



The Curious Case of the 1346 Earthquake Recorded Only by Very Young Chroniclers

by Romano Camassi and Viviana Castelli

INTRODUCTION

The earthquakes of May–June 2012 affected a heavily populated stretch of country on the northeastern border of the Italian administrative region of Emilia Romagna, which is an area of industrial districts that account for up to 2% of Italy's gross domestic product and the seismicity of which had been, up till then, considered comparatively moderate. Understandably enough, the 2012 earthquakes had great resonance in the media and effect on public opinion. At the present time the Po Valley earthquakes of May–June 2012 are acknowledged as the strongest ones in the known seismic history of the area. For some years before, a major candidate for this distinction was the earthquake of 22 February 1346. An authoritative study (Boschi *et al.*, 1997) credited the 1346 event with a 6.7 magnitude value that earmarked it as potentially one of the strongest historical earthquakes of Northern Italy. Later on, successive revisions of this study (Boschi *et al.*, 2000; Guidoboni *et al.*, 2007) did noticeably alter the epicentral location and estimated energy of the 1346 earthquake, but without explaining why these alterations had become necessary. In the wake of the May–June 2012 earthquakes the seismic history of the area became an object of great interest for historical seismologists. In this context the historical data set collected by previous studies on the 1346 earthquake was subjected to a thorough review and new information was sought. This paper presents the results of the investigation, which suggests the strong possibility that the 22 February 1346 earthquake never did happen at all.

THE SEISMOLOGICAL CONTEXT OF THE PO VALLEY MAY–JUNE 2012 EARTHQUAKES

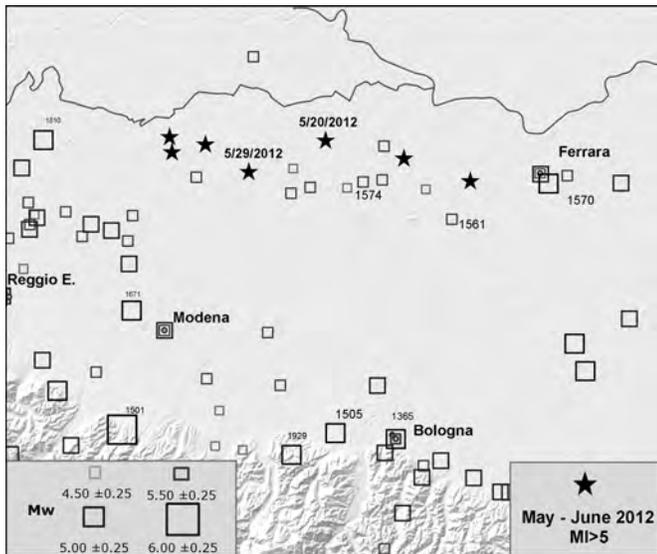
The area of the Po Valley that was affected by the May–June 2012 earthquakes includes well-known geological structures able to generate significant earthquakes, and well before the 2012 earthquakes the maximum expected magnitude had been estimated as M_w 6.14 (Gruppo di Lavoro Mappa di Pericolosità Sismica, 2004). On the other hand, the regional seismic history does not comprise any earthquakes of energy comparable with those of May–June 2012, nor any major earthquake located quite in the same area as those of May–June 2012

(Fig. 1). Before May–June 2012, the largest known regional event was the 1570 Ferrara earthquake, located decidedly eastward of the epicentral area of the 2012 earthquakes and in a different section of the Ferrara Arc. A few other damaging historical earthquakes cluster at the west (Reggio Emilia) and southeast (Argenta) parts of the region. In 2003 the new Italian seismic-hazard map and the attached seismic classification of the national territory (Ordinanza della Presidenza del Consiglio dei Ministri [OPCM]; 2003) categorized the Po Valley as belonging to Zone 3 (moderate hazard).

A survey of recent studies on the historical seismicity of the area draws attention to the singular case of an historical earthquake that, at one time, had been believed to be located practically in the same area subsequently affected by the May–June 2012 earthquakes. This is the earthquake of 22 February 1346, formerly a potential candidate for the role of maximum historical earthquake of the Po Valley and one of the largest earthquakes of Northern Italy.

THERE IS AN EPICENTER WANDERING THROUGH THE PO VALLEY...

