

Multidisciplinary Approaches to Understanding Space in the Greco-Roman World

How far have approaches drawn from other disciplines enriched our understanding of the ancient past?

Multidisciplinarity and spatial studies are intertwined, as they both encourage and inform the other. A multidisciplinary approach, which draws on techniques, models and resources across different fields, can bring to light evidence that enhances historians' reconstruction of spaces and landscapes in the ancient world. Alternatively, as Michael Scott writes, an interest in 'spatial studies' pushes a 'more integrated approach' which 'pull[s] down the disciplinary boundaries' and encourages a multidisciplinary approach from which historians construct a 'textured and credible understanding' of the ancient past.¹ Historians can draw from a broad range of disciplines to inform their understanding of the spatial experiences of the Greco-Roman world, such as archaeobotany, but a cross-disciplinary approach can never exist in isolation. Archaeobotanical analysis can be informed, supported or disputed by archaeology, literature, and other approaches such as anthropological models, speculative planting or digital archaeology. Drawing on other disciplines allows for an increasingly nuanced understanding of the ancient world, which creates space for marginalised perspectives in a way that traditional approaches to literary and material sources cannot offer. By examining the scholarship which draws on archaeobotany, such as the work of Wilhelmina Jashemski, Maureen Carroll and Marta Mariotti Lippi, we can see how the conversations which occur between disciplines can reveal the multisensory experiences of spaces in the Greco-Roman world, and therefore help us understand the lives of those who inhabited them.

The emerging field of archaeobotany, with its roots in the field of biology, has increasingly become an important aspect of an ancient historian's toolbox.² In archaeobotany, historians investigate archaeobotanical artefacts from ancient sites, using techniques from its parent fields of botany and archaeology, in a process that 'identifies not only the plant species' but also 'the planting [...] systems of ancient gardens', through analysis of preserved or fossilised plant remains, alongside landscape archaeology.³ The investigation and identification of flora can be used with written and architectural evidence to aid historians' reconstruction of ancient spaces, and enriches our understanding of how

¹ Scott 2013: 2.

² Day 2013: 5814.

³ Day 2013: 5806.

different people from the ancient world may have interacted with and experienced these spaces, such as how landscapes would have looked, felt and smelt, what plants were used to create privacy or shade, or what uses plants had, such as in cosmetics, food, medicine or simply to be ornamental. As Jo Day notes, there is a correlation between increased ‘archaeological interest’ in the ‘sensory experiences’ of ancient landscapes and the increased use of archaeobotany.⁴

The way in which archaeobotany has enhanced our understanding of ancient spaces can be exemplified through Lippi’s work. She uses archaeological palynology to analyse the pollen deposits preserved on roof tiles in Pompeii which ‘reveals the presence of many trees’ around the area.⁵ Palynology does have limitations, as Day asserts, it is ‘generally used by archaeologists to look at vegetation on a regional level rather than providing site-specific information’, due to the nature of pollen distribution, and also relies on preservation which only occurs in certain environments, hence a significant proportion of the body of archaeobotanical evidence discussed is from Pompeii.⁶ However, in some circumstances, it can be used to give historians site-specific information which supports the other investigations into the landscape, as Vaughn Bryant agrees, ‘the fossil pollen record’ can ‘provide [...] answers to questions that often cannot be answered by the artefact record alone’.⁷ Lippi’s investigation used microscopic chemical analysis on the roof tile pollen deposits to determine the species present at the time of the eruption. The analysis of Casa dei Casti Amanti fragments illustrated a significant proportion of the preserved ‘pollen spectrum’ was from juniper trees, which was corroborated by evidence of juniper ‘pollen in soil samples’, as well as the ‘charred wood recovered from holes located in the soil, along the perimeter of the flowerbed’, confirming juniper trees were present in the garden.⁸ This helps historians reconstruct the garden’s flora makeup and structure, which is realising Lippi’s intention to use both ‘macro and microscopic analyses [...] of plant fragments and pollen’ to ‘reconstruct[...] the garden as it was’ when Vesuvius erupted in 79 CE.⁹ While ancient textual evidence informs us Campania was a ‘fertile’ environment, ‘surrounded by fruitful hills’ which produced Rome’s ‘finest wines’, and was ‘blest with natural beauties and opulence’, employing archaeobotany can add to the literary evidence and create a richer picture of the landscapes and flora of *specific* sites within the region.¹⁰ As Lippi’s palynological analysis shows, the Casa dei Casti Amanti gardens were populated by juniper trees, evergreen conifers with edible berries which could provide both shade in the hot Italian climate and extra privacy to the internal garden space all year round. The berries from this property could be used in a variety of ways including

⁴ Day 2013: 5814.

