundeberg investigation, one must wonder what makes the senior KI officials act as they do? It is easy to get the impression that improper pressure has been involved. Why do they otherwise behave as marionettes ruled by Uvnäs Moberg and Björkholm?

Slightly less than two months after the incident just described, Kurt Björkholm writes to Harriet Wallberg-Henriksson and Jan Carlstedt-Duke and, to begin with, praises them. “Initially I want to forward my thanks to the Dean Jan Carlstedt-Duke for always being willing to help with discussions in a pleasant atmosphere and to assist in the investigations”. A little further on, disguised threats of the following type are expressed. “Many persons in positions with great responsibility wait to see that KI takes hold of its history and cleans up those parts that do not belong in a state-owned medical university with a high international reputation and an association with the Nobel Prize. If KI would hold a different opinion, the matter has to be transferred to other investigating authorities, which probably would not be in the interest either of KI or of society”. Similar warnings reappear in the end of the letter. “It is now up to KI to show determination before the information I still have at my disposal slips through my fingers to other persons and authorities that will have to take over where I have to finish my KI investigation if KI holds a passive attitude”. Most probably the two receivers of the letter know more in detail what “information” it is Björkholm refers to (see also chapter 16).

Not surprisingly, Cecilia Norrbrink gets upset and shocked by the letter she receives from Elisabeth Granström. She considers refraining from defending her thesis, but is persuaded by Claes Hultling, the
head of Spinalis, and Thomas Lundeberg to go up. She phones the representative of the doctoral students at KI, Kerstin Beckenius, and tells her what has happened. The two of them have earlier been in contact and Beckenius becomes alarmed at what she is told. Cecilia asks her to come to the dissertation next day, which she does. At the beginning of the thesis defence, Cecilia delivers the “apology” she has been requested to make, but tells the audience that it is on order and not of her own free will. In spite of the pressure she must have been under, the dissertation works out very well. During the next few days she again contacts Beckenius and also the lawyer Anders Stening, employed as a legal consultant by the Director’s Office at KI. They are both indignant and promise to talk to the officials involved. As a result of these discussions, Cecilia receives a new letter from Elisabeth Granström about a month after the dissertation. It is dated November 18 but this time lacks a registration number. Granström first mentions that she has received a telephone call from Anders Stening and that she thereafter talked to Harriet Wallberg-Henriksson. She then writes the following. “Since you have done what we requested of you point by point, both in connection with the dissertation and in the correspondence with the journal, we are content. You do not have to fulfil the remaining demands”. Have they realized their fatal mistake? This second letter from Granström to Norrbrink cannot be found in the KI diary on the web. Nothing is said in the letter about whether or not a copy has been sent to the persons who received a copy of the first letter. This Norrbrink has to take care of herself. She also believes that what Granström wrote was not true. She had not done everything they demanded from her. The only things she had done were to make an addition in the errata list and to forward an “apology” during the dissertation. None of the other requests had been fulfilled. As earlier mentioned, she had instead contacted the lawyer Anders Stening.

About half a year later, on March 29 2005, the representative of the doctoral students at KI, Kerstin Beckenius, writes a “petition in the case
Thomas Lundeborg” to the Research Council where she takes up the aforementioned turns in connection with Norrbrink’s thesis defence. In the end of the note she says the following. “As representative of the doctoral students I wish the Ethical Committee of the Research Council to judge whether the leading officials of KI have acted in a correct and ethically defensible manner in this case, and whether the measures taken in form of the letter with accompanying demands were in reasonable proportion to what Cecilia Norrbrink was considered guilty of”. As far as I have been able to find out, Beckenius never received any response from the Research Council. Basically they only act on requests from University Presidents. Moreover, the KI President Harriet Wallberg-Henriksson had herself recently been a high official in the Research Council in the capacity of Secretary General within its medical branch.

I have received from Cecilia Norrbrink copies of the two letters from the Dean of Research Education, Elisabeth Granström. The first letter is found in the KI diary but has been invalidated. The second has not been registered at all. I have written several times to the Registrar of KI and asked to see these two letters as well as an official note to explain why the first letter was invalidated and the second never registered. After all, it is not quite the normal type of letters we are talking about, but two very marked acts of interference in an individual’s life from an official authority. No answer whatsoever to my questions has been received. The lid has just been put on. As a state authority KI of course knows that by doing so they violate the 2nd chapter, 1 § in the press law according to which “all Swedish citizens have the right to study public documents”. Evidently, they do not care about this. In a similar manner, they ignore the paragraphs in the Archives Law concerning the keeping of public documents, at least when it comes to sensitive material.
18.2 Uvnäs Moberg raises charges against one of her students

Sarah Holst graduated as an agronomist at the Swedish University of Agricultural Sciences (SLU) in 1997. When she looked for possibilities to start doing research, she came in contact with Kerstin Uvnäs Moberg, who was just starting up her activities at SLU after recently becoming professor there. A position for a doctoral student position was included among the resources Uvnäs Moberg had received from the university and this position was given to Holst. Since Uvnäs Moberg still carried out most of her research in the Department of Physiology and Pharmacology at KI, it was here that Holst came to do most of her experiments. In parallel she was teaching at SLU in Uppsala. At this time, and for several years on, a close cooperation existed between the groups of Uvnäs Moberg and Lundeberg. The members of both collaborated in several ways, and one of the researchers Holst had contact with was Iréne Lund. Since Uvnäs Moberg had activities at both SLU in Uppsala and the Karolinska Hospital, she was not in the department on a regular basis. In spite of her having planning meetings with Holst, the latter to a large extent had to take care of herself as far as the practical part of the experiments was concerned. In any case, everything worked out reasonably well in the beginning.

After a couple of years, problems of different types started to appear. For example sometimes Holst had to wait several months to get comments on a preliminary manuscript given to Uvnäs Moberg for checking. Finally, the situation became so disturbing that in the autumn of 2005 Holst with support from the representative of the doctoral students at SLU, Hans Arrendahl, asked for a change of supervisor. One of the reasons she gave was that the time for her studies (position) had ran out, and that she was trying to finish her dissertation while having to take care of her second child. In the beginning of 2006, the Deputy Dean Ulf Magnusson appointed a supervision group and suggested that Professor Kristina Dahlborn should function as vice
supervisor and take care of the direct contacts with Holst. Along with Dahlborn and Arrendahl, Holst considered the proposal as a mere attempt to appease Uvnäs Moberg, who under no circumstances was prepared to let her student go. The “letter of agreement” that was signed on this occasion, did not work out as a solution of the problem. On request from Sarah Holst, in January 2007 the faculty appointed Professor Kristina Dahlborn as supervisor and Professor Mats Sjöquist at Uppsala University as vice supervisor. Uvnäs Moberg did not accept this decision, and in later official statements she has expressed her dissatisfaction with the solution she felt was forced on her. This discontent was probably, together with her pronounced hostility against Thomas Lundeberg, a major contributing reason for the events described below.

On June 20 2007, a news telegram from Tidningarnas Telegrambyrå (the Swedish News Agency – TT) is published in several daily newspapers around Sweden. It says that “a doctoral student in Uppsala has been reported to the police for stealing tissue samples from dead experimental animals. I cannot see any other reason for the theft than that the student has done it for her own gain says Kurt Björkholm, legal representative of Professor Kerstin Uvnäs Moberg, who has supervised the student and reported the incident. According to the report, it took place in 2001 when the student worked on her doctoral thesis in physiology at the Swedish University of Agricultural Sciences (SLU) in Uppsala. She is supposed to have handed over tissue samples of brains from killed rats from an earlier and completed experiment to outside researchers at Karolinska Institutet (KI). Professor Uvnäs Moberg had planned and financed the original rat experiment and had the ethical permission for it. According to the rules, transfer of the dead animals requires her permission, but she has neither been informed nor asked. According to the police report, this has caused her economic damages. Uvnäs Moberg has earlier reported the theft to SLU where, according to her representative it has remained undealt with”.

