

A Survey of Historical Research on Natural Disasters in Early Modern Istanbul

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Introduction

The Ottoman Empire left a vast amount of historical archives such as over 150 million documents now held in The Ottoman Archives of Prime Minister's Office (Başbakanlık Osmanlı Arşivi: BOA) in Istanbul. Such rich archives can be a potential source of studies that would help us understand the impacts of natural disasters in the Ottoman Empire. However, historical research into natural disasters in Ottoman Empire is very limited so far. The focus of existing studies of the Ottoman Empire by both Turkish and Western scholars has been placed on political history, economic and social history, agrarian system and local histories whilst they have rarely looked into environmental history and historical natural disasters until very recently.¹

Occurring of contemporary earthquakes often inspires historians to study historical earthquakes in Turkey, which is more or less the similar research trend seen amongst Japanese historians concerning natural disaster history. More recently some historians, especially those in the United States, of the Ottoman Empire have begun to specialize in environmental history and natural disaster history, which reflects the growing ecological interests at a global scale.²

The aim of this essay is to introduce and survey the available literature on natural disasters in the Ottoman Empire and offer an outline of urban disasters in early modern Istanbul.

1 Notable exception is Elizabeth Zachariadou (ed.), *Natural Disasters in the Ottoman Empire*, Rethymno, 1999. This is the proceedings of a symposium at the University of Crete, Greece, and contains 14 papers on earthquakes, 3 papers on floods, and other types of natural disasters such as famine.

2 See, Sam A. White, "Climate Change and Crisis in Ottoman Turkey and the Balkans 1590-1710," in *Proceedings of Climate Change and the Middle East* (on 22 Nov 2006 at Istanbul Teknik Üniversitesi), 2006, pp. 391-409, Sam A. White, *The Climate of Rebellion in the Early Modern Ottoman Empire*, New York, 2011., Alan Mikhail, *Nature and Empire in Ottoman Egypt: An Environmental History*, New York, 2011. In addition, the recent work by Yaron Ayalon (*Natural Disasters in the Ottoman Empire*, Cambridge, 2014.) mainly focuses on plagues in the Ottoman Empire.

I. Major earthquakes

Anatolia, which makes up the majority of the Republic of Turkey, is one of the areas in the world that are most frequently hit by earthquakes, as is Japan. Istanbul, on the boarder of Thrace which is the eastern end of Europe and Asian Anatolia, has experienced numerous earthquakes throughout the history. However, except for some well-known chronicles that recorded the occurrence of large earthquakes, archival sources are limited to offer the insights of natural disasters during the Antiquity and the subsequent Byzantine Period when Istanbul was known as Constantinople.

On the contrary, there are more archival sources available for historians to understand the devastation of earthquakes after the conquest by the Ottomans in 1453.³

The first earthquake in Istanbul under the Ottomans rule occurred in the summer of 1509, half a century after the conquest. It devastated the spirit of the citizens and the city's resources at the time when Istanbul began to regenerate as the capital city of the Empire overcoming the aftermath of the conquest wars. An Ottoman chronicle described this earthquake as 'the Lesser Judgement Day', suggesting how damaging it was to Istanbul.

The first modern historical study of the 1509 earthquake appeared in 1940 (Orgun 1940).⁴ This study transcribed the contemporary Ottoman fiscal documents written in Arabic alphabet into Latin alphabet in modern Turkish. It introduced to modern readers information such as the amount of levies collected for the urban regeneration following the earthquake, the number and components of workers employed in construction, and the material and instruments for construction. The author acknowledged at the beginning of the article that he published this study in an architecture industry's journal as he was urged by the earthquake that destroyed most of the city of Erzincan in eastern Anatolia on 27th December in 1939.

A more systematic study of the 1509 earthquake in Istanbul was carried out by Nicholas Ambraseys, who can be described as an earthquake historian, in the early 1990s. His research has covered many historical earthquakes across the world including Iran, Egypt, Iceland and Central America. He published an article in 1991 on the 1509 earthquake with co-author Caroline Finkel, a historian of the Ottoman Empire to who he probably owed the reading of

3 'The early modern period' in the history of the Ottoman Empire and European history often starts in 1453, the year of both the conquest of Constantinople and the end of the Hundred Years War between England and France. In this essay the early modern period also refers to the period between 1453 and 1839 when Tanzimat began.

4 Zarif Orgun, "1509 (Hicri 915) senesinde İstanbullu baştanbaşa harab eden zelzelede şehri tamir için alınan tedbirler," *Arkitekt*, 115-116, 1940, pp. 164-167.

the original documents.⁵

Although their article is the first systematic research of the 1509 earthquake, it largely relied on the exaggerated figures of the magnitude estimate and the devastation of the earthquake that were recorded in European traveler chronicles and reports. There was thus much room for material critique.

