

The virtual reality digital model of the Villa of the Papyri project

MANTHA ZARMAKOUPH

The virtual reality digital model of the Villa of the Papyri project has been developed over the past four years at the UCLA Cultural Virtual Reality Laboratory (CVRLab).¹ It demonstrates how virtual reality models may be employed to document and investigate archaeological sites as well as to present hypothetical reconstructions that may serve as virtual restoration proposals of architectural monuments. The aim of the project is threefold: 1) to create a digital architectural model of the Villa of the Papyri that incorporates both the architectural structures known from the 18th century as well as those found in recent excavations, 2) to present a virtual reality reconstruction of the architecture of the Villa that distinguishes between the structures known from Weber's plan (1758) and still lay underground, the structures that have been recently unearthed (1994–1998, 2007–), and proposed restorations, and 3) to reincorporate the surviving known fragments of the finds from the Villa, such as wall paintings, mosaics, sculptures and papyri.² In addressing these aims, the project will provide an invaluable research and teaching tool for the Villa of the Papyri. This paper presents the evidence, methodology and tools used for the construction of the virtual reality digital model of the Villa of the Papyri.

1 The project has been created with the support of the UCLA Experiential Technologies Center, the Friends of Herculaneum Society, University College London and the Excellence Cluster TOPOI.

2 The photographs of the Villa of the Papyri that are included in the digital model were taken by the author and are published here with the permission of the Ministero per i Beni e le Attività Culturali and the Soprintendenza Speciale per i beni Archeologici di Napoli e Pompei. I would like to thank Antonio De Simone, Maria Paola Guidobaldi and Domenico Esposito for discussing the most recent excavations at the Villa (see De Simone and Guidobaldi and Esposito in this volume). I am especially grateful to Domenico Esposito for discussing the reconstruction of the Villa of the Papyri.

The Villa of the Papyri and its reconstructions

Discovered and explored through a series of tunnels in the 18th century, the Villa of the Papyri remained effectively unseen until the beginning of the “New Excavations” by Infratecna in the 1990s.³ The Villa lies beneath about 30 m of consolidated mud, the result of the 79 C.E. eruption, the deposition of material over time and several subsequent eruptions.⁴ The original excavations at the Villa started in May 1750 and continued for eleven years until 1761; they were resumed briefly between 1764 and 1765. The 18th-century excavations were conducted by Karl Jakob Weber, the Swiss military engineer in the service of Charles of Bourbon, King of the Two Sicilies.⁵ During this period, the Villa was accessed by wells and was excavated systematically through a series of tunnels, which led to the extraordinary finds of the large papyri and sculptural ensembles. On the basis of the tunnels that gave access to the spaces of the Villa, Weber produced a plan in 1758, now in the Archaeological Museum of Naples (see Mattusch in this volume, fig. 5), which was redrawn with annotations of the findings by Comparetti and de Petra in 1883 (see De Simone in this volume, fig. 1).⁶ Weber’s plan was our only guide to the Villa until the Infratecna excavation. This period of excavation from 1994–1998 and the most recent excavations by the Archaeological Superintendency of Pompeii (2007–) gave access to the atrium quarter, known from Weber’s plan, as well as areas that were unexplored by the Bourbons – the first and second lower level of the *basis villae*, just below the atrium quarter, and the lower terrace structures to the south of the atrium quarter – but the entirety of the Villa still remains underground.⁷

The inability to access the Villa of the Papyri combined with the unique character of the finds from the Villa, the papyri and the sculptures, have led to its idealization as the Roman luxury villa par excellence. Scholarship has analyzed the ownership of the Villa, the philosophical affiliations of the owner as well as the ideological connotations

3 See De Simone in this volume, 1–8.

4 See De Simone in this volume, 6.

5 Parslow 1995, 85–106.

6 *CDP*, pl. XXIV.

7 See De Simone, and Guidobaldi and Esposito in this volume.

of the sculptural collection.⁸ Due to the lack of available information, attempts to reconstruct the architecture of the Villa have been far less numerous. In fact, there have been only two: the Getty Villa by Langdon and Wilson with the advice of Norman Neuerburg (1974) and the Capware reconstruction by Gaetano Capasso (1997). The first one was produced before and the second one after the Infratecna excavations.

The Getty Villa first opened to the public in 1974 (see Lapatin in this volume, fig. 6).⁹ It is not surprising that of all the available Roman luxury villas, J. Paul Getty chose to construct a full-scale reconstruction of the Villa of the Papyri in order to house his art collection in Malibu. The possible association with Julius Caesar's father-in-law, Piso, as well as the spectacular finds of this elusive site appealed greatly to Getty.¹⁰ Furthermore, the fragmented character of the material remains of the Villa of the Papyri allowed for some flexibility in the adaptation of Weber's plan for the purposes of the Getty Villa as a museum. Without the architectural details, wall paintings or mosaics of the Villa of the Papyri, Norman Neuerburg, the academic advisor to the Getty Villa architects Langdon and Wilson, compiled a list from the pristine examples of Roman art and architecture that were used to fabricate the museum's environment.¹¹ The decoration of the Getty is a product of an eclectic selection of the most impressive surviving decoration from houses and public buildings around the Bay of Naples as well as the city of Rome,¹² which in some cases were adjusted to accommodate modern American taste, for example the colour of the wall paintings.¹³ Getty's goal was not to produce an accurate reconstruction of the Villa of the Papyri, but rather to house his collection in what he "felt a good museum should be."¹⁴ In the case of the Getty Villa, the lack of infor-

8 For example, on the ideological programme underlying the sculptural display: Pandermalis 1971, Sauron 1980, *Wojcik*, Neudecker 1988, 113, and Dillon 2000, 27–28.

9 For the construction history of the Getty Villa see True and Silveti 2005.

10 See Lapatin in this volume. On the ownership of the Villa see Capasso in this volume.

11 Neuerburg's research notes on the design of the Getty Villa show this bricolage of ancient components: Neuerburg 1966–1987, "Series IV. Drawings and Designs, 1966–1976, 1979–1980, (bulk 1971–1973)," Box 7 and 8.

12 See Lapatin in this volume, 134–135.

13 See Favro in this volume, 166.

14 Gebhard 1974, 57; See in this volume, Lapatin, 130–131, and Favro, 167.

mation on the architecture of the Villa of the Papyri gave an interpretative leeway that was necessary for the adaptation of the Villa into a museum.

The Capware reconstruction of the Villa of the Papyri by Gaetano Capasso and his team was first released in 1997.¹⁵ This digital reconstruction is based on Weber's plan as well as on the information from the Infratecna excavations and fills in the "blanks" of the unknown areas, such as wall paintings and mosaics, on the basis of the decoration of houses in Pompeii and Herculaneum – like the Getty Villa does. Capasso also drew on the Getty Villa itself as is evident from the similarity of the two reconstructions – especially in the appearance of the second floor.¹⁶ Gaetano Capasso created this, as well as other reconstructions of sites around the bay of Naples, in order to appeal to general audiences. To this end, all the Capware reconstructions feature in a touristic movie and book and are presented in real time in the Museo Archeologico Virtuale in Ercolano, a museum designed for their display.¹⁷ In order to satisfy the purposes of "edutainment," the Capware reconstruction of the Villa of the Papyri presents a homogenous three-dimensional environment with no differentiation between the existing elements and those added hypothetically.

The virtual reality digital model of the Villa of the Papyri project presented here has a different scope from either the Getty Villa or the Capware reconstruction. The project was created in order to visualize the information that we have about the Villa and provide a virtual reality reconstruction that distinguishes the material remains of the Villa from hypothetical additions. The model incorporates the results from new excavations into Weber's plan and puts forward one or more restoration proposals of the Villa's architecture. Hypotheses are necessary in the restoration proposals that are incorporated in three-dimensional reconstructions of archaeological sites,¹⁸ and by putting forward several this project aims at facilitating further research on the Villa. Part of the flex-

15 Digital video: *Viaggio a Pompei* (Naples 1997 1st ed., 2002 2nd ed.); book: G. Capasso, *Journey to Pompeii, Virtual tours around the lost cities* (Naples 2002 1st ed.; 2004 2nd ed.; 2005 3rd ed.).

16 See also Lapatin in this volume, 137–138.

17 The Museo Archeologico Virtuale in Ercolano which opened on July 8th 2008 presents the reconstruction of the Villa of the Papyri, together with other Capware reconstructions of buildings from Herculaneum and Pompeii (www.mu-seomav.it).

18 Vacharopoulou 2005.

ibility of this virtual reality reconstruction is the ability to select among existing state and different restoration proposals. Whereas the previous reconstructions put forth restoration proposals for the missing parts of the decoration in the style of the original, adopting the approach of Viollet-le-Duc,¹⁹ the restoration proposals in this reconstruction do not imitate the missing decoration and feature a uniform colour. Furthermore, two different colours were used to differentiate the parts of the Villa that are known from Weber's plan and still lie underground from the recently excavated parts of the Villa. In this way, the colour-coding of the model enables one to distinguish between the kind of information that is visualized (fig. 1).

Methodology of the virtual reality digital model of the Villa of the Papyri project

A virtual reconstruction of an archaeological site is based on excavation data, historical sources, comparative studies as well as the modeller's informed hypotheses (fig. 2).²⁰ The virtual reality model of the Villa of the Papyri uses the data from the 18th-century excavations,²¹ the Infratecna excavation²² and the recent excavations of the Archaeological Superintendency of Pompeii.²³ The project used MultiGen Creator for the three-dimensional modelling and Adobe Photoshop for two-dimensional image processing of the textures applied to the surfaces of the model, including the images of the fragments of wall painting and mosaic decoration.

The 1883 publication of Weber's plan by Comparetti and De Petra was used as a basis for the model (fig. 3; See De Simone in this volume, fig. 1). Information provided by the new excavations allowed this plan to be adjusted and enriched. Specifically, the new plan of the atrium quarter was used to correct Weber's plan (see in this volume, De Simone, fig. 7, and Guidobaldi and Esposito, figs. 1 and 2), and the

19 Viollet-le-Duc 1854, vol. 8, 14–34; see Melucco Vaccaro 1996.

20 Hermon 2008, esp. 40–41.

21 *CDP*.