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It can hardly have been anything else than rage over being deprived of the supervision of Sarah Holst by the Faculty in January 2007 that led to an unjustified police report against Holst for something that had happened six years earlier. An official letter from Uvnäs Moberg to the President of Gothenburg University dated June 25 2007 demonstrates the absurdity of this event. The purpose of this letter is to request an examination of Luigi Männi, an earlier collaborator of Thomas Lundeberg. However, in the first five pages of this letter she describes “the case of the doctoral student Sarah Holst at SLU in Uppsala”. One has to ask what Gothenburg University had to do with that matter, except that the letter had been written five days after the announcement of the police report against Holst in the press. Uvnäs Moberg writes the following about the theft of tissue samples from 2001: “The brain samples, which originate from complicated and expensive experiments and which Thomas Lundeberg’s group has obtained through Sarah Holst, probably have one or more receivers involved in an overall project in which the rat biopsies are part of an advanced takeover of my research”. The ideas expressed here are of a similar paranoid character as seen in other allegations. After about a year the experiments in question were published by Sarah Holst together with Kerstin Uvnäs Moberg and Maria Petersson [98].

To call these experiments “complicated and expensive” is a great exaggeration. The first experiment was started with two groups of pregnant female rats. On three nights per week one of the groups was stressed by simultaneously exposing the cages to light and agitating them on a rotation table. The second group functioned as controls with darkness during the nights and no shaking. The newly born offspring were left undisturbed during the first day. Half of the pups in the two groups (either stressed or not) were thereafter given a daily injection either of oxytocin or saline as a control, for two weeks. The other half from both groups of the animals were softly touched over the abdomen with a fine brush of camelhair for five minutes daily,
from the second to the seventh day. After three weeks the pups were weaned from breast feeding and transferred to a standard rat diet. They were then allowed to grow up to adult age (eight months) under normal conditions, when blood pressure and heart frequency were measured. The results revealed that treatment with oxytocin during the neonatal period produced a lower blood pressure in adult age (especially in the diastolic pressure). This happened regardless of whether the mothers had been undisturbed or stressed during the pregnancy (although the blood pressure as such was higher in the offspring of the stressed mothers). A gentle stroking of the abdomen at early age showed a similar effect on the blood pressure in adult age (the diastolic). In neither case could any effect on the heart frequency be detected. This was neither a very complicated investigation nor a very expensive one, especially in view of the fact that the drug company Ferring had donated oxytocin and that Thomas Lundeberg had provided the equipment needed.

Where, then, do the brain samples come into the picture? According to information I have received during telephone interviews with Sarah Holst and Iréne Lund, at the time in question Sarah was in need of concrete results that could support the hypothesis forming the basis of her thesis project. When the aforementioned test of gentle stroking of the abdomen was about to be completed and the animals killed, the same was about to be made in a collaboration project with Iréne Lund. As a part of this oncoming project, Sarah and Iréne had been instructed by Uvnäs Moberg to take samples from several internal rat organs. These biopsies were to be processed by a technician of Uvnäs Moberg in an examination project at SLU. Since the animals were to be killed, Sarah found it reasonable to also take samples of the spinal cord and analyse them for their neuropeptides content. RIA methods and antibodies for this purpose were available in the peptide laboratory Lundeberg was running in the Karolinska Hospital. It was also here that the analyses were made for collaboration projects between his and
Uvnäs Moberg’s group. The costs for the analyses were to be covered by Lundeberg. If results indicating a role for the central nervous system (the brain and the spinal cord) in the functions studied were to be obtained, this would be of value not only for Sarah and Iréne but also for other persons involved, including Uvnäs Moberg. Since in the end a relatively large number of tissue samples needed to be taken when the animals were killed, several persons were involved in helping one another. Nevertheless, their hopes were not fully realised. When the brain and the spinal cord samples from the collaborative project were analysed it became apparent that the results varied considerably and not only in relation to the experimental treatments. Therefore, it was difficult to use them in a meaningful manner to supplement and strengthen the study in question. In the study Holst carried out together with Uvnäs Moberg, it was likewise difficult to draw any conclusions from the peptide analyses, partly because the number of control animals was too small. When later it became after all of importance to use these results, this was disallowed by Uvnäs Moberg and the vice supervisor Maria Petersson with reference to Jan Carlstedt-Duke and the ongoing investigation against Lundeberg.

Kerstin Uvnäs Moberg’s assertion that the experiment was complicated and very expensive, and that the collection of brain and spinal cord samples was part of a secret plan from several persons (or companies/organisations) to highjack her research, indicates an inadequate anchorage in reality. The experiment was neither complicated nor very expensive. Broadly speaking, any researcher with a basic training in animal experimentation could have performed it without any unusual costs. As a matter of fact, there was no reason or need to “steal” the experiment that Uvnäs Moberg had helped to plan but did not take part in executing. The fact that the accusation of theft was not brought up until many years after the experiment had been done, and then in connection with a trying dispute with the doctoral student who had carried it out, speaks for itself. Accordingly, the allegations
forwarded to the police led nowhere and after some time the investigation was discontinued. The suffering and harm Kerstin Uvnäs Moberg and her representative Kurt Björkholm caused a young researcher through their actions is considerable and not easy to evaluate. On March 13 2008, the district prosecutor Emma Häggström decided to discontinue the preliminary investigation since it was not possible to prove that those who had been suspected had committed any crime.

In parallel with the accusations to the police of theft of brain tissue to the police, Uvnäs Moberg and Björkholm also raised allegations against Sarah Holst for misconduct in research, first to KI (01817/2006) and subsequently to SLU (477/07-21). The report given to KI on February 15 2006 focused on the delivery of biopsies to Lundeberg and others without permission. On March 3 the same year a complementary addition is sent, presenting further details about the damages Uvnäs Moberg has suffered from Holst’s contacts with members of Lundeberg’s group. It ends with: “To that comes that the entire actions of Lundeberg’s group has hindered and seriously stopped me in my research, and has caused problems in the account of the research grants that have financed Sarah’s thesis work”. As earlier, it was Jan Carlstedt-Duke at KI who took care of the report from Uvnäs Moberg. By the next day, February 16 2006, he writes to her representative Kurt Björkholm and asks for further details about the animal experiments in question in order to be able to continue. Sarah Holst responds in writing to the accusations forwarded by Uvnäs Moberg. On June 19 2006, a meeting organized by Carlstedt-Duke is held. Those present besides Sarah Holst, Kerstin Uvnäs Moberg and Kurt Björkholm are Stefan Eriksson, Chairman in the Department of Physiology and Pharmacology at KI, Ulf Magnusson, Deputy Dean at SLU and Kristina Dahlborn, since a few months the new vice supervisor of Holst (see above). The outcome of this meeting is that the allegations against Holst are dismissed and the case closed down.
The material submitted to SLU is much more extensive and includes allegations of misconduct in research against more than twenty persons at different universities and companies in Sweden and abroad. Professor Lars Rask from Uppsala University and the Chief Lawyer of SLU, Lennart Jonsson, are appointed to examine the case (restricted to the accusations against Holst). On October 12 2007 they deliver their report to the Faculty Committee of the Faculty of Veterinary Medicine and Animal Science. It was Björkholm who submitted the report but it was to a large extent based on information from Uvnäs Moberg. She was therefore considered as plaintiff to the same extent as Björkholm. The charges directed against Holst included such things as: (i) refusal to show experimental findings to Uvnäs Moberg; (ii) transfer of tissue samples to Lundeberg and others without permission; (iii) theft of intellectual properties from Uvnäs Moberg (discoveries protected by patents et cetera), and; (iv) interference with the research of Uvnäs Moberg and limit to her ability to apply for grants. After a recapitulation of the case, the examiners direct devastating criticism to the plaintiffs. It is said that on no point have they delivered convincing arguments for their allegations. The examiners are most critical on the last of the seven accusations and in response writes. “It is said that Sarah Holst, by her disloyal actions has halted large parts of Kerstin Uvnäs Moberg’s oxytocin research, that this has caused large damage to Uvnäs Moberg and to Swedish medical research, and has prevented Uvnäs Moberg from applying for research grants. These statements are probably unique. A researcher with the experiences and the merits of Uvnäs Moberg should at an early stage be able to solve conflicts with a doctoral student if she experiences that the research education of the latter does not function well”. Later on the auditors write that they consider it “unworthy of a researcher with the capacity of Uvnäs Moberg to blame a doctoral student for decreased achievements in research”. The report ends as follows. “To sum up, we do not find on any point that Sarah Holst has acted fraudulently in her work as a doctoral student with Professor Kerstin Uvnäs
Moberg as supervisor. We therefore recommend the Faculty of Veterinary Medicine and Animal Science to completely clear Sarah Holst from all the accusations forwarded by Kurt Björkholm and Professor Kerstin Uvnäs Moberg”. The Faculty holds a meeting four days later, on October 16 2007. In the protocol one can read under § 175/07 Allegations of misconduct in research (SLU ua 21-477/07). “With reference to the investigation made by Professor Lars Rask, Uppsala University, and the Chief Lawyer of SLU, Lennart Jonsson, the Faculty Committee declares that the accused doctoral student is not guilty of misconduct in research”.

