

Research article

Swedish–German contacts in the field of anatomy 1930–1950: Gösta Häggqvist and Hermann Stieve

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ABSTRACT

This study presents a first exploration of Swedish–German contacts in the field of anatomy between 1930 and 1950, a subject of research that has only recently come into focus. Based on the background of the general cultural and scientific exchange between Sweden and Germany and the biographies of the Swedish anatomist Gösta Häggqvist (1891–1972) and his German colleague Hermann Stieve (1886–1952), this study identifies specific areas of collaboration between anatomists of the two countries. These include mutual professional career advancement, publication of research results, the exchange of technological expertise and transfer of anatomical specimens. The investigation also examines the use of “material” from executed persons in Sweden and Germany as well as public postwar critiques of this practice. Open research questions on Swedish–German interactions in anatomy during this time period are formulated. The contacts between Häggqvist and Stieve give insight into the impact of scientific collaborations and controversial political liaisons in the relationship between Swedish and German science in recent history. The study is based on documents from German and Swedish archives, including Nobel Prize nominations and reports from the Nobel Archive for Physiology or Medicine in Stockholm.

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1. Introduction

The history of anatomy in National Socialism has only become a focus of systematic research in the last decade (Hildebrandt and Redies, 2012). One thus far neglected aspect relates to scientific contacts during the National Socialist period between German anatomists and their colleagues in officially politically neutral countries like Sweden. During the 1930s, academic contacts between Sweden and Germany were supported by several so-called German-friendly organizations. However, the German–Swedish interactions in medicine between 1933 and 1945 have not been thoroughly investigated, despite the fact that physicians made up a large part of the membership of National Socialist associations in Sweden.

The Stockholm anatomist Gösta Häggqvist was one of the most influential Swedish anatomists and histologists during the first half of the 20th century. He has remained a subject of controversy because of his outspokenly friendly attitude toward National

Socialist ideology and his commitment to spreading National Socialist propaganda in Sweden. He also maintained close contacts to medical representatives of the “Third Reich” and his German colleagues, particularly Hermann Stieve (Hansson, 2013). This investigation takes a first look at the cooperation between anatomists in National Socialist (NS) Germany and their colleagues in officially politically neutral countries in the years from 1930 to 1950. Based on the background of the general cultural and scientific exchange between Sweden and Germany and the biographies of Häggqvist and Stieve, this study identifies specific areas of collaboration between anatomists of the two countries. These include mutual professional career advancement, publication of research results, the exchange of technological expertise and transfer of anatomical specimens. The investigation also examines the available evidence concerning the use of “material” from executed persons in Sweden and Germany as well as public postwar critiques of this practice. Finally, open research questions are formulated on Swedish–German interactions in the field of anatomy during this time period.

2. Material

This study is based on sources from archives in Germany and Sweden. Documents relating to Häggqvist and Stieve have

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been collected from the Royal Swedish Academy of Sciences Archive in Stockholm, the Greifswald University Archive, the Leopoldina German National Academy of Sciences in Halle/Saale, the Max-Planck-Archive in Berlin-Dahlem, and the Bayerische Hauptstaatsarchiv (Bavarian Central State Archive). In addition, information was gathered from memoirs of Häggqvist and Stieve's colleagues, obituaries and Swedish and German daily press from the 1940s and 1950s. Another insight into the relationship between German and Swedish scientists in the first half of the 20th century is provided by documents from the Nobel archives in Stockholm. The Nobel archive for Physiology or Medicine (NA) holds correspondence, reports and nominations of senior and junior physicians from around the world and therefore offers an exclusive view of Nobel Prize nominators and candidates in the field of anatomy. Historians are given access to the yearbooks fifty years after the year of nomination. This source has not previously been examined for the purpose of shedding light on the history of anatomy, although in recent decades it has gained scholarly attention among medical historians (for example Lüttenberger, 1996; Crawford, 2002; Norrby, 2010). The Nobel Prize nominations are of interest as they illustrate personal connections in the scientific community among leading anatomists.

3. General history of Swedish–German contacts in anatomy 1930–1950

Earlier research has shown that officials in NS Germany actively worked to establish and uphold good contacts with prominent Swedes in the fields of culture, journalism and education (Almgren, 2005). This policy included physicians and anatomists, however, the specific interactions between anatomists of the two countries have not been explored. For centuries, Swedish physicians had been influenced by medical progress in Germany, thus, the fact that interest in German medicine and science continued to be widespread in Sweden during the first decades of the 20th century is not surprising. Many Swedish physicians traveled to Germany for the purpose of studying there, and they wrote scientific articles and dissertations in German. Among those were the renowned Swedish anatomists Gustaf Retzius (1842–1919) and Carl Magnus Fürst (1854–1935), who both became honorary members of the *Anatomische Gesellschaft* (organizational body of German and international anatomists). Even in the 1930s and 1940s a well-functioning network in anatomy/histology existed between the two countries – despite the fact that the Swedish Society of Medicine tried to downplay its relationship with Germany in the 1940s through official protests against the Hitler regime and the treatment of physicians in occupied Norway (Brissman, 2010). The close working relationship was expressed by the fact that Ivar Broman (1868–1946) was chosen to act as a member of the board of directors of the *Anatomische Gesellschaft* from 1931 to 1934, and that Torsten Hellman (1878–1944) held this position from 1939 until 1945 (Herrlinger, 1965), when the society was disbanded by the Allied Occupational Forces in Germany (Winkelmann, 2012; Hildebrandt, 2013a). The aftermath of the Second World War also brought about a profound change in this relationship. In Swedish medical circles the language of science shifted from German to English. Swedish physicians made fewer study visits to Germany, and German physicians who were considered politically tainted were not allowed to participate in Swedish conferences for some years after the war. For example, Gunnar Dahlberg (1893–1956), head of the state institute for racial biology in Uppsala (where Häggqvist was a board member), wrote to the German geneticist Otmar von Verschuer (1896–1969) in 1947: “Invitations to the genetics congress next year will be sent only to those German scientists who are not politically discredited” (Max Planck Gesellschaft-Archive,

