J-READING
JOURNAL OF RESEARCH AND DIDACTICS IN GEOGRAPHY
2, 14, December, 2025, pp. 5-31 DOI: 10.4458/8698-01

A journey through time into the "real world" of ancient Pompeii. The 79 AD eruption of Vesuvius relived to raise risk awareness and as an opportunity for experiential learning

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Received: September 2025 – Accepted: November 2025

Abstract

The 79 AD eruption of Mount Vesuvius, which "destroyed-preserved" Pompeii, Herculaneum, Stabiae and Oplontis, left in its wake a huge number of various artifacts, data and documents that continue to come to light during archaeological excavation campaigns, giving back the eloquent features of the daily life and urban, economic and cultural organisation of the towns affected. This paper looks at a series of aspects relative to their social life, as well as elements from the casts that have made it possible to add new information regarding the eruptive phases and resulting phenomenology and the reactions of the inhabitants, found in all too telling positions that indirectly describe what they must have experienced and what action they decided to take. From a geographical point of view, the symbolic and material meanings steeped in the 79 AD eruption take on exceptional connotations when considering that at present the Naples Metropolitan city records very high building and population density, so that the risk level for a possible resumption of activity increases dramatically, making it necessary to glean as much information and insight from that tragic event in order to raise awareness to the issues of geodynamic risk. Among the objectives of this work is that of providing various cues which highlight the significance of fieldwork in the Pompeii site, aimed at making people understand, in a process of research-action and active and participatory didactics, what it means to live in a context in which in the past the absolute protagonist, Mount Vesuvius, offered a vivid testimony of Plinian eruption, which even today can be revisited in its most important phases in a dramatic and engaging journey in time.

Keywords: Mount Vesuvius, Pompeii, 79 AD Eruption, Journey in Time, Fieldwork, Experiential Learning

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1. Introduction

In Campania (Italy), particularly in the area around Naples which is marked by the presence of Vesuvius and Phlegraean Fields, volcanoes have constantly released remarkable resources and benefits, on one side, and caused anxiety and disasters, on the other. While Vesuvius has been quiescent since 1944 and, at the same time, represents a widely monitored volcano and a relevant tourist attraction, not far away to the west-north-west is the Phlegraean Fields Area – where the last eruption was in 1538 on Monte Nuovo – which currently continues to be a cause of apprehension with very frequent earthquakes. In 2024-2025, the earthquakes have reached here the maximum magnitudes of Md 4.4-4.6 and over 1,000 events/month have been recorded (Rapagnani et al., 2025, p. 1). In terms of ground uplift, an average monthly value of approximately 15±5 mm has continued to be occurred since April 2025 and a total value of over 148 cm has been recorded from November 2005 to June 2025 (Patanè et al., 2025).

We find ourselves in a context (Figure 1) characterised by an "urban fire mountain" made up of Vesuvius (La Foresta, 2005, p. 231), and the Phlegraean Fields which constitute a vast part of "the most widespread active volcanic system [the Phlegraean District] of the Mediterranean area" (Sbrana et al., 2021, p. 557).

Vesuvius is a cone surrounded by the remains of an older volcanic edifice, Mount Somma, that makes it possible to speak about an enclosure volcano (Figure 2). The first explosive eruption ("Codola") took place about 25,000 years ago and a very violent volcanic activity, attributable to the so-called eruption of the "Pomici Basali" (or "Sarno eruption"), occurred about 17,000 years ago; several other Plinian or Subplinian events have been later recorded at the Somma-Vesuvius complex (Fea et al., 2013, p. 175; Pesce and Rolandi, 1994, p. 16). In terms of hazard, the Mount Somma constitutes a natural barrier against the lava flows which come from Vesuvius in the north direction, and they are turned towards the west. On the contrary, the pyroclastic flows tend to maintain a radial propagation since this role of barrier is not played for similar turbulent and fast-moving mixing of ash, products with different dimensions and volcanic gas which derive from the collapse of an eruptive column. The fallout of ash and other fine-grained products from sustained column tends to be recorded in the sector from north-east to south-east due to the influence of stratospheric winds. Situated in the heart of the Campania Plain, over time the Somma-Vesuvius complex has been responsible for a frequent interplay of effusive and explosive activity that has visibly modified the physiognomy of this stratovolcano (Giacomelli and Scandone, 2006, pp. 165-168).

On the other hand, the Phlegraean Fields are a series of smaller cones, distributed inside a sunken area with respect to the surrounding territory, a caldera formed following two huge eruptions that took place about 39,000 (Campanian Ignimbrite) and 15,000 years ago (Yellow Tuff) (Rosi and Sbrana, 1987; Scandone et al., 2006; Del Gaudio et al., 2010).

Due to their long history, pleasant landscape, building and flooring materials, soil fertility and luxuriant harvests, these active volcanic areas have always attracted inhabitants and have a very high population density (Pesaresi et al., 2017; Pesaresi and Pavia, 2017); in general, this value for the Naples Metropolitan city (before Naples Province) is 2,535 people/km^2 in 2021 (ISTAT, 2023).

The present Phlegraean crisis, with its seismic tremors caused by a slow and progressive ground uplift (bradyseism) that has been going on for decades, has re-presented the question of how to tackle a possible return of volcanic activity. This makes the reconstruction of the eruptive history of the volcanoes even more urgent, drawing from every experience that may come in useful now and in the future.

When focusing on the territorial contexts affected by phenomena of active volcanism, it is in fact necessary to analytically know the aspects relative to the organisation of the territory, the landscape structure, the social and economic relations, the dynamics occurring over time, in order to keep the memory of the past alive and to direct present and future government action (D'Aponte, 2005, p. 11).

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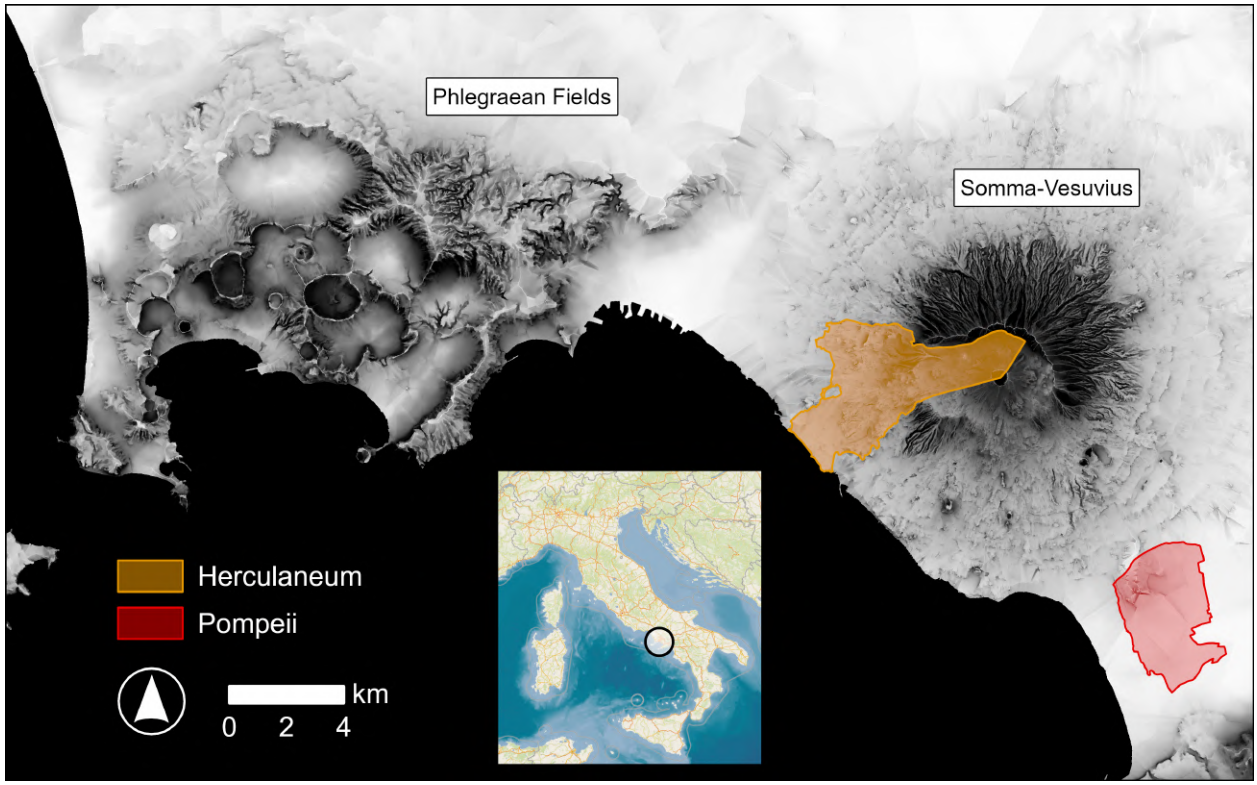

Figure 1. Physical-morphological framework of the Somma-Vesuvius complex and the Phlegraean Fields. The municipalities of Pompeii and Herculaneum are evidenced according to the current National Institute of Statistics territorial basis. Elaboration on data INGV (Tarquini et al., 2007, 2023) and ISTAT.