With support from her new supervisor, Professor Kristina Dahlborn, Sarah Holst successfully defends her doctoral thesis in December 2007 with Professor Sven-Ove Ögren as opponent. This is ten years after she started her doctoral work. Some of this time she has had to use to defend herself against the accusations from Uvnäs Moberg to KI, SLU and the Police. In addition, she has given birth to and taken care of three children. For one year she also worked as a teacher in high school due to lack of financing from SLU. When the dissertation was settled, the Press woke up, especially “Uppsala Nya Tidning (Uppsala New Journal), and started to narrate the odd allegations and the redress the doctoral student accused of theft and misconduct had finally obtained. At the beginning of 2008, Uppsala Nya Tidning publishes a series of articles that describe the fate of Sarah Holst and critically examines Kerstin Uvnäs Moberg’s research on oxytocin and the importance of this hormone for peace and well-being. The journalist responsible for most of this work was Niklas Skeri. On March 12 2008, Uppsala Nya Tidning publishes his article titled “researcher cleared from accusations of fraud” [99]. This came five months after the Faculty Committee at SLU had completely freed Sarah from suspicions, but better late than never. In the article several researchers criticized SLU for the compliant manner in which they had acted vis-à-vis Uvnäs Moberg and for the lack of support for Holst. It was further said that SLU ought to have given her a thorough
redress and compensation, but that instead they had chosen to put the lid on things.

19 Continuation follows

On June 22 2006 the President of Karolinska Institutet, Harriet Wallberg-Henriksson, declared Thomas Lundeberg and Joakim Carleson guilty of scientific misconduct on the basis of the report she had obtained from the Swedish Research Council. Perhaps someone believes that the case thereby was closed and that the involved persons would have a chance to get on with their lives. This however never happened. Kerstin Uvnäs Moberg and her representative Kurt Björkholm continued to submit a number of official letters with allegations against Lundeberg and others to different authorities.

19.1 Further accusations from Uvnäs Moberg

Less than two months after KI’s verdict against Thomas Lundeberg and Joakim Carleson, on June 22 2006, the representative of Kerstin Uvnäs Moberg, Kurt Björkholm, sends an official letter to the minister of Education Leif Pagrotsky and the KI President Harriet Wallberg-Henriksson (U2006/5646/02). He begins with: “Since lately I have had the opportunity to look behind the curtains of the research world at Karolinska Institutet, Gothenburg University and the Swedish University of Agricultural Sciences, and since I was the one who took the initiative and forced through the scientific investigation at KI, that was recently completed with a report from the Research Council which has attracted great attention, I think it is justified that I officially express my observations, especially with regard to KI”. As noted already before, there seems to be no doubt about whom it is that has “forced through” the Lundeberg investigation at KI and the Research Council. Later in his letter, Björkholm goes through
the entire case again, from the reports to the Police in the beginning of 2002, when Lundeberg was claimed responsible for a number of serious disease and death cases at KI and SLU (see chapter 5.1). In separate chapters the account further deals with Lundeberg’s research, his appointment as professor, his sabotage of Kerstin Uvnäs Moberg’s research, the role of Hans Wigzell and Harriet Wallberg-Henriksson, et cetera. To conclude, Björkholm asks "KI to let me know within a couple of days if KI agrees to recommence investigation concerning Thomas Lundeberg’s and his group’s research activities in accordance with my intentions mentioned above". The President and the Administrative Director of KI respond to this request on September 7 2006 and turn down the demand for a continued investigation with reference to the four years long inquiry into Thomas Lundeberg that has just ended, and in which both he and his former doctoral student Joakim Carleson were found guilty of scientific misconduct. Seemingly, Kurt Björkholm does not even give himself time to receive this answer before on September 11 2006 he again writes to the Minister of Education Leif Pagrotksy and the KI President Harriet Wallberg-Henriksson (U2006/6179/02). He begins by saying that he has not received any reply to his letter of August 20. Thereafter he insists that the extended KI investigation should concentrate on questions of human and animal ethics, economic transactions, payments to Lundeberg’s collaborators, damages, burglary, and the takeover of Uvnäs Moberg’s research. He concludes his letter with the following sentence. “I request an immediate answer from the Government and KI how you plan to solve the responsibility issues I have shed light upon above and in my earlier letter”. Leif Pagrotsky gives just a short response. “Thanks for the copy of the letter you have sent to Karolinska Institutet. With these few lines I just want to tell you that I have read your letter and the enclosed documents”.

Two months later, on November 13 2006, Kurt Björkholm writes to Catharina Håkansson-Boman in the Government Offices to protest about a number of inconveniences at KI and especially at the Depart-
ment of Physiology and Pharmacology (U2006/9067/UH). He mentions the investigations that he has initiated at KI and the Research Council and then adds: “Since the Research Council in June 2006 delivered its report to KI, KI and SLU have refused continued investigations. It can only be noticed that after the report from the Research Council, the will and the interest for further inquiries ceased. Neither KI nor SLU are today prepared to examine or even to discuss the additional questions I have raised”. He then declares that a lot remains to be said in the case and refers to his letters to Pagrotsky and Wallberg-Henriksson. In this connection he mentions the staff matters at SLU as well as his contacts with the Security Service, the Economic Crime Authority, chartered accountants, and banks. He further says that the Management of the Karolinska University Hospital in Solna protects Thomas Lundeberg and his collaborators via the Board Member Hans Wigzell. According to Björkholm, a similar resistance to investigations exists at Gothenburg University and the Sahlgren’s Academy, where Luigi Manni has moved, an earlier doctoral student of Lundeberg. With regard to SLU in Uppsala, Björkholm claims that Uvnäs Moberg has been refused contact with her President and Head. The chief lawyer is said to act as a “gatekeeper” who does not allow Uvnäs Moberg to see the new President of SLU. In a similar manner, the previous President is said never to have invited Uvnäs Moberg to discuss the happenings at SLU. Björkholm then continues with “the Lundeberg case” and take it as a starting point for ideas to forward to “the political Alliance” (the Government Parties) concerning the discussions of depoliticization of universities and colleges (“the autonomy inquiry”). Finally he comes to the following request. “The Government must see to it that hidden irregularities are examined”! It is followed by a question. “Does the Government not wish or dare to carry out a dawn raid on the research activities of KI and the Karolinska University Hospital”? Björkholm’s final proposal is the following. “A suggestion to the Alliance (the Government) is therefore to force the Lundeberg case to its root by initiating an extended investigation with the
report from the Research Council and the material from my inquiry as a basis”.