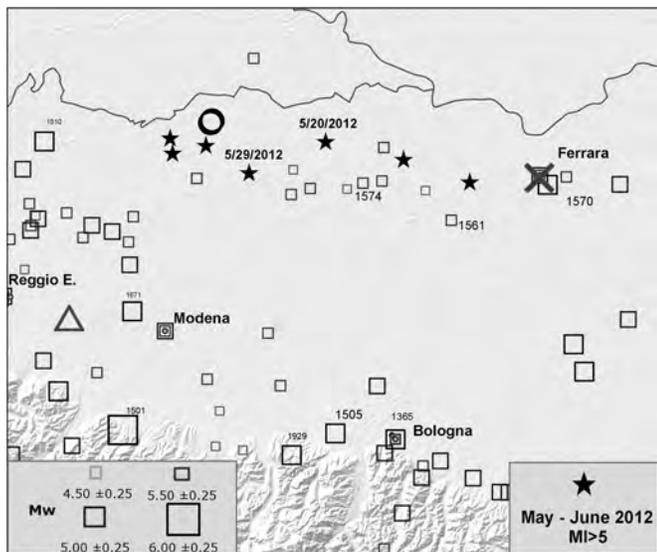
As Figure 2 shows, the first Italian earthquake catalog in the public domain (Postpischl, 1985) located the 22 February 1346 earthquake in the plain between Reggio Emilia and Modena, with $I_o = \text{VIII–IX}$ on the Mercalli–Cancani–Sieberg (MCS) scale and M_m 5.5, on the strength of a short summary of macroseismic effects provided by a descriptive earthquake compilation (Baratta, 1901). Ten years after, a formal historical-seismological study (Boschi *et al.*, 1995) shifted the epicenter of the 1346 earthquake to roughly midway between Mirandola and Concordia sulla Secchia (i.e., in the epicentral area of the 29 May 2012 earthquake) with $I_o/I_{\max} = \text{VII–VIII}$ MCS and M_c 5.5. Boschi *et al.* (1995) was the first issue of the *Catalogo dei Forti Terremoti Italiani* (CFTI). The second CFTI issue (Boschi *et al.*, 1997) confirmed the epicentral location and intensity of the 1346 earthquake but scaled up its energy to a redoubtable 6.7 magnitude value. The first version of the *Database of Individual Seismogenic Sources* (Valensise and Pantosti, 2000) remarked that the large 1346 event was “very close to the Mirandola Source,” although warning that both the location and the magnitude were “highly uncertain due to the very limited number of data available.” Later on, the magnitude of the 1346 earthquake was again downgraded, this time to 5.4, by the third CFTI issue (Boschi *et al.*, 2000). Finally, the last CFTI issue to date (Guidoboni *et al.*, 2007) shifted the epicentral location of the 1346



▲ **Figure 1.** The May–June 2012 earthquakes and the historical seismicity of the study area.

earthquake in the direction of Ferrara and lowered its magnitude to 4.9 (Table 1).

None of the quoted studies explains why the 1346 earthquake parameters required successive adjustments. The obvious reason would be that the acquisition of new data made them necessary, which does not seem to have been the case. In fact, the reference list appended to the information sheet provided for the 1346 earthquake by the latest study (Guidoboni *et al.*, 2007; as retrieved from the online version on 27 March 2013) is almost identical to the one provided by the earliest study (Boschi *et al.*, 1995), apart from a handful of nineteenth to



▲ **Figure 2.** The different epicentral locations of the 22 February 1346 earthquake. Gray triangle, Postpischl (1985); black circle, Boschi *et al.* (1995, 1997, 2000); gray cross, Guidoboni *et al.* (2007).

twentieth century earthquake compilations and parametric catalogs, none of which provides any relevant information, which was not available to Boschi *et al.* (1995).

The adjustments made to the parameters of the 1346 earthquake are reflected in the successive versions of the Italian earthquake catalog. The parameters proposed by Boschi *et al.* (1997) were adopted by CPTI Gruppo di Lavoro (1999) and CPTI Working Group (2004). Those proposed by Guidoboni *et al.* (2007) have been adopted by Rovida *et al.* (2011). In the wake of the May 2012 seismic crisis, as we looked over the historical earthquake record of the area, we became aware of the considerable divergence affecting the parameters of the 1346 earthquake in the two most recent issues of the national catalog and decided to investigate it.

THE OFFICIAL STORY OF THE 1346 EARTHQUAKE

Figure 3 presents the background information from which the main Italian parametric earthquake catalog (Postpischl, 1985) assembled the set of parameters assigned to the 1346 earthquake. Postpischl (1985) gives as references two descriptive earthquake compilations (Mercalli, 1897; Baratta, 1901), but, considering that Mercalli (1897) is among the sources quoted by Baratta (1901), it can be assumed that the latter is the main source of the catalog.