22 See De Simone et al. 1998; De Simone and Ruffo 2002, 2003, 2005; De Simone 2007b and in this volume.

23 See Guidobaldi and Esposito 2009 and in this volume; and Guidobaldi et al. 2009.

first and second levels of the *basis villae* structures as well as the lower terrace structures (VPSO area) were added (see in this volume, De Simone, figs. 15 and 16, and Guidobaldi and Esposito, figs. 1 and 34). The dimensions of Weber's plan, which were accurate overall,²⁴ were put into scale in relation to the measurements of the new plan of the atrium quarter. In addition, the pathway to the belvedere was given a more westward orientation according to the Infratecna excavation (see De Simone in this volume, cf. figs. 1 and 2). Finally, the information on the heights of the Villa from the Infratecna excavation (see De Simone in this volume, figs. 14 and 25) was used for the heights of the model (fig. 4).

Weber's excavation notes and annotations to his plan, published in the 1883 publication by Comparetti and De Petra, were used in order to clarify the difficulties of the plan resulting from the simultaneous graphic representation of structures and tunnels. They also allowed allocating the find-spots of the fragments of wall paintings and mosaics that were found and removed in the 18th century.²⁵ For the New Excavations of Infratecna the publications of Antonio De Simone and Fabrizio Ruffo were used.²⁶ Since the publication of results from the most recent excavations undertaken by the Archaeological Superintendency of Pompeii only appeared at the end of 2009, personal communications with Maria Paola Guidobaldi and Domenico Esposito, as well as their article in this volume, provided information on their findings.²⁷ Visits to the site were conducted in summer 2005 with the permission of the Archaeological Superintendency of Pompeii. Photographs of the mosaics and wall painting fragments taken during these visits were used in the model and are published here with the permission of the Ministry of Culture and the Archaeological Superintendency of Pompeii.²⁸ For the restoration proposals of the second floor above the atrium quarter as well as of the substructures of the rectangular peristyle facing the seaside, comparisons were made with other luxury houses and villas in Herculaneum, such as the House of the Relief of Telephus, and around the Bay of Naples, Villa Arianna A in Stabiae and Villa A at Torre Annunziata.

24 De Simone and Ruffo 1998.

25 *CDP*, 147–294, esp. 225–236.

26 See note 22.

27 See note 23.

28 See note 2.

As there is currently a terminological confusion in the field of visualizations,²⁹ a definition of the terms used in the virtual reality digital model of the Villa of the Papyri project is necessary. I use the term virtual reality reconstruction to refer to the model of the Villa of the Papyri model as a whole. This term does not differentiate the visualization of the existing structures and wall paintings of the Villa from their hypothetical reconstructions. The term virtual restoration designates the hypothetical reconstructions of the architecture and wall paintings, where restoration is defined as reconstitution of what is proposed to be the original state of the ancient building or decoration.³⁰ The term virtual restoration is used for the virtually created restoration of objects or structures that are either presented in virtual reality or projected in real-time on real-world objects.³¹ The virtual realm of the model enables us to put forth several such restoration proposals, as none of them is invasive to the monument itself, and as such they are non-committal.

Presentation of the model

The model reconstructs and distinguishes the following areas of the Villa of the Papyri: (1) areas known from the 18th-century plan, (2) areas revealed during the new excavations by Infratecna and the Archaeological Superintendency of Pompeii that are accessible today and (3) restoration proposals (fig. 1). The areas known from the 18th-century plan are indicated by a yellow-beige colour, (a) in the index of figure 1. A brown-beige colour is used for the areas revealed during the new exca-

29 Golvin, J.-C. "Signification et problèmes de définition," in: *De la restitution en archéologie, Archaeological restitution* (Paris 2008), 12–25, electronic document, <http://editions.monuments-nationaux.fr/fr/les-ouvrages-en-ligne/bdd/livree/9> (accessed June 30, 2009).

30 Stubbs 2009, 23–24.

31 This term is used for the virtually created restoration of objects or structures whether these are presented in virtual reality or projected in real-time on real-world objects: Law et al., "Projecting restorations in real-time for real-world objects," in: *Museums and the Web 2009: proceedings*, edited by J. Trant and D. Bearman (Toronto 2009), electronic document, <http://www.archimuse.com/mw2009/papers/law/law.html> (accessed June 30, 2010); Peral et al., "Virtual restoration of cultural heritage through real-time 3D models projection," electronic document, <http://public-repository.epoch-net.org/publications/VAST2005/shortpapers/short2002.pdf> (accessed June 30, 2009).

vations, (b) in the index of figure 1. For the restoration proposals of the atrium quarter and the rectangular peristyle a gray colour is used, (c) in the index of figure 1. For the restoration proposals of the second floors above the atrium quarter and above the rooms in between the square and rectangular peristyles the yellow-beige colour of the 18th-century plan was used. As this latter restoration proposal does not feature in the main view of the model but is only shown as one option of the reconstruction of the Villa in the fly-through of the model, this colour was chosen for reasons of homogeneity and readability of the model. For similar reasons, the gray colour used for the restoration proposals of the substructures is also used for the floors in the areas of the square and rectangular peristyles. The aforementioned colour-coding choices were made in order to satisfy two goals: on the one hand, to create a reconstruction that makes as clear as possible what is reconstructed from the archaeological evidence and what is projected from the evidence in the form of restoration proposal and, on the other, to offer a reconstruction that is comprehensible as a three-dimensional building and it is not overly schematic. Finally, coloured walls occur only in two cases in which archaeological evidence indicates their existence: first, the inner walls of the *natatio* of the lower terrace and, second, the short wall of the long promenade that is adjacent to the south-west side of the rectangular peristyle.

The model gathers all the surviving fragments of wall painting and mosaic decoration from the Villa, both the ones found in the 18th century and in the recent excavations by Infratecna and the Archaeological Superintendency of Pompeii (figs. 5 and 6). The mosaics and wall paintings found during the new excavations as well as those found during the 18th-century have been placed in their original locations, for example the mosaic and fragment of megalography in room (i) (fig. 7; see also Moormann in this volume, fig. 9) and the mosaic in room “XVI” in Weber’s plan (fig. 8).³² The fragments of wall paintings found in the 18th-century excavations were only schematically noted on Weber’s plan. The Latin numbers and letters on Weber’s plan indicate commentaries in his excavation notes where he lists the finds (sculptures, papyri, mosaics and fragments of wall paintings) of a given area over time.³³ For example, in the atrium area, “XIII” was used to indicate the location of

32 CDP, 224, “XVI.”

33 CDP, 221–224.

the fragment of wall painting NM 8759 found on 16 June 1754³⁴ as well as two other fragments of wall paintings found on 23 June 1754 that have no inventory numbers,³⁵ and “XI” was used to indicate the location of the fragment of wall painting NM 8548 found on 10 March 1754.³⁶ These annotations do not indicate the exact find-spots of the fragments of wall paintings. The fragments of wall paintings have been placed in the model at the points where their corresponding annotations occur on Weber’s plan, since these are the approximate “find-spots” for which we have evidence (fig. 9; cf. fig. 6).

The placing of the surviving fragments of wall paintings and mosaics on their exact or approximate locations aims at facilitating research on the Villa’s wall painting and mosaic decoration. One of the options of the model is to switch between existing state and restoration proposals, such as the one of the wall paintings of *ala* (e) by Moormann (fig. 10; see Moormann in this volume, fig. 5). The reversibility and easiness of switching between proposals during navigation in the virtual reality model facilitates the presentation of several hypothetical reconstructions of such a nature.

Very little is known about the architectural details of the Villa. In order to reconstruct the Villa’s architecture, comparative material from other luxury villas on the bay of Naples was used as well as architectural details surviving from other buildings of Herculaneum. There is no evidence for the order of the columns of porticoes (a), (u) and (m) of the atrium quarter (see in this volume, De Simone, figs. 7 and 8, Guidobaldi and Esposito, fig. 2). Plain Tuscan columns, similar to the tufa columns incorporated in the south and west façades of the House of the Relief of Telephus in Herculaneum, were produced for these porticoes. The surviving footprints of the columns (fig. 11) were used to adjust the intercolumniations indicated in Weber’s plan. These suggest that a fence or a thin wall – such as the thin walls placed between the columns of porticus 13 and 24 in Villa A at Torre Annunziata – was placed in between the columns, both of which were reconstructed as options in the model (fig. 12).

34 *CDP*, 224, V. Explic. “XIII;” *CDP*, 282, no. 97; see Moormann in this volume, 73, table 1, no. 3.

35 *CDP*, 224, V. Explic. “XIII;” *CDP*, 287, nos. 99 and 99b; see Moormann in this volume, 75, table 1, nos. 26 and 27.

36 *CDP*, 224, V. Explic. “XI;” see Moormann in this volume, 73, table 1, no. 1.

The recent investigations by Maria Paola Guidobaldi and Domenico Esposito have given information about the columns of the square peristyle.³⁷ Their shafts were built in *opus testaceum* and were coated with white stucco that rendered their fluting. The capitals and bases were made of tufa; the capitals were Ionic and the bases were characterised by the Attic profile. A photograph of the base of a column in the north portico of the square peristyle (see Guidobaldi and Esposito in this volume, fig. 14) was used for the reconstructed bases and shafts of the columns of the square peristyle in the model. The Ionic capitals of the square peristyle are not fully visible. As they bear a strong similarity to the Ionic capitals from the recently re-excavated Basilica in Herculaneum, a photograph of one of the latter was used to reconstruct the capitals of the columns in the square peristyle (fig. 13).³⁸

The area of the rectangular peristyle is known only from 18th-excavations. Weber's notes indicate that the columns of the rectangular peristyle were stuccoed.³⁹ Photographs of two different kinds of stuccoed columns with stuccoed Tuscan capitals from Villa A at Torre Annunziata (*porticus* 40, 33 and 34) were used to reproduce alternative solutions for the columns of the rectangular peristyle in the model, one with incised flattened flutes (*porticus* 33 and 34) and one that is plain up to 1.20 m and then fluted (*porticus* 40) (fig. 14).

The reconstruction of the *basis villae* presents the openings of the rooms of the first lower level, which were exposed during the new excavations (fig. 15; cf. figs. 1, 4 and 12; see in this volume, De Simone, figs. 9–11, Guidobaldi and Esposito, figs. 23, 32 and 33). The first lower level of the *basis villae* is presented in brown-beige colour in the model. Below this first lower level the façade continues for another level presented in gray colour in the model, to indicate the second lower level of the *basis villae* whose existence is documented by Guidobaldi and Esposito but is not yet excavated.⁴⁰ Two rows of large windows found at the west end of the façade (see in this volume, De Simone, fig. 13, Guidobaldi and Esposito, fig. 32) indicate a 5.50 m high flat roof structure in front of the *basis villae*. The roof of this structure was at level +6.211 (see De Simone in this volume, fig. 14). The slight

37 See Guidobaldi and Esposito in this volume, 30.

38 I would like to thank Domenico Esposito for providing images and advising on the reconstruction of the columns of the square peristyle.