It now takes another half a year before new official statements with demands for inquiries of Thomas Lundeberg and others turn up. When this happens, Kerstin Uvnäs Moberg herself has taken over. On June 25 2007, she writes to the Ethical Council at KI and its Chairman Stefan Einhorn with “a request for an examination of departures from good scientific practice in medical research” (3374/07-608). What she presents here is the same old story of trials to thwart and steal her research, mainly from the side of Thomas Lundeberg. However, the number of suspects has now increased and amounts to a total of twenty-seven (27) persons. Except for Lundeberg, the list of suspects contain eight persons from KI, three from SLU, one from the Royal Institute of Technology, three from AstraZeneca, one from Uppsala University, two from Gothenburg University, four from CNR in Rome, one from Japan, one from China, and two from the USA. To those are added the leaderships of KI, Sahlgren’s Academy in Gothenburg and the earlier leaders of SLU in Uppsala. What they are all accused of is “to not have assisted with requested investigations and in some cases to not have replied to letters and other official communications”. Why Uvnäs Moberg had expected that the Ethical Council of KI would examine all these persons from different universities and countries is not clear. Towards the end of her note, she also names a number of companies and institutions that she asks to have the opportunity to speak more in detail about at another occasion, concerning “activities where my rights as a researcher may be in danger”. The companies and institutions concerned are listed Table 4.

Next barely a month passes before Kerstin Uvnäs Moberg writes to the Minister of Education Lars Leijonborg and the Minister of Agriculture Eskil Erlandsson to ask for an investigation of “research activities at Karolinska Institutet and the Swedish University of Agricultural Sciences in Uppsala”. She refers to earlier correspondence with KI and SLU and
“requests that the Government takes measures for a thorough survey and overhaul of the conditions described in my enclosed report”. From the accounts and the quotations given here, it ought to be clear that all the allegations from the summer of 2006 and onwards that Kerstin Uvnäs Moberg and Kurt Björkholm have continued to forward to various authorities, including the Government, lack legitimacy in all essentials. As far as is known, the demands for an extended examination of Lundeberg and others have not been met. Perhaps their morbid character and their lacking anchorage in reality has finally been realized. If so, this is good but unfortunately too late for those that have suffered from this “crusade”.

In December 2005, Lundeberg via his lawyer turned to the County Prosecutor in Stockholm in order to have an inquiry into all the ill-founded allegations that Uvnäs Moberg had submitted against him to the Police, the Security Service and the Economic Crime Authority. The accusations concerned things like defamation, illegal threats, thefts, murder, et cetera. However, no reports of suspicions against Lundeberg were ever forwarded to him by those who had received the charges. The County Prosecutor decided not to start any preliminary investigation and as an explanation said that the information in the report gave no reason to assume that a crime leading to public prosecution had been committed. Via his lawyer, Lundeberg asked for probation of the decision but no change was obtained (see chapter 11). Obviously, it is possible to forward sensational and unjustified allegations to the Police and other authorities in Sweden without meeting with any countermeasures to protect those affected.
Table 4. Companies and institutions that are taken up in the report of Kerstin Uvnäs Moberg to the Ethical Council of KI from June 25 2007

AstraZeneca
Biovitrum AB / Pharmacia AB
CNR in Rome, Italy
Karo Bio AB
Karolinska Institutet Innovation AB
The Ferring group of companies
The Johnson & Johnson group of companies
The Merck group of companies
Nactilus AB
SLU Holding AB
The foundation FRID / Håkan Lagergren
The Stormby group of companies
Tripep AB

From the official letter with the registration number 3374/07-608

19.2  Danderyd’s Hospital forbids Lundeberg to research

Karin Rudling, head of the Rehabilitation University Clinic at Danderyd’s Hospital on July 3 2006 decides that the senior physician Thomas Lundeberg is forbidden to engage in research (DS rehab 107/06). The reason given is that “a possible research activity may be considered as a side-line with detrimental effects on the public trust of the clinic”. Lundeberg submitted his views and questioned the verdict. Carola Lemne, CEO of Danderyd’s Hospital AB (DSAB), slightly more than a year later (November 22 2007) confirms the earlier decision. Lemne refers to the report of the Research Council and writes that
“DSAB considers research made by Thomas Lundeberg as a side-line which could have detrimental effects on the public trust of the hospital according to § 8 mom 1c” without stating what law or what regulations she refers to. She then continues as follows. “This applies independently of whether the research is conducted within or outside the domains of DSAB. As research, we also consider processing and publication of earlier data as well as the writing of so-called review articles in the name of the hospital or the department”. What this means is that Danderyd’s Hospital on the basis of the questionable investigations carried out at KI and the Research Council (and after consultations with KI) imposes a decision on Thomas Lundeberg that can be regarded as an exclusion from a civil service profession.

20 Appeals that have never been taken up

In neither the report the Expert Group of the Research Council wrote on May 18 2006 (312-2004-822) nor in the decision signed by the KI President, Harriet Wallberg-Henriksson, on June 22 2006 (3327/06-208) is anything said about the possibility of appeal. Neither of the two accused and convicted persons, Thomas Lundeberg and Joakim Carleson, has admitted to what they have been blamed for. In this situation, and after consultation of Bertil Wennergren, a former Parliamentary Ombudsman (JO) and a former Justice of the Supreme Administrative Court, Lundeberg decides to appeal to the County Administrative Court in Stockholm against the report of the Research Council (13410-06 E) and the decision of KI (15476-06 E). This is done with reference to “the possibility to appeal decisions in the public administration according to 22 § in the Public Administration Law (1986:223)”.

What Lundeberg calls for is that the Court should set aside the judgements made by the two state authorities and for this he wants verbal court proceedings.
Referring to a legal statement of Bertil Wennergren, Lundeberg claims that the Research Council has carried out an investigation that is not compatible with the regulations that govern its activities. He further insists that they have not considered all material brought into the examination, that they have not given him access to or the possibility to comment on vital parts of the material, and that they have laid the burden of proof on him (to prove his innocence) rather than to themselves prove the accusations made against him. The Court uses the main part of its verdict to quote Wennergren. Thereafter, they say the following. “Taken together and with reference to what has been said above, the Public Administration Court finds that the report of the Research Council is of such a type that it does not have any legal effects on him or can be considered to interfere with his personal or economic position in such a way that it allows an appeal. What Thomas Lundeberg has presented to the Court and what has otherwise come out in the case does not entail any other judgement. The appeal should therefore be rejected”.

With regard to the decision of Karolinska Institutet (3327/06-208), Lundeberg says that this “is a statement through which an authority means to influence the actions of other administrative authorities or individuals”. For this reason, he feels that the decision has legal effects on him even if KI does not take any special measures against him. As just described, this was the case when his employer, Danderyd’s Hospital AB, forbade him to do research on basis of the decisions taken by the Research Council and KI (see chapter 19.2). Lundeberg also refers to what is said in his appeal against the Research Council. In its verdict, the Court first discusses whether or not it is possible to appeal against the decision of KI. One comes to the conclusion that this is not really the ruling according to the Public Administration Law, the University Law (högskolelagen) and the University Regulation (högskoleförordningen). However, after the European Convention for Human Rights of 1950 was incorporated into Swedish law in 1995, it became possible to set aside an appeal ban if a decision concerns human rights or obliga-
tions. Since July 2006, this has also been added to the Public Administration Law. The conclusion finally made by the Court is the following: “Taken together, and with regard to what is said in the judgement of Karolinska Institutet, the Public Administration Court finds that the case in question does not concern a dispute about civil rights and obligations of the type referred to in article 6.1 of the European Convention. For this reason the appeal should be rejected”. After a further short discussion, the Court says basically the same as in the process against the Research Council. “The Public Administration Court finds that the judgement of Karolinska Institutet from June 22 2006 is of such a character that it does not have any legal effects on Thomas Lundeberg or otherwise interferes in his personal or economic position in a way that makes it possible to appeal. For this reason, the appeal should be rejected”.