⁵ Mariotti Lippi and Bellini 2006: 157.

⁶ Day 2013: 5807.

⁷ Bryant and Holloway 1983: 217.

⁸ Mariotti Lippi and Bellini 2006: 156.

⁹ Ciarallo and Mariotti Lippi 1993: 110.

¹⁰ Strabo *Geographica* 5.4, Pliny *Naturalis Historia*. 3.6.

making wines or perfumes. Alternatively, as Dioscorides described, the ancient Mediterraneans believed juniper berries had medical properties, and were ‘good for the stomach, good taken in drink for infirmities of the chest [and] coughs’ among other ailments.¹¹ This multifunctionality of Roman gardens is corroborated by Lippi, who determines plants could be used in cooking, could be ‘medicinal’, while also being ‘ornamental’, which is illustrated by the colour coordination of different tree species, or flowering throughout different seasons.¹² This could suggest ways the property’s inhabitants would spend time in the garden. The *paterfamilias*, perhaps accompanied by clients or guests, might spend time in the garden admiring the ornamental plants under the shade provided by the trees. While for others, such as the enslaved people in the household, their spatial experience would differ, as the time they spend in the garden might involve labour, such as manoeuvring manure or managing plant growth, or perhaps harvesting juniper berries for medicinal uses.

The complex interaction between spaces, plants and people in the Roman world is also investigated by Carroll, who determines links between the landscaped gardens and the architecture of the Temple of Venus, Pompeii. Her focus on the sanctuary’s archaeological remains in determining the space’s landscaping illustrates how a multidisciplinary approach, which combines archaeological, archaeobotanical and literary evidence, can reconstruct a more ‘textured and credible’ sense of spatial experiences in Pompeii.¹³ Both Carroll and Lippi’s work, despite taking different approaches, can be informed by the literary sources, such as Virgil, who describes the landscaping of ‘tall-grown elms a-row’, alongside ‘pear [...] plum, and plane’ which are ‘yielding serviceable shade’ to the users of the space who would be avoiding the sun.¹⁴ This literary evidence of plane (*Platanus*) can be corroborated by the archaeobotanical approach taken by Lippi, who determines the species ‘occurrence’ in Pompeii ‘and its surroundings is well-known’, partially due to Jashemski’s ‘casts of tree-root cavities’ which are ‘attributed’ to *Platanus*, and also that it was ‘recorded in garden soil analyses in Pompeii’.¹⁵ Carroll does not determine the species planted, instead her analysis determines ‘trees were planted parallel to the colonnades [...] at regular intervals’ with around 1m between each tree, which suggests were ‘probably echoing the rhythms of the portico columns’, which confirms the landscaping style ‘row[s]’ described by Virgil.¹⁶ Carroll indicates an intentional relationship between landscaping and architecture in the spaces of the Roman world, wherein trees were planted to frame the architecture, creating shaded walkways, and privacy for the people using the temple. This aids a reconstruction of the spatial experiences of temple-goers, as Carroll notes, ‘the experience of passing from the public and secular to the private and sacred’ may have been one of ‘heightened’ emotional intensity through

¹¹ Dioscorides *De Materia Medica* 1.103.

¹² Ciarallo and Mariotti Lippi 1993: 114.

¹³ Scott 2013: 2.

¹⁴ Virgil *Georgica* 4.143-145.

¹⁵ Mariotti Lippi and Bellini 2006: 156.