39 CDP, 294.

40 See Guidobaldi and Esposito in this volume, 42–44.

inclination of the structure suggests an apsidal or curvilinear *avant-corps*. The excavators propose that the two windows indicate a series arranged on two levels that continue around this curvilinear structure.⁴¹ The model visualizes this restoration proposal (figs. 1, 4, 12 and 15).

The reconstruction of the structures of the lower terrace (level +2.30) incorporates the restoration proposal by Guidobaldi and Esposito that the terrace reached the front of the *basis villae*. The remains of the large monumental hall on the lower terrace allow for the front part of the hall to be reconstructed. Guidobaldi and Esposito estimate that the structure was as high as the *basis villae*, reaching the level of the atrium (+11.34). The model proposes that the roof of this hall reached back to a hypothetical terrace in front of the rooms at the south-east of the atrium quarter (fig. 4). Here again the existing structures are presented in brown-beige colour and the hypothetical reconstructed structures in gray.

Two restoration proposals have been created for the façade of the substructures of the rectangular peristyle that forms the continuation of the façade of the *basis villae* (first and second lower levels) to the north-west, for which there is no archaeological evidence. One restoration proposal was formed by comparison to the south-east façade of a projecting structure of the north-west *Insula* of Herculaneum that features two rows of a series of niches (fig. 16; see De Simone in this volume, fig. 5). This projecting structure is part of a large house, comparable to the House of the Relief of Telephus, and is part of the new excavations area to the south-east of the Villa of the Papyri (see De Simone in this volume, fig. 4). A second restoration proposal was formed by comparison to the vaulted substructures of Villa Arianna A and Villa Arianna B in Stabia presenting the façade of the substructures of the rectangular peristyle with two series of vaults (fig. 17).

A restoration proposal has been produced for the second storey above the areas of the atrium quarter and in between the square and rectangular peristyles. Like all the other restoration proposals of the Villa, it can be “switched” on and off during the fly-through the model (fig. 18). No restoration has been proposed for the second storey above the area of the library, room “IV” in Weber’s plan, as the full extent of this area towards the north-east is not known.

41 See Guidobaldi and Esposito in this volume, 43.

Conclusion

By differentiating between the kind of information visualized in the model as well as by providing the option to switch between several architectural and wall painting restoration proposals and their existing state, the virtual reality digital model of the Villa of the Papyri project aims at providing a flexible and adaptable research and teaching tool. In the next stage of the project, the find-spots of the papyri and three-dimensional scans of the sculptures will be added. When this stage is completed a Google Earth KML file of the model, which will enable the three-dimensional model to be launched in Google Earth, will be available through the website of the UCLA Experiential Technologies Center (<http://www.etc.ucla.edu/research/projects/projects.htm>). This access will allow for a wider audience, of scholars and students at all levels, to use the model for research and to increase information available about the Villa of the Papyri. In the meantime, information on the virtual reality digital model of the Villa of the Papyri project is available online through the same website.

The abundant production of virtual reconstructions in the field of archaeology over the past three decades has led to arguments over the scientific qualities of these reconstructions and their instrumentality in academic research.⁴² However, it is by now widely accepted that virtual reality reconstructions can be both accurate as well as instrumental in research.⁴³ The virtual reality digital model of the Villa of the Papyri project is an example for the application of virtual reconstructions both in the visualization of existing architectural remains as well as in virtual restorations. Restoration, that is an intervention that goes beyond the consolidation and preservation of an architectural structure to propose its original state, has two major disadvantages; first, it is a permanent intervention and, second, it has an impact on the existing architectural remains. In the virtual realm both these physical problems are superseded as several non-invasive restoration proposals can be put forth at the same time. The virtual restorations of the architecture of the Villa of the Papyri supersede an additional obstacle posed by the physical inac-

42 Favro 2006.

43 Favro 2006; Wulf and Riedel 2006; Frischer and Dakouri-Hild (eds.) 2008, especially Frischer, v-xxiv; Barcelò, Forte and Sanders (eds.) 2000. See also the proceedings of the annual CAA (Computer Applications in Archeology) conference: <http://www.leidenuniv.nl/caa/>.

cessibility of large part of the Villa. The virtual restorations serve as a mental link between the two kinds of architectural remains of the Villa, those still underground and those unearthed during the recent excavations, that enable us to understand them better. Furthermore, the visual differentiation of the restorations from the existing remains of the Villa as well as the multiple restoration proposals invite us to engage critically with the reconstruction of the Villa. In doing so the reconstruction presented in the virtual reality digital model of the Villa of the Papyri project not only deepens our understanding of the Villa's existing architectural structures but also sharpens our visual thinking and encourages a critical approach to reconstructions.

Bibliography

Abbreviations for titles of journals follow those of the *American Journal of Archaeology* 104 (2000), 3–24. References to Classical authorities follow the standard abbreviations for authors and books in the *Oxford Classical Dictionary* (Oxford 1996, third edition), xxix–liv.

Abbreviations

Antichità 1757–1792

Delle antichità di Ercolano (Naples 1757–1792).

CDP

Comparetti, D. and G. De Petra. *La villa ercolanese dei Pisoni: i suoi monumenti e la sua biblioteca* (Turin 1883; reprint Naples 1972).

Diario di scavo Infratecna

Ufficio Scavi in Ercolano. *Diario di scavo Infratecna*.

Fonti Ercolano Stabia

Archivio di Stato di Napoli. *Fonti documentarie per la storia degli scavi di Ercolano e Stabia* (Naples 1979).

Mattusch

Mattusch, C.C. *The Villa dei Papiri at Herculaneum: life and afterlife of a sculpture collection* (Los Angeles 2005).

NM

National Archaeological Museum, Naples; used with inventory numbers.

Noticia

Alcubierre, R.J. *Noticia de las alajas antiguas que se han descubierto en las escavaciones de Resina, y otras en los diez y ocho años, que han corrido desde 22. de octubre de 1738, en que empezaron, hasta 22. de octubre de 1756, que se van continuando* (Naples 1757). Manuscript preserved in the Library of Società Napoletana di Storia Patria, Naples.

PPM 1–10

Baldassarre, I. (ed.). *Pompei pitture e mosaici*, 10 vols. (Rome 1990–2003).

Pompei Ercolano Stabiae Oplontis

Biblioteca Universitaria di Napoli, *Pompei Ercolano Stabiae Oplontis, LXXIX – MCMLXXIX*, Mostra Bibliografica (Naples 1984).

Progetto Pompei

Progetto Pompei: primo stralcio. Un bilancio, Soprintendenza archeologica di Pompei (Naples 1988).

Wojcik

Wojcik, M.R. *La Villa dei Papiri ad Ercolano: contributo alla ricostruzione dell'ideologia della nobilitas tardorepubblicana* (Rome 1986).

Bibliography

- Ackerman, D. *A natural history of the senses* (New York 1991).
- Ackerman, J.S. The villa as paradigm, *Perspecta* 22 (1986), 11–31.
- Ackerman, J.S. *The villa: form and ideology of country houses* (Princeton 1990).
- Adamo Muscettola, S. Il ritratto di Lucio Calpurnio Pisone Pontefice da Ercolano, *CronErcol* 20 (1990), 145–155.
- Allen, W., Jr. and P.H. De Lacy, The patrons of Philodemus, *CP* 34 (1939), 59–65.
- Allroggen-Bedel, A. Ein Malerei-Fragment aus der Villa dei Papiri, *CronErcol* 6 (1976), 85–88.
- Allroggen-Bedel, A. Un frammento di dipinto, in: *La Villa dei Papiri*, Second Supplement to *CronErcol* 13 (Naples 1983), 65–68.
- Allroggen-Bedel, A. and H. Kammerer-Grothaus, Il museo ercolanese di Portici, in: *La Villa dei Papiri*, First Supplement to *CronErcol* 13 (Naples 1983), 83–128.
- Archäologie und Seismologie: la regione vesuviana dal 62 al 79 D.C. : problemi archeologici e sismologici*, Colloquium, Boscoreale, 26.–27. November 1993 (Munich 1995).
- Arnold, D. Unlearning the images of archaeology in: *Envisioning the past: archaeology and the image*, edited by S. Moser and S. Smiles (Oxford 2003), 92–144.
- Arnold, D. Facts or fragments? Visual histories in the age of mechanical reproduction, *Art History* 25:4 (2002), 30–48.
- Arnold, D. Ima(gin)ing architecture in: *Ima(gin)ing architecture*, edited by L. Verpoest and Z. Borocz (Leuven 2008), 15–29.
- Bacchetta, A. *Oscilla. Rilievi sospesi di età romana*, Il Filarete 243 (Milan 2006).
- Banham, R. Lair of the looter, *New Society* 40:761 (1977), 238.
- Barbara, A. and A. Perliss. *Invisible Architecture: experiencing places through the sense of smell* (Milan 2006).
- Barceló, J.A., M. Forte and D.H. Sanders (eds.). *Virtual reality in archaeology*, BAR International Series 843 (Oxford 2000).
- Barker, S. (ed.). *Excavations and their objects. Freud's collection of antiquity* (Albany 1996).
- Bassi, D. La sticometria nei papiri ercolanesi, *RivFil* 37 (1909), 321–515.
- Bastet, F.L. Villa rustica in contrada Pisanella, *CronPomp* 2 (1976), 112–143.
- Bastet, F.L. and M. de Vos (eds.). *Proposta per una classificazione del Terzo Stile pompeiano*, Archeologische Studiën van het Nederlands Instituut te Rome 4 ('s-Gravenhage 1979).
- Batteux, C. *La morale d'Epicure, tirée de ses propres écrits* (Paris 1758).
- Baudrillard, J. *Simulacres et simulation* (Paris 1981).
- Belozerskaya, M. *The Medici giraffe and other tales of exotic animals and power* (New York 2006).
- Bergmann, B. The Roman house as memory theater: the House of the Tragic Poet in Pompeii, *ArtB* 76 (1994), 225–256.
- Beyen, H.G. *Die pompejanische Wanddekoration von zweiten bis zum vierten Stil*, 2 vols. (Haag 1938–1960).

