



## Billroth and Brahms - A Unique Friendship

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### Abstract

Theodor Billroth and Johannes Brahms were two German boys born in the early part of the 19th century. Their backgrounds could not have been more different and at first sight their subsequent careers would appear to have been worlds apart. One would become the leading surgeon in Europe and internationally renowned whereas the other would become the greatest chamber music and symphony composer since the days of Beethoven, Mozart and Haydn. But their most productive professional years in Vienna brought them together with the development of a unique friendship based primarily on their love and appreciation of music. This association was constructed on a mutual foundation of science and art. Billroth was an accomplished musician and Brahms valued his opinion so much that he would pass his manuscripts to the surgeon for critical appraisal prior to public performance. These new compositions were initially played and reviewed at the surgeons home, usually late in the evening after the day's surgical work. The two friends studied and listened together to the music of other contemporary composers including Wagner, Liszt, Chopin and Berlioz. For Brahms this often raised the dilemma of the diehard Classicist living in the fast developing Romantic age. Although the temperaments of these two friends were very different it is clear that Brahms needed the warmth and poetic extroversion of his friend and in turn Billroth, beset by the problems of life and death in his profession, needed the musical joy which flowed towards him from Brahms.

They died within 3 years of each other and both are buried in the Central Cemetery, Vienna.

### Introduction

In the early part of the 19<sup>th</sup> Century, two boys were born into North German, Protestant families. The first boy born in Bergen, a small fishing village on the island of Rügen in the Baltic, in 1829 to scholarly parents, became the leading surgeon in Europe and internationally renowned. He founded a school of surgery in Vienna which nurtured a succession of young trainee surgeons who subsequently occupied key influential University Chairs of Surgery in Germany, Holland, Belgium and Austria [1-3]. The second boy, born in Hamburg in 1833 to poor parents of lower social order, became the greatest chamber music and symphony composer since the days of Beethoven, Mozart, Hayden and Schubert. The first was Theodor Billroth; the second Johannes Brahms. Although at first sight two extremely different individuals arising from contrasting social backgrounds and pursuing entirely disparate academic and professional careers, these two men subsequently created and developed an unique, powerful and productive friendship based primarily on their love and appreciation of music. Before examining this friendship in more detail it is appropriate to consider some key milestones and achievements in their individual lives. Christian Albert Theodor Billroth was the oldest of five sons but due to the premature death of his pastor father when the young Billroth was only 5 he was raised by his admirable mother who herself died from tuberculosis in 1851. Billroth initially studied music, played the piano and yearned to be a musician. This proved to be a distraction from his other studies. Both his parents and grandparents were unusually musical but his common-sense mother with the assistance of friends who were medical academics, including the surgical Professor Baum persuaded Billroth to commence natural science and medical studies initially at Greifswald and then at Göttingen [4]. Baum had a profound early influence teaching Billroth to regard surgery from both the practical and scientific points of view. These early lessons were to shape his subsequent career and lay the foundations for his phenomenal contributions to surgery. But at Göttingen Billroth devoted considerable time to music forming close associations with other scientists and doctors who shared his artistic and musical passions. Here, interestingly he met one Agathe von Siebold who was later to become one of Brahms' early but transient loves. She thought that Billroth could have become as great a musician as he was a surgeon. At this time Billroth is quoted as saying "Music became my free love whereas I courted medicine legitimately" He matriculated in 1851 in Berlin, the year of his mother's death but went on to receive his doctorate

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in 1852 [5]. He visited various medical centres in Europe, including Vienna before returning to Berlin to become surgical assistant to the famous Professor von Langenbeck. Here he met great and influential figures such as Meckel and Wilms. Billroth had now started the long and arduous journey to becoming an independent specialist in the field of practical surgery. Significantly he soon found himself becoming bored with clinical work alone unless accompanied by science and research. He spent long hours in pathology studying the microscopy of tumours.

