

Lessons from the Crimean War: How Hospitals were Transformed by Florence Nightingale and Others

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ABSTRACT

The spread of infectious diseases claimed more lives than battle wounds during the Crimean War (1853-1856). Istanbul, then the Ottoman capital, was transformed into a medical hub where new ideas were tested and exchanged among physicians, surgeons and nurses from all over Europe to control the spread of disease. Although the most well-known figure of this international effort was Florence Nightingale, the medical community serving in Istanbul at the time had many other heroes and heroines. While Nightingale's work played an important role in shaping healthcare facilities in the second half of the 19th century, there were other factors at play that led to this transformation. Notably, the Crimean War was the first major armed conflict that was directly reported from the front by newspaper reporters as it was happening; a possible catalyst for the significant improvements in hospital conditions that Post-Crimean War Europe witnessed. Most of these improvements were measures that had already been proposed prior to the Crimean War. Pavilion style typology in hospital architecture was one such measure dating back to the first quarter of the 18th century. This article examines the changing attitudes in Europe towards healthcare facilities immediately after the Crimean War and questions their links to political aspirations of the time.

The Crimean War (1853-1856) transformed Istanbul, then the Ottoman capital, into a medical hub where new ideas were tested and exchanged among physicians and nurses from all over Europe to control the spread of infectious diseases that claimed more lives than battle wounds. Although the most well-known figure of this international effort is Florence Nightingale, the medical community serving in the Ottoman capital at the time had many other heroes and heroines.

Surgeon Lieutenant-Colonel M. Wrench, a medical doctor who had served in Balaclava during the war, highlighted the role of medicine when he wrote:

Wars always have been and always will be cruel. It is, however, the pride of our profession that, while sharing the fatigues and dangers of the campaign, our sole duty will always be the protection of the soldier from what after all is his most deadly enemy – disease, and the alleviation of the sufferings of the wounded. The Crimean campaign taught a lesson that I trust

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will never be forgotten by the nation, that unless the medical department of the army is made efficient, and supplied with its proper complement of officers and ambulance during peace, it cannot be expected to do its duty efficiently during war (1).

Wrench had to send many of his patients to the Ottoman capital for better treatment; specifically to a barrack style hospital founded as a unit of the Selimiye Barracks in Üsküdar. Known to the British as ‘Scutari’, this 3200-bed facility was operating at over-capacity and patients were being treated on mattresses laid on the floors of corridors (2). This can be understood from the writings of Peter Pincoffs, a Dutch physician serving with the British medical unit in the Ottoman capital. Wrench’s words also confirm that conditions neither in Scutari, nor on the way there, were any better than those in Balacclava:

I am happy to say I handed them all alive to the care of the surgeon in charge of the sick wharf at the head of Balacclava Harbour, and there my responsibility ended. But alas! That was not the end of my poor patients’ sufferings, for, from the scarcity of boats, it is not unlikely that many of them lay for several hours on the wharf before they could be put on board the ships that were to convey them to Scutari. The ships were often sailing ships, devoid of all convenience for the sick; the voyage was tedious and the mortality great, and it is well known that 10 percent of those embarked were thrown overboard before the vessels arrived at Scutari. Nor were the dangers then over, for the great hospital was infested with typhoid, and hence many finished their journey beneath the grand cypress trees in the beautiful cemetery overlooking the Bosphorus (1).

Statistical data found in the writings and detailed reports of physicians like Peter Pincoffs and Gaspard Scrive, letters and memoirs of Marie de Melfort (published later in 1902 under her marital name Baroness Durand de Fontmagne), memoirs of Sir Adolphus Slade (a British advisor to the Ottoman navy, whose name appears in Ottoman sources as Kapudan İsklet, and who later came to be known by the Ottomans as Müşavir Pasha due to his advisory role) and Colonel Somerset Calthorpe of the British army as well as military records paint

a similarly sombre portrait of lives claimed by infectious diseases during the Crimean War.