- Blau, E. and E. Kaufman (eds.), *Architecture and its image: four centuries of architectural representation* (Cambridge 1989).
- Blessner, B. and L.-R. Salter. *Spaces speak, are you listening? Experiencing aural architecture* (Cambridge 2007).
- Bloch, H. L. Calpurnius Piso Caesoninus in Samothrace and Herculaneum, *AJA* 44:4 (1940), 485–493.
- Bloch, H. Review of: *M. Tulli Ciceronis "In L. Calpurnium Pisonem" oratio*, edited with introduction and commentary by R.G.M. Nisbet (Oxford 1961), *Gnomon* 37 (1965), 561–562.
- Borges, J.L. *A universal history of infamy*, transl. N.T. de Giovanni (London 1975).
- Bowser, B.J. Prologue: toward an archaeology of place, *Journal of Archaeological Method and Theory* 11:1 (2004), 1–3.
- Brand, S. *How buildings learn: what happens after they're built* (New York 1994).
- Bruno, G. *Atlas of emotion: journeys in art, architecture and film* (New York 2002).
- Budetta, T. L'esplorazione della Villa dei Papiri, *RStPomp* 2 (1988), 234–236.
- Camardo, D. La Villa di Arianna a Stabiae, in: *Stabiae dai Borbone alle ultime scoperte*, edited by D. Camardo and A. Ferrara (Castellammare di Stabia 2001), 75–84.
- Capasso, G. *Journey to Pompeii: virtual tours around the lost cities* (Ottaviano 2002).
- Capasso, M. Gli studi ercolanesi di Hermann Usener nel suo carteggio inedito con Hermann Diels, in: *Momenti della storia degli studi classici fra Ottocento e Novecento*, edited by M. Capasso, S. Cerasuolo, M.L. Chirico, G. Giannantoni, M. Gigante, F. Giordano, E. Paratore and A. Salvatore (Naples 1987), 116–117.
- Capasso, M. Primo supplemento al *Catalogo dei papiri ercolanesi*, *CronErcol* 19 (1989), 193–264.
- Capasso, M. *Manuale di papirologia ercolanese*, Università di Lecce, Dipartimento di filologia classica e medioevale, Testi e studi 3 (Galatina 1991).
- Capasso, M. *Volumen: aspetti della tipologia del rotolo librario antico* (Naples 1995).
- Carandini, A. (ed.). *Settefinestre: una villa schiavistica nell'Etruria romana* (Modena 1985).
- Carettoni, G. La decorazione pittorica della Casa di Augusto, *RM* 90 (1983), 373–419.
- Cassirer Bernfeld, S. Freud and archaeology, *American Imago* 8 (1951), 107–128.
- Castrucci, G. *Tesoro letterario di Ercolano, ossia, la reale officina dei papiri ercolanesi* (Napoli 1852).
- Cavallo, G. *Libri scritte scritte a Ercolano: introduzione allo studio dei materiali greci*, First Supplement to *CronErcol* 13 (Naples 1983).
- Cerulli Irelli, G. Il ritratto romano ad Ercolano, in: *La regione sotterrata dal Vesuvio. Studi e prospettive. Atti del Convegno Internazionale*, 11–15 November 1979 (Naples 1982), 697–700.
- Choisy, A. *L'art de bâtir chez les Romains* (Paris 1873).
- Ciardello, R. (ed.). *La villa romana* (Naples 2007).
- Cicirelli, C. Comune di Terzigno-Località Boccia al Mauro, *RStPomp* 8 (1997), 175–179.

- Cicirelli, C. La Villa 6, in: *Storie da un'eruzione. Pompei, Ercolano, Oplontis*, exhibition catalogue, Museo archeologico nazionale, Naples, March 20–Aug. 31 2003, edited by A. d'Ambrosio, P.G. Guzzo and M. Mastroroberto (Milan 2003), 214–220.
- Cinque, A. and G. Irollo. La paleografia dell'antica *Herculaneum* e le fluttuazioni, di origine bradisismica, della sua linea di costa, in: *Nuove ricerche archeologiche nell'area vesuviana (scavi 2003–2006)*, Studi della Soprintendenza Archeologica di Pompei 25, edited by P.G. Guzzo and M.P. Guidobaldi (Rome 2008), 425–437.
- Cioffi, U. Prodotti vulcanici anteriori al 79 nell'area archeologica di Ercolano, in: *Ercolano 1738–1988, 250 anni di ricerca archeologica*, edited by L. Franchi dell'Orto (Rome 1993), 655–658.
- Classen, C., D. Howes, and A. Synnott. *Aroma: the cultural history of smell* (London and New York 1994).
- Clarke, J.R. *Looking at laughter: humor, power, and transgression in Roman visual culture, 100 B.C.-A.D. 250* (Berkeley 2007).
- Clarke, J.R. *Art in the lives of ordinary Romans: visual representation and non-elite viewers in Italy, 100 B.C.-A.D. 315* (Berkeley 2003).
- Clarke, J.R. *The houses of Roman Italy 100 B.C.-A.D. 250: ritual, space, and decoration* (Berkeley 1999).
- Cochin, C.N. and J.C. Bellicard, *Observations sur les antiquités de la ville d'Herculaneum* (Paris 1754; reprint Geneva 1972).
- Coles, J.M. *Archaeology by experiment* (London 1973).
- Coles, J.M. *Experimental archaeology* (London and New York 1979).
- Comparetti, D. La bibliothèque de Philodème, in: *Mélanges offerts à E. Chate-lain*, Paris 1910, 118–129.
- Coticello, B. Dopo 221 anni si rientra nella Villa dei Papiri, *CronEcol* 17 (1987), 9–13.
- Coticello, B. and U. Cioffi. Il “rientro” nella Villa dei Papiri, in: *Restaurare Pompei*, edited by L. Franchi dell'Orto (Milan 1990), 173–190.
- Coralini, A. (ed.), *Vesuviana. Archeologia a confronto, Atti del Convegno Internazionale, Bologna, 14–16 gennaio 2008* (Bologna 2010).
- Costabile, F. Opere di oratoria politica e giudiziaria nella biblioteca della Villa dei Papiri, in: *Atti XVII Congresso Internazionale di Papirologia*, Naples 1983, 3 vols. (Naples 1984), vol. 2, 591–606.
- D'Agata, A.L. Sigmund Freud and Aegean Archaeology. Mycenaean and Cypriote material from his collection of antiquities. *Studi micenei ed egeo-anatolici* 34 (1994), 7–41.
- D'Arms, J.H. *Romans on the Bay of Naples. A social and cultural study of the villas and their owners from 150 B.C. to A.D. 400* (Cambridge 1970).
- D'Arms, J.H. *Commerce and social standing in ancient Rome* (Cambridge 1981).
- De Carolis, E. *Il mobile a Pompei ed Ercolano. Letti, tavoli, sedie e armadi*, *Studia Archaeologica* 155 (Rome 2007).
- De Franciscis, A. *La villa romana di Oplontis*, in: *Neue Forschungen in Pompeji*, edited by B. Andreae and H. Kyrieleis (Recklinghausen 1975), 9–38.

- De Franciscis, A. Considerazioni sulla Villa Ercolanese dei Pisoni, in: *Atti XVII Congresso Internazionale di Papirologia*, Naples 1983, 3 vols. (Naples 1984), vol. 2, 621–635.
- Delattre, D. (ed.). *Philodème de Gadara: sur la musique. Livre IV* (Paris 2007).
- Del Mastro, G. Secondo supplemento al *Catalogo dei papiri ercolanesi*, *CronErcol* 30 (2000), 157–241.
- Derrida, J. *Memoirs of the blind*, transl. Pascal-Anne Brault and Michael Naas (Chicago 1993).
- Derrida, J. *Archive fever: a Freudian impression*, transl. E. Prenowitz (Chicago and London 1996).
- De Seta, C. *Cartografia della città di Napoli*, 3 vols. (Naples 1975).
- De Simone, A. La Villa dei Papiri. Rapporto preliminare: gennaio 1986-marzo 1987, *CronErcol* 17 (1987), 15–36.
- De Simone, A. Il progetto di scavo di Ercolano e della Villa dei Papiri, in: *Il Vesuvio e le città vesuviane 1730–1860. In ricordo di Georges Vallet. Atti del Convegno "Il Vesuvio e le città vesuviane 1730–1860," 28–30 marzo*, edited by G. Cafasso (Naples 1998), 75–100.
- De Simone, A. Rilievo con satiri e ninfa. Testa di Amazzone, in: *Gli antichi ercolanesi: antropologia, società, economia: guida alla mostra*, edited by M. Pagano (Naples 2000), 22–23.
- De Simone, A. Villa Arianna: configurazione delle strutture della basis villae, in: *Stabiae: storia e Architettura. 250° anniversario degli scavi di Stabiae 1749–1999, Convegno internazionale Castellammare di Stabia, 25–27 marzo 2000*, Studi della Soprintendenza archeologica di Pompei 7, edited by G. Bonifacio and A. M. Sodo (Rome 2002), 41–52.
- De Simone, A. Presenze archeologiche e riqualificazione dei centri urbani nell'area vesuviana, in: *Archeologia, città, paesaggio. Atti del Convegno per il 40° anniversario ICOMOS. 16–17 dicembre 2005*, edited by R.A. Genovese (Naples 2007a), 71–83.
- De Simone, A. La villa dei Papiri ad Ercolano, in: *La Villa romana*, edited by M.R. Ciardiello (Naples 2007b), 167–193.
- De Simone, A. and F. Ruffo. Ercolano 1996–1998. Lo scavo della Villa dei Papiri, *CronErcol* 32 (2002), 325–344.
- De Simone, A. and F. Ruffo. Ercolano e la Villa dei Papiri alla luce dei nuovi scavi, *CronErcol* 33 (2003), 279–311.
- De Simone, A. and F. Ruffo. I mosaici della Villa dei Papiri ad Ercolano (Na). Il quartiere dell'atrio, in: *Atti del X colloquio dell'Associazione italiana per lo studio e la conservazione del mosaico: Lecce, 18–21 febbraio 2004*, edited by C. Angelleli (Tivoli 2005), 161–182.
- De Simone, A., F. Ruffo, M. Tuccinardi and U. Cioffi. Ercolano 1992–1997. La Villa dei Papiri e lo scavo della città, *CronErcol* 28 (1998), 7–59.
- De Simone, F. G. VI 17 *Insula Occidentalis* 41, in: *Pompei (Regiones VI–VII): Insula Occidentalis*, edited by M. Aoyagi and U. Pappalardo (Naples 2006), 43–68.
- de Vos, M. Scavi nuovi sconosciuti (I,9,13) pitture e pavimenti della Casa di Cerere, *Meded* 38 (1976), 37–75.