In 1858 Theodor married Christel Michaelis, the musical daughter of a deceased court physician, first requiring the permission of his surgical chief Langenbeck (as was the practice in the strict German academic surgical environment of the time!). Interestingly this was the year in which Virchow published his book Cellular Pathology which affirmed that diseases are localised to specific tissues and, by implication, may be surgically curable in many instances [6,7]. Then in 1859 Billroth was called to take up the surgical chair in Zürich, joining a distinguished faculty. Here he reveled in the opportunity to teach students establishing regular weekly meetings where the students became the lecturers and the professors the audience. After vigorous discussions they would all adjourn to a restaurant for food, beer and music with Billroth himself at the piano until midnight. Whilst in Zurich he published in 1863 his classical textbook General Surgical Pathology and Therapy. His musical interests continued and he became involved in the musical life of the city even serving as a musical reporter for a local newspaper. This surgical appointment in Zurich however would prove to be a stepping stone in 1867 to the surgical chair in Vienna. Here Theodor Billroth made his major innovative groundbreaking advances which did so much to change the very practice of surgery and influence generations of surgeons thereafter. He established himself as an investigator, pathologist, and educator - a man who shaped modern surgery. He fostered an approach of arduous scientific evolution from the laboratory to the operating theatre. Many of Billroth's greatest pupils went on to achieve fame and became heads of Surgical Departments e.g. Czerny in Heidelberg, von Mikulcz in Breslau, von Eisenberg in Vienna and Wölfler in Prague, to name but a few. Johannes Brahms, born in the slums of Hamburg, experienced an early childhood which contrasts somewhat markedly with that of the more privileged Billroth. Brahms' father, Johann Jacob, was an amateur musician and earned his living playing horn and double bass in the clubs and dance halls of Hamburg. He gave his son a musical training studying the piano from the age of 7, under Cossel. It was apparent from an early age that Brahms was a diligent and gifted young musician. Remarkably he had devised his own system of musical notation by the age of 5. He later contributed to the family finances by performing in the local dance halls. It is said that this early experience with regard to the observation of females with questionable morals warped his subsequent perception of and relationship with women. Although later enjoying close relationships with several females including most importantly Clara, the wife and later widow of Robert Schumann, he never married. Under the tutorship and influence of Eduard Marxsen he became drawn towards composition and studied intensely the music of Beethoven, Schubert, Mozart and Bach, giants whom he would come to revere and indeed live in the shadow of in 1851 Brahms met the famous and charismatic Jewish-Hungarian violinist Eduard Reményi, which resulted in Brahms undertaking a concert tour of N.E. Germany which would change his life. During this tour he was introduced to, and influenced by, a succession of famous and established musical figures

that would undoubtedly help to shape Brahms' whole musical career [7-10]. Another most important milestone in Brahms pathway to a stellar musical career was meeting with and becoming a close friend of the virtuoso violinist Joseph Joachim. Brahms had composed very little at this stage but nevertheless Joachim was overwhelmed by the 'undreamt of originality and power' of the music when he first heard Brahms playing his piano works Scherzo in E and sonatas in C major and F sharp minor. Soon Brahms was to fall out with Reményi but Joachim had become such an admirer that he introduced him to Liszt, the legendary master pianist of his generation and also more significantly to Robert and Clara Schumann in Düsseldorf. Brahms was an instant success with the Schumanns and so impressed were they by his music and playing that Clara was moved to write in her diary "The music he played was so masterly that it seems that God sent him into the world complete". Robert Schumann further promoted Brahms by writing letters of praise and support to his publishers in Leipzig. Here Brahms played his First Piano Sonata and the great Berlioz who was in the audience was so impressed that he publicly embraced him. The Schumanns had announced that in their opinion Brahms was to become the next great composer in the footsteps of Beethoven. This was an accolade which Brahms was determined to live up to. It is relevant to pause and examine more closely the young Brahms', only 23 years old, relationship with the Schumanns because this gives us many clues to his deep and complex character, a matter which would later have a profound bearing on his future associations especially with our surgical giant Theodor Billroth. Brahms had become a very close friend of the Schumanns so that inevitably when Robert became insane and was committed to an asylum in Dusseldorf, Brahms found himself in a crucial supportive role for Clara pregnant with her 7<sup>th</sup> child. When Robert died in July 1856 Brahms was not only supportive but clearly in love with the much older Clara 14 years his senior this love was romantic but platonic with no future in the cold light of day. Brahms was an idealistic young man of 23, could not and would not contemplate marriage. The couple nevertheless remained the closest of friends for the rest of their lives. Brahms had enjoyed other close female friendships including falling in love and becoming engaged to Agathe von Siebold in Göttingen. This relationship ended because of Brahms' desire to be free for himself and his music. Returning to music Brahms considered the Beethoven symphonies to be the supreme pinnacle of achievement and although he had flirted with the new Romantic Movement typified by the music of Liszt and Wagner (the new Gods) and was perhaps even a romantic at heart he remained essentially a traditionalist.

