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Temporal Philology
Reconstructing Patterns of *Avvisi* Creation and Distribution With Travel Times

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Abstract Manuscript newsletters are by definition documents in motion. While they were written up, adapted and reassembled, they spread information all over the European continent. In the Florence State Archives, the documents are being preserved in separate folders reflecting their varied origins. It is known that these volumes have been rearranged during archival works in the centuries following their creation, the value of this distinction is therefore not wholly clear. By applying digital methodologies, however, we can calculate the dynamics of the travel times. This both tells something about the inner workings of this news system and also allows us to reapply this data to make an educated guess about the origin of these documents.

Keywords Archives. Manuscript newsletters (avvisi). Travel times. Mail. XML.

Summary 1 Introduction. – 2 An Overview of Travel Times in the Sixteenth Century. – 3 The Layered Structure of the *Avvisi*. – 4 Method of Data Collection. – 5 The Speed of Letters: Mentions in the *Avvisi*. – 6 The Speed of News: Applying Travel Times to the News Items. – 7 Travelling Headers: Travel Times of the Headers. – 8 Reassessing the Place of Compilation. – 9 Studying Document Circulation. – 10 Conclusion.

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1 Introduction

In the sixteenth century, handwritten newsletters, often known by their Italian name of *avvisi*, were sent all over Western Europe. They are found nowadays in many different archives over the continent, but where they were compiled is not always clear. This genre of mainly anonymous sheets of paper containing information from one or more places truly revolutionised the dissemination of information. The lack of a clear authorship is a fundamental trait of the genre, in which texts could be copied, edited, and reassembled in changing compositions. The consequence of this flexibility was that news from different places could be included in the same document under distinct 'headers'. These headers preceded the actual news items and consisted of a dateline containing information about the date and place of origin. Their versatility makes them a fascinating source and their internal layered structure makes them very suitable for the application of digital methodologies. A great amount of meta-data, for instance on date and place, can be extracted from their pages shedding light on their creation and dissemination. In this article, we intend to show how one in particular – that of time, and mainly that of these 'headers' – can methodologically be exploited to obtain data about the interval it took the news coming from one place to be published in another. We intend to demonstrate how this data can be reapplied to the same dataset in order to make an educated guess about the most probable place of compilation of a specific subset of documents. We will study this issue in particular with reference to a volume of *avvisi* from Venice preserved in the Florence State Archive because at first glance one might not think that these documents originated here.

The Medici Archive – as the collection within the Florence State Archives pertaining to this family is often called – had the reputation of being a disorganised heap of documents that historians could not penetrate easily (Panella 1966, VIII). Already from the sixteenth century onwards, we know that rulers in Western Europe reordered the archival collections that they inherited (De Vivo 2010). A shift has been discerned in archival ordering from a more subject based approach in the Middle Ages to one that reflected the way in which documents were created (Head 2019, 264). That means that we cannot always be sure about how current archival divisions came to be. If we as historians wish to use these categories, that could be a problem. This also means that we do not always know for certain what value the archival separations such as those in the *avvisi* hold and whether we can use them for historic interpretation. For the Medici Archive, it has been said that at the turn of the eighteenth century, the archivist Fabrizio Cecini started to divide the material by provenance. This meant that the fruits of the diplomatic activity, such as letters but possibly also *avvisi*, were placed together with all the oth-

er documents that arrived in Florence from the same locality (Panella 1966, IX; Baggio, Marchi 2002, 8). Later custodians of this archive applied further reorganisations to the archival material, not least Riguccio Galluzzi. As a consequence, nowadays, we find place names written on the volumes of *avvisi* that supposedly refer to where they were created and from where they were dispatched to Florence. However, even though there exist some indications about the changes the archive went through, it is never completely clear who applied what changes to these archival entities. Therefore, the question remains what value this designated place of compilation holds. *Avvisi* are also a peculiar case, since they are not only created outside the territory of the state but oftentimes also not drafted up by the agents in service of that state, who would be more likely to be involved in the dispatch only. Also other people such as soldiers could occasionally be involved in the writing and dispatch of news (Lamal 2020, 15).

The question is particularly pressing for those documents collected in the volume of *avvisi* from Venice around the end of the sixteenth century. This is volume (or *filza*) 3082 with the designation "avvisi varii di Venetia" from the *Mediceo del Principato*. The curious thing here is that many of the manuscript newsletters from this volume do not have a single instance of a header from this city. Instead, we mainly find headers from Rome. What is more, this appears to constitute a regular series of newsletters, bearing words from the eternal city almost every week on the same day. Interestingly, together with Rome, Venice constituted the two most important centres of news in Early-Modern Italy (Infelise 2002, 22; De Vivo 2007, 81). This thorny question problematises the interpretation of this source within its archival setting as it is not always clear whether this layer can aid us at all in our understanding of the dissemination of the *avvisi* (Keller, Molino 2015, 152).

In order to study this matter thoroughly, we created a dataset of documents from the Florence State Archives which for specific research interests is located between March 1575 and March 1576. While attempting to shed new light on this specifically productive-archivistic matter of newsletter categorisation, we also hope to demonstrate how manuscript newsletters could be studied in relation to each other using digital methods. Such an approach has often been argued to be pivotal in reconstructing the way in which news networks worked, but has hardly ever been brought into practice (Raymond 2016, 109-13; Wijfjes 2017, 21; Nicholson 2013).

To facilitate understanding we will begin by clarifying the terminology. First of all, we get our documents from the Florence State Archives. There we find 'manuscript newsletters' (also called *avvisi*) divided over different 'volumes'. These volumes are nothing else than bundled manuscript newsletters. If we speak about a 'document', we mean one manuscript newsletter. These volumes come with a designated locality. It is generally assumed that the documents contained

in this volume were compiled here, therefore we call this the 'place of compilation'. The tricky part is this: because the compilers often put matters from different sources together, one document can contain several 'headers'. A 'header' is a certain heading over one section of a newsletter and contains a 'header place' and a 'header date'. Under the header follows the actual news in several paragraphs that we call 'news items'. At times, the news items also disclose their sources. We have called these 'transits'. The peculiarity of the volume from Venice is that it contains very few 'headers' from Venice. This disparity in headers creates doubts about what the actual place of compilation of these documents might have been.