- Dickmann, J.A. *Domus frequentata. Anspruchsvolles Wohnen im pompejanischen Wohnhaus* (Munich 1999).
- Diels, H. Stichometrisches, *Hermes* 17 (1882), 383–384.
- Dillon, S. Subject selection and viewer reception of Greek portraits from Herculaneum and Tivoli, *JRA* 13 (2000), 21–40, figs. 1–8.
- Dillon, S. *Ancient Greek Portrait Sculpture. Context, subjects and styles* (Cambridge 2006).
- Dobson, M.J. *Smelly old history, scratch 'n' sniff your way through history: Roman aromas* (Oxford 1997).
- Dorandi, T. (ed.). *Filodemo: Il buon re secondo Omero* (Naples 1982).
- Dorandi T., G. Indelli and A. Tepedino Guerra, Per la cronologia degli scolarchi epicurei, *CronErcol* 9 (1979), 141–142.
- Drummond, W. and R. Walpole, *Herculaniensis; or archeological and philological dissertations, containing a manuscript found among the ruins of Herculaneum* (London 1810)
- du Prey, P. *The villas of Pliny from antiquity to posterity* (Chicago 1994).
- Eco, U. *Travels in hyperreality: essays*, transl. W. Weaver (San Diego 1990).
- Ehrhardt, W. *Stilgeschichtliche Untersuchungen an römischen Wandmalereien von der späten Republik bis Nero* (Mainz am Rhein 1987).
- Ehrhardt, W. *Casa delle Nozze d'Argento, (V 2, i), Häuser in Pompeji* 12 (Munich 2005).
- Emele, M. The assault of computer-generated worlds on the rest of time, in: *Cinema futures: Cain, Abel, or cable? The screen arts in the digital age*, edited by K. Hoffmann and T. Elsaesser (Amsterdam 1998), 251–299.
- Esposito, D. *La pittura di Ercolano*, Ph.D. diss., Università degli Studi di Napoli “Federico II” (Naples 2005). Accessible at: http://www.fedoa.unina.it/1085/01/Tesi_Esposito_Domenico.pdf ; forthcoming in series: Studi della Soprintendenza Archeologica di Pompei.
- Esposito, D. Pompei, Silla e la villa dei Misteri, in: *Villas, maisons, sanctuaires et tombeaux tardo-républicains: découvertes et relectures récentes*, Actes du colloque international de Saint-Romain-en-Gal en l'honneur d'Anna Gallina Zevi, Vienne, Saint-Roman-en-Gal, 8–10 février 2007, edited by B. Perrier (Rome 2007), 441–465.
- Essler, H. What's in a name: Why were the books from Herculaneum given their titles? *Herculaneum Archaeology* 7 (2007a), 6.
- Essler, H. Zu den Werktiteln Philodems, *CronErcol* 37 (2007b), 125–34.
- Favro, D. Ancient Rome through the veil of sight, in: *Sites unseen: landscape and vision*, edited by D. Harris and D.F. Ruggles (Pittsburgh PA 2007), 111–130.
- Favro, D. In the eyes of the beholder: virtual reality re-creations and academia, in: *Imaging ancient Rome: documentation, visualization, imagination, Proceedings of the Third Williams Symposium on Classical Architecture, held at the American Academy in Rome, the British School at Rome, and the Deutsches Archäologisches Institut, Rome, on May 20–23, 2004*, *JRA Supplementary Series* 61, edited by L. Haselberger and J. Humphrey (Portsmouth, R.I. 2006), 321–334.

- Favro, D. The digital disciplinary divide: reactions to historical virtual reality models, in: *Rethinking architectural historiography*, edited by D. Arnold, E.A. Ergut and B. Turan Özkaya (New York 2006), 200–14.
- Fergola, L. *Oplontis e le sue ville* (Pompei 2004).
- Fergola, L. and M. Pagano (eds.). *Oplontis. Le splendide ville romane di Torre Annunziata. Itinerario archeologico ragionato* (Naples 1998).
- Fergola, L. and P.G. Guzzo (eds.). *Oplontis. La villa di Poppea* (Milan 2000).
- Filler, M. The Getty: for better and worse, *The New York Review of Books* 53:18, November 16, 2006 (2006), 47.
- Fiorelli, G. *Documenti inediti per servire alla storia dei Musei d'Italia*, (Florence and Rome 1878–80).
- Forte, M. and A. Siliotti (eds.). *Virtual archaeology: re-creating ancient worlds* (New York 1997).
- Franchi dell'Orto, L. (ed.). *Restaurare Pompei* (Milan 1990).
- Franck, K. When I enter virtual reality, what body will I leave behind?, *Architectural Design*, 65:11–12 (1995), 20–23.
- Frischer, B. Fu la Villa Ercolanese dei Pisoni un modello per la Villa Sabina di Orazio?, *CronErcol* 25 (1995), 211–229.
- Frischer, B. From digital illustration to digital heuristics, in: *Beyond illustration: 2D and 3D digital technologies as tools for discovery in archaeology*, edited by B. Frischer and A. Dakouri-Hild (Oxford 2008), v–xxiv.
- Frischer, B. and A. Dakouri-Hild (eds.). *Beyond illustration: 2D and 3D digital technologies as tools for discovery in archaeology*, edited by B. Frischer and A. Dakouri-Hild (Oxford 2008).
- Gallavotti, C. Nuovo contributo alla storia degli scavi borbonici di Ercolano (nella Villa dei Papiri), *RendNap* 40 (1940), 269–306.
- Gallavotti, C. La libreria di una villa romana ercolanese (nella Casa dei papiri), *Bollettino dell'Istituto di Patologia del Libro* 3 (1941), 129–145.
- Gamwell, L. and R. Wells (eds.). *Sigmund Freud and art: his personal collection of antiquities* (London 1989).
- Gasparri, C. Due nuove sculture da Ercolano, in: *Storie da un'eruzione. In margine alla mostra*, edited by P.G. Guzzo (Pompei 2005), 51–74.
- Gassendi, P. *De vita et moribus Epicuri libri octo* (Leiden 1647).
- Gebhard, D. Getty's Museum. Is it 'disgusting' and 'downright outrageous'? *Architecture Plus* 2:5 (1974), 56–70.
- Getty, J.P. et al., *The joys of collecting* (New York 1965).
- Getty, J.P., *As I See It: The autobiography of J. Paul Getty* (Englewood Cliffs 1976; reprint Los Angeles 2003).
- Getty, J.P. *My life and fortunes* (New York 1963).
- Gibson, J. *The senses considered as perceptual systems* (Boston 1966).
- Gibson, J. *The perception of the visual world* (Boston 1950).
- Giedion, S. *Space, time and architecture; the growth of a new tradition*, Charles Eliot Norton Lectures 1938–1939 (Cambridge MA and London 1941; 5th revised and enlarged edition in 1967).
- Gigante, M. Permessas, *CronErcol* 1 (1971), 5–6.
- Gigante, M. *Catalogo dei papiri ercolanesi* (Naples 1979).
- Gigante, M. *Ricerche Filodemee* (Naples 1983).

- Gigante, M. *La bibliothèque de Philodème et l'épicurisme romain* (Paris 1987).
- Gigante, M. (ed.). *Filodemo, Epigrammi scelti*, 2nd ed. (Naples 1988).
- Gigante, M. *Filodemo in Italia* (Florence 1990). Italian edition of Gigante 1987 with additions.
- Gigante, M. *Philodemus in Italy*, transl. D. Obbink (Ann Arbor 1995). English translation of Gigante 1990.
- Glueck, G. Getty Museum is a hit with visitors, *The New York Times*, May 28 1974, 34.
- Godart, L. and S. De Caro (eds.). *Nostoi: Capolavori ritrovati*, exhibition catalogue, Rome, Palazzo del Quirinale, Galleria di Alessandro VII, 21 dicembre 2007–2 marzo 2008 (Rome 2007).
- Goethe, J.W. von. *Italian journey, 1786–1788*, transl. W.H. Auden and E. Mayer (London 1962).
- Goldberger, P. Getty Museum's Roman styling once criticized, draws crowds, *The New York Times*, Aug. 6, 1975, 38.
- Goldberger, P. The architecture of choice, *The New York Times*, July 28, 1974, 263.
- Greenwood, J. Review essay, *Journal of Architectural Education* 43:4 (1990), 53–59.
- Grell, C. *Herculaneum et Pompéi dans les récits des voyageurs français du XVIIIe siècle* (Naples 1982).
- Gros, P. *L'architecture romaine du début du IIIe siècle av. J.-C. à la fin du Haut-Empire*, vol. 2. *Maisons, palais, villas et tombeaux* (Paris 2001).
- Guadagno, G. Note prosopografiche ercolanesi: i Mammii e L. Mammius Maximus, *CronErcol* 14 (1984), 149–156.
- Guadagno, G. Nuovi documenti del XVIII secolo per la storia degli scavi di Ercolano, *CronErcol* 16 (1986), 135–147.
- Guadagno, G. Ercolano. Eredità di cultura e nuovi dati, in: *Ercolano, 1738–1988: 250 anni di ricerca archeologica. Atti del Convegno internazionale Ravello-Ercolano-Napoli-Pompei, 30 ottobre-5 novembre, 1988*, edited by L. Franchi dell'Orto (Rome 1993), 73–98.
- Guidi, G., B. Frischer, M. De Simone, et al. Virtualizing ancient Rome: 3D acquisition and modeling of a large Plaster-of-Paris model of Imperial Rome, in: *Videometrics VIII: 18–20 January 2005, San Jose, California, USA*, Proceedings of Electronic Imaging Science and Technology, SPIE 5665, edited by J.-A. Beraldin, S.F. El-Hakim, A. Gruen and J.S. Waltonet (Bellingham WA and Springfield VA 2005), 119–133.
- Guidobaldi, M.P. (ed.). *Ercolano. Tre secoli di scoperte*, exhibition catalogue, Napoli, 16 October 2008–13 April 2009 (Milan 2008).
- Guidobaldi, M.P. and D. Esposito, Le nuove ricerche archeologiche nella Villa dei Papiri di Ercolano, *CronErcol* 39 (2009), 331–370.
- Guidobaldi, M.P., D. Esposito and E. Formisano, L'Insula I, l'Insula nord-occidentale e la Villa dei Papiri di Ercolano: una sintesi delle conoscenze alla luce delle recenti indagini archeologiche, *Vesuviana* 1 (2009), 43–180.
- Guidobaldi, F. and F. Olevano. *Sectilia pavimenta* dell'area vesuviana, *StMisc* 31, 223–240, tabl. 1–18.