The above-mentioned verdicts made by the Deputy Judge Tom Ericius in the Public Administration Court make obvious the weaknesses in the Swedish law system and the lack of legal protection that in practice prevails in cases of the type described here. The indifference shown by the Court vis-à-vis the legitimate needs of the plaintiff to have his case tested in court is remarkable. More than two months before the Deputy Judge passed his judgement to dismiss the appeal of Thomas Lundeberg on the claim that the decisions of the Research Council and KI did not constitute “an interference in his personal or economic position”, Lundeberg was forbidden by his employer to do research in his place of work in a university clinic on the very basis of these decisions. The Deputy Judge and Swedish law evidently do not realize what it means for a researcher to be accused and convicted of scientific misconduct on a defective foundation. As will be seen from the next chapter, in the USA the seriousness of this has been understood, and legislation has assured the accused the right to appeal and to have his or her case examined in a verbal proceeding of court-like character in which the plaintiff and the defendant separately are allowed to present their case and to call and cross-examine witnesses.
October 27 2006, Thomas Lundeberg writes to the Administrative Court of Appeal in Stockholm via his lawyer Per Gotthard and appeals against the Public Administration Court’s decision not to deal with the appeals against the judgements of the Research Council and KI. He urges that the Administrative Court of Appeal grants a leave to appeal, takes up the case again, and reverses the report of the Research Council from May 18 2006 (312-2004-822) as well as the judgement of KI from June 22 2006 (3327/06-208). What is emphasized in the appeal is that, in contrast to what is claimed by the Public Administration Court, the decisions of the Research Council and KI do have serious legal effects on Lundeberg and interfere with his personal and economic conditions. According to Lundeberg, the case concerns a dispute about civil rights and obligations of the type referred to in article 6.1 of the European Convention (included in Swedish law 1995). December 18 2006, the Administrative Court of Appeal gives their decision in the two cases. In less than one page, they first give an account of the claims made by Lundeberg. In six lines, they then state the reasons for their verdicts, which are exactly the same with regard to the Research Council and KI. Initially it is indicated that there are reasons to grant leave to appeal, but the final decision is as follows: “What Thomas Lundeberg has stated and referred to does not give the Administrative Court of Appeal any reason to deviate from the assessment of the Public Administration Court that it is not possible to appeal against the report of the Research Council and the decision of Karolinska Institutet. The decision of the Public Administration court to reject the appeal was therefore correct. In consequence, the appeal of Thomas Lundeberg to the Administrative Court of Appeal should be rejected”. These verdicts are signed by the Judge Peter Dinnetz, the Judge and the rapporteur Eva-Lotta Hedin, and the rapporteur Gustav Forsberg. Without indicating with as much as one word in support of the basis for their decision, these persons dismiss the well-founded claims of Lundeberg to have his case examined in a Swedish court.
January 3 2007, Thomas Lundeberg via his lawyer Per Gotthard appeals against the verdicts of the Administrative Court of Appeal in the cases against the Research Council and KI to the final court of appeal. What he urges is that “The Supreme Administrative Court grants me leave to appeal and takes up the case again, whereafter the Court should set aside the judgements made by Karolinska Institutet and the Research Council and remit the case to the County Administrative Court for retrial”. It is emphasized in the appeal that the decisions made by the Research Council and KI de facto have serious effects on Lundeberg’s personal and economic conditions. Hence, they constitute an interference with his civil rights and obligations according to article 6.1 in the European convention. For that reason, he demands to have his case tested in court referring to his research at KI which has been criticized by the Research Council and KI in their judgements. As support he cites literature in the field and earlier legal cases. Subsequently, the former Parliamentary Ombudsman (JO) and former Justice of the Supreme Administrative Court, Bertil Wennergren, submits a legal statement concerning “trial of a case before court according to the European Convention in an administrative court”. There he takes up a statement from the Supreme Court according to which the convention should be given priority when a conflict between the European Convention and an earlier Swedish law appears. This has also been incorporated in the Public Administration Law 3 § where the following is stated: “The appeal rules in this law are always applied if needed to meet the right of a court trial concerning civil rights and obligations according to article 6.1 in the European Convention on Human Rights from November 4 1950”. According to Wennergren, this paragraph should be seen not only as a right of appeal but also as “a specific right to plead before court”. April 2 2007, the Supreme Administrative Court decides not to grant a leave to appeal. The verdict is signed by the Justice Carina Stävberg and the rapporteur Fredrik Löndal. The Justice Anna-Karin Lundin and the Justice Henrik Jermsten were also present during the decision. This
means that Thomas Lundeberg definitively has been denied the right to have his case tested in a Swedish court. This can hardly be called anything else than a total lack of legal security.

21 New policy for investigation of scientific fraud

June 15 2007, the Association of Swedish Higher Education together with the Swedish Research Council submit a proposal on the handling of suspected scientific misconduct to the Government and the Ministry of Education (312-2006-2542). The regulations they suggest do not differ much from the system already in position. The responsibility for examining suspicions of misconduct and to take measures when misconduct has been proven will as before primarily rest with the university in question (the proposal applies to research under public but not private management). The starting point of the proposal is that the public need not worry that research fraud exists at the universities or that such cases are not handled in a proper manner. It is emphasized that openness in these questions is vital and should be secured via the principle of public access to official records. It is also stressed that there must be clear rules for how these matters are dealt with and that it is important that all universities in the country use a common definition of what scientific misconduct is. The proposers suggest the following definition: “Scientific misconduct includes acts or omissions in connection with research that lead to distorted results or give misleading information about a person’s contribution to the research”. They intend that this rule should cover such things as fabrication, falsification and plagiarism in connection with the planning, execution and publication of research. It also includes the illegitimate use of information given in confidence and the illegitimate assertion of authorship. A prerequisite
for the taking of measures is that the offence has been made deliberately or due to gross negligence.

According to the proposal, the one who has discovered strong indications of scientific misconduct should report to the President of the university where the researcher works. Each university should have an established plan for how the incoming suspicions should be handled. The idea of the proposers is that all seats of learning should have a “Misconduct Board” to which the President hands over the case. The Board would have a permanent chairman as well as some permanent members, including one lawyer and one experienced researcher. The primary duty of the Board would be to decide to what extent the suspicions should give cause for a complete investigation. If that becomes the case, at least two external experts should be associated with the Board. They should have special competence within the field in question or within the field of research ethics and good scientific practice. According to the proposal, these experts should jointly put together a report that is submitted to the board. On its own, the board then works out a statement and the accused is given opportunity to take part of and comment on the investigation. The final judgement of the board is delivered to the President who decides whether or not scientific misconduct has been committed. From the verdict it should be clear on what grounds it is based. If misconduct has been confirmed, the President may either issue a warning or pass the case over to the Committee for Staff Direct Responsibility (Personalansvarsnämnden). In the matter of more severe offences, it may also come to making a report to the Public Prosecutor. Concerning time aspects, it is said that a decision on whether to hold a full investigation should be taken within four weeks after the submission of the allegations. The investigation itself should be completed within six months, and the President’s decision made known within a maximum of three weeks after the completion of the work of the Misconduct Board.
Except for the local organization described above, the proposers also recommend that there should be a central and independent authority for the investigation of scientific misconduct. This so-called “Misconduct Committee” should have four permanent members from different areas of research commissioned for a three-year-period and a chairman appointed by the Government. The chairman should be a qualified judge, experienced in research conditions in Sweden and of working with questions concerning research ethics. Two of the permanent members should be appointed by the Association of Swedish Higher Education and two by the Swedish Research Council. It is further said that a report to the committee can be made by the earlier “whistle-blower”, the accused researcher, and by the university President if he or she wants to have the case examined in further detail. The type of cases that the committee may look into is those where the university: (i) has decided to make no inquiry; (ii) has decided after an inquiry that scientific misconduct has not been committed; (iii) has decided after an inquiry that scientific misconduct has been committed but that no measures except for this statement will be taken; and (iv) has decided after an inquiry that scientific misconduct has been committed and a warning has been issued by the President. In these cases, the committee can investigate whether the university has followed the regulations in force, and has the option of asking the university to take up the case again for a renewed inquiry or choosing to carry out an inquiry on its own. However, decisions about measures to be taken should as before be the responsibility of the employer.