Baratta (1901) provides a summary of information based partly on noncontemporary texts: earthquake compilations (Mercalli, 1883, 1897) and municipal histories of northern Italian towns (Ghilini, 17th century; Schiavina, 16th–17th century; Mezzotti, 1838–1840; Dondi, 1896); and partly on two contemporary chronicles whose authors hailed from Reggio Emilia (Pietro della Gazzata, 14th century) and Modena (Giovanni da Bazzano, 14th century), the latter being available to Baratta (1901) indirectly through a verbatim quotation made by Dondi (1896). Obviously, contemporary evidence should be the most authoritative in this case (noncontemporary evidence is certainly derivative, possibly unreliable, or sometimes even untrue). Unfortunately, as Figure 3 also shows, the contemporary evidence collected by Baratta on the 1346 earthquake is ambiguous. The Modenese chronicle describes an undamaging event felt in Modena on 8 February, whereas the chronicle from Reggio describes a destructive earthquake “all over the world” that occurred on 22 February. The wording of the précis made by Baratta (1901) indicates that he decided to trust the latter (“On 22 February [1346] there was a very strong earthquake *all over the world* [italics added], that caused many towers and houses to fall down”). He did not define the geographic location of the event (as he usually did), limiting himself to add that earthquake shocks were recorded in Modena (Emilia Romagna) on 8 February, in Monza (Lombardy) on 22 February and in Alessandria (Lombardy) on 24 February. As mentioned above, Postpischl (1985) located the 1346 earthquake between Reggio Emilia and Modena (Fig. 2). This indicates that his interpretation of the data provided by Baratta (1901) was not a literal one, but no record of the rationale behind it is available.

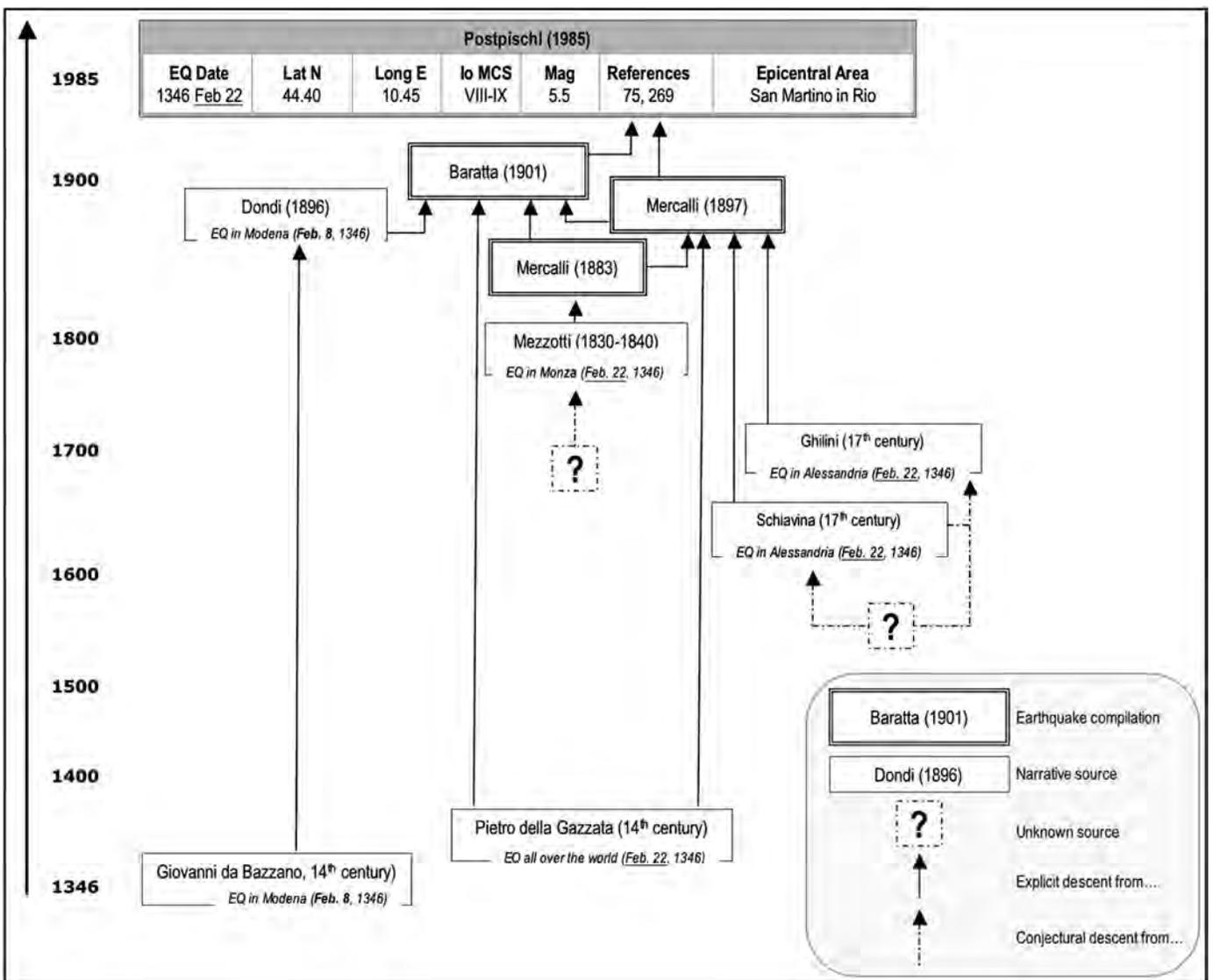
Table 1
Epicentral Parameters of the 22 February 1346 Earthquake According to the Main Studies and Parametric Catalogs