- Gullini, G. Il progetto di esplorazione della Villa dei Papiri, *CronErcol* 14 (1985), 7–8.
- Guzzo, P.G. Considerazioni sugli scavi di Ercolano, *CronErcol* 28 (1998), 61–67.
- Guzzo, P.G. La Villa dei Papiri: fasti passati, novità recenti, *CronErcol* 29 (1999), 39–51.
- Hancock, J.E. Architecture and its history: past futures and future pasts, *Journal of Architectural Education*, 36:1 (1982), 26–33.
- Hayter, J. *A report upon the Herculanum manuscripts in a second letter ... to His Royal Highness the Prince Regent* (London 1811).
- Hemmerdinger, B. Deux notes papyrologiques I: L'origine des Papyrus d'Herculanum, *Revue des études grecques* 72 (1959), 106.
- Hermon, S. Reasoning in 3D: a critical appraisal of the role of 3D modelling and virtual reconstructions in archaeology, in: *Beyond illustration: 2D and 3D digital technologies as tools for discovery in archaeology*, edited by B. Frischer and A. Dakouri-Hild (Oxford 2008), 36–45.
- Houston, S. and K. Taube. An archaeology of the senses: perception and cultural expression in ancient Mesoamerica, *CAJ* 10:2 (2000), 261–94.
- Iacopi, I. *La Casa di Augusto. Le pitture* (Milan 2008).
- James, S. Drawing inferences, in: *The cultural life of images: visual representation in archaeology*, edited by B.L. Molyneaux (London and New York 1997), 22–48.
- Johnson, K. A \$135 million home, but if you have to ask ... , *The New York Times*, July 2, 2007 (2007), A1.
- Kastner, V. *Hearst Castle: the biography of a country house* (New York 2000).
- Kenyon, F.G. *Books and readers in ancient Greece and Rome* (Oxford 1951).
- Kleve, K. How to read an illegible papyrus: towards an edition of *PHerc.* 78, Caecilius Statius, *Obolostates sive Faenerator*, *CronErcol* 26 (1996), 5–14.
- Knight, C. Le lettere di Camillo Paderni alla Royal Society di Londra sulle scoperte di Ercolano (1739–1758), *RendNap* 66 (1996), 13–55.
- Knight, C. and A. Jorio. L'ubicazione della Villa Ercolanese dei Papiri, *RendNap* 55 (1980), 51–65.
- Koller, D.R. Virtual archaeology and computer-aided reconstruction of the Severan Marble Plan, in: *Beyond illustration: 2D and 3D digital technologies as tools for discovery in archaeology*, edited by B. Frischer and A. Dakouri-Hild (Oxford 2008), 125–134.
- Kuspit, D. A mighty metaphor: the analogy of archaeology and psychoanalysis, in: *Sigmund Freud and art: his personal collection of antiquities*, edited by L. Gamwell and R. Wells (London 1989), 133–151.
- Lapatin, K. *Guide to the Getty Villa and its gardens* (Los Angeles 2005).
- Lapatin, K. The Getty Villa: art, architecture, and aristocratic self-fashioning in the mid-twentieth century, in: *Pompeii in the public imagination from its rediscovery to today*, edited by S. Hales and J. Paul (Oxford 2011).
- Laurence, R. The uneasy dialogue between ancient history and archaeology, in: *Archaeology and ancient history: breaking down the boundaries*, edited by E.W. Sauer (London and New York 2004), 99–113.

- Lesser, W. *The life below the ground; a study of the subterranean in literature and history* (Boston 1987).
- Le Vane, E. and Getty, J.P., *Collector's choice: the chronicle of an artistic Odyssey through Europe* (London 1955).
- Lin Y. and W.B. Seales. Opaque document imaging: building images of inaccessible texts, *International Conference on Computer Vision 1* (2005), 662–9.
- Lippold, G. *Kopien und Umbildungen griechischer Statuen*, München 1923.
- Longo Auricchio, F. and M. Capasso. I rotoli della villa ercolanese: dislocazione e ritrovamento, *CronErcol* 17 (1987), 37–47.
- McIlwaine, I.C. *Herculaneum: a guide to printed sources* (Naples 1988).
- McKay, A.G. *Houses, villas, and palaces in the Roman world* (Baltimore 1998).
- Manni, M. Per la storia della pittura ercolanese, *CronErcol* 20 (1990), 129–143.
- Maiuri, A. *Gli scavi di Ercolano: storia delle scoperte e programma dei lavori* (Resina 1958).
- Maiuri, A. *Herculaneum and the Villa of the Papyri* (Novara 1973).
- Marcus, G.E., The Production of European high culture in Los Angeles: The J. Paul Getty Trust as artificial curiosity, *Cultural Anthropology*, 5:3 (1990), 314–330.
- Marturano, A., S.C. Nappo and A. Varone. Trasformazioni territoriali legate all'eruzione del Vesuvio del 79 A.D., in: *Proceedings of the 2nd International Conference "Archaeology, volcanism and remote sensing," Sorrento 20–22 juin 2001*, edited by F. Vitiello (Rome 2006), 89–107.
- Marzi, M.G. (ed.), *Domenico Comparetti tra antichità e archeologia. Individualità di una biblioteca* (Florence 1999).
- Melucco Vaccaro, A. Restoration and anti-restoration, in: *Historical and philosophical issues in the conservation of cultural heritage*, edited by N. Stanley-Price, M.K. Talley Jr and A. Melucco Vaccaro (Los Angeles 1996), 308–313.
- Merleau-Ponty, M. *Phenomenology of perception*, transl. C. Smith (London and New York 1962).
- Metraux, G.P.R. Ancient housing: 'oikos' and 'domus' in Greece and Rome, *JSAH* 58:3 (1999), 392–405.
- Mielsch, H. *Die römische Villa: Architektur und Lebensform* (München 1987).
- Mielsch, H. *La villa romana con guida archeologica alle ville romane*, transl. A.M. Esposito (Florence 1999). Italian translation of Mielsch 1987.
- Miniero, P. La villa romana tardo-repubblicana nel Castello Aragonese di Baia, in: *Villas, maisons, sanctuaires et tombeaux tardo-républicains: découvertes et relectures récentes*, Actes du colloque international de Saint-Romain-en-Gal en l'honneur d'Anna Gallina Zevi, Vienne, Saint-Roman-en-Gal, 8–10 février 2007, edited by B. Perrier (Rome 2007), 157–176.
- Miniero, P. and C. Capaldi. *Un nuovo contesto pittorico da Baia*, Associazione internazionale sulla pittura muraria antica, X Congresso Internazionale, Napoli 17–21 settembre 2007 (in press).
- Miniero, P. and F. Zevi (eds.). *Museo Archeologico dei Campi Flegrei*, vol. 3. *Liternum, Baia, Miseno* (Naples 2008).

- Moesch, V. *La Villa dei Papiri*, in: *Ercolano, tre secoli di scoperte*, exhibition catalogue, Napoli, Museo Archeologico Nazionale, 16 ottobre 2008–13 aprile 2009, edited by M.P. Guidobaldi (Milan 2008), 70–79.
- Moesch, V. *Sculture in marmo dalla Villa dei Papiri ad Ercolano. Contributo alla conoscenza delle botteghe di scultori di età romana in Campania*, Ph.D. diss., Università degli Studi di Napoli “Federico II” (Naples 2009).
- Mommsen, T. *Inscriptionbüsten*. I: Aus Herculanum, *AZ* 38 (1880), 32–36.
- Moormann, E.M. *Le pitture della Villa dei papiri ad Ercolano*, in: *Atti del XVII Congresso internazionale di papirologia*, edited by M. Gigante, 3 vols. (Naples 1984), vol. 2, 637–674.
- Moormann, E.M. *La pittura parietale romana come fonte di conoscenza per la scultura romana* (Assen 1988).
- Moormann, E.M. *Der römische Freskenzyklus mit großen Figuren in der Villa 6 in Terzigno*, in: *Otium. Festschrift für Volker Michael Strocka*, edited by T. Ganschow and M. Steinhart (Remshalden 2005), 257–266.
- Moormann, E.M. *Villas surrounding Pompeii and Herculaneum*, in: *The World of Pompeii*, edited by J.J. Dobbins and P.W. Foss (London and New York 2007), 435–454.
- Murray, O. *Philodemus on the good king according to Homer*, *JRS* 55 (1965), 161–182.
- Mustilli, D. *La villa pseudorurbana ercolanese*, *RendNap* 31 (1956), 77–97, reprinted in: *La Villa dei Papiri*, Second Supplement to *CronErcol* 13 (Naples 1983), 7–18.
- Napoli, M. *Il capitello ionico a quattro facce a Pompei*, in: *Pompeiana. Raccolta di studi per il secondo centenario degli scavi di Pompei*, edited by A. Maiuri (Naples 1950), 230–265.
- Neudecker, R. *Die Skulpturenausstattung römischer Villen in Italien* (Mainz am Rhein 1988).
- Neuerburg, N. *Norman Neuerburg papers regarding Getty Villa design and construction, 1966–1987, bulk 1970–1975* (19 boxes, 22 flat file folders, 3 rolls), Getty Special Collections (Malibu, CA 1966–1987).
- Neuerburg, N. *Herculaneum to Malibu: a companion to the visit of the J. Paul Getty Museum building: a descriptive and explanatory guide to the re-created ancient Roman Villa of the Papyri built at the wishes of J. Paul Getty in Malibu, California, 1970–1974* (Malibu 1975).
- Nisbet, R.G.M. (ed.). *M. Tulli Ciceronis “In L. Calpurnium Pisonem” oratio*, with introduction and commentary (Oxford 1961).
- Norberg-Schulz, C. *Genius loci: towards a phenomenology of architecture* (New York 1980).
- Obbink, D. (ed.). *Philodemus: On Piety. Part 1: Critical text with commentary* (Oxford 1996).
- O’Donoghue, D. *Negotiations of surface: archaeology within the early strata of psychoanalysis*, *Journal of the American Psychoanalytic Association* 52:3 (2004), 653–671.
- Overbeck, J.A. *Die antiken Schriftquellen zur Geschichte der bildenden Künste bei den Griechen* (Leipzig 1868).