By learning more about the travel speed in the sixteenth century, we have developed a method by which we can compare different header dates within the same document. This can be used to reconstruct the place of compilation of a volume. First of all, we will apply this method to the volume of manuscripts newsletters that were – supposedly – from Venice.

2 An Overview of Travel Times in the Sixteenth Century

In order to understand which places constitute a likely place of compilation for this group of documents from the 'Venetian' volume, we first need to do something else: understand the dynamics of the velocity of the news in Europe at this time. The development of a continent-wide postal network is often considered to have been a great incentive to the advent of a system of regular dispatching of news in the sixteenth century. This allowed news writers to send their writings with frequent intervals to their customers. The use of the ordinary mail is generally also considered to be the reason why there are regular series of newsletters arriving on the same weekday (Infelise 2002, 7-10; Pettegree 2014, 167-81; Behringer 2003, 49).

Historians have since long been interested in the travel times of the news. An early and often-cited example of this is found in Braudel (1976, 335-9). Later historians have continued this interest (for instance Fedele, Gallenga 1988, 121). These do generally not yet depend on a digital approach and sometimes mention travel times merely in passing (for instance: Barbarics-Hermanik, Pieper 2007, 67-74). Furthermore, for printed news in the seventeenth century, we also have examples of a digital approach (Ryan 2018, 462). In general, there are more digital initiatives and databases for printed newsletters probably due to the greater ease with which these can be build (Hillgärtner 2014). In addition, datelines are also used in order to chart the changing distribution of news centres over time (Arblaster 2014, 123-30).

From the seventeenth century, we have descriptions of how the postal system worked in theory. Ottavio Codogno, postmaster in Mi-

lan, published an itinerary with timetables of the post (Caizzi 1993, 43). For the early sixteenth century, we also have the travel times as found in the agreements between Francesco de Tassis and the imperial authorities for the institution of a postal network. The resulting timetable found in Behringer indicates the travel times from Brussels to other localities that were, at least in theory, guaranteed (Behringer 2003, 74). The speeds we find here, however, are much faster than those usually found in our sources. They could be as fast as over 200 km a day, velocities that we have never attested.

This has already been indicated by Oswald Bauer (2011, 179). He has calculated the travel times for around the same timeframe with dates found in the commercial correspondence of the Fugger. We will reproduce his table here in order to compare it with our own data (Bauer 2011, 178). In this case, we do not have the travel times as they were guaranteed in theory by the postmaster, but the actual time that passed as indicated by the dispatching and reception of letters. There remain some differences, nonetheless. Bauer reports the time between dispatch and reception instead of publication as will be the case for our dates. Also, strictly speaking *avvisi* are not a purely postal matter even though the advent of the *avviso* has always been linked to the introduction of continent-wide postal systems.

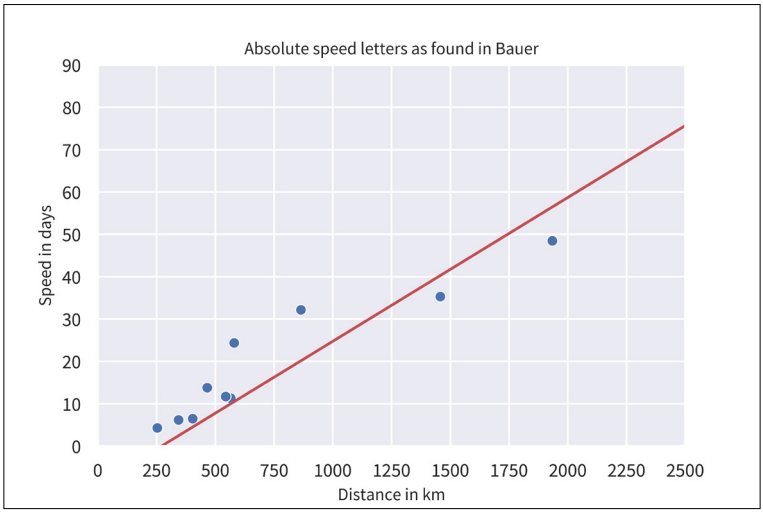
Table 1 Delivery times of the Fugger correspondence adapted after Bauer 2011. In the dates from Antwerp, Bauer also included those from Amsterdam and Middelburg

From	To	Days	Amount	Distance	Km/day
Antwerpen	Augsburg	11.3	45	565	50
Frankfurt	Augsburg	4.3	7	252	59
Genova	Augsburg	13.8	4	465	34
Goa	Augsburg	273.3	6	6,774	25
Hamburg	Augsburg	24.4	35	580	24
Köln	Augsburg	6.5	39	403	62
Lisboa	Augsburg	48.5	85	1,933	40
London	Augsburg	32.2	19	864	27
Lyon	Augsburg	11.7	21	544	47
Madrid	Augsburg	35.3	221	1,457	41
Venezia	Augsburg	6.2	131	344	55

Here, we see the time it took the letters on average to arrive in Augsburg from the designated locations. The first four columns are from Bauer's publication, the data in the last two have been calculated and added here in order to facilitate the comparison. By combining the number of times connections have been found with their travel speeds, we can make an approximation of the median travel speed found in this dataset. This is found to be around 41.3 km per day.

In the following chart, we have chosen not to include Goa to facilitate the comparison as it is a lot further away than any other locality found in this research.

Chart 1 Visualisation of the adapted data as found in Bauer



Formula 1 $y = -9.180 + 0.034x$

As we can see, historians have already made some valuable contributions to reconstructing the postal network and also started thinking about the dimension of time. At this place, we now want to develop a strategy to do this in a systematic way for manuscript newsletters which have an internal structure that sets them apart from letters. The possibilities and repercussions are quite different in comparison to documents pertaining to strictly epistolary practices.