## The Start of a Friendship

Having examined their backgrounds it is appropriate to look in more detail at the fascinating friendship between these two great 19<sup>th</sup> century titans, Brahms and Billroth. Billroth had closely followed Brahms' career before they had actually met. Brahms first met Billroth in Zurich in 1865 in the home of the musician Theodor Kirchner. Billroth was due to play second viola in a Brahms sextet but in the presence of the composer he became so nervous that he could not continue. A somewhat inauspicious start to their friendship! In order to gain an historical, musical and scientific reference point it should be noted that this was the year of Mendel's contribution to the understanding of genetic inheritance, Lister was starting to popularise the use of carbolic acid and Wagner had composed Tristan and Isolde. Billroth's admiration for Brahms' musical genius was exemplified in a letter written in 1866 in which he says "Dear Brahms, Yesterday we played your new sextet...I wish to tell you

what an extraordinary joy we had in playing it.... Please accept a thousand thanks for the beautiful hours which you have prepared for us". Brahms sent manuscripts to Billroth for critical assessment. He also recognized Billroth's remarkable surgical talents. By now both of these men had achieved some fame but their greatest achievements were yet to come. Once appointed to the chair of surgery in Vienna not only did he enjoy and involve himself in the new vitality which was sweeping through medicine but he also became immersed in the cultural life of the city. Brahms was now already living in Vienna, a city of song which was the very centre for the musical geniuses of the time including Schumann, Wagner, Mahler, Dvorak, Listz, and Strauss and not forgetting Brahms himself with still the memories of Mozart, Beethoven and Schubert ever present. Vienna received the two men with open arms and provided the ideal environment for the development of their respective careers. In 1874 the Billroths had purchased a large house at 20, Alserstrasse, just across the street from the Allgemeine Krankenhaus where the 2<sup>nd</sup> Department of Surgery was housed. It is of interest that this house had also been known to and visited by Beethoven. Billroth also had a large summer house (now a hotel) at St Gilgen in Wolfgangsee.

### **Billroth and Surgery in Vienna**

This was the start of Billroth's greatest period as a surgeon and educator. His first major endeavour in alimentary tract surgery was to propose resection of the cervical oesophagus for carcinoma, this suggestion being based on sound science gained from canine experimental studies. In the event the first resection in a human was carried out in 1877 by Vincenz Czerny, a student of Billroth. Billroth also recognized the importance of en bloc regional node resection in cancer well before the technique was popularised in the early 20<sup>th</sup> century. He had earlier proposed division of the mandible when resecting the tongue and in 1873 performed the first successful laryngectomy. He performed hemipelvectomy and by 1877 was using blood transfusion. Remarkably Billroth was initially not an enthusiastic follower of Listerian antiseptic methods nor did he apply Semmelweis' principles which are perhaps even more surprising as the latter had previously worked at the same institution. It is likely that Billroth was the first to observe both the Streptococcus and Staphylococcus bacteria although he did not appreciate their significance in wound infection. It remained for Koch and Pasteur to elucidate that relationship. The name of Billroth will forever be associated with pioneering gastric surgery. In 1877 he had successfully repaired a gastrocutaneous fistula and realised that gastric resection was feasible. Although the French surgeon Pean and the Polish surgeon Rydigier had unsuccessfully performed gastrectomy in 1879 and 1880 respectively, it was Billroth who first succeeded with this gastric resectional surgery in 1881 with procedures later to be known as B I and B II operations. Billroth did indeed later embrace the practice of Listerian antiseptic and appreciated the true significance of Koch's work. Billroth was undoubtedly a true surgical pioneer on many fronts but did have 'blind spots' and was sceptical concerning the possibility of cardiac surgery becoming a reality. In 1893 he wrote "Any surgeon who would attempt an operation on the heart should lose the respect of his colleagues" Although his contributions to endocrine surgery and thyroidectomy in particular were not always smoothly achieved and were perhaps sometimes overshadowed by the work of Kocher in Berne, Billroth did help to make progress in the evolutionary process necessary to make surgery of the thyroid gland a safe procedure. It must be appreciated that operations on the thyroid at that time were both rare and incredibly dangerous.