- Pagano, M. La villa romana di Contrada Sora a Torre del Greco, *CronErcol* 21 (1991), 149–186.
- Pagano, M. Il teatro di Ercolano, *CronErcol* 23 (1993), 121–156.
- Pagano, M. Torre del Greco. Scavi e restauri in località Ponte di Riviaccio (villa marittima romana detta Terma-Ginnasio), *RStPomp* 6 (1993–94), 256–267.
- Pagano, M. La nuova pianta della città e di alcuni edifici pubblici di Ercolano, *CronErcol* 26 (1996), 229–262.
- Pagano, M. *Ercolano. Itinerario archeologico ragionato* (Torre del Greco 1997).
- Pagano, M. Mosaici romani nella reggia di Portici, in: *Atti del VII Colloquio dell'Associazione italiana per lo studio e la conservazione del mosaico*, Pompei, 22–25 marzo 2000, edited by A. Paribeni (Ravenna 2001), 335–342.
- Pagano, M. *Gli scavi di Ercolano* (Naples 2003).
- Pagano, M. Herculaneum. Eine Kleinstadt am Golf von Neapel, in: *Verschüttet vom Vesuv. Die letzten Stunden von Herculaneum*, edited by J. Mühlenbrock-D. Richter (Mainz am Rhein 2005), 3–12.
- Pagano, M. Osservazioni storiche sul Castello, in: *Il Porto del corallo. Analisi storica del Porto di Torre del Greco*, edited by G. Troina and F. Russo (Torre del Greco 2007), 83–99.
- Pagano, M. and R. Prisciandaro. *Studio sulle provenienze degli oggetti rinvenuti negli scavi borbonici del Regno di Napoli*, 2 vols. (Naples 2006).
- Pallasmaa, J. *The eyes of the skin: architecture and the senses*, new revised and extended edition (Chichester and Hoboken N.J. 2005).
- Pandermalis, D. Zum Programm der Statuenausstattung in der Villa dei Papiri, *AM* 86 (1971), 173–209.
- Pandermalis, D. Sul programma della decorazione scultorea, transl. L.A. Scatozza Höricht, in: *La Villa dei Papiri*, Second Supplement to *CronErcol* 13 (1983), 19–50. Italian translation of Pandermalis 1971.
- Pannuti, U. Il 'Giornale degli scavi' di Ercolano (1738–1756), *MemLinc Serie* 8, 26, 3, (1983), 163–410.
- Pappalardo, U. *Le ville romane nel golfo di Napoli* (Naples 2000).
- Parslow, C.C. *Rediscovering antiquity: Karl Weber and the excavation of Herculaneum, Pompeii, and Stabiae* (Cambridge 1995).
- Pasquali, G. Domenico Comparetti, *Aegyptus* 8 (1927), 129–130, reprinted in: Pasquali, G. *Pagine stravaganti* (Firenze 1968), vol. I, 17–18.
- Pesando, F. *Domus. Edilizia privata e società pompeiana fra III e I secolo a. C.* (Rome 1997).
- Pesando, F. and M.P. Guidobaldi. *Pompei, Oplontis, Ercolano, Stabiae*, Guide Archeologiche Laterza 14 (Rome 2006a).
- Pesando, F. and M.P. Guidobaldi. *Gli 'ozi' di Ercole. Residenze di lusso a Pompei ed Ercolano*, *Studia Archaeologica* 143 (Rome 2006b).
- Platthy, J. *Sources on the earliest Greek libraries with the testimonia* (Amsterdam 1968).
- Polito, E. *Fulgentibus Armis. Introduzione allo studio dei fregi d'armi antichi* (Rome 1998).
- Porteous, J.D. *Landscapes of the mind: worlds of sense and metaphor* (Toronto and Bosen 1990).

- Porter, J.I. Herculaneum and the history of art criticism, *Herculaneum Archaeology* 3 (2005), 6–7.
- Porter, J.I. Hearing Voices: The Herculaneum papyri and classical scholarship, in: *Antiquity recovered, the legacy of Pompeii and Herculaneum*, edited by V.C. Gardner Coates and J.L. Seydl (Los Angeles 2007), 95–113.
- Pucci, G. La ceramica aretina: “imagerie” e correnti artistiche, in: *L'Art décoratif à Rome à la fin de la République et au début du Principat*, Table ronde organisée par l'Ecole française de Rome, Rome 10–11 May 1979, Collection de l'Ecole française de Rome 55 (Rome 1981), 101–119.
- Purcell, N. Town in country and country in town, in: *Ancient Roman villa gardens*, *Dumbarton Oaks Colloquium on the History of Landscape Architecture* 10, edited by E.B. MacDougall (Washington D.C. 1987), 187–203.
- Quilici, V. and G. Longobardi (eds.). *Ercolano e la Villa dei Papiri: archeologia, città e paesaggio* (Florence 2007).
- Ramage, N.H. Goods, graves, and scholars: 18th-century archaeologists in Britain and Italy, *AJA* 96:4 (1992), 653–661.
- Rasmussen, S.E. *Experiencing architecture*, transl. E. Wendt (Cambridge 1959).
- Richter, G.M.A. *The portraits of the Greeks*, 3 vols. (London 1965).
- Riemenschneider, U. *Pompejanische Stuckgesimse des dritten und vierten Stils* (Frankfurt am Main 1986).
- Rizzo, G.E. *Thiasos. Bassorilievi greci di soggetto dionisiaco* (Rome 1934).
- Rodaway, P. *Sensuous geographies: body, sense, and place* (London and New York 1994).
- Rosini, C.M. *Dissertationis isagogicae ad Herculansium voluminum explicationem, pars prima* (Naples 1797).
- Ruggiero, M. *Storia degli scavi di Ercolano ricomposta su' documenti superstiti* (Naples 1885).
- Ruggiero, M. *Degli scavi di antichità nelle provincie di terraferma dell'antico regno di Napoli dal 1743 al 1876* (Naples 1888).
- Sampaolo, V. In margine alle pitture del salone 13 della Villa di Terzigno, in: *Storie da un'eruzione. In margine alla mostra*, edited by P.G. Guzzo (Pompei 2005), 113–126.
- Sauron, G. *Templa Serena. À propos de la “Villa des Papyri” d’Herculaneum: contribution à l’étude des comportements aristocratiques romains à la fin de la République*, *MÉFRA* 92 (1980), 277–301. Italian translation by L.A. Scatozza Höricht, in: *La Villa dei Papiri*, Second Supplement to *CronErcol* 13 (Naples 1983), 69–82.
- Sauron, G. *La peinture allégorique à Pompéi: le regard de Cicéron* (Paris 2007a).
- Sauron, G., *La pittura allegorica a Pompei. Lo sguardo di Cicerone*, transl. M. Castacane (Milan 2007b). Italian translation of Sauron 2007a.
- Scarre, C. Sound, place and space: towards an archaeology of acoustics, in: *Archaeoacoustics*, McDonald Institute monographs, edited by C. Scarre and G. Lawson (Cambridge 2006), 1–10.
- Scarre, C. and G. Lawson (eds.). *Archaeoacoustics*, McDonald Institute monographs (Cambridge 2006).
- Scatozza Höricht, L.A. Nota bibliografica, in: *La Villa dei Papiri*, Second Supplement to *CronErcol* 13 (Naples 1983), 135–142.

- Scatozza Höricht, L.A. and F. Longo Auricchio, Dopo il Comparetti-De Petra, *CronErcol* 17 (1987), 157–167.
- Schmidt, M. Are dull reconstructions more scientific? in: *Les sites de reconstitutions archéologiques, actes du colloque d'Aubechies, 2–5 Septembre 1993*, edited by N. Barrois and L. Demarez (Aubechies 1994), 27–30.
- Seales, W.B. and Y. Lin, Digital restoration using volumetric scanning, *Joint Conference on Digital Libraries* (2004), 117–24.
- Serra, J.R. (ed.). *Paestum and the Doric Revival* (Florence 1986).
- Sider, D. (ed.). *The Epigrams of Philodemos*, with introduction and commentary (New York and Oxford 1997).
- Sider, D. *The library of the Villa dei Papiri at Herculaneum* (Los Angeles 2005).
- Smith, M.M. *Sensing the past: seeing, hearing, smelling, tasting, and touching in history* (Berkeley 2007).
- Sorrell, A. *Reconstructing the past*, edited by M. Sorrell (London 1981).
- Spence, D. *The Freudian metaphor: towards paradigm change in psychoanalysis* (New York 1987).
- Spinazzola, V. *Pompei alla luce degli scavi nuovi di via dell'Abbondanza (anni 1910–1923)*, 2 vols. (Rome 1953).
- Steven, R.G. Plato and the art of his time, *CQ* 27 (1933), 149–155.
- Strocka, V.M. VI 17, 41: Ein Haus mit Privatbibliothek, *RM* 100 (1993), 320–351.
- Strocka, V.M. Das Bildprogramm des Epigrammzimmers in Pompeji, *RM* 102 (1995), 269–290.
- Strocka, V.M. Troja – Karthago – Rom. Ein vorvergilisches Bildprogramm in Terzigno bei Pompeji, *RM* 112 (2005–06), 79–120.
- Tanzer, H.H. *The villas of Pliny the Younger* (New York 1924).
- Taylor, L.R. *The voting districts of the Roman Republic* (Rome 1960).
- Thomas, J. *Time, culture and identity: an interpretative archaeology* (London and New York 1996).
- Thomas, M.L. and J.R. Clarke. The Oplontis Project 2005–6: Observations on the Construction History of Villa A at Torre Annunziata, *JRA* 20 (2007), 223–232.
- Thomas, M.L. and J.R. Clarke. The Oplontis Project 2005–2006: new evidence for the building history and decorative programs at Villa A, Torre Annunziata, in: *Nuove ricerche archeologiche nell'area vesuviana (scavi 2003–2006)*, Studi della Soprintendenza Archeologica di Pompei 25, edited by P.G. Guzzo and M.P. Guidobaldi (Rome 2008), 465–471.
- Tilley, C. *A Phenomenology of landscape: places, paths and monuments* (Oxford and Providence R.I. 1994).
- Tortorella S., Le lastre Campana. Problemi di produzione e di iconografia, in: *L'Art décoratif à Rome à la fin de la République et au début du Principat*, Table ronde organisée par l'Ecole française de Rome, Rome 10–11 mai 1979, Collection de l'Ecole française de Rome 55 (Rome 1981), 61–100.
- True, M. and J. Silvetti. *The Getty Villa* (Los Angeles 2005).
- Tuan, Y.-F. *Topophilia: a study of environmental perception, attitudes, and values* (Englewood Cliffs N.J. 1974).
- Tuan, Y.-F. *Space and place: the perspective of experience* (Minneapolis 1977).