3 The Layered Structure of the *Avvisi*

We now intend to calculate the travel times for our own sources. In order to understand how this could be done using manuscript newsletters, we should first analyse their internal and archival structure. This collection of *avvisi* exhibits a certain system of layering. First, we have the collection as a whole. This exists of several archival volumes. The individual documents are deposited within these volumes. The documents in turn consist of one or more headers. Under the headers follow the actual news items containing the text. The transits are named within the text itself, in the lowest layer of the news

items. This structure could be represented in the following way: 'collection' > 'volume' > 'document' > 'header' > 'news item'. This structure can be turned to our advantage by comparing the layers with each other. In this case, we will take up this task for the dimension of time and find out with what speed news travelled around Europe in the years of 1575-76. We will reapply this information that we have gained to the same dataset and give a conjecture about a possible place of compilation for this 'Venetian' volume.

This same layered structure is reflected by the XML scheme that has been established within the EURONEWS project,[1] as can be seen in the image below **[code 1]**. By utilising its structure, we can calculate travel times between different layers. In the course of this paper, we will do this for three layers, that between the dates of the header and transit, between the header and the news item and, most importantly, between several headers within the same document.

Code 1 Simplified rendition of an XML fragment as used in the EURONEWS project

```
<newsDocument>
   <docid>27293</docid>
   <repository>Archivio di Stato di Firenze</repository>
   <collection>Mediceo del Principato</collection>
   <volume>3082</volume>
   <newsHeader>
      <hub>Roma</hub>
      <date>17/12/1575</date>
      <transc>Di Roma li 17 dicembre 75</transc>
      <newsFrom>
         <from date="18/11/1575">Paris</from>
         <from date="na/na/na">Roma</from>
         <from date="na/na/na">Bologna</from>
         <plTransit date="18/11/1575" dateUnsure="y">Lyon</plTransit>
         <transc>[omitted]</transc>
         <wordCount>272</wordCount>
         <position>1</position>
      </newsFrom>
   </newsHeader>
</newsDocument>
```

1 EURONEWS is a project funded by the Irish Research Council and hosted at University College Cork from 2019 till 2023. I would like to thank Lorenzo Allori for his work on data extraction and transformation within the project.

The peculiar thing with these volumes is that the documents can contain several headers that do not coincide with the location indicated on the volume. This is by necessity the case as one document can contain several headers. In table **2**, we can see that, in most volumes, the most common header is the one written on the spine that constitutes the official place of origin.[2] A notable exception is the volume from the city that is often said to have taken the forefront in the news culture of early-modern Europe, Venice. The most common header found here is actually from Rome. This begs the question what these documents actually have to do with Venice. This can lead one to doubt whether they originated from there at all. Why this is the case particularly for this city is not clear and might have something to do with the restraints that the authorities here placed on the dissemination of news and their desire to control the flow of information (Bongi 1869, 5; De Vivo 2007, 4-9). It might also have a different reason, since in other collections, such as that of the Fuggerzeitungen, we find plenty of headers from Venice (Keller, Molino 2015, 56-7). The thing we are interested in to study in this case is to construct a method that gives an indication of the probability of this volume of documents originating in *la Serenissima* as is being suggested by its binding or whether it is better to assume they were created at some other locality.

2 In some cases, *avvisi* were also found in other volumes, such as letters. They have been treated as one category here since usually they form continuous series of handwritten newsletters dispatched weekly.

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Table 2 Dataset overview of the header places contained in the various volumes of manuscripts newsletters for the period March 1575-March 1576. The number between brackets indicates the total number of documents

	Venezia (92)	Milano (72)	Roma (58)	Napoli (12)	Germania (7)	Genova (8)	Vlaanderen (8)	Polska (5)	Torino (1)	France (1)	Total (264)
Roma	57		45								102
Milano	1	67									68
Antwerpen	30	7	2		1		6				46
Wien	22		1		3						26
Napoli	6		4	10							20
Venezia	11		5								16
Praha	10		2		4						16
Genova	4	1	2			9					16
Krakow	5		1		1			3			10
Augsburg	8		1								9
Lyon	6		1								7
Paris	3	2									5
Regensburg	4		1								5
Madrid	1	2	1								4
Vlaanderen		3									3
Corfu	1		1	1							3
Bruxelles							3				3
Reims		2									2
Piacenza		2									2
Novellara			2								2
Mantova			2								2
Koln	2										2
Messina	2										2
Casale Monferrato		1							1		2
Istanbul	1							1			2
Espana		1									1
Schouwen-Duiveland	1										1
Otranto				1							1
Lecce				1							1
Dresden					1						1
Warszawa								1			1
Marseille										1	1
Total	**175**	**88**	**71**	**13**	**10**	**9**	**9**	**5**	**1**	**1**	**382**

Because we have chosen to collect sources from a shorter timeframe only, the possibility can never be wholly excluded that our findings are influenced by the specific circumstances of that time. Between the years 1575-77, the plague once more ravaged Europe, which did not leave communication lines unaffected (Fedele, Gallenga 1988, 121). This is also well documented within the *avvisi* themselves. One news item, for instance, makes mention of the courier from Venice be-

ing delayed because he had been halted by the Duke of Ferrara due to fears of the plague.[3] Having said that, our dataset runs as said till March 1576, whereas the contagion is said to have reached its worst moments only in the summer of that year (Preto 1979, 123).

4 Method of Data Collection

The several layers contain different kinds of information which because of the distinctive nature of every layer has also been treated differently. Most often, the dates have been inferred from the transcription of the document itself. In the case of the news items, it has sometimes been derived from the secondary literature if the event could be established with certainty.

The XML also indicates whenever a date or a place could not be established with certainty (for a general discussion of place and time Bosse 2019; Lewis et al. 2019). All these dates have been excluded from the calculations.

The header date is in general most straightforward. In principle, an *avviso* header has one date only. There occurs one exception, in which the header contains different dates pertaining to different sections of the news nested underneath it.[4] Because this could not be processed according to a regular methodology, it has been excluded.