Catalog/Study	MO*	I_0 †	MCS	I_{max} ‡	MCS	Latitude (N)	Longitude (E)	Magnitude	Epicentral Area
Postpischl (1985)	—	VIII–IX	—	44.667°	10.750°	5.5	San Martino in Rio		
Stucchi <i>et al.</i> (1993)	5	VII–VIII	44.817°	11.617°	5.9	Ferrarese [<i>doubtful EQ</i>]			
Boschi <i>et al.</i> (1995)	14	VII–VIII	44.920°	11.020°	5.3	Ferrara			
Boschi <i>et al.</i> (1997)	14	VII–VIII	44.917°	11.017°	6.7	Ferrara			
CPTI Working Group (2004)	14	VII–VIII	44.920°	11.020°	5.8	Ferrara			
Boschi <i>et al.</i> (2000)	14	VII–VIII	44.917°	11.017°	5.4	Ferrara			
Guidoboni and Comastri (2005)	3	VII–VIII	44.833°	11.617°	—	Po Plain			
Guidoboni <i>et al.</i> (2007)	5	VII–VIII	44.833°	11.617°	4.9	Ferrara			

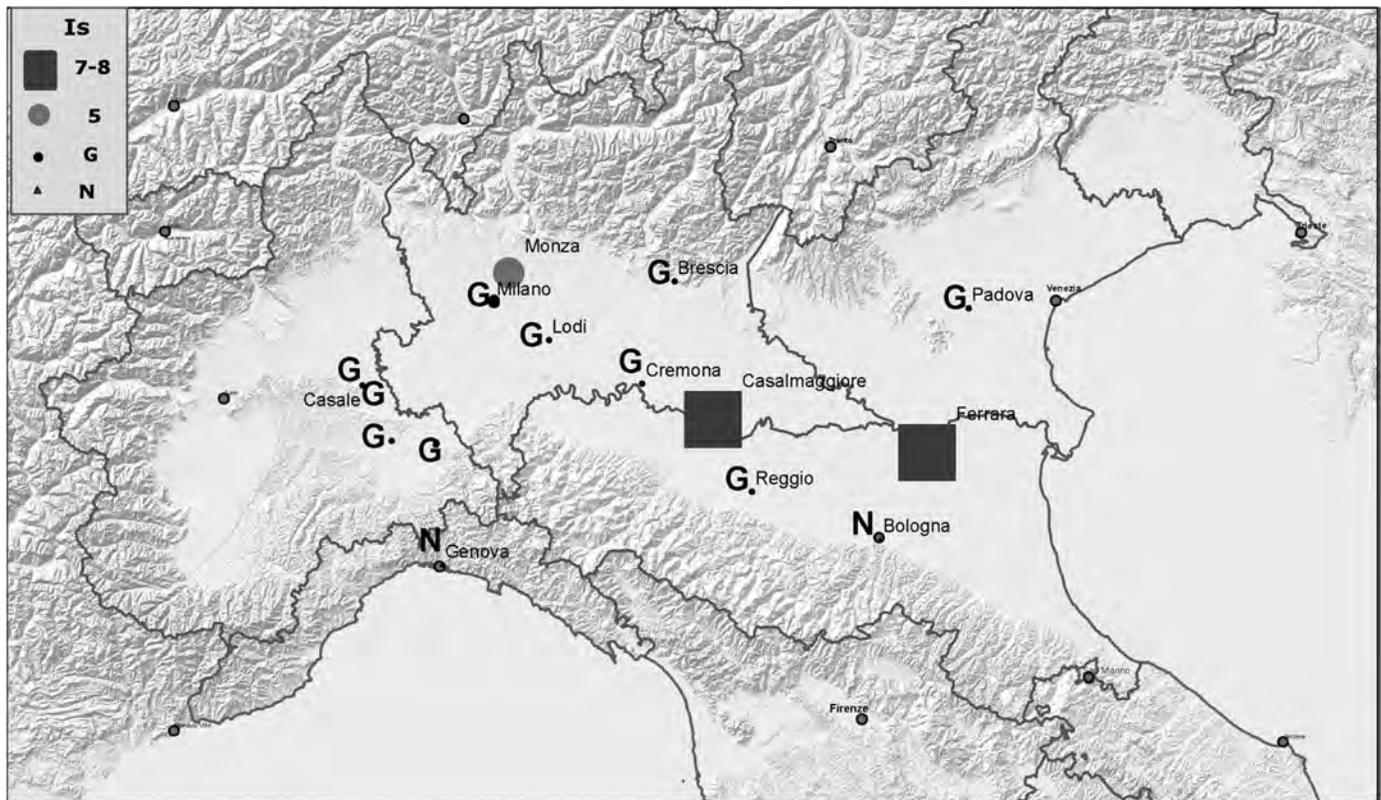
*. MO: macroseismic observations.