III. Abt., Rep. 86A, Nr. 217). Nevertheless, Häggqvist was among those international anatomists who continued their contacts with German colleagues after the war (Hildebrandt, 2013a) and was a member of the board of directors of the *Anatomische Gesellschaft* from 1954 to 1958 (Watzka and Voss, 1957).

While only a few Swedish physicians openly criticized the Hitler regime or the actions of the National Socialist German Physicians' Federation (NSDÄB), there was also only a small number of them who unreservedly supported Adolf Hitler. The German legation in Stockholm kept a list of Swedes with a positive attitude toward National Socialism (Almgren, 2005). Among these were Gösta Häggqvist and the pathologist Folke Henschen (1881–1977), who were both members of so-called Pro-German associations before and during the Second World War. Häggqvist was a member of one of the main Swedish organizations that supported NS ideology, the *Riksföreningen Sverige-Tyskland* (RST, national association Sweden–Germany) and several other related Swedish–German societies.

The RST was founded in 1937 with a proclamation that was signed by more than 400 persons, among them 40 physicians. Its purpose was to evaluate and eventually support the ideology of NS Germany and to promote National Socialist ideas within Sweden. During its most active period from 1938 to 1943, RST had about 5600 members, of whom nearly 200 were physicians (Hansson and Nilsson, 2007). The RST published a periodical paper with articles ranging in topic from themes related to German culture and politics to commentaries on war events. Prominent members of the RST, among them Häggqvist, protested in December 1939 against NS Germany's lack of support for Finland's struggle against the Soviet invasion during the so-called Finnish Winter War in 1939/1940 and argued for a temporary break with Germany. As a result, some members chose to leave the association (Hansson and Nilsson, 2007). Despite these incidents, the association grew significantly between 1941 and 1943. In 1942, RST published a book on German–Swedish relations, for which Häggqvist contributed an article on the “productive” cooperation between German and Swedish anatomists by portraying anatomists like Robert Remak (1815–1865) and Stieve (Häggqvist, 1942). Some of the RST-physicians were also members of the Manhem Society (*Samfundet Manhem*). It was founded in 1934 to promote studies in Nordic culture and to cultivate scientific contacts with Germany. Gösta Häggqvist was elected member of the first board and gave lectures at meetings organized by *Samfundet Manhem*. The Association Sweden–Germany (*Svensk-Tyska Föreningen*) and the German Scientific Institute (*Das deutsche wissenschaftliche Institut*) also played significant roles in medical contacts between the two countries. In the former organization, Häggqvist served as president between 1948 and 1955, and, in the latter, the focus was on allegedly “uncontroversial” medical research, “as the Swedes would have been suspicious and the Germans would not have expected success, if there had been German guest professors in such fields as history, social sciences and journalism” (Hausmann, 2001). While the RST played a more active role as a leading pro-German organization at the national level, the Association Sweden–Germany was more limited in its scope as it operated locally in the Stockholm region and did not publish a regular journal.

4. Gösta Häggqvist and Hermann Stieve

4.1. Gösta Häggqvist

Gösta Häggqvist was born in Rödön, a rural village in the northern Swedish province of Jämtland on October 18, 1891, son of the clerk Gustav Häggqvist and his wife Malin Molin. He graduated from a *gymnasium* (college) in Härnösand in 1914, and then



Fig. 1. Gösta Häggqvist 1941.

moved on to the Karolinska Institute in Stockholm for his medical studies, finishing in 1918 (Nilsson, 2004). His early research interests included studies on temperature regulation of the human skin (Häggqvist, 1915). He continued his graduate studies at Lund University, where he published his PhD dissertation and was promoted to associate professor (*Docent*) in 1919 and to the position of professor of histology in Lund from 1920 to 1921. In 1922 Häggqvist returned to the Karolinska Institute in Stockholm where he served as professor of anatomy and histology until 1960. As professor, Häggqvist wrote several articles on various aspects of muscle tissue for German journals (for example Häggqvist, 1920a, 1920b, 1920c) and contributed to the German histology textbook *Handbuch der mikroskopischen Anatomie des Menschen* (Häggqvist, 1931). He also taught histology at the Faculty of Dentistry at Karolinska Institute and was often consulted on matters concerning medical education. For example, he served on a committee (1938–1941) for the revision and reformation of medical education for undergraduate students. During his lifetime he received a number of awards and held honorary memberships in professional societies in Finland, Bulgaria, Germany and the Netherlands. He served as the President of the Swedish Society of Medicine in 1952, the main scientific medical organization in Sweden. After his retirement in 1960 he published several scholarly works in the field of medical history (Liljestrand et al., 1960), including a book about Andreas Vesalius (Häggqvist, 1965). Gösta Häggqvist was married and had two children. He died in 1972 (Fig. 1).