The commission report described above is slightly less than five pages long and does not make any detailed proposal. Since to a large extent it is the same authority that was responsible for the examination of Thomas Lundeberg and Joakim Carleson that stands behind the proposal, one must question its credibility. In comparison with the conditions e.g. in the USA, one is hesitant over the way in which Swedish authorities approach these matters. Admittedly, the academic
sector in the USA is much larger than in Sweden. However, the demands for an adequate and legally secure procedure during the investigation of a phenomenon such as scientific misconduct should not differ. Since the American system has many appealing qualities, I would like to describe it as a possible model also for Sweden. What strikes me when looking on the changes that have been made in the regulations for inquiry of scientific misconduct in the USA during the last ten-year-period is the openness that characterizes the process, and that also distinguishes the American authority system at large. When an official group appointed to prepare an issue has delivered their report, it is placed in a federal register and everyone who so wishes is invited to give his or her comments. When these have been collected and studied by the delegated Department, the Government makes its decision and a new law or regulation is inaugurated. This is then published and laid out on the Internet homepage of the authority in question. At this time, the public opinions that have been submitted are described and those which have influenced changes in the original proposal identified. The document that explains the new regulations also informs whom one can contact with questions and comments.

On the initiative of the Public Health Service, an Office of Scientific Integrity (OSI) was in 1989 established at the National Institutes of Health (NIH). In parallel, an Office of Scientific Integrity Review (OSIR) was created at the department itself. The mission these units obtained was to take care of the central (federal) handling of research misconduct. The creation of OSIR commenced the development that would lead to the removal of these questions from the granting authority, NIH (the counterpart of the Research Council in Sweden). Three years later, in 1992, OSI and OSIR were fused into the Office of Research Integrity (ORI) that became a sovereign unit placed within the Public Health Service. Later the same year, an independent Board of Appeal was created within the department to which researchers who had been accused of research misconduct can appeal. This is the
board which granted Thereza Imanishi-Kari the possibility to appeal and to be rehabilitated after ten years of accusations for scientific fraud in one of the most discussed cases in modern time (see chapter 3.2). This opportunity is not guaranteed in Sweden and Thomas Lundeborg has in several instances been denied a court examination of his case (see chapter 20).

The Office of Research Integrity, ORI, is by Swedish standards a large agency with extensive duties. In immediate association with its Director-General, there is a unit with an overall responsibility for questions of research misconduct that reports directly to the Minister and the Deputy Minister in the Public Health Service. The main task of this unit is to direct the handling of these issues on a federal basis. This includes responsibility for: (i) a clear definition of research misconduct; (ii) that inquiries are carried out in a legally secure manner; and (iii) guaranteeing that both the accused and the accuser are treated correctly. Another task for ORI is to vouch for education and information that promotes integrity within research and prevents misconduct. ORI also has a Division of Investigative Oversight whose mission is to follow, document and evaluate how allegations of research misconduct are handled locally in the institutions that execute research and research education with Public Health Service support. This division should also report confirmed cases of research misconduct to the Head of ORI, assist the investigations in connection with appeals to the Board of Appeal, and propose administrative measures against those responsible. The assignment further includes providing information about applicable regulations to the accused, the accusers and the institutions that carry out the inquiries. A third unit at ORI is the Division of Education and Integrity. Its responsibility is education in order to prevent misconduct in research. This includes coordinating the distribution of the regulations in the field, initiating and analysing research regarding these regulations, and producing an annual report on research misconduct. The fourth and last unit at ORI
operates under the name of Research Oversight Legal Team. It supervises the legal aspects of ORI’s work, represents ORI in connection with appeals, releases proposals for new laws and regulations, and functions as adviser for the units in ORI that are answerable for oversight and education in questions of research integrity.

The Swedish counterpart of ORI is the Expert Group for Questions of Misconduct in Research within the Research Council. As described earlier, this group consists of a lawyer with the competence of a judge, three scientific members representing different fields, and a secretary in the form of a higher official from the Research Council. For the handling of individual cases, the Expert Group has the ability to call in special experts. According to the proposal submitted to the Government in 2007 (see above), the Expert Group within the Research Council should be replaced by a Misconduct Committee. The differences in organization and duties are, however, small. The committee will have one additional member and it is suggested that not only university presidents but also the accuser and the accused will be able to consult with it in order to have a case re-examined. The situations in which such a re-examination may be considered are defined in four typical examples (see above in this chapter). To sum up, it is evident that the proposed national organization in Sweden for handling questions of scientific misconduct is very small in size compared to the corresponding authority in the USA. The same can be said about the rules proposed in Sweden. Below, a short overview is given of the most important regulation in this area in the USA.

On May 17, 2005, the Department of Health and Human Services (DHHS) settled and published its revised rules regarding research misconduct [100]. In parallel, the Office of Research Integrity (ORI) had carried out a larger investigation by observing and reporting suspected misconduct in biomedical research [101]. The basis for the revised law was that fraud or misconduct in research conflicts with the interests and the goals that the Government, the public and the re-
search society have in general. DHHS and the institutions that apply for grants from them are accountable for preserving the integrity within research. The aim of the regulation can be divided into five parts: (i) to settle what responsibility DHHS, ORI and the academic institutions have to act in questions of misconduct; (ii) to define what constitutes fraud in biomedical research; (iii) to indicate what administrative measures DHHS should take against fraud; (iv) to settle what demands are made on the institutions to report and investigate accusations of fraud and what guarantees are required to allow them to take part in research supported by DHHS, and; (v) to protect the health and security of the public as well as to promote the integrity of the research performed within the health care system.

Fraud or misconduct in American rules is defined as fabrication, falsification or plagiarism during planning, execution or publication of research. Fabrication means that data or results are made up, written down in protocols, and reported. Falsification implies that research material or equipment is manipulated, or that data or findings are changed or omitted. Plagiarism denotes that ideas, results or formulations are taken from others without indicating so. To be regarded as fraud, an action must also clearly deviate from what is considered as normal practice within the research area in question, that it has been made consciously and with intention, and that the accusations can be proven in a convincing manner. With a few specified exceptions, there is further a six-year-rule which implies that an allegation is only valid for six years after its submission. With regard to the demands for proof, the American regulation clearly says that the university or the authority that examines the accusations of fraud has to present convincing evidence. If experimental protocols and data that document the research are lacking, it is up to the examiners to prove that the accused deliberately, consciously or through gross carelessness has destroyed or withheld this material. It is further emphasized that the auditors should consider reasonable assurances from the accused for
lack of intention and should also pay attention to their divergent views. These demands are never clearly defined in the Swedish rules, a fact that may endanger law and order. Alarming examples of this are found in the Lundeberg investigation. Another item missing from the Swedish regulations is the demand for confidentiality. In the American rules, it is explicitly said that the identity both of the accused and the accuser should not be publicised if this is not required to ensure a careful, competent, objective, and fair investigation. The type of exposure in the press that Thomas Lundeberg and Joakim Carleson had to endure before the completion of the inquiries of KI and the Research Council would probably have been indictable in the USA.

As in Sweden, the primary inquiry is supposed to be carried out at the local institution. To initiate an investigation, it is required that the accusations are within the scope of the definition of research misconduct described above. Moreover, the allegations must be sufficiently reliable and specific to make it possible to present convincing evidence. If it is decided to go on, the defendant should be informed in writing. At this time, if not before, all material in the form of experimental protocols, results et cetera that may be needed to prove the accusations should be collected. Within 60 days, a decision must be reached as to whether a complete investigation should be carried out, and the accused informed accordingly. If such becomes the case, the institution should notify ORI, the federal authority, and inform within 30 days about: (i) the name and the position of the defendant; (ii) the allegations in hand; (iii) the amount of financial support from the Public Health Service the research in question has received (grant number, contracts, applications, publications); (iv) the basis on which an extended inquiry is recommended, and; (v) any available comments from the accuser or the accused. The regulation also makes a number of other demands on the investigation in order to guarantee justice and objectivity. This includes the prevention of challenge. Regarding
witnesses, it is said that all who may have relevant information in the case should be heard, including those identified by the defendant. It is further required that the testimonies should be recorded or typed, that the witnesses should be given opportunity to take part of and if necessary correct their statements, and that these should be filed together with all other documents in the case.