Not only can one news item contain more than one place, at times we also find more than one date for the same place. For the news items, we have always chosen the most recent date for every locality named there.

As far as the transits are concerned – that is, we remember, when the writers disclose their sources – the dates have been treated differently because one can regard them as separate itineraries. Therefore, two transits coming from the same place within the same news item with different dates are included separately. If on the contrary a transit recurs in more than one news item under the same header, it has not been duplicated but has been included only once because strictly speaking there is only one source.

3 *Avviso* from Rome, 16 December 1575, ASFi, MdP 4026, f. 490, MAP DocId #26283. The DocId can be used to locate the document on the Medici Archive Project's MIA platform (`https://mia.medici.org`).

4 This is a document with headers from Vienna, Antwerp and Prague, ASFi, MdP 3082, f. 301*r*-303*r*, MIA DocId #27230.

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5 The Speed of Letters: Mentions in the *Avvisi*

The closest thing we have in comparison to the dates of others such as Bauer are the times of these so-called 'transits'. These sometimes also refer to letters. They cannot be completely equated to the travel times of the mail itself, however. What are they exactly? A 'transit' occurs when an *avviso* discloses the source where it got the news. Usually this follows a phrase such as "From letters from Lyon dated 25 of last month".[5] Because we also have the header date and place, we know how much time it took before a transit was mentioned there. We simply subtract the date in the attribute of the transit tag from that of the header (i.e. the `<hub>` tag, see **code 1**). It still goes that we only know when these letters, or whatever form the transition of information took, were mentioned under the news header. This is their so-called publication date, not necessarily when they had arrived, as was the case with Bauer's dates. These transits travelled both with ordinary as well as extraordinary couriers (and by other means). Because the texts specify this only in the minority of the cases, we have not taken this into further consideration.

By iterating through the XML, we can easily collect all the places where transits are mentioned for which we can consequently calculate the speed in kilometres per day. The time difference was calculated in days using datetime which allows us to subtract dates from each other and thus calculate the time difference between them. For the coordinates of places, we relied on GeoPy's Nomanitim database, which also allowed us to calculate the distance between two coordinates as the crow flies. In the future, it might be worthwhile to calculate the itineraries based on the post routes which are becoming digitally available, even though we are not always sure what route they took and there might be more than one possible (Midura 2021, 1030).

Below we see an overview of the transits **[tab. 4]**. The selection is random, they are simply the first and last items in the XML sheet.

Table 3 Abbreviated logbook of travels with distance and kilometres per day

No	Hub	Transit place	Days	Distance	Km/day
1	Milano	Genova	3	119	40
2	Milano	Antwerpen	30	732	24
3	Milano	Genova	2	119	60
4	Milano	Genova	10	119	12
297	Milano	Lyon	12	341	28
298	Milano	Antwerpen	21	732	35

5 Example taken from ASFi, MdP 3082, f. 217*r*, MAP DocId #51901. Original text: "Con lettere di Lione di 25 passato". All translation are by the Author.

299	Milano	Schweiz	4	166	41
300	Casale Monferrato	Genova	16	90	6

We could also take the median of all these examples and place them in a table. In order to make it more reliable, we have decided to only include connections (header-transit) that have at least three occurrences. The result can be seen below.

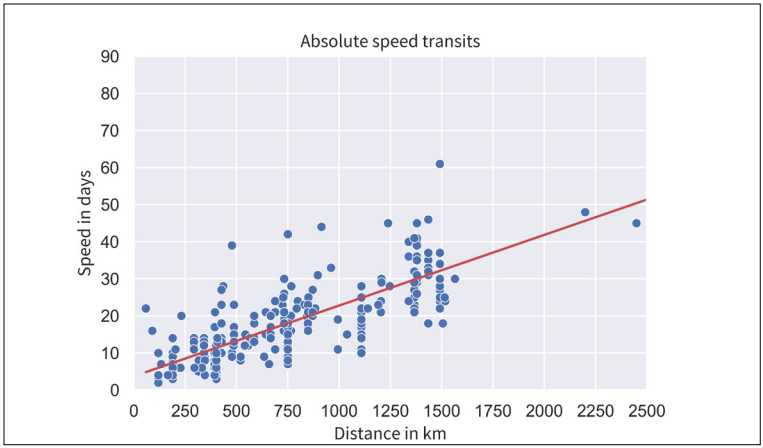
Table 4 Absolute speed in days for transit connections that appear at least 3 times

	Roma	**Milano**	**Venezia**	**Wien**	**Lyon**	**Augsburg**
Istanbul	35		34			
Napoli	6					
Wien						14
Madrid	25					
Lyon	11	10	15			
Avignon	15					
Vlaanderen		25				
Genova	8	3	12			
Augsburg				5		
Malta	21					
Palermo	18					
Antwerpen		26	21	19		
Milano	10					
Paris	17	15	19		7	
Messina	15					
Espana	28	30				

Now that we have both the absolute distance in kilometres and the absolute time in days, we can combine them in one graph **[chart 2]**. If we put all the travel times of the letters in another scatterplot, we get the following result. As one would expect, the further the distance of the connection, the longer it takes the letter to get mentioned in the *avviso*.

This means that the transits reach a median speed of 42.7 km a day. From this data, we can also derive a formula that describes the general development of the time it took the news to be published. In chart **2** this is represented by the red line.

Chart 2 Absolute speed transits in speed in days for distance in kilometres



Formula 2 $y = 3.71049 + 0.01906x$

6 The Speed of News: Applying Travel Times to the News Items

We know the speed of light. But what is the speed of news? Or to be more precise, what was the speed of news in the years 1575-76? From this dataset of *avvisi* from the Medici Archive, we can collect data on different levels. We have already done this for the mentions of letters. But that is not the same as the news itself. We can, however, undertake the same steps for the news by comparing the date of the header (under the `<hub>` tag **[code 1]**) and the single news item (under the `<from>` tag **[code 1]**). Difference with the transits discussed in the previous paragraphs is that this goes back to the actual events rather than of the sources used by the writers. In most cases, the locations of the news in the *avvisi* have not been assigned a date. It is usually simply not explicitly mentioned when something happened, and we cannot always trace back an event to a specific day. Of the total of 2,597 news items (or `<from>` tags **[code 1]**), only 813, or 31.3 percent comes with both an identifiable place and date. Of these, there are only 277, or 10.7 percent, that relate to a movement from one locality to the other. The median travel times in this case are as follows.