In memoirs of contemporary Swedish post-war physicians, Gösta Häggqvist was characterized as a Germanophile academic, but, after the war, was careful about showing any political opinions or pro-German bias during his years at the Karolinska Institute or in front of colleagues and medical students (Gyllenstein, 2000; Jersild, 2006). However, many of them knew parts of his personal biography and of his positive attitude toward Germany during the war years. During the NS period he had published papers in the pro-NS weekly “Nationell Tidning” on a regular basis and had been a member of right-wing political organizations, first the “Nationalsozialistiska Blocket” and later on the “Sveriges Nationella Förbund”. It should be noted that there is no evidence that Gösta Häggqvist was in close contact with Dr. Åke Berglund, the leading protagonist of NS ideology among Swedish physicians during the time of the Third Reich (Nilsson, 2004). This could be a sign that Häggqvist had hesitated about getting too close personally to organized NS movements and their members, at least during the latter part of the Second World War.

Among Häggqvist's wide-ranging scientific and political contacts with German colleagues were his acquaintance with

Reichsgesundheitsführer (Reich leader of health) Leonardo Conti (1900–1945) and Häggqvist's honorary doctorate candidacy in Greifswald in 1944 (see below). Leonardo Conti had met Häggqvist on several occasions, for example during a Paracelsus-conference in 1941 in Salzburg (Henschen, 1957). They probably had another encounter during Conti's guest lectures in Stockholm in 1939 and 1941, organized by the Sweden–Germany Association. In 1943, Conti invited Häggqvist to act as an international expert in an investigation of mass graves at Winniza/Winnizja in the Ukraine. In Winniza several thousand persons, mostly of Ukrainian ethnic origin, had been murdered by the Soviet secret police during Joseph Stalin's Great Purge in 1937/1938. Häggqvist accepted this assignment and became part of a committee of 11 investigators led by the Hungarian pathologist Ferenc Orsos (1879–1962). Their report was subsequently used in German anti-Soviet propaganda. Once Häggqvist returned to Sweden, he wrote to his colleague Ivar Broman in Lund (August 19, 1943): “The experiences in Winniza were awful. One has to assume that hundreds of similar murder-sites exist in Russia, and it is not hard to imagine what would happen if the Bolsheviks ruled Europe” (Nilsson, 2004).

Apart from the Winniza commission there is further documentation of the German medical authorities trying to strengthen contacts with Häggqvist. One such example was an honorary doctoral award from a German university for a Swedish physician, as was contemplated in Greifswald in 1944. There were two important conditions for a potential candidate: he should be of documented scientific renown and be a public supporter of NS Germany. Häggqvist was named as the most suitable candidate by the German legation in Stockholm. The other Swedish candidates were held to be too old or not politically “trustworthy”. Ultimately, no one was appointed to the honorary position due to the war situation in 1944 (Greifswald University Archive, Med.Fak I-565) (Fig. 2).

4.2. Hermann Stieve

Hermann Stieve (1886–1952) was chairman of anatomy in Halle/Saale from 1921 to 1935 and in Berlin from 1935 to 1952 (biographical notes on Stieve based on Hoffmann, 1951; Grosser, 1951; Romeis, 1953; Kirsche, 1953). He began his professional career at the University of Munich as assistant to the anatomist Johannes Rückert in 1912 and focused on questions of development, reproduction and fertility early on. In 1918 he accepted a position as second prosecutor in Leipzig, and in 1921 he was hired as youngest chair of a German medical department to the anatomical institute at Halle University. During his time in Halle a close friendship developed with the gynecologist Hugo Sellheim, who encouraged Stieve's interest in the female reproductive organs and their changes during pregnancy and the menstrual cycle. Sellheim provided Stieve with many rare surgical specimens. Stieve was generally innovative in his discovery of sources of “material” for his studies. Apart from the surgical specimens gained through termination of pregnancies by hysterectomy in severely diseased patients and organs of persons who died suddenly through accidents or suicide (Schagen, 2005, p. 42), he explored the traditionally available source of bodies of executed persons. He had used this “material” for the first time in a 1919 study on the pyloric region of the stomach (Stieve, 1919). By the early 1920s he had realized that the situation of prisoners on death row essentially mirrored his animal experiments for the study of the influence of stress on reproductive organs. In the case of the prisoners, the chronic stress factor was the incarceration itself, while the acute stressor was the prisoner's notification of the upcoming date of execution. In 1924 Stieve had collected fresh “material” from 34 bodies of executed men and found distinct changes from the normal in the functionality and structure of these organs (Stieve, 1924). Similar studies on women were impossible then, as they were not subject to executions in