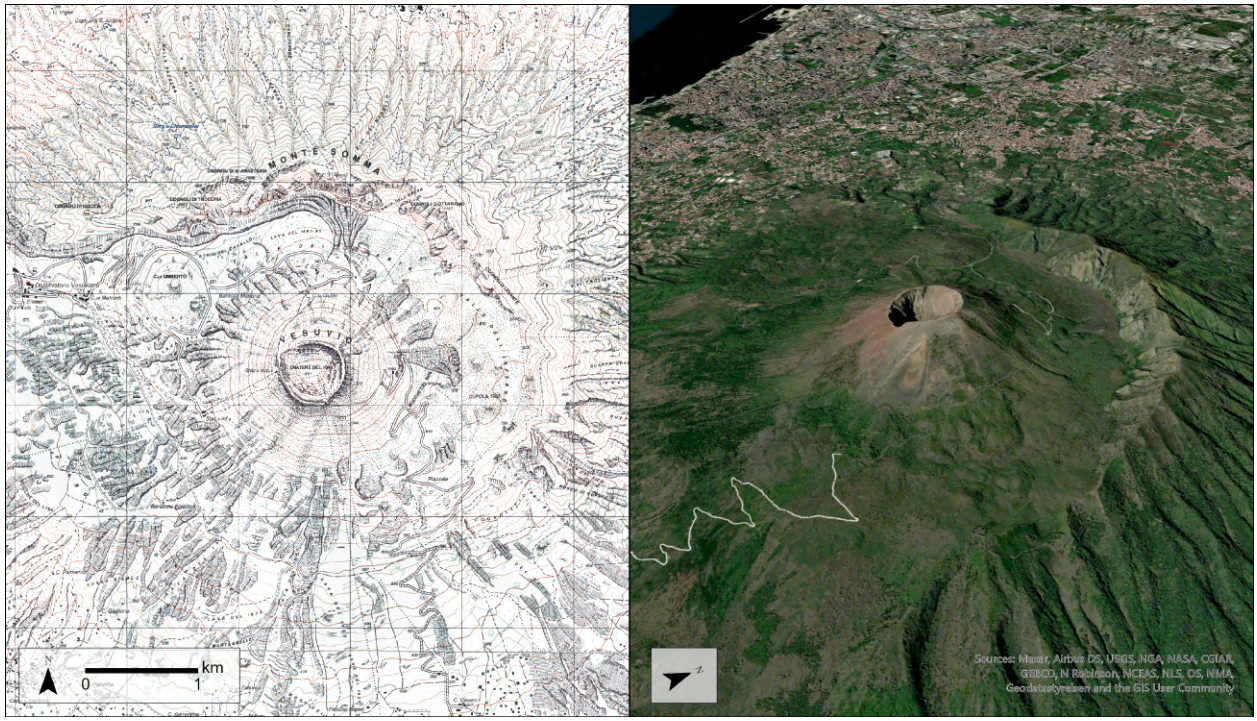

Figure 2. A zoom on the Somma-Vesuvius complex in a georeferenced comparative elaboration made with ArcGIS Pro. On the left there is a composition of IGM Tavolette; on the right there is a satellite three-dimensional scene. Elaboration on data Geoportale Nazionale (MASE) and ESRI.

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Such considerations are particularly fitting in a context like the one of Vesuvius where uncontrolled urban development or urban sprawl along the coast has not even spared the upper parts of the volcano (Leone, 2005, p. 24) and where the volcano-population ratio has changed over the centuries, from initial contemplation and lack of cognition, to subsequent anxiety-fear, to subdued concern (Lirer et al., 2005, p. 119) that must instead be transformed into conscious awareness and detailed planning.

From this point of view, the Vesuvius eruption that buried Herculaneum and Pompeii in 79 AD appears like a veritable mine of precious data.

The reconstruction of the main phases of that tragic event represents a close-up learning opportunity and an interdisciplinary lesson ranging over many fields, from the historical-archaeological one to the geographical-geological one, with civil protection included too (Giacomelli and Pesaresi, 2019, p. 90). The eruption left such a quantity of signs, ruins and testimonies, as to be accurately retraced and almost revisited, in a dramatic and engaging scientific-emotional journey back in time.

A field trip to discover ancient Pompeii and its relationship with Vesuvius, suddenly and definitively interrupted in 79 AD, represents a unique opportunity of direct observation, active learning and research-action, for an in-depth understanding of the significance of the explosive eruption and the importance of risk awareness.

2. The eruption of 79 AD

Vesuvius burst violently into history in the summer of 79 AD. Until then for many centuries the Gulf of Naples had been a place marked by theatrical performances, gladiatorial games and intense commercial activity that brought life to various towns. Like a fake scenario, the wide bay was nearby Mount Vesuvius. Vesuvius was a mountain covered in woods and vineyards, dotted with rustic villas and elegant settlements reaching the sea from the slopes.

The two most densely populated urban centres, Pompeii and Herculaneum, had different features: the former busier, bigger and commercial, the latter more tranquil and perhaps more cultured. Flat, above a 40m high lava flow stood Pompeii; sloping towards the beach on a bank of volcanic tuff stood Herculaneum. The River Sarno flowed close to the walls of Pompeii and was used as a riverport, while two streams isolated the tuff spur on which rose the hub of the town of Herculaneum.

Strabo knew that the stones of Vesuvius were similar to those of volcanoes[1], but even Pliny the Elder, in his monumental *Naturalis Historia*, dismissed him in a few words (Libro III, 62). The inhabitants of Pompeii and Herculaneum and those living in the settlements built in that area of Campania, which sprang up also thanks to the volcanic soil fertility, had absolutely no idea of the terrible threat lurking behind them. The most informed may have known that it was a volcano. But now it is extinct, they thought.

The eruption occurred in AD 79, while the exact day has been debated for a couple of centuries (Borgongino and Stefani, 2001/2002; Stefani, 2006; Stefani and Borgongino, 2007)[2]. It is very likely to have been 24 August, since the archaeological evidence proposed for other dates has never been conclusive[3]. The disputed

[1] "Above these places lies Mt. Vesuvius, which, save for its summit, has dwellings all round, on farm-lands that are absolutely beautiful. As for the summit, a considerable part of it is flat, but all of it is unfruitful, and looks ash-coloured, and it shows pore-like cavities in masses of rock that are soot-coloured on the surface, these masses of rock looking as though they had been eaten out by fire; and hence one might infer that in earlier times this district was on fire and had craters of fire, and then, because the fuel gave out, was quenched" (translation in https://penelope.uchicago.edu/Thayer/E/Roman/Texts/Strabo/5D*.html).

[2] The misunderstanding arises from different transcriptions of Pliny's text. The most widely accepted translation – though often questioned – is "nine days before the calends of September" (non. kal. Septembres).

[3] A charcoal inscription found in 2018 on the wall of the *House with Garden* in Pompeii reads: *XVI K Nov in[d]ulsit pro masumis esurit[ioni]*; or: *XVI (ante) K(alendas) Nov(embres) in olearia proma sumserunt* (Osanna, 2019). Beyond the differing interpretations offered by experts, the inscription bears the date of 17 October, but not the year, just as with other similar finds in the city. For example, in

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August, September, or October dates are often overstated. A few weeks make little difference for volcanology and even less for archaeology.