†. I_0 : epicentral intensity.

‡. I_{max} : maximum intensity.



▲ **Figure 3.** Background information available to Postpischl (1985) for the 22 February 1346 earthquake.



▲ **Figure 4.** Macroseismic effects of the 22 February 1346 earthquake according to Boschi *et al.* (1995, 1997, 2000).

The first modern historical-seismological study of the 1346 earthquake was a classified one, carried out in the 1980s for the qualification of sites considered for the installation of nuclear power plants. The first generally accessible study of the 1346 earthquake is the one included in the earliest CFTI issue (Boschi *et al.*, 1995). The information sheet that summarizes the results of the study mentions “the collapse of many houses, palaces and towers” in Ferrara; severe although generic damage (“collapse of houses and trees struck down”) in Casalmaggiore, a locality some 100 km eastward of Ferrara, and unspecified damage at several places in the regions of Emilia, Veneto, Lombardy, and Piedmont (Fig. 4). The second CFTI issue (Boschi *et al.*, 1997) included only the epicentral parameters for the 1346 earthquake, and the third one (Boschi *et al.*, 2000) gave only its intensity table, one that was exactly the same as the one provided by Boschi *et al.* (1995). Later studies (Guidoboni and Comastri, 2005; Guidoboni *et al.*, 2007) provided a much smaller number of macroseismic observations than the earlier studies (Table 2).

Some of the modifications undergone by the 1346 earthquake data set and parameters in the handing down from one study to another are easily explainable, but others are less so. For instance, the high-magnitude value, which Boschi *et al.* (1997) assessed for the event and which uplifted it, for a time, to the rank of one of the strongest earthquakes ever occurred in the whole of northern Italy (Table 3), was probably due to the employment of a preliminary version of the Boxer algorithm

(Gasperini and Ferrari, 1997) for calculating the magnitude, because a lower magnitude value was assessed by Boschi *et al.* (2000) using the same set of macroseismic observations and a newer version of the Boxer algorithm. On the other hand, it is not as easy to understand why the set of macroseismic observations available for the 1346 earthquake changed from 14 sites (Boschi *et al.*, 1995, 2000) to three sites (Guidoboni and Comastri, 2005) and to five sites (or three plus two negatives ones) in Guidoboni *et al.* (2007), or which one of the epicentral locations proposed for the 1346 earthquake should be favored (Table 1). Looking for answers to these questions, we went back to the original historical data set made available by all studies of the 22 February 1346 earthquake, subjecting every piece of information to a critical cross examination and setting up a search for further original data (if any) useful to improve our general understanding of the event.