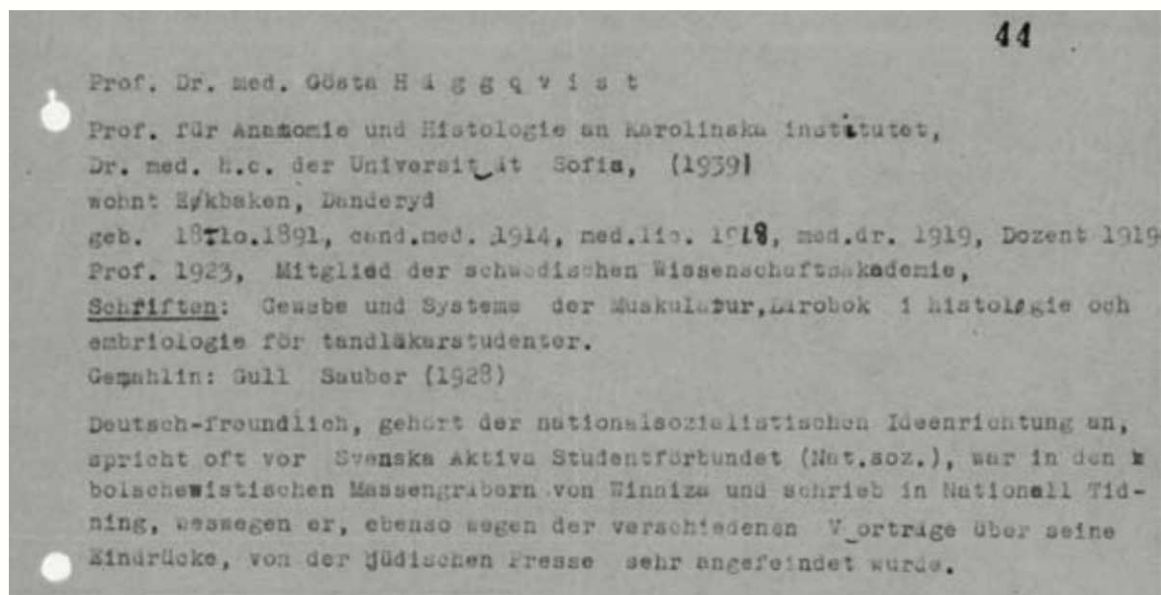


Fig. 2. University of Greifswald: UAG Med.Fak. Bd 5 65:1. [Translation: Gösta Häggqvist: "[...]German-friendly, belongs to the National Socialist movement, often gives talks for Svenska Aktiva Studentförbundet (Nat. soc.) [Swedish student organization], was in the bolshevist mass graves in Winniza and wrote about that in *Nationell Tidning* [Swedish newspaper]. Was strongly attacked by the Jewish press because of this as well as for his public presentations on the subject"].

the Weimar Republic. By the time of his recruitment in 1935 to one of the most prestigious positions in anatomy, the chair of the anatomical institute at the Friedrich-Wilhelms-University Berlin, Stieve had published more than one hundred scientific papers. Berlin was the political center of Germany, and this included the center of NS legislation, the *Volksgerichtshof* (people's court), where most of the prominent political trials were held. Death sentences increased exponentially during the NS period, and in Berlin they were performed at the Plötzensee execution site or in Brandenburg-Görden. From 1935 on, women were among the executed, and Stieve immediately seized this 'opportunity' to continue his studies on the influence of stress on reproductive organs, now in the female human "system" with ovulation patterns as one of his major interest (Schagen, 2005; Winkelmann, 2008; Winkelmann and Schagen, 2009; Hildebrandt, 2013b). As elsewhere in Germany, the collaboration between prison authorities and anatomical institutes was a close one. Stieve elicited clinical information on female prisoners on death row, e.g. on their menstrual cycle, from the prison employees, and then investigated the victims' reproductive organs directly after their death (Winkelmann and Schagen, 2009). In 1942 alone more than 500 executions were performed at Plötzensee (Winkelmann and Schagen, 2009, p. 165). The bodies of executed persons and other victims of the NS system were used for the dissection course as well as for Stieve's research. Students and staff were sworn to secrecy, however, the provenance of the bodies was obvious due to the decapitations (Noack, 2007). Many of the victims were members of the political resistance or persons who had committed minor crimes (Hildebrandt, 2013a). Stieve performed and published several studies based on "material" from hundreds of bodies of executed men and women during this time. He felt it to be his "duty" to store and use this "material of a kind that no other institute in the world can call its own" (Stieve, 1938, quoted after Winkelmann and Schagen, 2009, p. 165; see also below). Stieve was nationally and internationally respected as one of the leading German anatomists of his time. He held the position of member of the board of the *Anatomische Gesellschaft* from 1934 to 1938 and continued to feel responsible for the society after the war (Hildebrandt, 2013a). He died suddenly of a stroke on September 9, 1952.

While Stieve was a fervent National conservative and had been a member of right-wing paramilitary organizations, among them

the Stahlhelm, after WWI, he never joined the NSDAP and maintained a certain distance from the NS regime. This could be due to his rather autocratic and dominant personality, which may have prevented him from forming easy alliances with any group or person he considered inferior to his own standards (Schagen, 2005; Noack, 2007; Hildebrandt, 2013a). The latter interpretation is supported by an anecdote remembered by Häggqvist in his obituary of Stieve. Stieve, who, according to Häggqvist had never talked about his Stahlhelm membership, told Häggqvist about an encounter with Hitler in 1923, when Hitler, whose NSDAP was still an obscure political party at that time, sought contact with the Stahlhelm in preparation for the Beer Hall Putsch in Munich. The leadership of the Stahlhelm was of the opinion that Hitler was a "crazy fantasist" and refused any collaboration, a statement that Stieve seemed to support (Häggqvist, 1953) (Fig. 3).