Considering modern knowledge, the event could not be considered entirely unexpected, since for at least 17 years earthquakes had been occurring, phenomena that we now interpret as precursors of the volcano's reawakening. But the frequency of these tremors had produced a lack of concern rather than alarm among the population, and the eruption was a terrible and sudden catastrophe. After each earthquake, beginning with the major one of AD 62 (Johannowsky, 1986), damage was repaired (Maiuri, 1942), and between one tremor and the next, fear subsided: the land resources rebounded after such occasional misfortunes. Seneca confirmed that Pompeii "is never safe from such calamity, unharmed yet repeatedly terrified" (*Naturales Quaestiones*, VI, 1).

The development of the eruption was reconstructed primarily thanks to an extraordinary eyewitness account: that of Pliny the Younger (*Epistulae*, VI, 16; VI, 20). By combining his words with the stratigraphic sequence of deposits emitted by Vesuvius and with analogies drawn from similar observed events, the reconstruction proves exceptionally detailed. Added to this is the impact on buildings and the population, still evident in the archaeological sites. Historical documents, volcanological surveys, and archaeological finds provide a wealth of data unmatched anywhere else in the world destroyed by such a violent volcanic eruption.

Pliny the Younger observed the event from Misenum, about 20 km away, directly facing Vesuvius. He observed an unusual column shaped like a pine tree that appeared to be smoke. The eruption was already underway, and what looked like smoke was a column of gas, ash and pumice that had already reached a height of about 13 km. In modern volcanology, the term *Plinian* refers to an eruptive column rising several kilometres above the crater, typical of the most violent explosive eruptions.

Pliny the Elder, the uncle of Pliny the Younger and commander-in-chief of the Roman fleet stationed at Misenum, driven by his naturalist's curiosity, decided to sail toward Herculaneum to see the phenomenon up close. The column was rising higher (eventually exceeding 30 km above the crater; Carey and Sigurdsson, 1987) and spreading at the top with a crown bending southward, toward Pompeii and the Sorrento Peninsula (Lirer et al., 1973).

Pompeii lies less than 10 km from the present summit of Vesuvius. At that distance, the eruption column released pumice fragments averaging 1-2 cm in diameter (Lirer et al., 1973; Sheridan et al., 1981; Giacomelli et al., 2003). Farther to the south-southeast, progressively finer materials fell, down to very fine ash carried over great distances. As the column height increased, so did the size of the pumice falling over the city, along with a growing number of small stones (evidence of intensifying violence that was fragmenting the rocks enclosing the magma). The fall of pumice lasted between 12 and 20 hours, forming over the city a layer about 3 meters thick (Figure 3), as uniform as a snowfall (Sigurdsson et al., 1985).

While the winds continued to drive the eruptive column south-southeast, only a light dust fell over Herculaneum, seemingly posing no danger.

At Herculaneum, the tragedy began later. After those hours of apparent calm, the volcano unleashed its full fury. The eruption grew increasingly violent, and the material reached the crater in such abundance that the gas jet could no longer sustain it aloft. Everything – ash, pumice, stones – collapsed and flowed down the volcano's slopes like a torrential, scorching river, rushing toward the sea for hours, uprooting trees and demolishing walls. The first to be struck was Herculaneum itself; then, after a pulsating phase with brief

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the *Thermopolium of Athictus*, discovered in 1916, an inscription on an olive jar reads *oliva condita XVII K(alendas) Novembres*. The pomegranates stored in a villa at Oplontis may have been intended for dyeing, since – given their small size – they were likely unripe. Other autumn fruits, such as walnuts and hazelnuts, may have been leftovers from earlier harvests; figs, on the other hand, have a long ripening season. A silver denarius found in Pompeii bearing the image of Titus – who was acclaimed emperor after 7 or 8 September – seems to confirm instead the August date (Stefani, 2006).

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resurgences of the column, the collapse became total, and the entire area was engulfed by flows of pumice, ash, and rock fragments.

Beyond Herculaneum, these pyroclastic flows reached Pompeii and Stabiae, burying the rural villas of farmers and the seaside residences of Roman nobles. Herculaneum was entombed beneath 20-30 meters of volcanic products of various sizes, encased in a matrix of ash that over time solidified into a tough rock. At Pompeii, above the thick layer of pumice, several levels of ash can be seen, alternating with pumice beds (evidence of the pulsating nature of the eruption column). Finally, the city was buried by the flows, which left a layer 5 to 10 meters thick of heterogeneous volcanic material (Gurioli et al., 2004).

The entire sequence lasted only a few days. A long history that had begun around the 8th century BC, when the Oscan people traced the first perimeter of the settlement, came to an end (sealed forever beneath a gray shroud).

3. The reaction of the inhabitants

The two eruptive phases had different impacts on the territory and provoked different reactions among the population. In Herculaneum, for many hours people believed that the strange phenomenon did not concern them directly, while in Pompeii the danger from the fall of light, porous, and by then cold stones was underestimated (from that height, such small fragments could not have retained their initial temperature). There were no showers of large incandescent blocks or lava flows running through the streets, as sensationalised documentaries often suggest, spreading misleading information (Giacomelli and Scandone, 2021).

The eruption was strongly explosive. Magma rose to the surface and was expelled in violent jets of gas that fragmented it and hurled it high into the sky, from where it fell back to the ground. By contrast, lava flows, typical of effusive eruptions, though they destroy fields and buildings, generally move slowly enough to allow most people to escape. As for incandescent fragments, to reach such a distance still glowing they would have to be large and if large, they could not have travelled that far. Indeed, no such elements have been found among the deposits visible at Pompeii.

It is therefore understandable that many inhabitants of Pompeii trusted that the fall of material – initially almost harmless – would soon end, and that taking shelter in the most solid rooms of their houses would be enough to survive the unusual situation.

Flight into the open began only when the eruption changed style: when deep rock collapses into the magma chamber, coinciding with increased ejection of material, propagated as tremors shaking the surface. Completely unaware of what an eruption was, but familiar with earthquakes, those who had taken refuge indoors – already weakened by pumice impacts – felt their walls trembling and sought another desperate way to escape (Scandone et al., 2019). The discovery of groups of victims in open spaces, such as the Garden of the Fugitives and Casa Stabiana, and several places outside the walls, is connected to this reaction (Figure 4).

Archaeological excavations have revealed that some gave up fleeing due to physical limitations such as age or pregnancy, others to avoid separating from family groups with small children, and others because they could not open doors blocked by the thick layer of pumice. Sadly, we also know that for those who did flee Pompeii were walking on the compacted pumice crust sealed by a thin layer of ash from the first flow. It was already too late. Waves of ash detached from the main flow descending toward Herculaneum, swept over Pompeii's walls, and overtook every fugitive, even reaching the banks of the Sarno River.

The inhabitants of Herculaneum reacted differently. We do not know how many managed to escape during the long hours that tormented Pompeii. Escape by sea was impossible, as we learn from Pliny's account. His uncle, Pliny the Elder, was unable to land at Herculaneum because of rough seas and instead steered his ships toward Stabiae, where he was suffocated the next day on the beach by the ashes of the flows (Guadagno, 1993).

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During the excavations, archaeologists initially took comfort in finding few victims inside the houses of Herculaneum. But in 1980, when an attempt was made to drain the ancient shoreline below the Suburban Baths, the skeletons of more than 300 individuals were found huddled together inside the *fornici* (Figure 5), the vaulted chambers used to shelter boats (Maggi, 2013).

Beyond the emotional impact of the discovery, the find yielded an immense amount of data valuable to several disciplines. This was an unaltered population, not selected by age or disease as in typical cemetery contexts, but a healthy cross-section ranging from foetuses to the elderly, accompanied by everyday objects rather than items used in ritual burial ceremonies.

It is difficult to determine exactly when they fled their homes, but they fell upon the ancient beach and were covered by volcanic material of varying sizes, mixed with debris swept up by the flows as they passed over the city and destroyed the piers. They were likely seeking escape by sea, waiting in terror beneath the massive walls that supported part of the city itself.

4. The casts of Pompeii

Several victims in and around Pompeii left impressions in the ash from which plaster casts could be made, capturing the moment of their death. The method was first applied by Superintendent Giuseppe Fiorelli in 1863, when he realised that in some cases a void remained in the ash, and that by filling it with liquid plaster, once solidified, it reproduced the appearance of the victim. Since then, it has been used whenever the necessary conditions exist for casting with plaster.

Beyond their emotional impact, the plaster casts have also proven to be a valuable source of scientific data. First, because of their position within the stratigraphy of the eruption deposits: the few that remained in situ and those photographed during excavations all lie above the thin layer of ash covering the pumice.