William Halsted in Baltimore could trace accounts of only eight in which the scalpel had been used between 1596 and 1800, and sixty-nine between then and 1848. The mortality was often as high as 40%. In 1866 Samuel Gross of Philadelphia was moved to write "thyroid surgery - horrid butchery, leading to a torrent of blood. No honest and sensible surgeon would ever engage in it". Goitre due to iodine deficiency was endemic in Central Europe and Billroth and Kocher along with others rose to the challenge. Whilst at Zurich between 1861 and 1867 Billroth performed 59 thyroid procedures, a third of which were enucleations. Eight patients died, 7 from sepsis. These depressing results caused Billroth to consider abandoning thyroid surgery. He was however an enthusiast for the treatment of early goitre by iodine often preferring direct injection into the gland. By 1877, now established in Vienna, he began to operate on the thyroid again. Some of his procedures were conservative such as cyst drainage and simple arterial ligation without thyroid tissue removal. For thyroidectomy he used haemostats and aneurysm needles to achieve haemostasis along the lines proposed by Kocher and were now also employing antiseptic techniques. By 1881, the year of his first gastrectomy, he had performed 48 thyroid operations, 22 of which were total extirpations with an overall mortality of 8%. With meticulous technique and attention to anatomical detail thyroid surgery was becoming safer and by the end of the century Kocher was able to report a personal mortality rate of 0.18%. These remarkable achievements earned him the Nobel Prize for Medicine in 1909. There was however still morbidity associated with thyroidectomy. The recurrent laryngeal nerves were at risk and in Billroth's department in a series of 48 thyroid operations unilateral nerve injury occurred in 11 cases and bilateral injury in 2. Billroth's young assistant Wölfler routinely performed laryngoscopy and therefore obtained an accurate assessment of nerve injury risk. In contrast Kocher rarely saw nerve injury and perhaps this was due to the fact that his technique was one of obsessional attention to detail to achieve haemostasis and he invariably left the posterior thyroid capsule intact thus fortuitously protecting the recurrent laryngeal nerves. He did not attempt to routinely visualise the nerve, a practice which contrasts sharply with the technique employed today. Billroth encountered much less postoperative hypothyroidism than that seen in Kocher's cases. It has been suggested that this might be the result of Billroth inadvertently leaving some thyroid tissue in situ. There were subtle differences in the details and application of surgical technique used by the two surgeons. Parathyroid damage and hypocalcaemic tetany were ill understood. Wölfler had first documented a case of tetany in one of Billroth's patients in 1879. Indeed one of Billroth's earlier cases actually succumbed to severe tetany. A few years later in 1890 Anton von Eiselsberg, Theodor Billroth's assistant in Vienna, had studied the effects of parathyroid transplantation, perhaps unwittingly during the grafting of thyroid tissue. Again it is likely that Kocher's method of staying inside the posterior thyroid capsule and using meticulous haemostasis allowed him to avoid severe hypocalcaemia. Billroth tended to work rapidly, clamping and ligating tissues en masse with less concern for haemorrhage and could therefore be more likely to remove or damage the parathyroids. Although Richard Owens had first described the parathyroid glands in the Indian rhinoceros in 1862, it was not until 1880 that the Uppsala anatomist Ivar Sandström described the glands in the human, reporting in an obscure Swedish journal. It is therefore not surprising that Billroth, Kocher and their contemporaries had limited understanding of the parathyroid glands. Indeed it would be many years before the vital role of the parathyroid glands in the regulation of calcium metabolism would be elucidated.

## The Developing Friendship

Now return to the relationship between the surgeon and the musician. Parallel with these surgical achievements the Brahms/Billroth friendship was maturing such that many of the former's chamber pieces were tested in Billroth's home before public performance. Billroth became the first to review Brahms' new major orchestral compositions - indeed manuscripts were routinely sent to the surgeon for critical assessment. Billroth with the cooperation of the influential professional music critic, Eduard Hanslick, strongly championed Brahms and indeed the artistic triumvirate enjoyed almost two decades of enormous influence on the Viennese musical scene.

It must be appreciated that Brahms' also fully recognised the remarkable talents of his surgical friend, an acknowledgement which was based on a profound appreciation not only of Billroth's scientific intellect but also of his artistic temperament. In 1873 Brahms dedicated the two Opus 51 string quartets in A minor and C minor to Billroth. These later became known as Billroth I and Billroth II. A troubling issue started to emerge for Billroth and he found himself distressed by the conflict between his life as a surgeon and his joy in the musical life of Vienna. He was also disturbed by the inevitable failures of surgery. Not surprisingly Brahms' also had moments of dejection with his music. His Piano Concerto No1 in D minor which took two years to write was not an immediate success after first being performed in Hannover and then Leipzig in 1859. The gestation period for his First Symphony in C minor was even longer at 17 years and it was composed very much in the shadow of Beethoven and his symphonic works. Billroth was initially mildly critical and thought that the first movement was too long and resembled a mere introduction but considered that the 2<sup>nd</sup> movement was delicate, the 3<sup>rd</sup> charming and the 4<sup>th</sup> overwhelming.