¹⁶ Carroll 2010: 74.

the interaction with the landscaping, as the people would have to ‘cross through a row of trees to step into the courtyard’.¹⁷ This delineation created a ‘complex of gardens’ which was private and ‘introverted’, presumably with the plants blocking the sight and sounds of the exterior, allowing the sacred space to be distinctly separated from the urban space surrounding it.¹⁸ While there were no preserved organic remains around the temple, Carroll’s multidisciplinary approach draws on archaeobotany in her examination of buried plant pots, as she determines at least three species were planted around the sanctuary, and suggests they may have been laurel, myrtle and rose, which are found elsewhere in Pompeii. Carroll suggests these specific plants due to the former’s association with festivals, and its close association with the Julio-Claudian dynasty, and the latter two for their association with Venus.¹⁹ This type of speculation, which to a certain extent illustrates the limitations of multidisciplinary approaches, has been used across the history of Campanian excavations.

As Virginia Campbell writes, examining space allows us to ‘imagine the [...] people’ and ‘to consider the full, multi-sensory experience of watching or participating in’ communal spatial experiences.²⁰ While ‘imaginative’ or speculative history writing, as Campbell acknowledges, can leave room for potentially erroneous interpretations, it can bring the ancient world to life in a way which cannot be accessed through repeating material from literary sources, or examining archaeological remains without further context. By taking a multidisciplinary approach which uses literary, archaeological, and archaeobotanical evidence alongside imagination or speculation, historians can envision the spatial experiences. As Campbell argues, we could speculate about human behaviour such as ‘imagin[ing] patrons of one of the *cauponae*’ in Pompeii drunkenly ‘joining in with the musicians’ of a *pompa funebris*, or we could use topographic digital reconstructions to ‘consider how the funeral procession would be seen and heard from a distance’, and visualise ‘the sight and smell of smoke’ or ‘the sound of music and chanting’.²¹ Campbell illustrates how a multidisciplinary and speculative approach to understanding space can reconstruct the lived experiences of the ancient past.

Jashemski, in her consideration of the early 20th-century reconstruction work done by Giuseppe Spano in the ‘tomb gardens’ of Pompeii, also explores links between space and speculation.²² By planting ‘roses, anemones and myrtle’ in the enclosure around the *schola* tomb of Marcus Tullius, Spano was visualising a role for the space, despite a lack of archaeobotanical evidence for the species he planted.²³ This speculative approach to the botanical makeup of the space allowed the modern

¹⁷ Carroll 2010: 81.

¹⁸ Carroll 2010: 82.

¹⁹ Carroll 2010: 77, 82.

²⁰ Campbell 2021: 158.

²¹ Campbell 2021: 156,150.

²² Jashemski 1970.

²³ Emmerson 2010: 81.

viewer to interact in the space in the way in which passers-by may have done in the ancient past, an approach which continues to be practised today such as the roses planted around the courtyard in the Forum Romanum's Atrium Vestae.²⁴ Jashemski's archaeobotanical work gives retrospective authority to Spano's speculative planting, illustrating the necessity for multidisciplinary approaches. While she could not conduct archaeobotanical investigations around the enclosure of Tullius' tomb, due to lack of preservation, the broader 'tomb garden' theory was supported by her contemporaneous excavation at Scafati. Jashemski used 'rootcasting' to determine the placement of plants around the tomb at Scafati, noting 'within the tomb enclosure the cavities of six tree roots were found', and to 'expect at least some of them to be cypresses', due to their popularity in the region, and their association with funerary practises.²⁵ This can be corroborated by textual evidence, illustrating the value of combining approaches from different disciplines, such as Horace who suggested cypress trees were commonly planted around funerary monuments, 'alone the Cypress shall attend' the grave of the poem's addressee.²⁶ This association between funerary monuments and cypress can also be seen in Virgil's *Aeneid*, which depicts 'a perpetual altar, sadly dressed in cypress dark and purple pall of woe' and also describes a 'meeting-place' 'outside the city's gates' over which 'a cypress, ancient shade o'erhangs' suggesting the 'shade' provided by cypress trees created attractive spaces in which to meet and socialise.²⁷ This aligns with the design of some Roman funerary monuments in which passers-by are encouraged to stop, some have benches built-in to sit on, and read the monument's inscription. These can feature direct addresses to the viewer, such as on a funerary monument from Pompeii which reads 'stranger delay a brief while', or another from Rome which reads 'thank you, my dear guest, for stopping at my abode'.²⁸ Jashemski's archaeobotanical analysis therefore gives historians a clearer idea of how Romans interacted with the spaces around them, how they would plant gardens around funerary monuments to make them pleasant places to visit, providing shade, and looking and smelling pleasant, as Jashemski points out, 'we can [...] assume that the area around the [Scafati] tomb was planted with fragrant flowers', which would grow even under the shade of cypress trees in the Italian climate.²⁹ Thus Spano's speculative planting of flowers around the schola tomb of Marcus Tullius, could be accurate.