A 19TH-CENTURY PERSPECTIVE ON INFECTIOUS DISEASES

Army hospitals, like the one in Scutari, were established to serve regular troops. Officers and high-ranking officials in need of medical services were taken to places like the Şehzade Kiosk in Haydarpaşa, or the Sultan Kiosk in Tarabya, which were airy and spacious residential houses transformed into rehabilitation centres during the Crimean War. Hospitals at the time, both in Europe and the Ottoman Empire, were mostly regarded as charitable organizations serving the general public who could not afford private healthcare in the comfort of their domestic residences. Hospitals were commonly preferred only as a last resort as they were viewed as

HIGHLIGHTS

- Although the most well-known figure of the international effort to control the spread of disease in Istanbul during the Crimean War (1853-1856) was Florence Nightingale, the medical community serving in the Ottoman capital at the time had many other heroes and heroines.
- The Crimean War was the first major armed conflict that was directly reported from the front by newspaper reporters as it was happening; a possible catalyst for the significant improvements in hospital conditions that Post-Crimean War Europe witnessed.
- Pavilion style typology in hospital architecture was one of the major developments in the design of healthcare facilities in post-Crimean War Europe. Although the origins of this typology can be dated back to the first quarter of the 18th century, it only took precedent particularly in British hospital design after Nightingale published her *Notes on Hospitals* in 1863.
- An inquiry into changing attitudes towards healthcare in post-Crimean War Europe might provide valuable insights into current debates concerning the intricate links between governments, media, public, and healthcare systems.

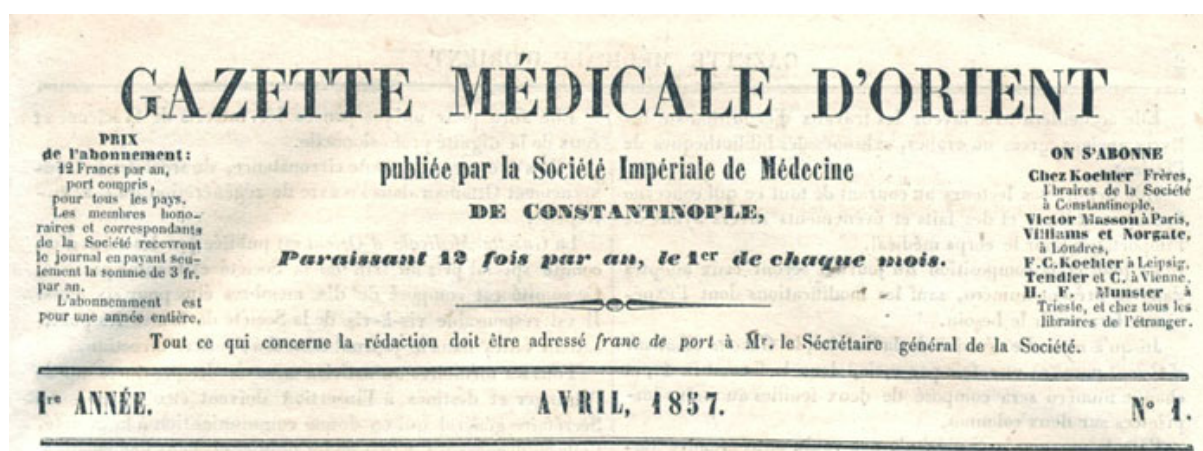


Figure 2. 1st issue of *Gazette Médicale d'Orient*; available in SALT Archives.

A decade after the Crimean War, following the cholera outbreak of 1865 in Europe, the Third International Sanitary Conference was held in Istanbul in 1866. The Ottoman Empire was singled out as the main perpetrator. It was claimed that the Ottoman authorities were not taking proper precautions in Hejaz and the French delegate Fauvel, who was particularly vocal in his criticism of the Ottoman government's neglect, received support from other European delegates (10). Unlike in the First International Sanitary Conference in 1851, the Ottoman delegation did not argue against these allegations.

THE OTTOMAN CAPITAL AS A MEDICAL PLATFORM

War had always been a major catalyst for the prevalence of infectious diseases – regardless of geography or ethnicity. The Crimean War was no exception. As infectious diseases such as typhus and cholera re-entered the Ottoman capital during the Crimean War (1853-1856), the city was transformed into a land of make-shift hospitals where physicians and nurses from all over Europe and the Ottoman Empire were tending to patients brought back from the battlefields. Figure 1 displays an 1855 map prepared by Peter Pincoffs showing military hospitals in the Ottoman capital.

Germs were easily spread in overcrowded hospitals, turning these facilities into death wards not only for the patients but also for the medical staff. Marie de Melfort, the niece of the French ambassador Edouard-Antoine Thouvenel, noted that typhus

had claimed the lives of 82 physicians and several nurses serving in French military hospitals in the Ottoman capital. It is understood from her memoirs that on average 240 people per day were losing their lives at French hospitals in the first months of 1856 when typhus was spreading throughout the city (11). On the other hand, none of the physicians serving at British hospitals died of this disease. Marie de Melfort was convinced that there was a correlation between the practice of grouping patients in separate wards depending on their symptoms, a technique employed at British hospitals, and preventing the spread of disease. She criticized French hospitals for not doing the same, even though the idea had initially been put forward by the French physician Gaspard Scriver, and was supported by La Charité nuns serving as nurses at French hospitals (11).