REASSESSING THE BODY OF KNOWLEDGE ON THE 1346 EARTHQUAKE

Our reassessment of the body of knowledge collected by previous studies of the 1346 earthquake addressed two main problems: evaluating the evidence from which the studies derived their set of macroseismic observations (Table 2), and comparing that evidence with that provided by as many contemporary narrative sources of the Reggio Emilia–Ferrara area as it was possible to find. Our comparison took into account

Table 2
Intensity Tables Provided by the CFTI Studies of the 22 February 1346 Earthquake

Place	Study		Boschi <i>et al.</i>	Boschi <i>et al.</i>	Guidoboni and	Guidoboni <i>et al.</i>
	Latitude (N)	Longitude (E)	(1995)	(2000)	Comastri (2005)	(2007)
			I MCS	I MCS	I MCS	I MCS
Ferrara	44.836°	11.618°	VII–VIII	VII–VIII	VII–VIII	VII–VIII
Casalmaggiore	44.988°	10.421°	VII–VIII	VII–VIII	V	V
Monza	45.584°	9.274°	V	V		
Reggio Emilia	44.697°	10.631°	G*	G	F†	F
Padova	45.406°	11.876°	G	G		
Cremona	45.136°	10.024°	G	G		
Brescia	45.544°	10.214°	G	G		
Milano	45.464°	9.189°	G	G		
Lodi	45.314°	9.501°	G	G		
Tortona	44.897°	8.864°	G	G		
Casale	45.132°	8.450°	G	G		
Alessandria	44.913°	8.614°	G	G		
Genova	44.419°	8.898°	N‡	N		N
Bologna	44.498°	11.340°	N	N		N

*. G: generic damage information.
†. F: felt.
‡. N: no information in contemporary sources.

seven 14th-century chronicles and all the earthquakes recorded by them in the 1345–1348 time window (Table 4).

First of all, we focused on the most conspicuous difference between the earlier (Boschi *et al.*, 1995, 2000) and the later CFTI studies (Guidoboni and Comastri, 2005; Guidoboni *et al.*, 2007), namely the disappearance from the data sets of the latter of nine macroseismic observations related to as many northern Italian localities for which “generic damage information” was available in the earlier studies (Table 2). We identified the earliest historical source available to Boschi *et al.* (1995) for each of the nine localities (Table 5). These are all second-hand sources (the earliest is Corio, 1503) whose descriptions of the 1346 earthquake are very similar in general (date, global extent of the quake), although the involvement of different towns, usually the one whose history the author is writing, is emphasized in some cases. This suggests that

the origin of most of the texts listed in Table 5 can be traced to a common source. A likely candidate to this role is Corio (1503), a very popular standard history of the Duchy of Milano, which authors of later town histories of the same area would have trusted implicitly as an authoritative source. Corio himself did probably derive the episode of the 1346 earthquake from the already mentioned 14th-century chronicle by Pietro della Gazzata, which is known to have been one of his sources (Rombaldi, 1989). It seems safe to assume that the nine localities were expunged from the latest CFTI studies of the 1346 earthquake, because no contemporary/reliable record of their involvement in the earthquake is available; this decision seems unquestionably a wise one.

According to the current reconstruction of the 1346 earthquake (Guidoboni *et al.*, 2007; see Table 2) the event of 22 February reached an intensity of VII–VIII MCS in

Table 3
Magnitude ≥ 6.5 Earthquakes in Northern Italy According to Boschi *et al.* (1997)

Date (yyyy/mm/dd)	Time (hh:mm)	Latitude (N)	Longitude (E)	I_0 MCS*	Sites	M_e †	Epicentral Zone
1117/01/03	13	45.330°	11.200°	IX	85	6.5	Veronese
1346/02/22	11	44.920°	11.020°	VII–VIII	14	6.7	Ferrara
1348/01/25	15	46.370°	13.580°	IX	59	6.6	Carinthia
1511/03/26	14:40	46.200°	13.430°	IX	66	6.8	Slovenia
1690/12/04	14	46.930°	13.300°	VIII–IX	60	6.8	Carinthia
1695/02/25	05:30	45.800°	11.950°	X	82	6.6	Asolano

*. I_0 : epicentral intensity.
†. M_e : equivalent (macroseismic) magnitude.

Table 4
Overview of 14th-Century Chronicles of the Modena–Ferrara Area and Their Earthquake Records

Chronicles				Earthquakes Recorded in 1345–1348			
Author	Hometown and Lifespan	Age in 1346	Chronicle Time Span	1345 31 January	1346 8 February	1346 22 February	1348 25 January
Bonifacio da Morano	Modena ~1280/90–1349	~60 yr	1108–1347	NR*	NR	NR	—
Giovanni da Bazzano	Modena ~1280–~1363	~65 yr	1188–1363	NR	EQ [†] shock felt in Modena	NR	Strong EQ Villach destroyed
Nicolò da Ferrara	Ferrara early 14th century–~1387	~40 yr	1287–1387	NR	NR	NR	Great EQ shock felt in Ferrara; Villach destroyed
Chronicon Estense	Ferrara 14th century	Unknown	328–1393	NR	NR	NR	Great EQ shock felt in Ferrara; Villach destroyed
Ingrano Bratti (14th century)	Mirandola 1325–1400	21 yr	1320–1380	NR	NR	NR	NR
Pietro della Gazzata	Reggio Emilia ~1336–1414	~10 yr	800–1388	Very severe EQ shock [Reggio?]	NR	Great EQ all around the world	Strong EQ all around the world
Giacomo da Marano	Ferrara 1344–1412	2 yr	[?]-1412	NR	NR	Great EQ said to have been felt around the world	NR

*. NR: not recorded.
†. EQ: earthquake.