Spano's planting of roses, specifically, may accurately reflect the way the space was experienced in the ancient past, as Day points out 'the Campanian region' was 'famed' for its roses, and 'rose-scented perfume', and therefore roses likely would have been a common sight, and scent, through the

²⁴ Figure A.

²⁵ Jashemski 1970: 108.

²⁶ Horace *Carmina* 2.14.

²⁷ Virgil *Aeneid* 3.64, 2.722-727.

²⁸ AE (1964) 160, *CIL*_1².1202.

²⁹ Jashemski 1970: 110.

region, a sensory experience which speculative planting can help reconstruct.³⁰ This can be corroborated with archaeological evidence, such as the garden fresco found in the Casa del Bracciale d'Oro, Pompeii. The fresco on the south wall features a reed warbler surrounded by a variety of plants including four red roses in different stages of blooming, which is perhaps an artistic reflection of the gardens which grew roses, both commercially and privately, around Pompeii.³¹ The presence of roses throughout the landscapes of the region, is also evidenced by a fresco from the Casa dei Vettii which depicts the production of perfume.³² Day interprets this fresco as 'cupids [...] extracting oil from a wedge press and adding rose petals to a steeping basin' to make perfume, while David Mattingly suggests the 'seated woman at the left hand end of the panel is a wealthy customer buying [...] and testing' the rose-scented perfume.³³ This fresco fleshes out historians' understanding of the experiences of textually-marginalised people, as it depicts a woman, described by Mattingly as 'female figure carrying a fan', who is presumably an enslaved woman, alongside the wealthy woman.³⁴ These figures could represent the activities (and therefore spatial experiences) of different status women, as they would both experience the smell of roses in the workshop, and may see the plants throughout the space of the city, but they are experiencing the same landscape and flora in different ways, one woman is purchasing luxury goods, whereas the other is enslaved. Jashemski argues the owners of Casa dei Vettii, where the cupid fresco was found, 'likely [...] raised flowers commercially', linking to her theory of 'commercial gardens' within the urban space of Pompeii.³⁵ Therefore the sight and smell of roses, among other flowers, would have been a common experience for all people who inhabited the space. This theory was evidenced by Jashemski's multidisciplinary investigations at Casa del Giardino d'Ercole, which determined the archaeobotanical evidence of 'soil contours, planting pattern [...] ancient pollen' as well as the archaeological evidence of 'provisions for watering [...] and the perfume bottles' would 'suggest that this was a commercial flower garden', and the flowers which were grown 'in this garden may have been used for making perfume, and perhaps also for garlands'.³⁶ Utilising archaeobotany alongside analysis of artefacts and textual sources, combined with the interpretation of frescos, gives historians a multisensory picture of Pompeian flora; what it looked like, how it could be used, and who used it; showing the value of multidisciplinary research in spatial experience in the Roman world.

Jashemski's multidisciplinary approach reflects a trend of engagement with material beyond literary texts and architecture, which gained traction in the latter part of the 20th century. Drawing on

³⁰ Day 2013: 5812.

³¹ Figure B.

³² Figure C.

³³ Day 2013: 5812, Mattingly 1990: 74.

³⁴ Mattingly 1990: 73.

³⁵ Jashemski 1963: 115.