During the Crimean War, the international medical community in Istanbul was unofficially led by Peter Pincoffs. Towards the end of the war, on February 15, 1856, the informal practice of exchanging medical ideas was institutionalized under the name *Société de Médecine de Constantinople* and French surgeon Lucien Jean Baptiste Baudens was appointed as its first president. This organization was recognized by Sultan Abdulmejid, renamed as *Société Impériale de Médecine de Constantinople* and *Cemiyet-i Tibbiye-i Şahane-i Osmaniye* in Ottoman Turkish, and given a monthly stipend of 50 gold liras. This medical society, which also had corresponding members in Europe, started publishing a medical journal titled

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THE CRIME OF THE AGE.

It has been very justly observed by Macaulay, that there are fashions in crime as in everything else. Crimes come in and go out, like neckcloths; they reflect the ages successively, and conform to the laws of "supply and demand," like every other article. Now and then they attain such prominence in some one shape, that mankind are driven to contrive measures to neutralise their consequences, for their own protection. We have just arrived at one of these stages in England. Poisoning is the fashionable crime,—that is to say, poisoning by the means of certain institutions, which society has established for purposes quite opposite to murder. Everything has its weak, or dangerous side, and there is one handle to it for the good man, and one for the scoundrel. We suppose that there are so many scoundrel, born in every age; that the nature of the age determines in what way they shall display their faculties; that every period has its experience to go through, before it can finally detect its scoundrels, hang them, and amend the conditions under which they have learned to work.

Poisoning itself, considered *simpliciter*, is one of the oldest crimes in the world, of course. The moment that drugs were found available for any purpose, it must have been seen that death was one of them. The opiate that induces sleep may equally make sleep eternal; the grains which give a flip to the blood may hurry it into fever. Crime follows knowledge, like its shadow: it is the after-taste of the fruit of the Tree. But poisoning is peculiarly the crime of civilisation. In early days, violence is the characteristic of crime, as of everything else; in later days, craftiness or cunning. The dagger carried off the enemy in early Rome; the Emperor Claudius was poisoned by a mushroom. Indeed, as Rome became corrupt, poisoning became more and more the regular crime of the day. It is a favourite topic with Juvenal. Historians mention rumours of poison as regularly as they mention notable deaths. To say that a potentate died *hæud seise suspicione veneni*, was almost as much a matter of form as to write his epitaph. The poet and the moralist have delighted to exhibit the terror of the tyrant on this one fatal point. For what can guard against a death which lurks in daily food, in the cup of the banquet, in the glitter of wine, in the familiar objects of common life? There is a remarkable story in Froissart, how one of the great house of De Foix fell dead while washing his hands after hunting, and how his squire immediately began drinking the water, to prove their innocence. It has always been felt, that, of all crimes, none is so much a matter for delicate handling—suspicion, care, watchful use of evidence. It is so hard to guard against it—it is so easy to commit it. Blood tells its own story so loudly, that men do not care to risk detection; poison tempts the coward—tempts the worst sort of villain—that most fatal of all villains, who is prudent, calculating, and not impulsive. Indeed, we do not hesitate to say, that, in these cases, circumstantial evidence should assume a more important aspect than in others.

Now, civilisation of the modern kind has its own evils, over and above those of the ancient civilisation, exactly as it adds more of experience to the stock of mankind. Science is the great modern fact. Science, in the last century, demanded dissections of the human body. The demand led to grave-stealing; and stealing from graves being found insufficient, we had the murders of Burke and Hare. This led to legal reforms, and one kind of crime terminated. We suppose that the same kind of men who then murdered to sell to surgeons, would now murder to defraud burial clubs. The higher class of villain, who, in the last century, poisoned coarsely, would now (chemistry having advanced)



THE NIGHTINGALE JEWEL.
(COPYIED FROM THE ORIGINAL BY PERMISSION OF H.R.H. PRINCE ALBERT.)

poison with refinement. To blame science for this would be idiotic; we must only try and provide against the partial evil which science has brought us, along with much good.