Table 5
Original Sources Used by Boschi *et al.* (1995) to Assess Macroseismic Intensities for Nine Localities Not Considered in Guidoboni *et al.* (2007)

Locality	Historical Source	Earthquake Description
Milano	Corio (1503)	In 1346 [...] on 22 February the earth was shaken almost everywhere by an unheard of earthquake so that many towers and houses collapsed.
Brescia	Maggi (16th century)	In 1346 a great earthquake shattered many houses in Brescia and other Italian towns.
Tortona	Montemerlo (1618)	In 1346 [...] on 22 February almost everywhere in the world there was a terrible and frightful earthquake that destroyed and ruined many buildings in several places.
Cremona Lodi	Bresciani (17th century_a)	In 1346 there was an amazing earthquake that threw down many houses, towers and trees in Cremona, Lodi and the Duchy of Milano causing great damage and ruin to many people.
Casalmaggiore	Bresciani (17th century_b)	1346. In January an earthquake ruined buildings and uprooted trees.
Alessandria	Schiavina (16th–17th century), Ghilini (17th century)	The following year [1346] on 22 February the earth did fearfully quake in many parts of Italy, and particularly in Alessandria; most buildings collapsed and there were some casualties. In 1346 on 24 February there was a frightful earthquake in Alessandria and also in other places, and many buildings collapsed.
Padova	Quadro ristretto...(1818)	On 22 February 1346. A frightful earthquake.
Casale	De Conti (1838–1842)	In 1346 almost everywhere in the world there were several earthquake shocks that caused considerable damage.

Ferrara and was felt in Reggio Emilia and Monza. In fact, however, Reggio Emilia and Monza could well have had nothing to do with the 22 February earthquake: the only available contemporary Reggio Emilia source (Giovanni da Bazzano, 14th century) describes an earthquake shock (*terraemotus*), which was felt in town on 8 February and not 22 February. The Monza source, a very late municipal history of a minor Lombard town (Mezzotti di Castellambro, 1838–1840), could well be another of the many such works that picked up the episode of the 1346 earthquake from some earlier author, as described above.

It remains now to examine the case of Ferrara, the one locality damaged by the 22 February 1346 earthquake, according to the CFTI studies. The source for the data in this case is Giacomo da Marano (14th–15th centuries), a Ferrarese burgher born in 1344 (Andreolli *et al.*, 1991), whose chronicle was handed down in sixteenth to eighteenth century copies of uncertain accuracy, lacks a critical edition, and is described as “a heap of mixed truths and lies” by an eighteenth century Ferrarese erudite (Frizzi, 1791–1809) and as “unoriginal” by modern ones (Andreolli *et al.*, 1991).

The description of the 1346 earthquake penned by Giacomo da Marano runs as follows: “At lunchtime on February 22, [1346] a great earthquake started to be felt and they said that it was felt all over the world. It was very terrible, no one having ever felt its like, so that many houses palaces and towers in Ferrara, and in the countryside farmhouses, barns, churches [?] and other buildings fell down. That much was heard from the news sent to Ferrara from several parts of the world, about the month and day in which this happened; that earthquake lasted for nearly three hours, upsetting everyone to the utmost degree.”

So far, so good, or it would be, were it not that this report does not find confirmation in the other two Ferrarese chronicles of the time. In 1346 the authors of these chronicles, unlike Giacomo da Marano, were grownups in places of responsibility, one as a Benedictine abbot (Nicolò da Ferrara, 14th century), the other (*Chronicon Estense*, 14th century) as a notary in the chancery of the Este lord of Ferrara (Kohl, 2013), and thus presumably well able to notice and correctly write down an earthquake such as the one later on described by Giacomo da Marano. Neither mentions that any earthquake occurred in February 1346, either on 8 or 22, although the anonymous author of the considerably detailed *Chronicon Estense* starts his extensive coverage of the year 1346 with an incident that occurred on 23 February (only a day after the alleged devastation of his hometown, which seems to have escaped his notice), and carries it on with another 37 entries dealing with assorted occurrences of local, regional, and, in a few cases, international interest.