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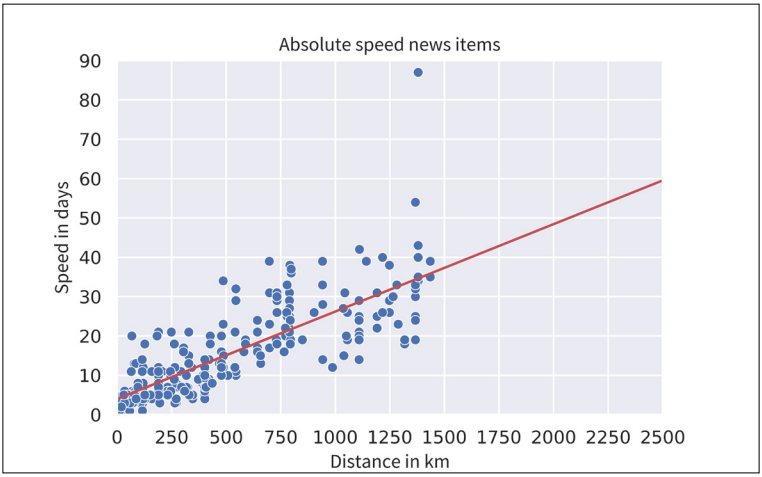
Table 5 Absolute speed in days for news connections that appear at least 3 times

	Roma	Milano	Antwerpen	Praha
Genova	8	7		
Madrid	30	23		
Paris	25	17		
Milano	13	2		
Cartagena Espana	29	26		
Bruxelles		23	1	
Antwerpen		29	4	
Napoli	7			
Regensburg	24			
Cremona		3		
Torino		5		
Zierikzee		27		
Roma	3			
Istanbul	35			
Pitigliano	6			
Casale Monferrato	12			
Palermo	18			
Firenze	6			
Siracusa	19			
Finale Ligure	8			
Krakow				
Stezyca				29
Praha				8
Corfu				
Dordrecht			10	
Schoonhoven			11	
Wien				
Venezia				

Here one can see the median time it took a news item from its occurrence to its appearance under the header. In this case, it is possible that the location of the header and the news item coincide. We could call this domestic news. Also in these cases, it usually took more than one day to be published. This was to be expected. After all, also the regular series of newsletters that appeared with frequent intervals were only weekly. It might happen for this reason that a news item had to wait several days before it could appear. In that respect, also here the data represents specifically the speed of *publication* and not simply the speed with which the news travelled from one place to another. It seems to suggest that the publication added in general about another two days.

Now that we have both the absolute distance in kilometres and the absolute time in days, we can combine them in one graph. Also here, the publication time increases for longer distances.

Chart 3 Absolute speed of the news items in speed in days for distance in kilometres



With 33.03 km an hour the median speed of the news is significantly slower than that of the transits (42.7). This might be partially due to the fact that in the case of the news items, oftentimes, the letter or person that bore the information did not depart immediately after the event, but sometimes only after a couple of days, meaning that they came to a standstill in their transit place. Letters, on the other hand, were often dated on the day that the courier left. That would make the news slower in comparison. The formula describing the general development of travel times over distance is for the news also steeper. This means that the increase in travel days over a longer itinerary develops faster in comparison to the transits. Also in that sense, they are slower **[form. 3]**.

Formula 3 $y = 3.99205 + 0.02221x$

7 Travelling Headers: Travel Times of the Headers

Let us now reconnect this to the matter of the headers. The dates here are much scarcer. After all, one single header can contain dozens of news items or transits, but only gives a few dates for the headers, if any at all. The data we have produced before will also be useful

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in comparison to the data produced hereafter. Not in the last place because the dates of the headers, as we will see, are very similar to that of the news items. We will now set out to explain how exactly one can calculate the travel speed of the headers.

The first important thing to realise is that one single document can contain more than one header. In many cases, at least one among the header places will coincide with the locality indicated by the volume in which this document was found **[tab. 2]**. That means that if we assume that this particular document was actually created in this locality, that there remains a time difference compared to the other headers. This time difference supposedly constitutes the time it took for this particular header to travel from the header place to the place of compilation. For example, in the earlier mentioned volume from Venice, there is a document with a header from Venice dated 29 October 1575.[6] But there is also another header included in this document, originally from Rome, dated 22 October 1575. That means that, for these headers, the connection Rome-Venice took 7 days.

One first important sign that these designations found on the volumes might constitute the actual places of compilation is that if a document does contain a header directly from there, then this is always the most recent among the bunch. That means that this header was probably drafted as last and that the others were created at an earlier date at another place after which they were sent to the place of compilation in order to be included in the same document.

We will now calculate the speed with which the headers moved around the continent in the same way that we have done for the news items and transits. This is possible, we remember, because one document can contain more than one header. In the table that follows, one can see that the sample size is much smaller than for the other categories as has already been indicated above. For both Rome and Venice, we have 11 examples. For Milan there are merely 4 as this volume does not include too many headers from other localities **[tab. 2]**. The median speed with which the headers moved is 33.04, oddly similar to that of the news items.