Insurance societies, burial clubs, and so forth, are institutions most characteristic of our time, and of great utility. They are prudential—sober—calculative. "Individualism" makes people avail themselves of their neighbours, without incurring the obligation which modern independence and isolation hates. So we band together for a kind of trade protection, and fraternise without being fraternal. The utility is indubitable. With the utility has come the inevitable shadow. The floating capital of criminality has found a new investment. The devil finds his cutty into the new body as easily as he did into the serpent.

This form of poisoning is to life insurance what the Burke and Hare murders were to the progress of anatomy. It is the blot on the 'scutcheon of our commercial prudence, as those crimes were on that of our medical science. It is to life insurance what arson is to fire insurance.

The dangers arising from the practice are greater now than those which arose from the old historic poisonings of Italy; for in such times people were on their guard—and in such times, too, only individuals of some eminence were in much danger. But now the crime is a matter of business and arithmetical calculation. It is not done at the promptings of jealousy, but done simply to turn a penny. In short, it is worse than those crimes which spring from great passions, inasmuch as it is a mean business prompted by the vulgarst greed, and rivaling the wickedness of a Borgia from the motives of a pedlar.

We have, indeed, always believed that a scoundrel is essentially a prosaic character; nor did we ever see anything in a penny romance which altered our opinion—though the penny romance school of literature endeavours to invest scoundrels with a halo of poetic interest. Iago is a man of brutal selfishness and low views. "Most of the great villains I have known," says Swift, "have been brutes in their understandings, as well as in their characters." We see every day, that, when the policeman captures the murderer, the fellow is not buying violets, but gorging tripe. Now, our modern poisoner is not only a prosaic villain, but his line of business tends to seduce peculiarly prosaic villains into it. For a generous nature may be betrayed into a great crime by passion; but he who poisons to cheat an insurance office, can have no motive but the pence. He does not even hate his victim. It is not revenge which maddens him—he may even rather like him as a companion—but a commercial calculation makes him pick him out as the best fellow for his purpose, and he kills a human being as coolly as a rat-catcher kills a rat. Then, the chance of secrecy—the fact that death by poison so often resembles death by disease—tempt the cunning and cowardly. Probably, too, a certain vanity, which (as distinct from pride) is often found in criminals, finds its gratification in this particular mode of causing death. The rascal feels that he is doing a scientific stroke of business, and has a more delicate hand than Cain, his primeval prototype. He considers butchery vulgar, and hugs himself with the idea that, if detected, he shall interest Liebig, and show some acquaintance, perhaps, with the great work of Orfila!

In another part of our paper the reader will find details, showing that these crimes are, beyond all question, on the increase. Publicity itself, though clearly unavoidable, seems to have partially the effect of stimulating them. When the Essex poisonings of some years since were exposed, it was found that hints, which had dropped from the physicians about the causes of detection in some cases,



FLORENCE NIGHTINGALE.—(FROM A DRAWING BY HER SISTER.)

(COPYIED BY PERMISSION OF MESSRS. COLNAGHI FROM THE ENGRAVING BY HOLL.)

Figure 3. Illustrated Times news story featuring Florence Nightingale, Feb. 2, 1856.

Gazette Médicale d'Orient (Figure 2) in April 1857. The society also had corresponding members in European countries.

FLORENCE NIGHTINGALE AND HER NOTES ON HOSPITALS

Among the members of the medical community in Istanbul during the Crimean War was an English nurse by the name of Florence Nightingale who was one of the supporters of the miasma theory of disease. Nightingale, who applied hygiene regulations at the Barrack Hospital in Scutari, had been appointed to the hospital in Scutari along with her team of 38 nurses in November 1854 directly by Sidney Herbert, Secretary of State for War, in light of reports from the Ottoman capital. Conditions at military hospitals for regular troops had always been undesirable; however, this was never made public prior to the Crimean War. The government had to take action in order to prevent a civic uproar. Since the beginning of the Crimean War, newspapers had been printing horror stories about British army hospitals. As a response to such news, the British Parliament formed a commission to work on the improvement of hospitals serving British soldiers in the Ottoman Empire.

In Britain, fundraising campaigns were started, and donations collected were used to improve the British army hospitals in Üsküdar and Kuleli. Despite all efforts, the death toll kept increasing. Finally, in 1855 the British government appointed a Sanitary Commission to the Ottoman capital. It was then understood that the edifice housing the British army hospital, namely the Selimiye Barracks built by William James Smith who was also British^b, was situated on a sewer; thus, the water available in the hospital was contaminated. The British army hospitals were flushed out and ventilation was improved. Consequently, death rates started to fall in 1856. Florence Nightingale was celebrated by the media as the heroine of the Crimean War (Figure 3).