The local institution must finalize its investigation within 120 days. During this time, the evidence is assembled and a preliminary report presented that the defendant is allowed to study and to express an opinion on. If more than 120 days are needed, the institution has to ask for permission from ORI. In addition to viewing the preliminary report just mentioned, the defendant should have the opportunity to see all the evidence referred to, and to submit his/her views within 30 days after obtaining the material. Thereafter, the investigating institution should present a final report in writing. It should include the following information: (i) the allegations delivered; (ii) the financial support received from the Public Health Service; (iii) the allegations considered in the inquiry; (iv) the regulations used in the inquiry; (v) the evidence collected; (vi) for each count, what type of fraud is concerned (fabrication, falsification or plagiarism); (vii) available evidence and explanations given by the defendant; (viii) the need to correct or retract publications; (ix) identification of the person(s) responsible for the fraud; (x) a list of the comments given to the preliminary report by the accused and the accuser. Complete archives of all relevant documents added to the investigation must be kept, and any material requested made available to ORI.

If the local institution is able to deal with appeals, this should be done within 120 days. In any case, a copy of the final report with all enclosures and possible appeals if any should be sent to ORI. At the same time the level of agreement with the auditor’s conclusions should be indicated and what administrative measures have been taken against the accused. The institution must further let ORI know
in advance to what extent the accused has admitted guilt during the inquiry, and whether any agreement has been reached on withdrawing the case prematurely. Another responsibility of the Public Health Service and ORI is that at any time during the proceedings of an individual institution they can intervene and reach their own decision as to any disciplinary measures. The rules that then apply are even stricter than those described above. However, they are not explained further here. Instead the rest of this chapter will be devoted to the possibilities for appeal against the decisions made by ORI. In the Swedish system, so far there has not been any opportunity for appeal against the reports given by the Research Council in questions regarding scientific misconduct. According to the proposal at hand, it will be possible to appeal to a central instance, the Misconduct Committee. The final decision will however, as now, be made by the local educational institution. The only further authorities to which a complainant can turn are the National Agency for higher Education (Högskoleverket), the Parliamentary Ombudsman (JO) and the Office of the Chancellor of Justice (JK).

The American system safeguards the possibilities of appeal in a much better way. The decisions made and the measures taken by ORI may be appealed against through a Departmental Appeal Board (DAB) or an Administrative Law Judge (ALJ). Within 30 days after the receipt of a decision, a written request for a verbal court proceeding should be submitted to the chairman in the Appeal Board as well as to ORI. In this petition, the complainant should describe in detail what parts of the decision he or she contests and on what grounds. Within 30 days after receiving the request, the Appeal Board should appoint a Judge to handle the case. One or more scientific experts may be called on for assistance. These are selected jointly by the two sides or, if this does not succeed, by the Judge. Neither the Judge nor any of the experts are allowed to hold any viewpoints or any other interests that may affect their impartiality. If valid reasons exist, the parties may
request that one or more are excluded from the handling of the case due to conflicts of interest or subjectivity. If this affects the Judge, the Chief Judge in the Appeal Board will have to decide in the matter. Verbal proceedings should be used if there is a genuine dispute concerning the factual material behind the verdict of research misconduct and the measures taken. The parties are the defendant (the one accused of and convicted for research misconduct) and ORI (the convicting authority). During the proceedings, the parties may be represented by a lawyer and have the right to present verbal as well as written evidence, to call and cross-examine witnesses, et cetera. In many respects, the whole thing may be compared to normal court proceedings. The judge sets the date, time and place of the proceedings and can decide about any breaks if any of the parties have a good reason to request them, carrying out in all respects the rights and the duties of the Judge in normal court proceedings. The precise rules for carrying out the verbal proceedings runs over five pages and cannot be given in detail here.

When the verbal proceedings have been completed and the parties have been given opportunity to submit complementary material, the Judge should give a verdict in writing within the next 60 days. One copy each of this document should be given to the parties and one to the Deputy Minister of Health. The adjudication is to be considered as a proposal for a decision, and the final judgement is made by the Deputy Minister of Health who has the possibility to examine the proposal more closely and, if necessary, reconsider it wholly or in part. In that case the parties should be informed of the intention to re-examine the proposal within 30 days. If the process has not been carried out within that time limit, the Judge’s verdict should be regarded as the definite decision. The American system described here for the investigation of suspected research misconduct within the academic world goes much further than the corresponding Swedish regulations. This applies to the demands on the conduct of the inquiry, the search
for truth and justice, and the possibilities of appeal for the defendant as well as the plaintiff.

22 Summary

On June 10 in 2002, Professors Suzanna Wiesenfeld-Hallin and Per Hansson accuse Professor Thomas Lundeberg of scientific fraud. This is set out in a letter to the chairman of the Department of Surgical Sciences at Karolinska Institutet (KI) in Stockholm, Sweden. The allegations are of plagiarism in a ten-year-old scientific article and partial overlap between a couple of figures in two textbooks. The two complainants are colleagues and competitors of Lundeberg. Both of them have had earlier controversies with him due to differences in experimental results and scientific views. The next day, June 11, Professor Kerstin Ulnas Moberg complains against Lundeberg to the Ethical Council at KI. She states that he has inappropriately exploited her research on the hormone oxytocin. Notably, the two of them have been cooperating in this field since 1992. For the commercial development of their findings, they have also founded two smaller biomedical companies. At the time of the report, disputes have been surfacing between their research and business contacts for at least two years. The following day, June 12, Professor Andris Kreicbergs brings additional charges against Lundeberg in a letter to the chairman of the surgical department. The accusations include attempts of commercial exploitation (Lundeberg had asked for remuneration for analyses made on behalf of Kreicbergs), misleading information about an ethical permission for animal experiments, and fraudulent purchase of radioimmunoassay kits. Kreicbergs and Lundeberg have been collaborating since the middle of the nineties on the role of neuropeptides in inflammatory processes. They have shared a laboratory in which analyses of such molecules were made under the supervision of Lun-
deberg. This work was an integral part of an EU project led by Kreicbergs about opioid treatment of chronic pain and inflammation in the musculoskeletal system.

This is the start of a four-year-long inquiry about research misconduct carried out by KI and the Swedish Research Council. Following an internal investigation at KI lasting for two years, in March 2004 the case is transferred to the Research Council and its Expert Group in issues of scientific fraud. During the further two years this group examines the matter, additional charges are made against Lundeberg and his former doctoral student Joakim Carleson. These originate from Kerstin Uvnäs Moberg and her representative, Kurt Björkholm, and are delivered to Jan Carlstedt-Duke, Dean of Research at KI, who examines and forwards them to the Research Council. Later on, the allegations are addressed directly to the latter authority. On January 24 2006, the three expert advisers appointed by the Research Council present their report. In this document, Lundeberg and Carleson are in vague and general terms declared guilty of research misconduct. Specific details about the violations, for example with regard to plagiarism, are largely lacking. Yet as soon as the statement reaches the Secretary of the Expert Group in the Research Council, it is handed over to the press and media. As a result, Lundeberg and his younger colleague are exposed in a full page in Dagens Nyheter, the main daily newspaper in Sweden, and in Dagens Eko, the chief news program of the Swedish Radio. Four months later, May 18 2006, the Expert Group delivers its report to the President of KI, Harriet Wallberg-Henriksson. In this document, the Expert Group upholds the conclusions of its auditors and once again condemns Lundeberg and Carleson for research misconduct. A whole month passes before Harriet Wallberg-Henriksson makes her decision in the case official. With reference to the statement from the Research Council, she concludes that the suspicions and observations made during the internal investigation at KI have been confirmed. Accordingly, Lundeberg and Carleson are once
more convicted as responsible for scientific fraud and hung out in the daily press.