4.3. Specific interactions between Gösta Häggqvist and Hermann Stieve

Hermann Stieve and Gösta Häggqvist were connected by a friendship based on mutual personal respect and high regard for each other's home country. As Stieve, in contrast to Häggqvist, was not a committed supporter of National Socialism, political ideology is unlikely to have been of great importance in their relationship. Stieve had probably first become acquainted with Sweden and its people through his brother Friedrich Stieve (1884–1966), a diplomat and historian, who was married to a Swedish woman. Friedrich Stieve served as press attaché to the German consulate in Stockholm during the First World War (Kraus, 2005). Häggqvist and Hermann Stieve were both highly appreciative of each other's great professional contributions. In his obituary for Stieve, Häggqvist praised his German colleague as a very important researcher in reproductive medicine in Germany (Häggqvist, 1953). He reported that Stieve sent important histological specimens to Häggqvist for safekeeping during the Second World War, when Berlin was under constant bombardment (Häggqvist, 1953, p. 427). At this point it is unclear what became of these specimens, as they can be located neither in Stockholm nor in Berlin. It is also unknown what kind of specimens these were.

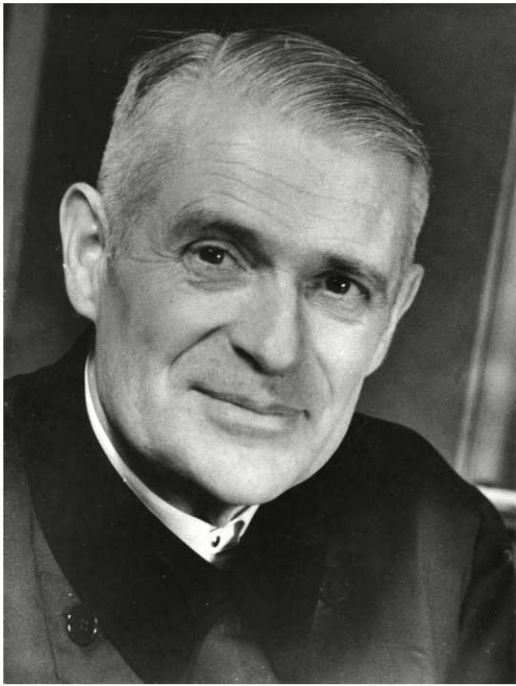


Fig. 3. Hermann Stieve 1944.

Image of Hermann Stieve in 1944, private property Rebecca Stieve, permission granted.

On at least three occasions, Häggqvist and Stieve nominated each other for prestigious awards or memberships to academic societies. In 1940, Stieve was elected as a member of the Royal Swedish Academy of Sciences because of his academic achievements as well as for his commitment to strengthen the scientific connections between Germany and Sweden. He had been nominated by Gösta Häggqvist and two other professors at the Karolinska Institute, Gösta Forssell und Göran Liljestrand (Henning Pleijels Letter to Stieve: The Archive of the Royal Swedish Academy of Sciences, Letters From the Secretary 1940). Likewise, as the result of a nomination by Hermann Stieve, Gösta Häggqvist became a member of the Leopoldina National Academy of Sciences (Halle/Saale) 3 years later, in 1943. In his proposal, written on January 30, 1943, Stieve acknowledged Häggqvist as a prominent researcher, but also as a “great friend of Germany, who takes every chance to promote Germany, even in difficult times”. Stieve also emphasized the need to strengthen the contacts to Sweden during World War II (Leopoldina-Archive, M 4697, Stieve’s nomination of Häggqvist). Bernhard Rust, the Minister of Science, Education and National Culture (Reichsminister für Wissenschaft, Erziehung und Volksbildung) approved the proposal. Stieve himself remained in close contact with Sweden during the war, as he agreed to participate in a search commission for a professorship at the Karolinska Institute in Stockholm (Häggqvist, 1953).

In terms of research, Häggqvist is best known for his experiments with “giant animals” (Jersild, 2006), which were reported in scientific journals (Häggqvist and Bane, 1950) and even in German newspapers (*Die Zeit*, 1950; *Der Spiegel*, 1950). In 1947 he had started on a series of successful experiments that aimed to increase the size of animals by raising the number of their chromosomes. Hermann Stieve was impressed by this work and nominated Häggqvist for the Nobel Prize in 1951. Stieve wrote:

“The essence of Häggqvist’s experiments lies in the fact that he was able to produce giant animals [...] All anatomists who participated in the Kiel conference [in 1950] agreed that Häggqvist presented by far the most important contribution of the

whole meeting [...] It is certain and beyond all doubt that Häggqvist [...] deserves the Nobel Prize”. (Nobel Archive, Stieve, on January 15, 1951, translation by the authors).

Häggqvist was also nominated by the Munich anatomist Benno Romeis (1888–1971). The Nobel Committee report on Häggqvist was written by the geneticist Gert Bonnier (1890–1961) (NA, Bonnier, March 24, 1951). Bonnier argued that Häggqvist’s experiments were indeed of great importance, but not original enough for a Nobel Prize.