Upon her return to England, Nightingale penned *Notes on Hospitals* in 1863. Determined to improve sanitary conditions of hospitals in England, she defined four deficiencies in current hospital design:

the clustering of large numbers of sick people in the same space, spatial limitations, ventilation problems, and the lack of light. Hospital architect Henry Currey took Nightingale's recommendations into consideration when he designed the new buildings of St. Thomas's Hospital (built between 1868-1871) in London (Figure 4).

DISCUSSION

The poorest lower classes, who were affected the most by infectious diseases, made up a significant majority of the industrialized cities of the 19th century Europe. This segment of the society was particularly bound to live in poor sanitary conditions as they struggled to put food on their tables. While lack of nutrition and sanitation made the spread of diseases unavoidable, the European governments of this era displayed a tendency to prescribe a scapegoat to conceal their shortcomings. Particularly during the International Sanitary Conferences, the medical community of Europe participated in this act by suggesting that the main cause of the spread of cholera was the Ottoman Empire rather than the domestic deficiencies of the European states. Historian John Chircop has linked this attitude to a colonialist agenda:

The setting up of lazarettos and quarantine systems in Ottoman and other city ports around the Mediterranean was presented as an act of European 'enlightenment' and of colonial 'benevolence' and considered by the native elites as instruments of 'modernisation' for their countries (10).

This attitude was also apparent in the words of William James Smith, the British architect of Selimiye Barracks and the *Mekteb-i Tıbbiye-i Şahane* (The Imperial School of Medicine) building^c completed in 1852. When the Board of Works in London started an enquiry about his activities in the Ottoman Empire, Smith's justification for accepting local commissions was that he was simply engaged in "a humble source of aiding for the advancement of civilisation" (12) as he claimed that he was not receiving any payment for these side projects. It is, however, understood from Ottoman sources that he was receiving a monthly payment from the Palace (13) and that he even got into a dispute over



Figure 4. St. Thomas's Hospital, London, exterior bird's-eye view from south; anon., after an engraving made for Cassell's Old and New London. Credit: Wellcome Collection. CC BY.

payments for a private project (14). In British sources, he is recorded as saying that he was trying to be “useful in a barbarous country struggling to civilise itself” (12).

Although the Ottoman Empire and its doctors were looked down upon by the European medical community and blamed for the spread of disease^d, its capital served as the starting point for medical advancements in the mid-19th century. Marie de Melfort's accounts of Istanbul during the Crimean War demonstrate how the city was in fact a platform where medical professionals from all over Europe could exchange ideas. As mentioned earlier, she wrote extensively about the British adaptation of a method suggested by a French physician and it was such exchanges that planted the seeds of *Cemiyet-i Tıbbiye-i Şahane-i Osmaniye*. Until the 1890s Ottoman physicians were only welcome as honorary members to this medical society. Among these local members were physicians appointed to high-level positions by the court; possibly a strategic move in order to maintain the Sultan's

favours. Although the society's official Ottoman title included the word *Osmaniye*, its members curiously preferred to drop this particular word and use *Cemiyet-i Tıbbiye-i Şahane* as its Turkish name. Their publication, *Gazette Médicale d'Orient*, often published articles in French criticizing Ottoman healthcare establishments and medical education in the Empire (15), perhaps as a counter argument to the British newspapers' exposé of the poor conditions of European healthcare facilities during the Crimean War.

It is important to note that the Crimean War was the first major armed conflict that was directly reported from the front by newspaper reporters as it was happening. News from the hospitals where the sick and wounded soldiers were being treated played an important role in making the European public aware of their governments' shortcomings regarding healthcare services. The British papers, in particular, forced their government to take action by exposing the poor conditions that ordinary troops were subjected to when high ranking officers

had access to better treatment options; a situation analogous to the contrasts in levels of access to nutrition, sanitation and healthcare across different classes of the British society. As a result of reports from army hospitals as well as the efforts of doctors and nurses, post-Crimean War Europe witnessed improvements in hospital conditions and the treatment of infectious diseases.

Newspapers' designated heroine of the Crimean War was Florence Nightingale and it was only after her publication of *Notes on Hospitals* that pavilion-style hospitals became the norm for the 19th-century hospital architecture in Europe. This was an improvement that dramatically changed the image of hospitals among public; they went from being "gateways to death" (3) to pathways for healing. By the turn of the century, the idea of a modern hospital became synonymous with building complexes designed as pavilions which were sufficiently distanced from each other in order to ensure daylight exposure and free circulation of air. Although earlier examples of pavilion-style hospitals such as the Royal Naval Hospital in Plymouth (completed in 1756) exist in England, this typology only took precedent in British hospital design after Nightingale's publication.