6 The document is ASFi, MdP 3082, f. 335*r*-336*v*, MAP DocId #27259.

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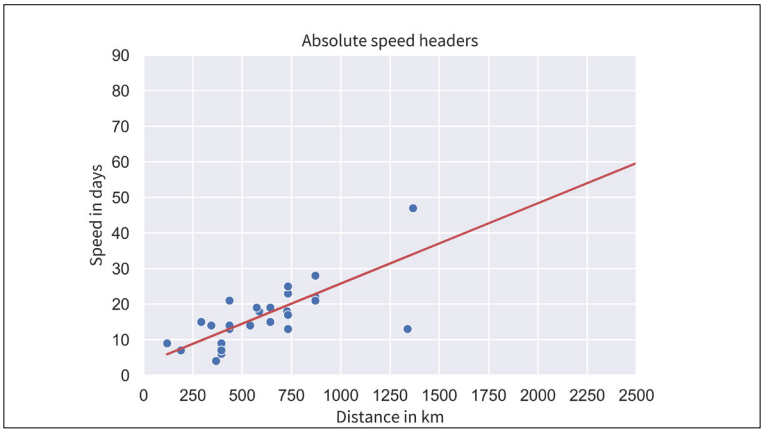
Table 6 Absolute speed in days for connections between headers that appear at least 3 times

	Venezia	Milano
Wien	14.0	
Roma	7.0	
Vlaanderen		25.0
Antwerpen	22.0	23.0

This translates to the following scatter plot **[chart 4]**. Even though the sample size is much smaller than that of the news items, the pattern it follows is quite similar.

Chart 4 Absolute speed headers in speed in days for distance in kilometres



The general speed is just a notch higher. This might be due to the fact that there are relatively few header places on short distance from the volume's place of compilation. In general, however, in light of the other data we have collected here, it does not appear to be unrealistic.

Formula 4 $y = 3.19529 + 0.02258x$

Now that we understand the dynamics underneath the movement of the news in the years 1575-76, we can reapply the data we have collected to other documents about which there remain some uncertainties around their place of compilation.

The median travel speeds that we have found for the news items and headers are generally somewhat slower compared to those found by Bauer in the correspondence of the Fugger. This was to be expect-

ed however, due to the earlier mentioned inherent differences in the nature of the dates.

8 Reassessing the Place of Compilation

Let us now return to the archival question. Where did the documents preserved in this volume of Venice originate? One might ask, but did they not just come from Rome? After all, Rome is the header most frequently found in this volume **[tab. 2]**. Let us for the sake of the argument consider this possibility.

One of these documents found in the Venetian volume includes headers from Augsburg and Rome that are both dated 27 August 1575.[7] Logically, one would not expect this document and the included headers to be composed in either of these places. If it would have been created in Rome, one would expect a difference of 3.19529 + 0.02258 * 730 km ≈ 20 days. Instead, it is zero. The only other possibility is that the information found under that header would be relatively outdated for that geographical location. But then, why not add some recent news in a genre in which novelty was key? It should follow on the contrary that this document was drafted up elsewhere, probably somewhere in a geographical location between Augsburg and Rome.

We, however, are first testing the hypothesis that these documents from the volume from Venice with a Roman header were made in the eternal city. What we have done above for one document, we can do for all of them. In the table below, all the other headers found in these documents have been collected indicating the number of days between that header and the one from Rome, as well as the number of days that one would expect taking into consideration the general formula we created **[form. 4]**.

Table 7 Indication of the expected travel times of the headers would the documents have been made in Rome

No	From	To	Days	Expected days	Relative difference	Distance	Km/day
1	Krakow	Roma	26	27	96	1,075	41
2	Antwerpen	Roma	11	30	37	1,206	110
3	Messina	Roma	13	14	93	487	37
4	Corfu	Roma	14	18	78	673	48
5	Lyon	Roma	18	20	90	750	42

7 ASFi, MdP 3082, f. 305*r*-308*r*, MIA DocId #27231.

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No	From	To	Days	Expected days	Relative difference	Distance	Km/day
6	Genova	Roma	8	12	67	402	50
7	Milano	Roma	10	14	71	477	48
8	Augsburg	Roma	7	20	35	730	104
9	Genova	Roma	8	12	67	402	50
10	Wien	Roma	17	20	85	766	45
11	Antwerpen	Roma	21	30	70	1,206	57
12	Antwerpen	Roma	21	30	70	1,206	57
13	Wien	Roma	14	20	70	766	55
14	Antwerpen	Roma	21	30	70	1,206	57
15	Wien	Roma	14	20	70	766	55
16	Antwerpen	Roma	14	30	47	1,206	86
17	Napoli	Roma	7	7	100	189	27
18	Schouwen-Duiveland	Roma	24	32	75	1,270	53
19	Regensburg	Roma	15	21	71	793	53
20	Antwerpen	Roma	14	30	47	1,206	86
21	Lyon	Roma	7	20	35	750	107
22	Napoli	Roma	7	7	100	189	27
23	Paris	Roma	27	28	96	1,109	41
24	Antwerpen	Roma	14	30	47	1,206	86
25	Antwerpen	Roma	21	30	70	1,206	57
26	Paris	Roma	20	28	71	1,109	55
27	Antwerpen	Roma	14	30	47	1,206	86
28	Wien	Roma	5	20	25	766	153
29	Antwerpen	Roma	21	30	70	1,206	57
30	Antwerpen	Roma	12	30	40	1,206	101
31	Wien	Roma	15	20	75	766	51
32	Lyon	Roma	8	20	40	750	94
33	Madrid	Roma	29	34	85	1,366	47
34	Napoli	Roma	10	7	143	189	19
35	Regensburg	Roma	15	21	71	793	53
36	Paris	Roma	26	28	93	1,109	43
37	Napoli	Roma	7	7	100	189	27
38	Genova	Roma	7	12	58	402	57

As we can see, in some cases such as the first one, it could be quite accurate. In others, however, the travel would be much too fast. The most extreme case is that of a header from Vienna which would have travelled in only a quarter of the expected time with a speed of 153 km a day. Not only is there not a single header in the database that would match that speed (the maximum is 102 km per day), also none of the news items or transits travel at such a high veloci-

ty. De Tassis maybe promised such high velocities for some connections, but they are never attested in the dates collected in the database nor in those by Bauer.