It was not the first time that Stieve had unsuccessfully nominated a Swedish anatomist for the Nobel Prize: 25 years earlier, in 1926, he had given his vote for Johan August Harald Hammar (1861–1946) for his research on the thymus of suicidal persons and pregnant women, as well as for his comparative thymus studies on “different races” (NA, Stieve, January 25, 1926). Neither Häggqvist nor Stieve were nominated for the Prize between 1936 and 1945, perhaps for political reasons. On January 30, 1937, Adolf Hitler prohibited all German citizens from accepting a Nobel Prize, or even to nominate anybody or be nominated. This was in reaction to the awarding of the Nobel Peace Prize to the pacifist Carl von Ossietzky in 1935 (Crawford, 2000). As an alternative to the Nobel Prize, Hitler created the *German National Prize for Art and Science*. It was to be awarded annually in a ceremony at the main Nazi Party congress. It is an open research question whether Stieve or other anatomists had been nominated for this prize.

5. Use and transfer of “material” from executed persons and public criticism after the war

Bodies of executed persons were the first legal source for anatomical dissection in scientific anatomy (Hildebrandt, 2008). In German anatomy “material” from bodies of the executed became a gold standard for high-quality research in histology many years prior to 1933, when executions were quite rare (Hildebrandt, 2013c). Other countries, especially in Northern and Eastern Europe, were also familiar with the use of bodies of the executed in anatomy, among them Sweden. Häggqvist gave the following account of a histology course in Sweden in the early 20th century:

“Every student received 200 histological specimens, which he/she could keep. During my time as assistant we had about 80 students, which meant a production of about 18000 [microscopic slides] per year. [...] We had plenty of material. It came from the two last executions in Sweden, the serial killer Nordlund [in 1900] and the [robbing-] murderer Anders [in 1910]. It had been conserved in alcohol and was no longer in excellent condition due to shrinkage and bad coloration.” (Häggqvist, 1960, p. 70, Manuscript, translation by the authors).

“Material” from executed persons was not only used for teaching purposes but also in Swedish research, as two publications show (Bergstrand, 1938; Gentile and Swensson, 1941). In 1938 Carl Gustaf Bergstrand from the histological institute at the Karolinska university in Stockholm published a paper entitled “*Zur Morphologie der quergestreiften Ringbinden*” (on the morphology of striated circular bands) in which he used pieces of the diaphragm of a 35-year-old executed man. The “material” had been collected by his colleague Gunnar Wohlfahrt between 1932 and 1938. Similarly in 1941, Gentile and Swensson reported, in a study on the dorsal roots of the spinal cord, the use of “material” from a 30-year-old man who was executed. A source of this “material” was not named. Given the fact that civilian executions had been abolished in Sweden in 1921 and executions were only allowed under conditions of war (Schweden-Geschichte, 2014), the question has to be asked as to where and when the “material” for these two studies had been acquired. Both papers were published in the German

journal *Zeitschrift für Mikroskopisch-Anatomische Forschung*, which had been founded and edited by Stieve since 1924. Stieve's work, on the other hand, was also published in Sweden (Stieve, 1944).

Apparently Stieve supported Swedish anatomists not only by publishing their research results. Stieve, like many of his colleagues, shared his "valuable material" from executed persons with pupils and colleagues even before 1933, as we know from a publication by Max Clara. The latter thanked Stieve in 1928 for "material" from the reproductive organs of a man, most likely an executed prisoner, as Stieve himself was working with this kind of tissue at the time (Clara, 1928). Stieve also gave "material" to Swedish colleagues. Häggqvist saw it as a sign of Stieve's friendship with Sweden that he helped younger and older researchers with "material that was otherwise difficult to obtain" (Häggqvist, 1953).

Among those profiting from Stieve's collegiality was the doctoral student Sten Floderus. He thanked "Professor Stieve" for the gift of "material" for work on his thesis on the morphology of the human hypophysis (Floderus, 1944). Floderus reported in the foreword of his dissertation that he started his work in 1936 following a suggestion by the pathologist Folke Henschen. Floderus had spent the summer of 1938 at the anatomical institute in Berlin, where he had been introduced to the technology of tissue culture under the supervision of Stieve (Floderus, 1944, p. X). Stieve provided him with "material" from seven executed men either at that time or sent it to Floderus at a later date (Floderus, 1944, pp. 69–72). Floderus published his report in 1944 and defended his thesis in a public hearing, as is Swedish custom. Apparently the press became aware of this matter and a newspaper article appeared, criticizing the ethics of body acquisition in anatomy. The *Aftonidningen* wrote on May 18, 1945 under the heading "Women killed for ovarian experiments: Swedish physician received pituitary glands from decapitated German prisoners":

"Where does a researcher draw the line when he is collecting material for his research? That is a relevant question following the terrible horror-reports from Germany, according to which human beings have been killed for the purpose of serving physicians as good opportunities for scientific studies. Prof. G[eorg] Kahlson [Kahlson (1901–1982), Professor of physiology at Lund University 1938–1968 was one of few professors who strongly and unreservedly criticized Adolf Hitler in many publications] recently described several cases of German physicians' systematic use of concentration camp prisoners for medical experiments. One doctor after another performed various experiments, yes, they even killed human beings according to a schedule in order to obtain organs exactly when they wanted them. A Swedish physician, Sten Floderus, published a dissertation last year, which was partially based on his findings from a study trip to Berlin in 1938, where he obtained material. He received a good grade on his thesis. It dealt with the morphology of the pituitary gland with particular focus on histological relationships. On page 69 in chapter 3 he writes that he studied 49 human pituitary glands, seven of which "stemmed from men who had been decapitated, but of course not in Sweden". From his tables on pp. 70 and 71 it is clear that the poor victims were 24, 25, 26, 31, 36, and 47 years old. AT [Aftonidningen] contacted the young doctor, who used this German material, to ask him some questions. He answers: Yes, it is obvious that one often has doubts about material that has been offered from Germany. I had been asked to acquire pituitary glands from Germany. Somebody suggested that I should travel to Spain and collect pituitary glands from the battlefields there. However, I found this too macabre. In Berlin I could have received more than the seven pituitary glands, all already conserved and dissected. I will probably never find out who the executed persons were. However, the editor is quite right in assuming that I should have had