A key requirement for obtaining casts is that the ash in which the void forms must be fine-grained and homogeneous so that it adheres perfectly to the shape of the body and clothing, providing a precise negative form. Coarser or irregular material would not allow for the remarkable level of detail observed. Furthermore, for the void to remain, decomposition must occur slowly enough for the ash surrounding the body to harden. This condition is possible thanks to the presence of a thick layer of porous pumice beneath (covered only by a thin film of ash), which allows for the gradual drainage of body fluids (Giacomelli, 2022).

Notes recorded in archaeological excavation journals specify that in some cases the cast either failed or was not made because the body lay directly on the pumice layer (Luongo et al., 2003, p. 185; De Carolis and Patricelli, 2003, pp. 378-379; Dwyer, 2010, p. 80; Capurso and Masseroli, 2021, p. 327).

This means that the liquid plaster could seep beneath the cavity instead of filling it. The ash layer thus acts as a barrier between the body and the pumice, preventing the plaster from draining away.

Recognising this detail in the casting procedure implies that over one hundred casts made at Pompeii – though often separated from their original contexts as in the case of the casts made in the Garden of the Fugitives and outside Porta Nocera (Figures 6-8) – each represents people who fled at the same moment (Giacomelli, 2022). Their stratigraphic position pinpoints the precise stage of the eruption. The collapse of magma chamber had already occurred, accompanied by strong tremors and the collapse of the eruption column (Scandone et al., 2019). The turbulent motion of the gas phase had expanded and propelled part of the flow descending toward Herculaneum beyond the walls of Pompeii. At that moment, during the transition from the first to the second phase of the eruption – from a sustained column to a collapsing one – many people fled, in groups, simultaneously.

The most important finding is that many hours after the eruption began, people were still alive and though desperate and panic-stricken, were able to walk amid extremely difficult conditions toward an unknown destination.

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Figure 3. The sequence of products from the 79 AD eruption, outside Porta Nola. Above the lava road, there are approximately 3 meters of pumice (sustained eruption column phase), followed by layers of ash alternating with pumice (pulsating column phase) and then several meters of ash (pyroclastic flow phase). About twenty victims were found on this stretch of road, between the tomb of Obellius Firmus (visible on the left) and the outcrop.

Figure 4. Two parallel farm plots in Pompeii: on the right, the so-called Garden of the Fugitives, where 13 victims were found; on the left, the Casa Stabiana vineyard, where 10 victims were discovered. In the background is the Somma-Vesuvius complex.

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Figure 5. Resin casts of skeletons inside one of the vaulted chambers (*fornici*) of Herculaneum.

Figure 6. The casts of the 13 victims found in the Garden of the Fugitives during the excavations of 1961-1962.

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Figure 7. A cast of a victim found in the Garden of the Fugitives. Its position indicates an attempt to get up.

Figure 8. The cast of a victim found with three other people in 1956 outside Porta Nocera.

At Herculaneum, no human casts were made because the victims, unlike those in Pompeii, lay directly on the ground surface and were not enveloped in fine ash capable of preserving the impressions of their bodies. They decomposed rapidly (perhaps even vaporised by the intense heat of the volcanic products; Mastrolorenzo et al., 2001a; Giordano et al., 2018).

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5. Social life in Pompeii

The excavation of the sites – begun in 1738 at Herculaneum and ten years later at Pompeii – marked the birth and accompanied the growth of archaeology, a process strewn with inevitable errors as well as brilliant insights, all reflective of the knowledge available at the time.

Beyond the furnishings and objects found in the houses, the Pompeian wall inscriptions, and to a lesser extent those of Herculaneum, offer the truest glimpse into daily life and the social organisation of Roman cities.

At Herculaneum, inscriptions are rare, both because many wall plasters fell during and after the eruption, and because much of the ancient city still lies buried beneath the modern urban centre. A splendid exception is preserved on the façade of a building along the Decumanus Maximus[4], where elegant drawings of wine jugs are accompanied by the prices of their contents. On the same plaster wall is an announcement of a gladiatorial show in Nola – exceptionally signed by one Aprilis of Capua, evidently an itinerant writer of such notices – and the image of a male figure with the inscription "ad Sancum" perhaps referring to a deity (Pesando and Guidobaldi, 2006, p. 366; Cooley and Cooley, 2014, p. 266).

Pompeii, on the other hand, has preserved a vast quantity of wall inscriptions. In addition to the conspicuous electoral slogans, painted in large, carefully brushed red letters, there are phrases executed with charcoal, nails, or knife points, recounting private stories and public affairs, advertising goods and events, expressing love declarations and insults, obscene jokes, and even unexpected quotations from famous poems (from the *Aeneid* to the *Iliad* and *Odyssey*). Many have miraculously reached us only thanks to the transcriptions of the scrupulous epigrapher Matteo Della Corte, who in his book "*Case ed abitanti di Pompei*" (1965) recorded numerous inscriptions now lost or heavily deteriorated, and from these was able to hypothesize the identity of many house owners.

Although the epigraphic evidence only partially reflects the population's composition – often recording unusual events or personal experiences – the number and variety of wall inscriptions, tombstones, and stamps on goods and amphorae reveal unexpected details of Pompeii's social structure. The desire for self-promotion expressed through inscriptions was especially strong among certain groups, such as freedmen, whereas those born free felt less need for it. This leads to a probable overestimation of the number of freed slaves who appear to populate the city.

On the wax tablets found in the house of the banker Lucius Caecilius Iucundus, 83 percent of recorded financial transactions list freedmen as witnesses; the rest were curial members, and only 6 percent were ordinary free citizens (Mouritsen, 2001, pp. 1-27). The prohibition on aristocrats engaging in trade, and their tendency to delegate productive activities to their slaves, created circumstances in which slaves became indispensable to the family economy.

Many freed slaves were active in the productive and public sectors. For example, Stephanus converted a patrician residence into a *fullonica* (laundry); Vesonius Primus even attempted a political career; Lucius Popidius Dionysius owned a small *fullonica* adjoining his master's house and later became proprietor of the entire building.

One of the clearest examples is a modest house on the Vicolo del Labirinto, where a seal engraved M. Stla(borius) Auctus was found. The same family included a garum (fish sauce) merchant and two wine producers (likely not poor, but not among the city's aristocrats). Yet one of them, after being adopted by the noble Vei Frontoni family and taking the name M. Stlaborius Veius Fronto, attained the highest municipal honours. Two tombstones and as many wall inscriptions near Porta Vesuvio commemorate the public offices obtained by this freedman, who spared no expense in honouring his wife Arellia Tertulla, buried in a magnificent tomb outside the gate (Della Corte, 1965, p. 62).

One reason for the abundance of freedmen may be traced to the AD 62 earthquake, the most destructive of the many preceding the eruption. Frequent tremors had made the area unsafe and the inhabitants anxious, likely prompting some to move away. Those with the means probably did so, while others – those unable to leave or

[4] The sign AD CVCVMAS, on the doorpost next to the House of the Black Hall.

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who saw opportunity in acquiring damaged and abandoned buildings – stayed. This would explain both the large size of many dwellings, resulting from the fusion of several properties, and the social and economic rise of many freedmen (such as the wealthy merchant brothers Vettii), who formed the most numerous class remaining in the city after the earthquake: the most courageous in facing danger, the most driven toward social redemption, and the most enterprising in business.

The inscriptions, like the wall paintings, were generally unsigned by their authors, except in two cases, where both the artist's name and profession were recorded: they were *fullones* (laundry workers), the lowest class of slaves, forced to tread clothes in urine to fix dye in fabrics. This detail, together with the literacy shown in many inscriptions, suggests a wider diffusion of literacy than one might expect.

Electoral slogans were usually painted at night by small teams: one held the lantern, another the ladder, a third erased the previous slogan, and finally the *scriptor* painted the new one. The format was ingenious: within the large letters of the candidate's name (Figure 9) were smaller initials clarifying the purpose of the message, e.g., DVASPOVF (*D(ignum) V(iis) A(edibus) S(acris) P(ublicis) O(ro) V(os) F(aciatis)*, "I ask you to elect him as worthy of streets, sacred and public buildings").

When accompanied by the letter U (V in Latin), the message indicated that an entire trade group (*universi*) was urged to vote for that candidate, for example, barbers for Trebius, carpenters for Cuspius Pansa, and so on (Cooley and Cooley, 2014, p. 267).