³⁶ Jashemski 1979: 403, 411.

anthropology is way of enriching our understanding of ancient history, as Alastair Blanchard writes, ‘models derived from the social sciences’ can create a ‘framework for understanding [...] ancient populations’, which is also explored by Cohen who asserts ‘evidence from contemporary societies’ can be used alongside ancient sources.³⁷ Cohen uses Pierre Bourdieu's description of 1950s Kabyle women, for whom ‘the fountain is one of the most important places’ they ‘gather to talk’, to disagree with Dyfri Williams’ idea ‘respectable’ Athenian women ‘did not go of doors [...] certainly not to the fountain house’.³⁸ Due to the disparate contexts between modern Algerian and ancient Athenian women’s lives, referencing Bourdieu’s research in an isolated context would have limited use in determining the lived experiences of women in the Athenian cityscape, however when corroborated by both archaeological and textual Greek sources, it proves an effective argument against Williams’ understanding of Athenian space. The corroborative evidence to support this anthropological claim could include, as Lisa Nevett writes, Athenian *hydriai*, such as the 5th century BCE Priam painter *hydria* with well-dressed women ‘sociably’ collecting water at colonnaded *krene*.³⁹ Nevett suggests the *hydria* likely represents conventional ‘patterns of behaviour’ of Athenian women, and their experiences with the *krene*, and topography of Athens.⁴⁰ Athenian women’s interaction with the public spaces and *krene* of Athens, can also be seen in Aristophanes’ depiction of a ‘citizen’ woman ‘fighting the elbows of housemaids and branded slaves’ among the loud ‘throng’ surrounding a fountain at ‘dawn’, and carrying the *hydria* herself, which contests William’s notion women were ‘secluded’ in their homes.⁴¹

Similarly, Jashemski utilises cross-cultural comparative evidence from beyond the period she is investigating in order to enhance her archaeobotanical evidence, by suggesting Roman garlands were similar to ‘Hawaiian lei’, in both production and sales.⁴² Jashemski compares the ‘open stalls of the lei sellers’ in 20th-century Hawaii to the ‘Pompeian flower shops’ and ‘market day [...] portable stands’ of garland-sellers, asserting ‘passers-by can watch the Hawaiian girls plaiting the leis that they offer for sale, just as in Pompeii they may have stood and chatted with the garland makers’.⁴³ This tentative comparison allows us to envision flower garlands being made and sold on the streets of the Roman world, and speculate about the conversations between garland-makers and consumers, the colours and smells of the flowers, the process of making garlands (which is not described in surviving textual material) and the movement of people around stalls. Multidisciplinary approaches allow us to examine the perspectives of garland-makers, as well as people who passed them, giving us a broader

³⁷ Blanchard 2010: 13, Cohen 1989: 7.

³⁸ Williams 1983: 103, Cohen 1989: 7.

³⁹ Nevett 2011: 582, Figure D.

⁴⁰ Nevett 2011: 582.

⁴¹ Aristophanes, *Lysistrata* ll.325-335.

⁴² Jashemski 1963: 119.

⁴³ *Ibid.*

understanding of the multifaceted spatial experiences of the Roman world which cannot be determined from just analysing static or isolated material evidence. Garlands are a common motif depicted on monuments, such as the Ara Pacis, where the interior frieze, which features garlands of fruits and flowers strung between *bucraniums*, acts as both an iconographic representation of prosperity in Augustus' Rome, and an immortalisation of garlands used in religious rituals, illustrating their importance in the Roman world.⁴⁴ Jashemski's multidisciplinary investigation of Pompeii's flower industry allows us to establish a conversation between the dominant perspective of texts and iconography, and the marginalised perspective of garland-makers and ordinary people experiencing the spaces of Pompeii.

Ultimately it can be argued that approaches drawn from other disciplines significantly enrich our understanding of the ancient world. Archaeobotanical analysis, when used alongside literary and textual primary sources allows for a detailed, multisensory understanding of ancient spaces, and how they were used and experienced. It does need to be acknowledged that the information gained from archaeobotanical research can be limited by a lack of preserved material, but by taking a speculative approach or using cross-cultural comparisons, historians can attempt to fill in the gaps to construct a detailed and multifaceted understanding of Greco-Roman spaces.

⁴⁴ Figure E.



Figure A (above, right) photograph of the roses planted in the courtyard of the Atrium Vestae, Rome.

Figure B (left) detail from garden fresco in the Casa del Bracciale d'Oro, Pompeii, a reed warbler among roses.



Figure C (above) detail from Casa dei Vettii fresco, cupids making perfume.



Figure D (left) Attic black figure hydria featuring women at a *krone* c. 520 BCE, MFA 61.195.

Figure E (above, right) relief from the Ara Pacis, flower and fruit garlands strung between *bucraniums*.

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