an idea [about the source of the material]. The violent regime had after all already started in 1933. I had received the material as a gift from a German institute. It is obvious that ethics, too, plays a part in my research. Thus I had been offered pituitary glands from women in Berlin, who had been executed in a specific, prearranged manner. These were women, who had been murdered on certain days of their menstruation, e.g. on the 1., 3. or the 5. day. However, I refused to accept this material. Everybody who knows me also knows that I have performed my work with the best intentions. Nobody has protested the horrible persecution of Jews more than I have done, and the same is true of the grotesque treatment of prison camp inmates by the Germans." (Anon., 1945; translation by authors)

This article by *Aftonidningen*, previously quoted by the gynecologist Ulf Högberg (Högberg, 2013, p. 248) represents the first currently known public criticism of the use of bodies of executed victims of the NS system for anatomical purposes. While the fact that Stieve used bodies of executed women for his research was never in doubt, his manipulation of execution dates according to the women's menstrual cycles, as reported here by Floderus, has been the subject of previous discussions. A former student of Stieve had made similar claims many years after the war (Bräutigam, 1998), but up to now no corroborating documentation could be found. Winkelmann and Schagen list several arguments controverting Stieve's dating of executions according to a menstrual calendar. First of all, the execution processes at Plötzensee were highly regulated and well documented, so that a record of such an interference should exist. Secondly, many of the women were executed on the same day. Thirdly, most women did not menstruate at all. Fourthly, an examination of individual cases showed that only 12 women were executed less than 28 days after their last menstrual period, so that a planned execution date seems unlikely (Winkelmann and Schagen, 2009, p. 166). In addition it seems questionable why the women should have been executed on specific days during their menstrual period when Stieve's interest was primarily in ovulation, which does not occur during menstruation. It is unclear how Floderus came by the information that he shared with the newspaper. The vagueness of his report implies that he had only second or third hand knowledge of the true events. Were these just rumors circulated by fanciful medical students who misunderstood Stieve's research? Or is it possible that Floderus had heard of such plans on his visit in Berlin in 1938? Stieve's list shows the names of only nine persons, four of them men, whose bodies he had used for his research between 1935 and 1938, as the execution rates were not yet high at that time. Thus it seems unlikely that Floderus could have personally observed such planned executions. At the same time it is unlikely that he invented such a scenario entirely, as it is so similar to the one reported by Bräutigam many years later. How did he come to this supposed knowledge shortly before or during the Second World War, when the "material" was apparently offered to him? At this point these questions cannot be answered, but it remains remarkable that only 10 days after the end of World War II in Western Europe a Swedish newspaper publicly questioned the ethics of anatomical body acquisition during National Socialism. Any follow-up is not known at this time, especially no response from Stieve. Neither is there any information on Floderus' having voiced any protests against German policies in general or against body procurement specifically before the end of the war.

A year later another international criticism of Stieve's use of bodies of executed women was published in Switzerland. The physician H.J. Gerster was a fervent supporter of Hermann Knaus and his method of natural birth control based on the timing of a woman's ovulation (Gerster, 1955). As such he was also one of Stieve's most outspoken critics, as Stieve had believed to have found evidence of so-called "paracyclical ovulations" and disputed Knaus'

work vehemently (Winkelmann and Schagen, 2009). In 1946 Gerster published a paper in which he discussed criticisms of Knaus' method, among them Stieve's (Gerster, 1946). While Gerster's analysis of Stieve's argument was lucid – Stieve's theory of “paracyclical ovulations” was indeed wrong – Gerster also mentioned “articles published in the daily press” that reported of Stieve's having received organs removed from concentration camp prisoners by vivisection. Gerster did not cite specific articles, however he questioned whether data won from such sources could be scientific (Gerster, 1946, p. 372). Stieve was informed about this criticism by Swiss colleagues and answered with a rebuttal in 1947, in which he accused Gerster of using slander in aid of a scientific argument (Stieve, 1947). Stieve declared that he had never set foot in a concentration camp or received bodies from such a source, and indeed there is so far no documentation of any such transaction (Winkelmann and Schagen, 2009). Stieve further stated that, apart from surgical cases, he had used bodies of women who had been executed following “orderly court sentences” for “heinous crimes, murder, looting and professional abortion” (Stieve, 1947, p. 783). This was one of Stieve's lies, as he was familiar with the fact that many of the women whose bodies he dissected were political dissidents or other innocent victims, and that the “orderliness” of an NS court should have been questioned after the end of the war (Noack, 2007; Hildebrandt, 2013a). Stieve further justified his actions with the anatomical tradition of using bodies of the executed and wrote:

“Never before has an anatomist been reproached for this practice. The anatomist has no dealings with court proceedings or court sentences. He only tries to gain insights from these events that belong to the saddest experiences known to mankind, findings that otherwise cannot be obtained at all. [...] Our knowledge of the human body and its functions is built to a large part on such investigations of the executed. The facts discovered hereby benefit all physicians and thus ultimately all of humanity.” (Stieve, 1947, p. 783, translation by authors)

Unfortunately it is unclear which publications Gerster had based his criticism on. An article in the German press from October 1945 dealt relatively leniently with Stieve (Schagen, 2005; the authors thank Udo Schagen and Andreas Winkelmann for providing a copy of the article). The *Neue Zeit*, press organ for the Christian German Democratic party in the Soviet occupation zone, reported about an interview with Stieve, in which the anatomist appeared to experience

“psychological relief on being able to unburden and free himself from all these things that had been weighing on him for years” (Brammer, 1945; translation by authors).