A note, now vanished, left on the wall of the Taberna of Zosimus (*Notizie degli Scavi di Antichità*, 1927, p. 98; Della Corte, 1965, p. 357), listed – like a memorandum – the market days: in Pompeii and Nocera on Saturday, in Nola and Atella on Sunday, in Cumae on Monday, in Puteoli on Tuesday, in Rome on Wednesday, in Capua on Thursday, and on Friday – lacking indication – perhaps a day of rest.

The frescoes, both in Pompeii and Herculaneum, are almost all mythological or depict battles and episodes from famous poems of the time. A fine example in the House of Loreius Tiburtinus (Figure 10), in Pompeii, illustrates scenes from the life of Hercules and episodes from the Trojan War. Popular subjects included Narcissus gazing at his reflection and Actaeon devoured by his hounds, although these were often the least successful artistically.

Figure 9. Inside the letters of the candidate LOLLIVM, there are the initials of Dignum Viis Aedibus Sacris Publicis and the O, which was completed with Vos Faciatis.

Few Greco-Roman deities or battle scenes were left unrepresented. Yet the most famous example is not a fresco but a mosaic, that decorating the floor of the exedra of the House of the Faun: over one and a half million tiny polychrome tesserae depicting with refined detail the Battle of Issus between Alexander and Darius (333 BC). Following its discovery at Pompeii, it was assigned to the Naples Archaeological Museum and relocated to the Museum in 1844. Relocating the extremely fragile mosaic (more than 20 square meters) required both artistic and archaeological expertise. It was mounted vertically in its current position at the Museum in 1916, a lasting testament to the challenges faced by archaeologists through the centuries.

By contrast, frescoes depicting scenes of daily life or actual events are rare but highly significant. Small panels from the atrium of the House of Julia Felix (now in the Naples Archaeological Museum) show various activities in front of the Forum colonnade: fabric stalls, vendors of cookware and bread, carts transporting goods, and townspeople meeting and chatting (Figure 11). One even depicts a beggar, perhaps blind, led by a dog on a leash,

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while another shows the punishment of a lazy student with a whip (Figure 12).

The very sign on the façade of the house is itself a masterpiece of ancient advertising[5] to promote a residence with an entrance on Pompeii's main street and an exit onto a garden connected to the square of the Amphitheatre. Equipped with a thermal bath complex and too large for a single woman, it was made available to clients (essentially functioning like a modern-day spa; Figure 13).

Another example of daily habits is painted on the walls of Salvius's tavern (Figure 14), with a series of small scenes depicting friends drinking and playing dice, accompanied by inscriptions that make them resemble modern comic strips.

But the true exception is the fresco found in the House of the Gladiator Anicetus, which depicts a brawl (Figure 15) that took place in the Amphitheatre in AD 59 between Pompeians and Nucerians (a riot so violent that Nero banned the amphitheatre's use for ten years). The ban was lifted after the earthquake three years later, and the stadium returned to Pompeian use, much to the citizens' delight, as expressed in numerous inscriptions on the city's walls. The event confirms that the Pompeian amphitheatre was far too large for the city's population and served as an attraction for surrounding communities. The Nucerians, inhabitants of Nuceria Alfaterna, though they lived in a city larger and more important than Pompeii – and one that had its own amphitheatre – did not hesitate to travel to Pompeii and engage in bloody street fighting, much like modern-day violent football fans.

The fresco of the riot not only depicts a real historical event but also represents the amphitheatre itself, recognisable by its external staircase giving access to the upper tiers (unique among Roman amphitheatres). It was built against the city walls, as if space inside the city were already running short and stood between two towers (V and VI). The fresco also shows the palaestra, with a central pool and porticoes on three sides. The façade of the main entrance bore inscriptions in Greek and Latin with the names of those who financed the games. Inside and outside the arena, groups of people are shown fighting, with several bodies lying on the ground. A fierce clash, rendered in every detail (like the illustrated report of a current newspaper).

A very particular type of inscription is that of Samnite times, known as EÍTUNS, a word usually appearing on the second line, meaning "*go forth*". Only a few examples survive, but their importance lies in the fact that they were military orders, addressed to young men who, in case of enemy attack, were to gather at predetermined points (Prosdocimi, 1978).

Another term, AMVÍANUD, frequently found in these inscriptions, identified areas familiar to the Pompeians. The locations of the inscriptions, their reference points, the proper names they include, and the way they communicated instructions for troop mobilisation constitute the most accurate information we have from pre-Roman Pompeii (a period almost devoid of literary sources or other evidence of material culture).

Beyond revealing a defensive organisation – symptom of a turbulent phase in Samnite Pompeii – these inscriptions offer a rare and unique window onto the toponymy of the earliest city. The most notable example remains the first inscription discovered in 1780[6], translatable as: "From this district go to the area between Tower XII and the Gate of Salt, where commands Adirius, son of Vibius" (Willi, 2020, p. 85).

The mention of a city gate (*Porta del Sale* – 'Gate of Salt', today's Porta Ercolano**)**, near a tower (the twelfth, counting from the south counterclockwise), points to a district associated with salt production or trade, probably the famous Saltworks of Hercules.

Confirming that these saltworks were nearby – and that salt transporters passed along this route – is an electoral recommendation painted on the façade of a building not far from the gate, urging support from the Salinienses, inhabitants of the village that had developed next to the saltworks.

[5] "To let, in the estate of Julia Felix, daughter of Spurius: elegant baths for respectable people, shops with upper rooms, and apartments. From the 13th of August next, to the 13th August of the sixth year, for five continuous years. The lease will expire at the end of the five years" (see i.e. Della Corte, 1965, p. 390).

[6] *EKSUK AMVÍANUD EÍT(UNS)*
ANTER TIURRÍ XII ÍN Í(M) VER(U)
SARÍNU PUF FAAMAT
M(A)R(AS) AALÍRIIS V(IBIRSÍS).

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Figure 10. A wall in the House of Loreius Tiburtinus. The top panel features eight scenes from the life of Hercules; the smaller panel below depicts episodes from the Trojan War.

Figure 11. The atrium of the Praedia of Julia Felix, where the paintings are illustrating life in the Forum of Pompeii.

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Figure 12. A painting which illustrates the punishment of a student.

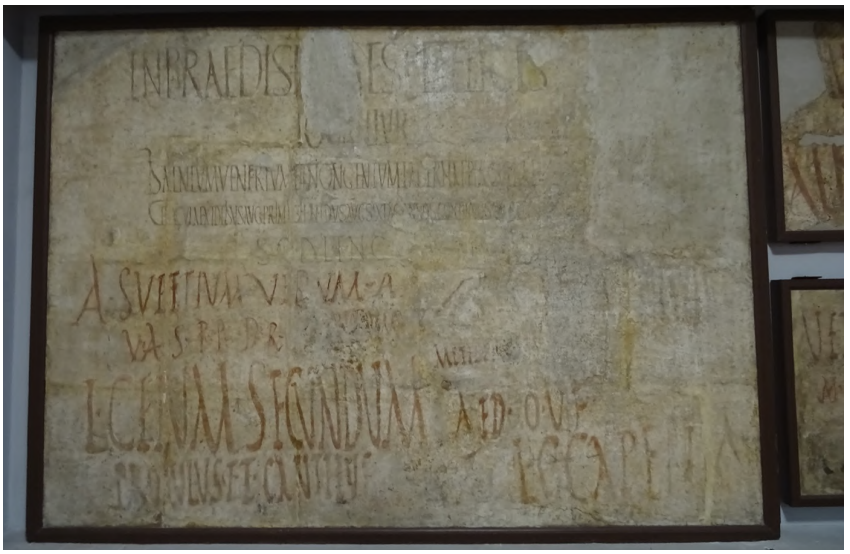

Figure 13. The engravings from the facade of the Praedia of Julia Felix with the rental terms and election announcements (MANN, inv. 4713).

Figure 14. A series of vignettes from Salvius' tavern with figures of men and women, above whom are written sentences which represent a dispute between dice players (MANN, inv. 111482).