In fact, Ambraseys himself published another single-authored article on the same topic in 2001 which reassessed the earlier study. In this article, he changed his earlier view and argued that the devastation of the earthquake was very limited, without offering clear explanation why he changed his view.⁶ Another co-authored book by Ambraseys and Finkel on historical earthquakes in other regions in Turkey, despite it being the subject of material critique, is considered as the seminal work on historical earthquakes in the Ottoman Empire, together with Sakin's work in Turkish (Sakin 2002).⁷

More recently I have critically reviewed Ambrasey's work by drawing on Orgun's transcriptions and introductions of the original material as well as other chronicles and archives.⁸

As we have seen, the occurrence of contemporary earthquakes is often the source of imagination for historians to embark on studies of historical earthquakes in Turkey, as is the case of studies of the earthquake in 1766, the second most devastating earthquake in Istanbul after the 1509 disaster.⁹

An architectural historian studied this earthquake after experiencing the devastation of the earthquake on 17th August in 1999, that killed over 20,000 people in Marmara (the epicentre was in western Anatolia). Using both archival sources and fieldwork method, Mazlum published her pioneering research firstly as the doctoral thesis to the Istanbul Technical

5 N.N. Ambraseys and C. F. Finkel, "The Marmara Sea Earthquake of 1509," *TERRA MOTAE*, no. 2, 1991, pp. 167-174.

6 N.N. Ambraseys, "The Earthquake of 1509 in the Sea of Marmara, Turkey, Revisited," *Bulletin of the Seismological Society of America*, 91-6, 2001, pp. 1397-1416.

7 *The Seismicity of Turkey and Adjacent Areas, A Historical Review, 1500-1800*, Istanbul, 1995. Orhan Sakin, *Tarihsel Kaynaklara Göre İstanbul Depremleri*, İstanbul, 2002.

8 Kazuaki Sawai "The 1509 Istanbul Earthquake and Subsequent Recovery" *Rekisigaku Kenkyū*, No. 898, 2012, pp. 154-162 (in Japanese) and Kazuaki Sawai, "The 1509 Istanbul Earthquake and Subsequent Recovery", *Mediterranean World*, no. 22, 2015, pp. 29-42.

9 It is notable that major earthquakes occurred in 1556 and 1719 although they are not as known as the one in 1509. The earthquake in 1719 led to the production of the earliest Ottoman book on earthquakes *Risale-i Zelzele*. Lemi Akın, "İlk Müstakil Deprem Kitabı: Risale-i Zelzele", *Türk Dil ve Edebiyat Dergisi*, no. 44, 2011, pp. 1-82.

University in 2001 and later as a monograph (Mazlum 2011).¹⁰

There are some academic literature about the earthquake in 1894, another major earthquake that followed the 1766 earthquake, in modern Ottoman period (after the Tanzimat era). However, they are beyond the periodical scope of this essay as we focus on early modern period.¹¹

II. Floods as a result of combined flash flood and storm surge

Little is known about historical flood damages in Istanbul, compared to our knowledge about major earthquakes that frequented the city every 150 years or about urban fires that we shall discuss later. However, Istanbul was occasionally devastated by floods and the damage was lasting, as described in 'Major flood in 1563' at the beginning of the late sixteenth century chronicle *Tarih-i Selaniki*. The flood not only submerged some quarters of the city under water and washed away many bridges and coastal buildings but also destroyed several aqueducts that were supplying fresh water to the city centre from the suburbs. This led to severe water shortage in Istanbul lasting for some years.

Obviously, Istanbul is not located on major river banks as many other major cities in the world are. As mentioned above, the city's water supply relied on the aqueducts, since the Ancient Roman time, which brought fresh water to the city from the spring source, 50 km north of the city. It may sound strange that such a city with no river running through is subject to the flood damage. However, floods in Istanbul were not caused by overflowing of a river. Instead, the city's floods were simultaneously caused by coastal storm surge and flash flood that was due to the prolonged heavy rain in the city which lies on land with elevation difference.

For example, when the flood killed dozens of people and damaged many buildings and roads in September 2009, it was the similar type of flood that hit similar area of the city and occurred in similar time of the year with the flood in 1563. This suggests that certain type of natural disasters may repeat in certain areas under certain weather conditions given the geological conditions remain unchanged. My article in Japanese which examines the 2009 flood in relation with the 1563 flood is the historical study of the 2009 flood from historical

10 Deniz Mazlum, *1766 İstanbul Depremi: Belgeler Işığında Yapı Onarımları*, İstanbul, 2011.

11 See, Fatma Ürekli, *İstanbul'da 1894 Depremi*, İstanbul, 1999, which was probably inspired by the Marmara earthquake in 1999. The same author also studied the aid from the United States to Turkey for regeneration, see Fatma Ürekli, *Belgelerle 1889/1894 Afetlerinde Osmanlı-Amerikan Yardımlaşmaları*, İstanbul, 2007.

point of view,¹² although some metrological studies exist.¹³

III. Urban fires

Urban fires most frequently hit Istanbul amongst other urban disasters that Istanbul suffered in the past. For example, just a trawl through the Mühimme Registers (Mühimme Defterleri: MD), which are transcriptions of the Ottoman edicts, finds eighteen urban fires of various sizes during a quarter of a century between 1564 and 1589. Despite that the city went through so many fires, academic literature on urban fires in Istanbul is very limited.