It is clear how much importance Brahms' attached to Billroth's opinion. More and more new compositions were initially played and reviewed at the surgeons home usually late in the evening after the days surgical work. However Billroth still found time to go to many daytime musical rehearsals. The two friends heard together the music of not just of Brahms but also other key composers of the time including Wagner, Bruckner, Chopin, Berlioz, Verdi and Strauss. These performances would later be discussed at a comfortable restaurant with good food, wine and cigars, with close friends welcomed. This circle of friends would include composers, conductors, music critics, usually Eduard Hanslick and of course the famous surgeon himself. Billroth would return home after these gatherings to then work on his surgical papers and manuscripts late into the night. This mutual friendship and even interdependence is well illustrated in a letter written by Billroth to Brahms in July 1881. "Dear friend, it is always a festival day for me when a manuscript of yours comes into my hands..." Brahms' magnificent 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> symphonies quickly followed in 1877, 1883 and 1885 respectively. Back in Vienna at Billroth's large mansion Brahms supervised and conducted performances of his newest works before a selected group of friends. These performances were invariably concluded by the drinking of much champagne! Further quotes from Billroth shed more light on the relationship between these two men. In 1887 he wrote "I am grateful for all the beauty with which you have gladdened and enriched my life" In 1890 "I was often reflecting upon what constitutes human happiness. Today I was happy hearing your music ..... I was the happiest when I could listen to your music".

The two men travelled together throughout Europe and shared many philosophical views. Billroth had ideas on imagination as a prerequisite for achievement in science - reflected in his writings integrating his interest in medicine and art. He said "I have never known a great man in research who is not essentially an artist. Science and art spring from the same source". These views perhaps take on a new significance when reading Sir Peter Medawar, often regarded as "the father of transplantation" because of his works in immunology, who in 1970 wrote "Every discovery, every enlargement of the understanding, begins as an imaginative understanding of what truth might be."

Also in 1881, with Billroth in attendance, Brahms' wonderful Piano Concerto No 2 in B Flat was performed to great acclaim in Budapest. Brahms and Billroth were both triumphant in their respective fields but Billroth, aged 52, was finding the pressures of long days in surgery physically trying with the emotional stresses of close involvement with life and death. He wrote "My strength is leaving me". He was still able to pursue his passion for music and no doubt enjoyed the presence in his surgical department of Johann von Mikulicz Radecki of Poland, an excellent musician and pianist who would later go on to achieve outstanding surgical fame.

## A Developing Rift

Returning the relationship of our two friends although they wrote frequently to each other with a total of more than 330 letters in almost 30 years of friendship unfortunately a rift started to develop. This was the result of several quite trivial factors none of which should have individually caused a breakdown of the friendship. Brahms was grumpy, bearded and slovenly in appearance often ready to insult friends and colleagues. On one notable occasion he turned up at a banquet at Billroth's home dressed in old rags to the embarrassment of his hosts. In contrast Billroth was neat and dignified in appearance. But the two men shared many characteristics both having a critical intellect, tempered by humility and a great gift of humour. However Brahms was obsessional and meticulous with care of musical manuscripts, so when Billroth innocently cut a signature bearing section with scissors out of a quartet manuscript this caused great offence. Billroth was also critical and indiscreet on occasions in his writings describing Brahms as being poorly educated. On another occasion Brahms failed to play a particular piece of music for Billroth in the latter's home, causing offence.

Finally Billroth wrote a manuscript entitled "Who is Musical"? Which Brahms considered being inappropriate. He thought that his friend was overextending himself. Brahms was not lovable. He was once described as being as prickly as a hedgehog.

## The Last Chapters

Billroth, although outwardly appearing physically robust suffered much ill health with gallstones, kidney stones, episodes of pneumonia and later cardiac failure. He was the first to die in Abbazia in 1894 at the age of 64. Brahms attended his funeral but at a distance from the graveside. Later he was to write to Billroth's widow and visited her at St Gilgen. Two years later Brahms who had always enjoyed excellent health died probably from biliary tract malignancy. His funeral was elaborate with the procession passing through the people lined streets of Vienna. Unlike Billroth no wife or children stood at the graveside. Brahms detested ceremony and would not have approved of these funeral arrangements. Brahms and Billroth were both buried in the same Vienna cemetery close to the graves of Beethoven and Schubert,

also close to the Mozart memorial monument. Looking back at this friendship of giants it is clear that Brahms lived a life which Billroth envied and in turn Brahms, as an introvert, needed the warmth and friendship of his extrovert friend. Perhaps the surgical historian Hans Barkan best summarises the relationship with his comment in 1957, "From their Olympian heights of achievement both men can look down with satisfaction on their remarkable friendship and how this contributed to both their happiness and professional success" 002E.

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