The author Karl Brammer gave a detailed and accurate account of the NS victims who were executed and then delivered to the anatomical institute for teaching and research purposes. He finished his article with an admonition to remember these events and the victims. He also included an assessment of the anatomists:

“Professor Stieve and his assistants are serious men of science, whose hearts had not hardened. They were repeatedly shaken by the horror of what they had to see and live through.” (Brammer, 1945; translation by authors)

This positive assessment of Stieve by the German journalist stands in clear contrast to the critical voices from Sweden and Switzerland and is more reminiscent of Stieve's colleagues' evaluation of his work (Romeis, 1953). Häggqvist was offended by these attacks on Stieve, especially by the Swedish press statement, which he called a “malicious accusation” (Häggqvist, 1953, pp. 422–423).

Stieve had to defend his wartime activities repeatedly in the following years. He was questioned about his practices not only by all military occupational forces but also by the university

administration. Given the fact that the body registers had “vanished” in 1945, Stieve was only able to put together a partial list of 182 victims' names in 1946, which was based on his research notes (Hildebrandt, 2013b). The use of bodies of executed political prisoners did not sit too well with the minister of education of the new German Democratic Republic, Paul Wandel, and in 1949 he recommended trying to avoid a public discussion of the topic (Zimmermann, 2007, p. 38). As Stieve had never been a member of the NSDAP he was eligible for continued employment as professor of anatomy in the Soviet occupation zone, especially given the fact that he was one of the most prominent and productive anatomists in Germany. Thus the authorities decided to keep silent on the subject of Stieve's research (Zimmermann, 2007, p. 38).

Stieve continued with the use of “material” from NS victims even after the war. Indeed, this “material” was one of the reasons why he stayed in Berlin, as he wrote in a letter to his colleague Albert Hasselwander on November 11 1949:

“One of the main reasons why I stayed in Berlin is the specimens, which I collected over the last 40 years, and that don't exist anywhere else in the world any more. I hope to be able to continue working with these at least for a few more years.” (BayHSta MK 43752, personnel file Albert Hasselwander, translation by the authors)

This collection of “material” was apparently well known among his colleagues as Häggqvist remarked:

“He [Stieve] could perform his manifold contributions to anatomy and the human reproductive organs and their function only because of his large and first class collection of specimens which he had collected over many years.” (Häggqvist, 1953, pp. 422–423)

A debate on the ethics of the use of bodies of NS victims for anatomical purposes was taken up in Germany only several years later, in 1957, and it remained secret as an intramural controversy at the University of Würzburg (Hildebrandt, 2013d). A full and international discussion on the ethics of anatomical body procurement had to wait until the new millennium (Jones and Whitaker, 2009).

6. Summary: findings and open questions

This first exploration of Swedish–German contacts in anatomy between 1930 and 1950 reveals close relationships between German and Swedish anatomists based on their science as well as to a certain degree on politics. While the protagonists Häggqvist and Stieve shared a mutual affinity toward the other's home country, the Swedish anatomist was an active supporter of the NS ideology, whereas Stieve maintained some distance to it. Their relationship was based on a profound appreciation of the other's professional accomplishments, to the extent that they proposed each other for important professional honors. Among those were memberships in honorary societies and even recommendations for the Nobel Prize for Physiology or Medicine. The anatomists also shared a similar attitude, commonly found among anatomists at the time, with respect to the use of bodies of the executed for anatomical purposes. Stieve supported the publication of Swedish studies based on “material” from the executed in the journal he edited, and he had his own work published in Sweden. He also invited a Swedish student to his laboratory for training purposes and he shared “material” from the executed with this student and others. This prompted the first public postwar criticism of German body procurement during the NS period. Häggqvist sheltered Stieve's most valuable specimens during the war years. And while the Swedish scientific community in general gave up its orientation toward German

science after the war, Häggqvist maintained his contact with German anatomists. Remarkably, both anatomists remained in prominent academic positions after the war.

This first insight into the friendship between a Swedish and a German anatomists highlights important research questions that need to be further explored:

- were there other personal relationships between German and Swedish anatomists?
- was this the only example of the transfer of “material” from NS Germany to another country, either for research or for sheltering purposes during the war?
- if so, what happened to these specimens?
- what circumstances led to the fact that a Swedish journalist publicly questioned the use of bodies of executed NS victims for anatomical purposes when nobody else had done so before?
- how did the relationship between Swedish and German anatomy change after the war?

This study has provided a preliminary account of the possible breadth of the field of Swedish–German relations in anatomy in the first half of the 20th century. Further research, especially examinations of unexplored archival material in Germany and Sweden, may provide answers to the questions arising through this investigation.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.aanat.2014.05.037>.

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