Considering that other modern natural disasters have urged historians to research the historical examples, relative lack of literature on urban fires suggests the following. That is, Istanbul has been more or less free from major catastrophic fires since the twentieth century.

Indeed, houses in some areas of Istanbul, such as the Europeans' residential quarter in Galata, were already built with non-wood materials in the nineteenth century. In the twentieth century, increasingly modern houses were built using fire resistant material, thanks to wider use of concrete. As a result, buildings in Istanbul are significantly more fire resistant than before and the city no longer suffers from major urban fires that destroyed urban areas in the past. It is likely that the absence of contemporary risks related to urban fires in modern Istanbul delays the advancement of historical research of great fires in Istanbul. This is in contrast with the development of historical studies of earthquakes that were inspired, as we discussed, by contemporary earthquakes in the last century.

Most of the few existing studies on Istanbul's urban fires have focused on the city's great fire in 1660. Even these studies are unfortunately inadequate in studying the fire's impacts and devastation, or the urban regeneration process. Instead, the pioneering work by Marc David Bear on the great fire has caused a series of criticism from Turkish historians on his use of Istanbul's 'Islamization'.¹⁴

Bear has argued that, as part of the post-fire regeneration process, the Ottoman authority moved the Jewish residential quarter from the city's central Eminönü area to the suburbs which turned, as a result, Eminönü into an Islamized area in the late 17th century. Kenan Yıldız on

12 Kazuaki Sawai, "The deluge of Istanbul in 1563: Flood without the big river", (in Japanese) *Rekishi Hyōron*, no. 760, pp. 20-34, 2013.

13 Ali Ümran Kömüşçü, Seyfullah Çelik, Abdullah Ceylan, "8-12 Eylül 2009 Tarihlerinde Marmara Bölgesi'nde Meydana Gelen Sel Olayının Yağış Analizi", *Coğrafi Bilimler Dergisi*, no. 9 (2), 2011, pp. 209-220, Ankara.

14 Marc David Bear, "The Great Fire of 1660 and the Islamization of Christian and Jewish Space in Istanbul," *International Journal of Middle East Studies*, no. 36, 2004, pp. 159-181.

the other hand criticizes Bear's arguments firstly in his doctoral thesis¹⁵ and later in the journal article.¹⁶ Abdülkadir Özcan who has published many works on the Ottoman Empire also criticizes Bear by pointing out many errors in Bear's article.¹⁷ Yıldız and Özcan's criticism mainly concerns two issues. First, the great fire of 1660 cannot be considered as the beginning of political Islamization of Istanbul because the city had already been recognized as an Islamic capital before 1660. Second, the relocation of the Jewish quarter from Eminönü during the urban regeneration process was legitimate and its financial compensation was adequate.

The debate over the post-fire Islamization of Istanbul has remained divided between two contrasting views on how to interpret the relocation of the Jewish quarter from Eminönü to the suburb during the post-1660 urban regeneration. However, considering our knowledge of urban fires in Ottoman Istanbul is very limited, there is an urgent need for building empirical data of the fire's impacts on the city and the urban regeneration process, rather than how to interpret them.

Conclusion

This essay has surveyed the literature on historical urban disasters in Istanbul in three fields, earthquakes, floods and fires. Studies on earthquakes are relatively richer than others, although the current literature is largely confined to the earthquakes in 1509 and 1766. However, as the case of the earthquake in 1719 and the production of the *Risale-i Zelzele* shows (see footnote 9), further research into the devastation and regenerations of historical earthquakes may lead to the discovery of more historical major earthquakes that are currently unknown to us.

As we discussed, almost no literature of historical floods exists while other urban fires than the one in 1660 remain largely under-researched. This leads us to conclude that historical research of natural disasters in Istanbul is overwhelmingly lagging despite the city's prominent role as the capital of the Ottoman Empire for 470 years from its conquest in 1453 to the empire's fall in 1922. It also reflects the delays in historical studies of natural disasters in the Ottoman Empire as a whole despite the fact the Empire's territory stretched over three continents for more than 600 years.

15 Kenan Yıldız, "1660 İstanbul Yangınının Sosyo-Ekonomik Tahlili," Dotoru tezi, Marmara Üniversitesi, İstanbul, 2012.

16 Kenan Yıldız, "Doğruluğu Tartışmalı Bir Tartışma: 1660 Yangını İstanbul'un İslâmlaşmasına Etki Etti mi?," *Osmanlı İstanbulu I*, İstanbul, 2014, pp. 197-242.

17 Abdülkadir Özcan, "İstanbul'un Eminönü Senti XVII. Yüzyılda mı İslamlaştırıldı?," *Osmanlı Araştırmaları*, no. 37, 2011, pp. 206-213.

I am intending to fill the gap in the above historiography by studying primary sources of Istanbul's urban fires in the 16th century on which no research has been done and other urban fires in the 17th century than the great fire of 1660. I will pay particular attention to not only the size of fires and the devastation levels but also to other issues. These include the supply of charcoals and firewood which were often blame for many urban fires, and the supply mechanism of timbers that were essential for the urban regeneration. In sum, the study of urban disasters in Istanbul should combine the perspectives from history of natural disasters, urban history and economic and social history.