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Figure 15. The fresco depicting the brawl in the Pompeii Amphitheater in 59 AD between the Nocera and Pompeii residents. The walls with two towers, one of the two stairways leading to the stands, the arena covered by the velarium, and the gymnasium with its swimming pool are visible

A secondary road, still largely unexcavated and ending near Tower VII, is mentioned on a doorpost of the House of the Moraliser. The instructions are detailed, directing soldiers to follow the present Via dell'Abbondanza eastward, turn left at the first side street, reach Via *Mef(ira),* and then proceed toward Tower VII (*Tiurrí Mefira*)[7] (Weiss, 2022, pp. 951, 954). The Oscan word Mefira corresponds to the Latin *media* and designates the street located midway between two parallel roads, Via di Nola and Via dell'Abbondanza.

At this point, the group of soldiers would have had to divide, with one contingent defending the section of the walls between the tower and the present-day Porta Nola (*veru urubla(nu)*, meaning "Gate of the City"; Della Corte, 1924), while the other detachment was to position itself between the same tower and the current Porta Sarno, whose Oscan name is not recorded (Della Corte, 1965, p. 364; Prosdocimi, 1975, 1978).

Another inscription ordered the troops to follow the road running between two private residences – those of Maius Castricius and Umbricius Scaurus – which faced the edge of the city overlooking the gulf; in this case, the Oscan text perhaps indicated the point of access to the southern city wall.

An Oscan inscription carved on a road marker (cippus) near Porta Stabia marks the route toward the Temple of Jupiter Meilichius (Figure 16). The text has been translated as follows: "The aediles M. Sittius and N. Ponzio improved the road leading from the Gate (Stabia) to the Stabian Bridge, and the Via Pompeiana up to the Temple of Jupiter Meilichius. These roads, as well as the Via Jovia and the *decuviare* (decumanus?), under the auspices of the *meddix* (magistrate), were

[7] *AMPT TRÍBUD TÚV AMPT MENERE(VAS) ÍNÍ. VÍU MEF[……]ỊS NERTRAK.VE[……]U PÍÍS. SENT.*
EÍ [.....]RAK VERU.URUBLA[.....]R RÍ. MEFÍRA.

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restored to perfect condition" (MANN, Epigraphic Section, inv. 114466; Vetter 8)[8].

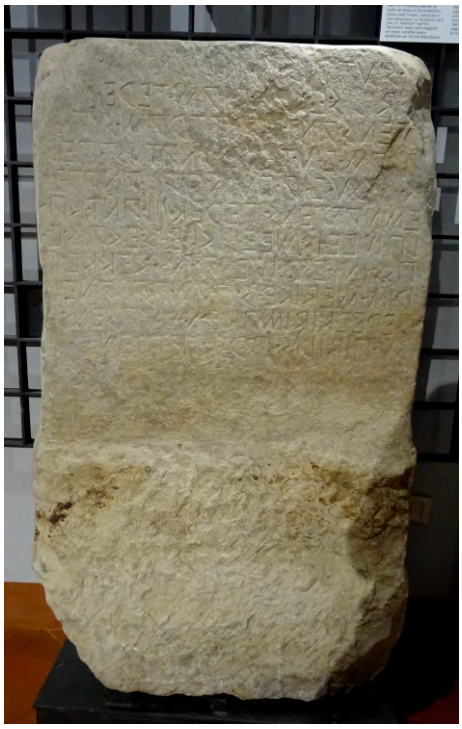

Figure 16. The road marker at Porta Stabia, with the inscription in Oscan reporting the measures adopted by the aediles M. Suttio and N. Pontio to delimit the city streets (MANN, inv. 114466).

The EÍTUNS inscriptions reveal how the Oscan-speaking Pompeians defined routes within their city, how they interacted with the urban landscape, and how they perceived the threatening presence of neighbouring populations and enemies in general.

Even when first made, these inscriptions were few; fewer still survived the eruption of AD 79, and even fewer remain after the bombings of 1943, which caused more damage to Pompeii than the great eruption of Vesuvius itself. Yet their importance has not faded (unlike the paint, now barely visible among the grains of the porous volcanic rock on which they were traced).

6. Notes on the Urban Structure

The development of Pompeii – from its original Oscan nucleus, founded in the 8th century BC, through its final expansion phase after the Roman conquest in 89 BC, and the major reconstruction following the earthquake of AD 62 (Maiuri, 1942; Dessales, 2022) –followed the classical layout: *cardines* running north-south intersected by *decumani* running east–west.

Around the Forum, which occupies the flattest and sunniest area of the city, stood the baths, various other public buildings and temples, the market, the mensa ponderaria, and places for food, drink, and public latrines. The nearest entrance from outside the city to the Forum was along Via Marina, a steep road ending at the gate of the same name (both accessible only to pedestrians). Even within the Forum, wheeled traffic was prohibited.

On the southern side of the city – facing the sea, which before AD 79 reached much closer to the buildings – stood both the oldest structures (the Triangular Forum) and the most recent ones, which had grown along and even beyond the city walls (the Suburban Baths, Sarno Baths, Villa Imperiale, and several private houses). Defensive walls had by then become useless in the absence of enemies during the Roman colonial period.

Numerous shops and premises (Figure 17) lined the main thoroughfare, Via dell'Abbondanza, which runs from the Forum to Porta Sarno. After the intersection with Via Stabiana, where another bath complex stands (the Stabian Baths), follow in succession: a large bakery (the House of the Chaste Lovers), Stephanus's Fullonica (Figure 18), created from a private home, the Thermopolium of Asellina, and various inns and shops. Elegant private residences opened along both sides of the street, although large areas connected to the main artery remain unexcavated.

The junction between Via dell'Abbondanza and Via Stabiana is marked by a step preventing carts from proceeding toward the Forum. Two marble pedestals remain; one once held the armoured statue of M. Holconius Rufus, a

[8] *SIUTTIIS M, N PUNTIIS M*
AIDILIS EKAK VIAM
TEREM [NA/A] TENS. ANTPUNTTRAM
STAF(I)ANAM VIU TE EMNATUST PER.
X· IUSSU VIA PUMPAIIANA TER
EMNATTENS PEREK IIIANT KA.
LA IUVEIS MEELIKIIEIS.

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prominent citizen from an important family who had a reserved seat in the theatre. At the crossroads there is also a fountain and one of the fourteen water towers (piezometric tower). Here, and in the adjoining upper streets, traffic was heavy, as evidenced by the deep ruts left by cartwheels. Nearby stands one of the many street shrines, set within a triple-arched niche, dedicated to the *Lares Compitales*, guardian deities of crossroads.

Continuing north along Via Stabiana, after the junction with Via di Nola – where another bath complex, the Central Baths, was under construction at the time of the eruption – the road changes name to Via del Vesuvio and reaches the highest point of the city, where the Castellum Aquae stood. This structure, vital to Pompeian life, collected and distributed water from the Serino aqueduct. The reservoir had three outlets: one directed water to private houses, another to the public baths, and the third to the public fountains. In times of shortage, fountains were the last to be rationed.

Over forty fountains remain visible at intersections. Some are made of lava stone, others of marble, often decorated with masks or symbols, worn smooth on the side where buckets were set down. Many still preserve their lead supply pipes and stand beside their piezometric towers, which regulated water pressure. Fountains were often accompanied by altars and public spaces, giving the impression of a lively city – much like today's bustling seaside towns – filled with people, carts, and *clientes* waiting to be received by their patrons, seated on masonry benches flanking the entrances of wealthy homes.

The main public buildings, besides the Forum (Figure 19) and the Triangular Forum, included two theatres (Figure 20), one older and larger, equipped with a *velarium* (awning) for shade, and a smaller, covered Odeon. Next to them, a colonnaded courtyard probably served first as a gladiators' barracks, and later converted into a promenade for spectators between performances. A staircase connected the theatre area to the Triangular Forum.

The amphitheatre – the most intact among those surviving from the Roman era – stood beside a large gymnasium, with a central pool, exactly as depicted in the fresco from the House of the Gladiator Anicetus.

Life in the city extended even into the streets of the dead. Alongside the houses, the *necropolis* outside the city gates tells many stories. For example, of Umbricius Scaurus, we know his profession (he was a producer of garum, the fish sauce beloved by the Romans), where he lived (in one of the most beautiful houses overlooking the gulf), and his social standing as confirmed by the family tomb along the Porta Ercolano necropolis.

Figure 17. An example of the premises along Via dell'Abbondanza with the food containers stuck in the counter, a painted altar and the doors leading to the private residence on the back.

Figure 18. Stephanus's Fullonica. The impluvium in the atrium of a private home on Via dell'Abbondanza transformed into a basin for washing and dyeing fabrics.