Comparing Giacomo da Marano’s description of the 22 February 22 earthquake with contemporary chronicles composed elsewhere in the lower Po Valley does not help in finding positive feedback for it (Table 4). In Modena, Bonifacio da Morano (14th century) does not mention any earthquake at all in the 1345–1347 time window, whereas Giovanni da Baz-

zano (14th century) records the already mentioned shock felt on 8 February 1346, and also the arrival in Modena (at the end of April 1348) of the news of another, much stronger earthquake, which had destroyed faraway Villach (Carinthia, Austria) in January 1348. In Reggio Emilia, Pietro della Gazzata (14th century) describes three earthquakes in four years: a “very severe earthquake shock” (*terremotus gravissimum*, no damage) on 31 January 1345; the 22 February 1346 event studied in this paper; and the 25 January 1348 Villach earthquake. It is perhaps worthwhile to note that Pietro’s descriptions of the 1346 and 1348 earthquakes are very similar: the former is described as “very great” (*maximus*), the latter as “extraordinary” (*ultra modum*); both are said to have affected “the whole world” (*universum orbem, totum mundum*); of neither does Pietro claim that they damaged Reggio Emilia or any other nearby places. In short, as Table 4 shows, the 1348 Villach earthquake is the only seismic event to have been recorded by all contemporary chronicles of the Reggio Emilia–Ferrara in the 1345–1348 time window, with two exceptions only: Bonifacio da Morano (14th century), whose narrative ends in 1347, and Giacomo da Marano (14th century), that only mentions the 1346 earthquake. And yet both the *Chronicon Estense* and Nicolò da Ferrara testify that the 1348 Villach earthquake was quite clearly felt in Ferrara and other nearby places (*fu in Ferrara un grandissimo tremuoto, che fu sentito a di e ora suddetti in molte altre parti, maximus terremotus factus est in civitate Ferrarie et aliis pluribus locis et civitatibus*) and show themselves to be aware that its maximum effects occurred in Carinthia (*Carentana, in partibus Clarentanorum*) where the town of Villach was destroyed (*la città di Villach tutta fu pel detto tremuoto sommersa, Villac... tota quedam civitas submersa est*).

CONCLUSIONS

Did the 1346 earthquake really happen or not? In the light of the available historical evidence, it probably did not happen at all. There are only two contemporary authors to describe it, and both were very young in 1346: Pietro della Gazzata was about ten years old and Giacomo da Marano a babe in arms. This means that their versions of the episode must have been put on paper after several years at best from its date of occurrence, and that they must have relied either on personal recollections (that tend to grow hazy as time goes by) or on tales picked up from other witnesses and possibly distorted by the passing of time. Though, strictly speaking, contemporary, these two particular witnesses seem less reliable, in this specific case, than those other chroniclers who were of more mature age in 1346 and who probably wrote down their narrative within a briefer interval from the facts themselves. It seems likely that Giacomo da Marano made a mistake in dating the earthquake he described in 1346 and that his report was in fact intended to describe the Villach earthquake of 1348 (that he does not record as such). The same reasoning probably does hold good in the case of Pietro della Gazzata, who in fact records both the 1346 and the 1348 earthquakes, describing them in terms that are almost interchangeable.

The chronicle by Pietro della Gazzata was one of the sources used by a popular early sixteenth century regional history (Corio, 1503), through whose mediation the episode of the probably fictional 1346 earthquake happened to be picked up by many authors of municipal histories written in several locations of northern Italy. Each of them would seem to have interpreted it as referable to the town/area he was mainly concerned with, thus contributing to the creation of a wholly fictional super earthquake of northern Italy.

Most of the historical-seismological studies produced on the 1346 earthquake from the 1980s onward do not appear to have explicitly put in question the dependability of its sources, the only exception being Stucchi *et al.* (1993), who classed the 1346 earthquake as doubtful (Table 1). This episode reminds all researchers who perform the tricky task of reconstructing the macroseismic effects of historical earthquakes of the importance of keeping a record of the reasons behind their choices: to minimize the possibility of future misunderstandings on the part of users unaware of the many pitfalls and stumbling blocks that beset the path of historical seismologists. ❧

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Romano Camassi
Viviana Castelli
Istituto Nazionale di Geofisica e Vulcanologia
Sezione di Bologna
Via Donato Creti, 12
I 40128 Bologna
Italy
romano.camassi@bo.ingv.it
viviana.castelli@bo.ingv.it