There are also three other locations indicating a hypothetical speed of more than 100 km a day. All of them coming from the north. A header coming from Naples on the other hand appears too slow. In that respect, for the actual place of compilation of these documents one might have to look further up north.

Then, where could this place be? In order to make a conjecture, we can execute similar calculations for other localities. Let us take into consideration as place of compilation of these documents every header that occurs at least three times in the dataset **[tab. 2]** which are, next to Rome, the following: Milan, Antwerp, Venice, Prague, Genoa, Naples, Krakow, Augsburg, Regensburg, Lyon, Paris, Madrid, Flanders, Bruxelles and Corfu.

The problem we run into here is that in many cases we are assuming that these documents would have been made in a place from which there was no header included. That means we do not longer have a fixed date as we had with the Roman headers. That is why we have to work with floating hypothetical dates. In order to do this, we will first calculate hypothetical dates of arrival for every candidate place for all the documents from the Venetian volume (using **[form. 4]**). Then, we will compare the hypothetical dates found within the same document if that particular *avviso* contains two headers or more. If there is little time difference between these hypothetical dates, that means that it constitutes a likely place of compilation. If, on the other hand, they are far removed from each other on the calendar, then it results unlikely that these headers arrived in that place to be compiled in one document. In order to keep the score for the whole volume, we give the candidate places one 'penalty point' for every day of difference between the hypothetical arrival dates.

The problem remains that not every connection is very well documented. For the connections that we do not have enough data on **[tab. 6]**, we will have to make a conjecture of the travel days with the formula that we have created based on the data from other headers **[form. 4]**.

An example might clarify a lot. The first document from the Venetian volume contains headers from Rome (2 April 1575), Krakow (7 March 1575) and Antwerp (22 March 1575).[8] We want to make an estimate about the travel time had it been compiled in one of the aforementioned places. Because Milan is the first on the list of candidate places of compilation, we will use it here as example. Because the distance between Milan and Rome is 477 km, we can apply the formula found above and calculate the expected days of difference between the

8 ASFi, MdP 3082, f. 229*r*-230*v*, MIA DocId #27120.

existing header from Rome and Milan as hypothetical place of compilation **[form. 4]** 3.19529 + 0.02258 * 477km ≈ 14 days. That means that the hypothetical date of compilation in Milan as far as this Roman header is concerned would need to be placed 14 days after the date indicated in this header itself, which would come down to 16 April 1575. This indicates an approximation of the time that it would – hypothetically speaking – have arrived in Milan had that been the place of compilation. We can do the same for the other two headers included in this document. For Krakow that would come down to a difference in days of 3.19529 + 0.02258 * 952km ≈ 25 days which results in a hypothetical date of compilation in Milan of 1 April 1575. For Antwerp we actually know that, in other cases, the median trip took 23 days **[tab. 6]** which gives us a hypothetical date of compilation of 14 April 1575.

As one can see, there are not too many days of difference between these three headers but there remain a couple nonetheless. The Roman header has 15 days difference with that of Krakow, which results in 15 penalty points. The discrepancy with the header from Antwerp adds another two penalty points. The time difference between the latter two adds another 13 points adding up to a total of 30. By doing the same for all other documents from the 'Venetian' volume, we can compare the total amount of penalties they received and see what candidate appears most likely to have been the place of compilation of this volume of documents. This gives us the following results.

Table 8 Total amount of penalty points indicating the probability of the candidate places constituting the place of compilation for the Venetian volume. In this case, we made use of the documented connections as seen in tab. 6

Venezia	574
Roma	933
Napoli	952
Milano	970
Genova	994
Corfu	1,065
Augsburg	1,364
Regensburg	1,422
Wien	1,546
Praha	1,663
Lyon	1,709
Krakow	1,723
Madrid	1,737
Paris	2,420
Vlaanderen	2,650
Bruxelles	2,656
Antwerpen	2,697

As one can see, Venice actually comes forward as the most likely place of compilation, followed at a respectable distance by Rome and Naples. Logically, places that are geographically close to each other appear not too distant. All top 5 places are found in Italy, followed by Corfu and then the places are circling ever further away from Italy.

9 Studying Document Circulation

The problem remains that we do not have specific data for every single connection. Even though the travel times clearly follow a general trend, some connections tend to be faster than others. As a consequence, if we repeat the experiment making use only of times reconstructed with the formula above **[form. 4]** without recourse to documented connections, we see that Venice still emerges on top, but the difference has become a lot smaller.

Table 9 Total amount of penalty points indicating the probability of the candidate places constituting the place of compilation for the Venetian volume. In this case, we made exclusively use of reconstructed travel times

Venezia	786
Roma	829
Napoli	925
Genova	970
Milano	1,052
Corfu	1,065
Augsburg	1,364
Regensburg	1,422
Wien	1,546
Praha	1,663
Lyon	1,709
Krakow	1,723
Madrid	1,737
Paris	2,420
Vlaanderen	2,650
Bruxelles	2,656
Antwerpen	2,697

In this case, however, Venice receives a great deal of penalties because the reconstructed travel time for the connection Venice-Rome should, according to the formula, take about 12 days. These two centres, however, were at the very centre of the European news system. One would expect the connection between them to be quite robust and efficient (Caizzi 1993, 224; Burke 2002, 393). A faster time of de-

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livery and compilation is to be expected, which has also been documented by others (Infelise 2002, 10). In reality, none of the five occurrences of this connection within the database takes up that much time (restrictively 7, 7, 7, 8 and 9 days). The return trip Rome-Venice is also found once where it takes up only 6 days. The one time that there is a transit from Rome under a Venetian header, it takes only 7 days. In the opposite direction there is again one case which took 9 days to complete. In the future, it might therefore be worthwhile to consider the possibilities for bigger databases from various collections in order to better document the differences between the various connections and the dynamics of publication for specific headers.

Of course, once this tool to make educated guesses about the origins of groups of manuscripts newsletters has been developed, it could just as well be applied to other subsets of documents. The question was more pressing for the volume of Venice, whose composition of headers with only very few cases from the 'official' place of origin made it such a problematic and puzzling case. But it could just as well be applied to other compositions of documents.