The eruption brought destruction and death, but as Johann Wolfgang Goethe wrote somewhat cynically in his *Italian Journey* (1786), "it has given great joy to posterity".

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Figure 19. The Forum of Pompeii with the Temple of Jupiter at its centre and Vesuvius in the background.

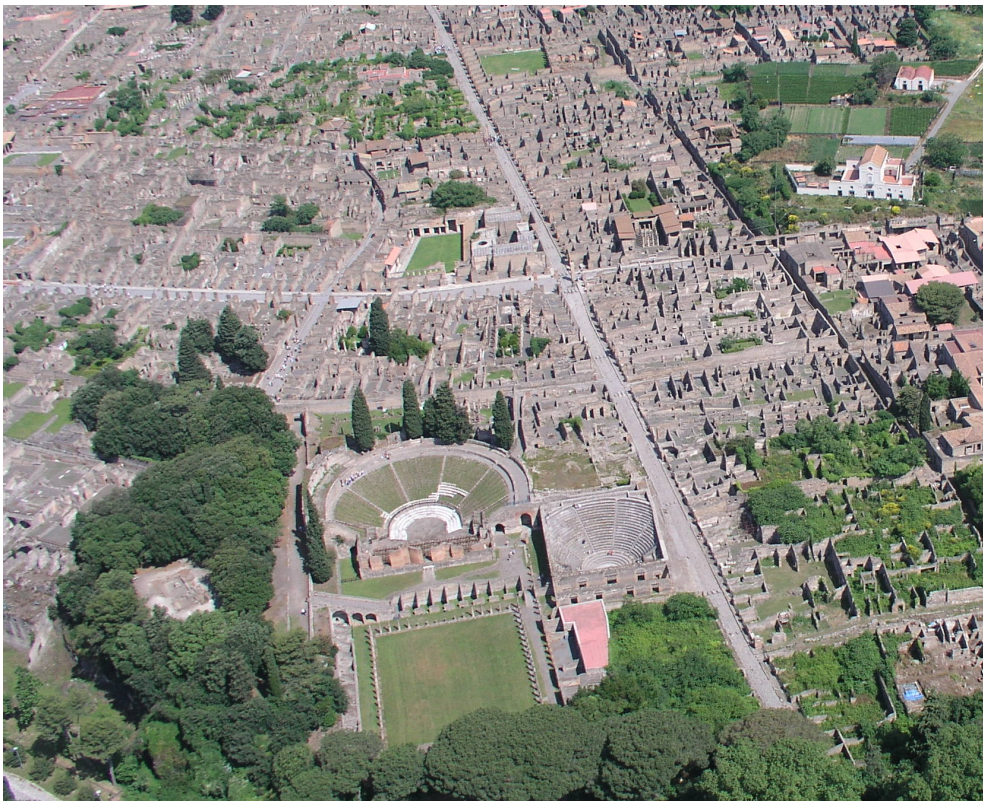

Figure 20. A panoramic view of part of the ancient Pompei with the two theatres in the foreground.

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7. Some didactical considerations about fieldwork in the Pompeii sites

The Pompeii sites represent an archaeological patrimony of inestimable didactic-scientific value, an open-air museum of historical-geographic knowledge. It is as if time had stood still at the moment of the paroxysmal episodes of the 79 AD eruption, and progressively as the excavation campaigns proceed and extend new exceptional fragments come to light, becoming an accurate testimony of the daily life of an advanced society that suddenly come to a halt: a society that was abruptly "petrified" and left buried and embedded on the territory where the everyday socio-economic-commercial activities were carried on.

"Pompeii is one of the most important archaeological sites in the whole Globe" and "The image of the city preserved, astonishing for its monumentality, belongs to its final days: it's the city of 79 CE, freezed [sic] under the eruption of the Vesuvius" (Bianco et al., 2021, p. 135). Moreover: "Pompeii, with its well-preserved buildings in an excavated area of 44 ha [subject to increase; in relation to a total surface of about 66 ha], is the only archaeological site in the world that provides a complete picture of an ancient Roman city" (https://whc.unesco.org/ en/list/829/).

Even now, the buildings, frescoes and artifacts that continue to emerge contribute to the reconstruction of the history, geography, city life and the exchanges among its inhabitants in a more and more accurate and detailed way.

Pompeii and Herculaneum, with their rediscovered settlements and treasures, have profoundly influenced scientific advancements, progress in knowledge and creative thought over the last several centuries (Foss, 2008).

This is also thanks to "an archaeological philology ('of things') able to reconstruct the evolving of all the single elements that made up the antique landscapes associated with a scientific procedure of architectonic integration making it possible to visualise the missing parts and to imagine the topographic and monumental contexts in their original unity and constant flowing in time" (D'Alessio et al., 2024, p. 2).

Contextualised in an approach of active didactics and direct observation, fieldwork in the Pompeii ruins represents a fitting example of a moment for great cultural enrichment and a golden opportunity to acquire geographical-interdisciplinary contents.

In fact, fieldwork – often underdeveloped or neglected in real practice – is a notable motivating agent in geography education, above all if it associated experiences outside schools and universities with the knowledge reported in textbooks and presented during lessons. Students can develop contents and skills which enrich classroom activities and enhance long-term memory thanks to fieldwork's concrete behaviour and direct acknowledgment (van der Schee et al., 2023, p. 9; Rickinson et al., 2004, p. 1). Many educational and didactical benefits have been reported using references to: direct contact with objects and contents, such as interdisciplinary analysis of a problem-theme; application and integration of different methods of teaching; increasing of motivation for learning; strengthening and enhancement of social relations, and development of various skills useful in fieldwork (Anđelković et al., 2018, p. 110). Moreover, carefully planned fieldwork can be particularly useful to analyse regional problems related to natural and social risks and, at the same time, to develop an engaging heritage valorisation approach that is important in arousing historical-archaeological and geographical-geological memory (de Barros et al., 2012, p. 830). Conducting action-research, verifying data and contents and developing a sense of place are complementary with problem-themes and study areas which play a very relevant geographical and interdisciplinary part (Allen, 2014, p. 11).

Students may have seen the effects and consequences of an eruption or an earthquake during lessons, also with the support of the web, in a television documentary or on the newscast. In combination with the direct observation of a crater or a fault-line and damaged or collapsed buildings in the field, students have the possibility to give a real meaning to the geographical concepts of volcanic activity and earthquake (Oost et al., 2016, p. 64).

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In text books "it is possible to read […] the descriptions of volcanoes, but if you walk on the smooth silky lava of Kilauea and you come across the tangles of Pele's Hair [thin strands of volcanic glass], you won't forget what a shield volcano is"; if you climb up "Etna during an eruption with the volcanic bombs twirling in the air, puffs of incandescent lapilli cast towards the sky like extraordinary fireworks, adventitious cones suddenly forming", you'll have had a close encounter with a typical manifestation of the volcano that is hard to forget (Giuliani Balestrino, 2013, p. 520).

8. Fieldwork in the Pompeii sites as an opportunity for experiential learning

In the case of the Pompeii excavations, the meanings linked to fieldwork take on connotations of huge importance owing to several reasons, like for example the following:

- The possibility to deeply move the emotional sphere, in a dramatic and riveting journey in time which catches one's attention and stimulates the desire for knowledge, enabling one to relive the phases of the eruption and identify with the terror experienced by the people upon realising what was about to happen to them.
- The possibility to understand firsthand the potential impact of an explosive activity and its connected phenomena, with particular reference to the falling of ash and suspended lithic products in the eruption column and the propagation of pyroclastic flows with the collapse of the column.
- The possibility to observe the Somma-Vesuvius complex, from a strategic position (the same in which the inhabitants of Pompeii were at the time of the disaster), reflecting on the distance travelled by the phenomena released during the eruption and reasoning on what the consequences could be today in the case of new eruptive activity in an urbanised context with population density values unparalleled in Italy.
- The possibility to synergically use different geographical instruments, also on the basis of the students' age, like large-scale cartography, geobrowsers, photographs and videos made easier with the use of smartphones, up to experimenting, in the case of university didactics, activities of georeferencing in a GIS environment.
- The possibility to connect materials and documents gathered on site and during the propaedeutic phases following (debriefing) the fieldwork into multimedia representations and Story Maps, with students engaging in the realisation of original products that continue to stimulate the sensory component, contributing to the acquisition of knowledge as well as specific skills.