Nightingale was certainly not the first person to advocate changes in hospital design. Similar views had previously been put forward, not only by physicians like Thomas Southwood Smith^e and John Robertson, but also by George Godwin, the editor of the British architectural journal *The Builder*. Rober-

ton and Goodwin's recommendations were mostly based upon the example of a hospital plan designed by Jacques-René Tenon more than a century prior (16). Tenon, a surgeon by profession, had designed a new plan for the Hotel Dieu in Paris, France after the hospital had been destroyed in a fire in 1722. As rebuilding was interrupted by the French Revolution, this plan was not realized until the mid-19th century. It was indeed Tenon's plan that served as a blueprint to the pavilion-style typology in hospital architecture.^f

Aforementioned primary sources provide strong evidence for the argument that an architectural proposal to control the spread of infectious diseases had been made more than a century prior to the Crimean War by several others that came before Nightingale. Even though similarly deadly wars had occurred before, European governments preferred not to spare adequate funds to build proper facilities to take care of their sick and wounded soldiers until the Crimean War. Until this time, hospitals serving the general public in Europe were not sufficient either. It is evident that Europe learned several lessons about hospital design from the Crimean War, what remains unclear is whether the main catalyst for change was the work of Florence Nightingale or that of the newspaper reporters. Perhaps contemplating on this very question that presumably is a concern of architectural historians might lead to a deeper understanding of current critical debates related to the intricate links between governments, media, public, and healthcare systems.

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Transactions of the Manchester Statistical Society, 1855-6
The *Builder* Archives digitally provided by the University of Pennsylvania, USA

Memoirs, letters and other textual accounts written by the following individuals (sources listed in references and further readings):

Somerset John Gough-Calthorpe (7th Baron Calthorpe)
Marie de Melfort (La Baronne Durand de Fontmagne)
Florence Nightingale
Dr. Peter Pincoffs
Surgeon John Robertson
Dr. Gaspard M. Scribe
Adolphus Slade (Kapudan İslet, Müşavir Pasha)
Surgeon Lieutenant-Colonel M. Wrench

FOOTNOTES

- a “The Report on the Sanitary Condition of the Labouring Population of Great Britain of 1842” a pamphlet produced by Edwin Chadwick emphasized the poor conditions that the lower classes of the British population lived in as well as the lack of sanitary infrastructure in the country. As a supporter of the miasma theory, Chadwick did not see a link between diet or work conditions and health but rather supported the view that misery of the poor could be eased through government intervention to ensure sanitation. As a response to the cholera epidemic of 1848-49 in England, the Public Health Act of 1848 was adopted, and the Board of Health was created with Chadwick as its Commissioner. Chadwick's views had met their demise when his order to flush London sewers into the Thames in order to get rid of the “filth” during the cholera outbreak of 1848, a decision strongly opposed by engineers at the time, resulted in contamination of the river causing further public health problems. For further information, see Creighton C. A History of Epidemics in Britain, Volume II: From the Extinction of Plague to the Present Time. Cambridge: Cambridge University Press; 1894.
- b British architect William James Smith had been appointed by Sultan Abdulmejid in 1848 to complete the Selimiye Barracks project which had originally been started by the Ottoman architect of Armenian descent Kirkor Balian in 1820s. For further information, see Nasır Ayşe. İstanbul Mimarlığında Yabancı Mimarlar. İstanbul Technical University, PhD (Doctor of Philosophy) thesis, 1991.
- c The building houses the Faculty of Architecture of İstanbul Technical University in present day İstanbul and is referred to as Taşkışla today.
- d For further information, see Chircop J, Francisco JM. Mediterranean Quarantines, 1750-1914: Space, Identity and Power. Manchester: Manchester University Press; 2018.
- e For further information about the work of Thomas Southwood Smith, please see Cook GC. Thomas Southwood Smith FRCP (1788–1861): leading exponent of diseases of poverty, and pioneer of sanitary reform in the mid-nineteenth century. *J Med Biogr* 2002; 10: 194-205.
- f For further information, see Burke Angela. Towards a new hospital architecture: an exploration of the relationship between hospital space and technology. University of East London School of Architecture, Computing and Engineering, PhD (Doctor of Philosophy) thesis, 2014.

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