The only prerequisite for this is that the volume used should contain several documents with more than one header. Venice was very useful also in that respect because there were no less than 48 documents that fit this qualification. The other two candidates, Milan and Rome, have far fewer documents that can be taken into consideration, 12 and 7 respectively. In the results for Milan, here below, it regards Milan as the most likely place of compilation. Naturally, this is a very different situation from the Venetian volume, where headers directly from Venice were often lacking. All the multi-headered documents here contain a header straight out of Milan.

Table 10 Total amount of penalty points indicating the probability of the candidate places constituting the place of compilation for the Milanese volume. In this case, we made use of the documented connections as seen in tab. 6

Milano	98
Napoli	130
Roma	133
Corfu	140
Genova	145
Venezia	159
Wien	230
Lyon	243
Augsburg	255
Regensburg	269
Krakow	282
Praha	306

Madrid	307
Paris	431
Bruxelles	520
Vlaanderen	536
Antwerpen	543

For the Roman volume, it is also Rome itself that ends on top even though with an advantage of one meagre point over Venice. But we remind the reader here that this is also based on a narrow selection of documents.

Table 11 Total amount of penalty points indicating the probability of the candidate places constituting the place of compilation for the Roman volume. In this case, we made use of the documented connections as found in tab. 6

Roma	122
Venezia	123
Napoli	134
Genova	138
Milano	147
Corfu	154
Augsburg	168
Lyon	189
Regensburg	194
Praha	224
Wien	225
Krakow	242
Paris	260
Madrid	268
Bruxelles	281
Vlaanderen	287
Antwerpen	290

Of course, the same methodology could be applied to other archival collections. At this point, the best thing at my disposal to do such a thing is a partial transcription of the collection of documents within the same date range 1575-76 from the Fuggerzeitungen. This collection was originally from Augsburg but is now being preserved in Vienna.[9] Unlike the Medici collection, there is no subdivision in separate folders

9 Unfortunately, the digital project surrounding the Fuggerzeitungen that offers photographs of all the volumes does not take the documents (or what they would call 'Zeitungssendungen') into consideration.

for different geographical locations, but everything is lumped together in chronologically ordered volumes. We have good reason, however, to believe that these might have been made in Venice as well. The principal hub in these documents is almost always either Venice or Rome. In addition, among these documents there are several which have been signed by one Hieronimo Acconzaioco. This is quite rare, since as a general rule, these documents are anonymous. We also know virtually nothing about him and it is doubted that this even constituted his real name. He is, however, generally considered to have been active in Venice (Infelise 2017, 24-5; Bauer 2011, 101; Keller, Molino 2015, 111). Among these documents, there are 32 that offer more than one header and can thus be used to create the friction necessary to make calculations about a possible place of compilation. The results show that also here, Venice is the most likely candidate. Naturally, the calculations would work better if one had a fuller picture of the headers that were dispatched together. It has also not been said that these documents were necessarily all compiled in the same locality.

Table 12 Total amount of penalty points indicating the probability of candidate places constituting the place of compilation for the transcribed documents from the Fuggerzeitungen collection. In this case, we made use of the documented connections as found in tab. 6

Venezia	276
Corfu	591
Roma	599
Istanbul	622
Napoli	641
Messina	649
Milano	704
Genova	718
Wien	767
Madrid	776
Krakow	819
Augsburg	837
Regensburg	874
Lyon	911
Praha	973
Paris	1,117
Vlaanderen	1,145
Antwerpen	1,161
Bruxelles	1,171

In all these cases, it can never be ruled out that a particular *avviso* actually found its way to Venice through Rome. For one year before

our timeframe, from the Medici Archive, we find in the same Venetian volume a document that reads:

> From Palermo, 22 September 1574 arrived in Venice Thursday morning at the 30th around 16 o'clock by an extraordinary from Rome.[10]

First of all, this is a header travelling at particularly high speeds. Secondly, it illustrates how headers travelled from one place to another. The more so because in the next pages of this volume, this header from Palermo has been combined with another from Rome dated 2 October 1574 in one document.[11] This is an illustration of how headers from different places were combined in the same document.

10 Conclusion

The travel times of the news clearly followed patterns established by the dynamics of their dispatch. We can discern a general line for the transits, news items and headers. The time of publication tends to increase for longer itineraries. There remains some disparity, which is partly due to the fact that manuscript newsletters were often published only once a week which meant that after reaching the locality of the header, the news events had to wait for different amounts of time before getting published. Furthermore, there can also have been other factors in play, such as the seasons, the weather, diseases, armed conflicts disturbing communication lines and more. Analysing the data in this way tells us something about how communication networks developed. It can give us insight about when the news reached their locations and what kind of patterns of dissemination to expect.

Here, we have reapplied our understanding of the temporal dynamics of manuscript newsletters to an archival question that has troubled the interpretation of the Medici collection. These newsletters are not all listed under uniform archival numbers, but have directly or at some later point been separated into different folders based on their supposed geographical provenance. This raises the question what the value of such a distinction would be and whether it also went back to separate places of compilation. This question was more pressing for the volumes of Venetian *avvisi* since it is mainly populated with newsletters from Rome with only very few from

10 ASFi, MdP 3082, f. 146*r*-v, MAP DocId #55842. Original text: "Di Palermo li 22 di settembre 1574 venuto in venetia giovedì mattina ^alli 30^ circa le 16 hore per un straordinario di Roma". The '30' has been added later in another hand however, so it might also be that it was not that fast but they were just mistaken, the more so because the Roman header in the following document is actually dated later.

11 ASFi, MdP 3082, f. 147*r-v*, MAP DocId #26945.

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Venice. An analysis of the time difference between the headers contained in the same documents has eventually made clear that Venice should still be seen as the most probable place of compilation for this volume of newsletters.

Abbreviations

ASFi Archivio di Stato di Firenze
MdP Mediceo del Principato

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