From the educational point of view, multimedia (i.e. web-based documentaries and interactive documentaries) and an integrated use of images, audios, videos, supported by explanatory texts, facilitate the personalization of training and interaction, stimulate discovery and support an engaging approach to learning (Puttilli, 2014, p. 43). At the same time, the creation of Story Maps focused on volcanic landscapes has the power to involve students in an engaging and fascinating process of knowledge and successive sharing of their own works. In fact, some contributions have evidenced how Story Maps can also be dynamic-interactive tools to summarise the results of degree or master's theses (Pesaresi et al., 2024) and even to harmonise and present the final project for middle school (De Vecchis and Pesaresi, 2024, pp. 123-137). Similar geotechnologies can provide a notable added value in the case of Pompeii. In fact, an informative and well-documented poster system has not yet become available to help visitors orient their visit to Pompeii. Such a system would be valuable for visitors to engage cognitively as well as observing the casts, domus and frescoes indicative of Pompeii's past (Delle Donne, 2015, p. 88).

Moreover, the knowledge and digitalisation of specific documentary sources can facilitate real processes of geographical discovery and historical-archaeological reconstruction. For example, the georeferencing of "*Foglio 13*" of the "*Carta Topografica ed Idrografica dei contorni di Napoli Levata per ordine di S.M. Ferdinando I: Re del Regno delle due Sicilie dagli uffiziali dello Stato Maggiore e dagl' ingegneri topografi negli anni 1817. 1818.*

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1819." (updated to the early 1860s) can represent the start of an amazing journey from many points of view (Figure 21). As a work of remarkable detail and scientific rigour, despite its time of compilation, the Map in question makes it possible to clearly recognise the main elements present and brought to light over decades of excavations, but very far away in time with respect to today. By means of digital enlarging, one can read the names of the streets, identify the forum, basilica, theatres, the amphitheatre, follow the pattern of the walls with the town's entrances, having among other things a first clear picture of the urban and structural layout. Furthermore, once the georeferencing has been carried out, the superimposing of recent satellite images enables one to see live, by means of swipe effects for example, the "before" and "after" differences, or that is, between the state of the art at the time of the drafting of the historical Map, in terms of archaeological finds and domus found, and the present situation. The excavation campaigns continue to bring to light new elements, new pieces of a giant puzzle, owing to the surface area occupied and its historical-cultural value.

Furthermore, fieldwork in the Pompeii excavations, with a suitably organised itinerary, serves as an alternative destination for school trips. For example, ascending to the Vesuvius crater armed with a 1:25,000 scale map (IGM Tavoletta) and smartphone to use Google Maps is feasible. In this way it will be possible to go on an excursion that shows, live and with the support of special instruments, the physical-morphological features and the remains of phenomena imprinted on the territory during the various events over the centuries leading up to 1944. A similar excursion also makes it possible to observe from above the impressive entity of artificial surfaces as one overlooks the coastal strip, in a context characterised by a building-constructive unicum that significantly raises volcanic risk. The itinerary takes on even greater meanings considering that in the vicinity, to the west-north-west, is the Phlegraean Fields caldera, characterised by slow ground uplift (bradyseism). The Phlegraean Fields are under close observation owing to the relevance of the ground deformations and occurrence of frequent seismic events, at times with magnitude greater than or equal to 4, in another intensively and extensively anthropised context with similar volcanic risk values.

It was recently stated that when speaking about education within the territory and embarking on organised attempts at narrative mapping, in the common thread we understand "dreams, hopes, wonder, fears, desires, loves, connections" that concern the single inhabitants and the overall community (Giorda, 2025, p. 13). In the case of the reality of Pompeii, dreams, hopes, wonder, fears, desires, loves and connections were suddenly shattered, once and forever. The preservative burial of the antique city that continues to resurface, revealing new elements, has resulted in an ongoing increase in historical-geographical knowledge and scientific progress from the volcanological-archaeological point of view.

In this way fieldwork translates into a fundamental moment of experiential learning, passing from the "abstractionism" of textbooks to a form of living participatory knowledge, matured on site, in an engaging process shared by the group, with the possibility of observing what is being studied in person. Being able to understand aspects that take shape before one's own eyes in a crescendo of emotions (Giacomelli and Pesaresi, 2019, p. 57) often occurs in such fieldwork. Moreover, by attentively walking through the sites, students are spurred on to acquire spatial and temporal awareness, to formulate and verify hypotheses about the eruptions and the relations between economic and commercial practices, cultural, recreational and religious activities, and the public spaces of ancient Pompeii. The experience stimulates cognitive and affective engagement through the "combination of guided exploration and active observation" and drives "the transition from classroom-based theorisation to field-based investigation" (Ripamonti et al., 2025, p. 17).

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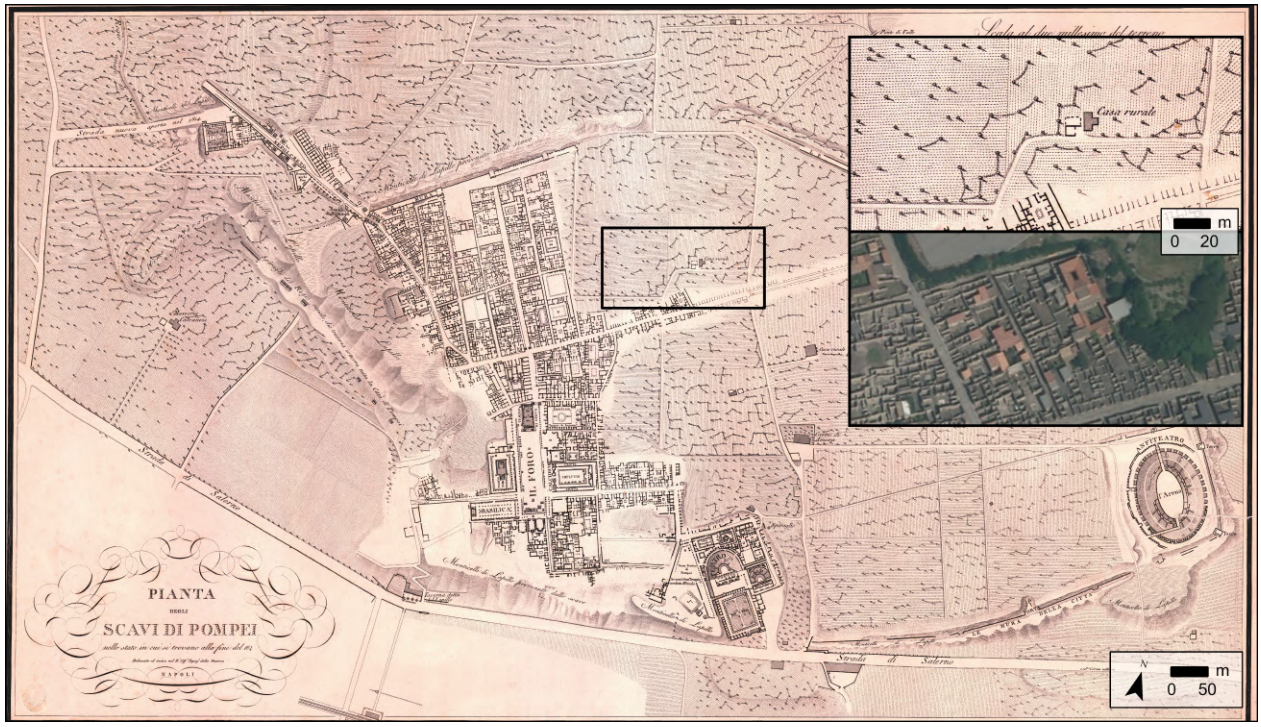

Figure 21. The map of Pompeii from "*Foglio 13*" of the "*Carta Topografica ed Idrografica dei contorni di Napoli…*" (updated to the early 1860s) georeferenced and overlayed to a recent satellite imagery in order to show an example of the changes recorded over the time. Elaboration on "Carta Topografica ed Idrografica dei contorni di Napoli…" and data Geoportale Nazionale (MASE).

Acknowledgements

Even if the paper was devised together by the Authors, L. Giacomelli wrote paragraphs 2, 3, 4, 5 and 6; C. Pesaresi wrote paragraphs 1, 7 and 8. Figures 1, 2 and 21 were elaborated by C. Pesaresi and D. Pavia. The photos were taken by L. Giacomelli and R. Scandone.

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