This story basically represents a coordinated attack by four professors on a colleague with whom all of them are in conflict. What they take up are old publications and other concerns of doubtful relevance. Most of the claims are dismissed in the initial inspection made at KI. Nevertheless, the affair is prolonged and successively grows in size due to continuing fresh accusations from Uvnäs Moberg and Björkholm. Nowhere during the investigation is it possible to find any information about, or any standpoints taken with regard to, the challenges (lack of neutrality) that can be made to many of the complainants, examiners, and witnesses. Not least obvious are these objections concerning the key witness, Indre Bileviciute-Ljungar, an earlier doctoral student of Lundeberg and a former girl friend of Carleson. In connection with a congress in 1996, Carleson broke off with Bileviciute-Ljungar. This led to tensions that negatively affected the atmosphere in the laboratory for a long time. According to reliable information, these circumstances were known to Jan Carlstedt-Duke, the Dean who received the testimony of Bileviciute-Ljungar and forwarded her information to the Research Council. He ought to have been more hesitant when she came to him with a worn out ("dead") laptop from which a computer technician, only after long hard work, managed to extract a number of files named "Thomas folder" and "Thomas folder/Joakim" as well as two of her own unpublished manuscripts. For what conceivable reason did she have a large number of files belonging to these persons (the two accused) in her laptop. It was impossible to decide when these files had been created and last modified.

The evidence put forward by KI and the Research Council is poor and deficient. A few examples are given here. Two patent applications submitted together by Lundeberg and Uvnäs Moberg were among the matters examined. Jan Carlstedt-Duke decided that two unpublished
manuscripts (given to him by Uvnäs Moberg) used in the preparation of one of the patent applications were in part plagiarized from articles published by other authors. The advisers of the Research Council concurred with this conclusion. However, if these articles are compared with the patent text, it is not possible to see any close similarity between the results presented. With regard to the second patent, it is correctly notified that the animal models used in some examples are derived from the literature. It is also true that the wordings in the description of the experiments had to a large extent been taken from published articles. This, however, is not forbidden in connection with patent applications. On the other hand, it is obviously not permitted to plagiarize or steal the results of other scientists. The experts of the Research Council express the matter as “effects directly copied from the publications of other authors”. This is done without specifying which effects or whose publications they refer to. At a closer examination, the statement appears to be concocted.

The unpublished manuscripts Indre Bileviciute-Ljungar handed over to Jan Carlstedt-Duke are another illustration of the inappropriateness of the arguments used by the prosecutors in this affair. The studies described in these documents deal with knee joint inflammation and have a similar disposition as the investigations later made by Joakim Carleson on the jaw-joint. Thomas Lundeberg acted as supervisor in both of these doctoral projects. In a letter to Carlstedt-Duke, Bileviciute-Ljungar describes how (after earlier rejection in other journals) she had revised her manuscripts before resubmitting and publishing them. The manner in which this modification is explained fits the definition of the type of fraud called “falsification”. For example, she writes about “selecting the analytical results where no or only a minimal error had appeared”. The four published articles that came out of this selection of “appropriate” values from the three manuscripts handed over to Carlstedt-Duke contain portions with suspect fabrication and plagiarism. In contrast, no clear signs of such deception can be
found in the articles by Carleson and Lundeberg (plus additional authors) condemned by KI and the Research Council. When these latter publications are compared with the articles published by Bileviciute-Ljungar (where Lundeberg himself is senior author) no close similarity is found either in wording or results. If instead the comparison is made with the unpublished manuscripts, a resemblance between the texts is unsurprisingly noted. After all, the projects of the two students are very similar in character, dealing with inflammation in the knee joint and the jaw-joint, respectively. Moreover, the source of some of the formulations was an unpublished manuscript, and Lundeberg was the senior author and supervisor in both cases. In this situation, it is incorrect to talk about plagiarism. It should also be clearly noted that no striking “identity” exists between the research articles of Carleson and the unpublished manuscripts of Bileviciute-Ljungar. The similarity is even smaller if the comparison is made with the articles the latter author later published.

A striking feature in the entire investigation both at KI and the Research Council is the departure from basic principles of law and order. The constitutional rules about objectivity and equality of rights have been seriously violated. This is demonstrated by the fact that Kerstin Uvnäs Moberg and her solicitor Kurt Björkholm were allowed to direct the investigation to a large extent. A survey of the written communications these two persons have had, not only with KI and the Swedish Research Council but also with the Police, the Swedish Security Service, the Swedish Economic Crime Authority, and the Government (including the Prime Minister), reveals a basically pathological slant to their behaviour. The harassment continues after the final decision by the President of KI, declaring Lundeberg and his colleague guilty of research misconduct. As late as the summer of 2007, Uvnäs Moberg called upon KI and the Swedish Government to initiate examinations of about thirty persons in Sweden and other countries, all with some type of relation to Lundeberg, and about ten companies
in the pharmaceutical field as well. The foundations on which this entire inquiry was based cannot be called anything but abnormal. The fact that it was allowed to continue year after year indicates that the investigation already in an early phase lost all signs of moderation and objectivity.

An unpleasant element of the process is the rumours that private detectives have been engaged and that high officials at KI have been subjected to inappropriate intimidations. At the same time, it is alarming to see how the prosecutors ignore the neutrality rules and the paragraphs in the public administration law assuring the persons in question the right to comment on all the material in the examination. It is likewise shocking to realize that state authorities like KI and the Research Council can neglect the sections in the archive law that demand registration and filing of official documents. As an example, it can be mentioned that central parts of the written evidence the prosecutors cite has not been registered and is not available for examination. Moreover, the accused and their representatives have never been given the opportunity to see this material and express their opinion about its validity.

It is not just the legal scandal that the investigation of KI and the Swedish Research Council represents. The decision made by Harriet Wallberg-Henriksson, the President of KI, has a number of personal and economic consequences for Thomas Lundeberg. His employer, Danderyd’s Hospital AB, has forbidden him to practise research (“risk of loss in trust”). Early during the investigation, Lundeberg had applied for a position as professor of rehabilitation medicine at the University of Gothenburg and was marked as number one among the applicants. When in 2004 KI asks the Research Council for help to investigate the suspicions of scientific fraud, it is decided to defer the appointment until a decision has been made. When the President of KI pronounced her judgement, Gothenburg decides to withdraw the professorship. Later on, in proper order Lundeberg addresses the
County Administrative Court, the Administrative Court of Appeal, and the Supreme Administrative Court. His hope is to get the report of the Swedish Research Council and the decision of KI reviewed in a court process. As support for this request, he encloses, among others, a juridical certificate from a former Swedish Parliamentary Ombudsman (JO) and a former member of the Supreme Administrative Court, Bertil Wennergren. In the view of this leading expert, Lundeberg has the right to get his case considered in court according to the European convention’s paragraph about human rights (incorporated in the Swedish law since 1995). This was however ignored by the three administrative courts. Without any explanation, they just declared that no appeal was allowable against the report of the Research Council and the decision of KI.

The conclusion that must be drawn after looking carefully into the investigation made by KI and the Swedish Research Council in response to the allegations of scientific fraud raised against Thomas Lundeberg and his former student Joakim Carleson is that it represents a serious injustice from two state authorities against two individuals. The expression “legal scandal” is not sufficient to describe what has happened. A nation that officially allows a violation of this type without any intervention cannot call itself a state governed by law.
23 Sources

The facts and the documents presented and discussed in this text mainly derive from different official sources. Among these, the following can be mentioned:

• The diary and the archives of Karolinska Institutet
• The diary and the archives of the Swedish Research Council
• The Government offices
• The archives of police authorities, prosecutors offices, and courts
• The Swedish Companies Registration Office (registration documents, articles of association, annual reports, lists of officials, firm histories, et cetera for Swedish joint-stock companies)
• The European network of patent databases, Espacenet (access to more than 50 million patents from all over the world)
• PubMed, a service mediated via the U.S. National Library of Medicine (contains more than 16 million citations from the database Medline as well as a large number of biomedical journals from the 1950-ies and onwards)
• The archives of individual scientific journals
• Swedish daily press and Swedish media
• Sources mentioned in the reference list
• Other documents available on the Internet
• Personal interviews with affected persons and others with insight into the case
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because the papers were submitted for publication simultaneously, and we omitted to inform the respective editors of the existence of the other paper. Furthermore, when the papers were ultimately accepted for publication, we neglected to correct the record. We apologize for any inconvenience caused. As senior author I accept sole responsibility for this regrettable error.

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