- Tybout, R.A. *Aedificiorum figurae. Untersuchungen zu den Architekturdarstellungen des frühen zweiten Stils* (Amsterdam 1989).
- Tybout, R.A. Malerei und Raumfunktion im zweiten Stil, in: *Functional and spatial analysis of wall painting*, Proceedings of the Fifth International Congress on Ancient Wall Painting, Amsterdam 1992, edited by E.M. Moormann (Leiden 1993), 38–50.
- Vacharopoulou, K. Monument conservation in the Mediterranean: issues and aspects of anastylosis, in: *SOMA 2003: Symposium on Mediterranean Archaeology*, BAR International Series 1391, edited by C. Briault, J. Green, A. Kaldelis, A. Stelatou (Oxford 2005), 161–166.
- Venuti, N.M. *Descrizione delle prime scoperte dell'antica città di Ercolano, ritrovata vicino a Portici, villa della Maestà del Re delle Due Sicilie* (Rome 1748).
- Venuti, N.M. *A description of the first discoveries of the antient city of Heraclea, found near Portici, a country palace belonging to the king of the Two Sicilies. In two parts... Done into English from the original Italian of the Marquis Don Marcello di Venuti. By Wickes Skurray. To which are added some letters that passed between the learned Jo. Matthia Gesner..., Cardinal Quirini, and Hermannus Samuel Reimarus... concerning these discoveries* (London 1750).
- Viollet-le-Duc, E.-E. *Dictionnaire raisonné de l'architecture française du XIe au XVIIe siècle* (Paris 1854).
- Walsh, J. and D.A. Gribbon. *The J. Paul Getty Museum and its collections: a museum for the new century* (Los Angeles 1997).
- Willey, G.R. and P. Phillips. *Method and theory in American archaeology* (Chicago 1958).
- Wilson, G. and C. Hess. *Summary Catalogue of European Decorative Arts in the J. Paul Getty Museum* (Los Angeles 2001).
- Winckelmann, J.J. *Sendschreiben von den herculanischen Entdeckungen: an den hochgebohrnen Herrn Heinrich Reichsgrafen von Brühl* (Dresden 1762).
- Winckelmann, J.J. *Lettre de M. L'Abbé Winckelmann à M. Le Comte de Brühl sur les découvertes d'Herulanum* (Paris 1764). French translation of Winckelmann 1762.
- Winckelmann, J.J. *Critical account of the situation and destruction by the first eruptions of Mount Vesuvius of Herulanum, Pompeii, and Stabia* (London 1771). English translation of Winckelmann 1764.
- Winckelmann, J.J. *Lettere Italiane*, edited by Giorgio Zampa (Milan 1961).
- Wojcik, M.R. La "Villa dei Papiri" di Ercolano. Programma decorativo e problemi di committenza, *AnnPerugia* 17 (1979–1980), 359–368.
- Wulf, U. and A. Riedel, Investigating buildings three-dimensionally: the 'Domus Severiana' on the Palatine, in: *Imaging ancient Rome: documentation, visualization, imagination: proceedings of the Third Williams Symposium on Classical Architecture, held at the American Academy in Rome, the British School at Rome, and the Deutsches Archäologisches Institut, Rome, on May 20–23, 2004*, edited by L. Hasselberger, J. H. Humphrey and D. Abernathy (Portsmouth R.I. 2006), 220–234.
- Yegül, F. The Marble Court of Sardis and historical reconstruction, *JFA* 32 (1976), 169–194.

- Yegül, F. with T. Couch. Building a Roman bath for the cameras, *JRA* 16 (2003), 153–177.
- Zanker, P. In search of the Roman viewer, in: *The interpretation of architectural sculpture in Greece and Rome*, Studies in the History of Art 49, edited by D. Buitron-Oliver (Washington D.C. 1997), 179–192.
- Zumthor, P. *Architektur denken* (Baden 1998).

List of Electronic Bibliography

- Apuleius, *The Golden Asse*, (Adlington's 1566 translation), edited by M. Guy, 1996, electronic document, <http://books.eserver.org/fiction/apuleius/> (accessed June 22, 2009).
- Golvin, J.-C. "Signification et problèmes de définition," in: *De la restitution en archéologie, Archaeological restitutor* (Paris 2008), 1–4, electronic document, <http://editions.monuments-nationaux.fr/fr/les-ouvrages-en-ligne/bdd/livree/9> (accessed June 30, 2009).
- Gregory, A.P. "Digital exploration: unwrapping the secrets of damaged manuscripts," *University of Kentucky Odyssey* (Fall 2004), electronic document, <http://www.research.uky.edu/odyssey/fall04/seales.html> (accessed October 9, 2010).
- Law, A., et al., "Projecting restorations in real-time for real-world objects," in: *Museums and the web 2009: proceedings*, edited by J. Trant and D. Bearman (Toronto 2009), electronic document, <http://www.archimuse.com/mw2009/papers/law/law.html> (accessed June 30, 2010).
- Lorenzi, R. "Ancient villa rescued from Vesuvius' mud," electronic document, <http://dienekes.awardspace.com/blog/archives/000040.html> (accessed June 8, 2008).
- Nold, C. "Bio mapping," electronic document, <http://www.biomapping.net/index.htm> (accessed June 5, 2008).
- Peral, R., D. Sagasti and S. Sillaurren, "Virtual restoration of cultural heritage through real-time 3D models projection," electronic document, <http://public-repository.epoch-net.org/publications/VAST2005/shortpapers/short2002.pdf> (accessed June 30, 2009).
- Sobchack, V. "Real phantoms/phantom realities: on the phenomenology of bodily imagination," in: *Phantom Limb* (2004), electronic document, <http://www.artbrain.org/real-phantomsphantom-realities-on-the-phenomenology-of-bodily-imagination/> (accessed June 8, 2008).
- Tringham, R., "Senses of Places: remediations from text to digital performance, Draft 1 March 1, 2007," electronic document, <http://chimeraspider.wordpress.com/2007/03/01/beyond-etext-remediated-places-draft-1/> (accessed May 5, 2008).
- Tringham, R. "Putting vision in its place: the interweaving of senses to create a sense of place at Çatalhöyük," electronic document, <http://traumwerk.stanford.edu:3455/31/admin/download.html?attachid=157977> (accessed May 14, 2008).

- Tringham, R., M. Ashley and S. Mills, "Senses of places: remediations from text to digital performance", electronic document, http://chimeraspider-files.wordpress.com/2007/09/bet_ret_ma_sm_0907_web.pdf (accessed June 8, 2008).

General Index

- Ackerman, James, 161
Actium, battle of
– *P.Herc.* 817, 94, 104, 117, 117 n. 5
– Plutarch (*Vit. Ant.* 71), 117, 117 n. 4
– Shakespeare, *Antony and Cleopatra*, 117, 117 n. 4
Adamo Muscetolla, Stefania, 2 n. 8, 100
ager cosanus
– Villa Settefinestre, 11, 56
Agrippina the younger, 86, 108
Aischines, marble statue (NM 6018), 86
Alcubierre, Roque Joachin de, 118 n. 6
Allroggen-Bedel, Agnes, 63, 66, 67 n. 16
Amazon, Sciarra type, marble head (Herculaneum, inv. 4296/80499), 13, 48, 59, 107
Annius Mammianus, Lucius, 104
Antimachus, 106
Antiochus IV Epiphanes, 105
Antipater of Thessalonica, 100
Antonius, Marcus (“Mark Antony”), 80, 117
Apollo (or kouros), bronze head (NM 5608), 83, 87
Apollonios of Athens, 84
Archidamus III of Sparta, 105
Argyl, Duke of, 133
Aristophanes
– on Pamphilus of Amphipolis (*Plut.* 385), 122 n. 17
Aristotle, 85
Arsinoe II, 85
Ashley, Michael, 179
asiatica luxuria, 17-18
Athens
– Acropolis, 86
– Parthenon, 81
– Stoa of Attalos, 130
Attis, 54
– mysteries of Attis, 55
Augustus the Strong, 133
Banham, Reyner, 167, 168
Baraldi, Paolo, 67 n. 16
Bassi, Domenico, 96
Batteaux, Charles, 123
Baudrillard, Jean, 160
Baxadall, Michael, 177
Bellicard, Jérôme-Charles, 153
Benton, Garth, 134
Bierstadt, Albert, 79
Bloch, Herbert, 97, 98
Boscoreale,
– Villa of the Pisanella (Villa della Pisanella), 41, 41 n. 60
– Villa of Publius Fannius Synistor, 11, 69, 70, 78
Borges, Jorge Louis, 178
Brosses, Charles de, 151
Buckingham, Duke of, 133
Caecilius Statius
– *Obolostates* or *Faenarator* (*The Usurer*), 126
Caesar, Julius, 80, 93, 94, 117
Caledon, Earl of, 133
Callimachus, sculptor, 54
Calpurnius Piso Caesoninus, Lucius
– and Philodemus, 93-95, 97-98, 109, 111-112, 124-125
– and the Villa of the Papyri, 71 n. 30, 92, 93-95, 97-98, 100, 103, 107, 111-112, 124, 131, 183
– fictional character in J.P. Getty’s *A Journey from Corinth*, 132

- Calpurnius Piso Pontifex, Lucius,
 – and the Villa of the Papyri, 92, 94,
 100-101, 103, 107
- Cambyzes, 106
- Capasso, Gaetano,
 – digital reconstruction of the Villa of
 the Papyri, 137, 170-171, 183-
 184
- Capasso, Mario, 16
- Capware reconstruction of the Villa
 of the Papyri, see Capasso, Gae-
 tano
- Carthage, 18
- Castrucci, Giacomo, 138
- Cataneo, Aniello, 3 n. 10
- Cato, 18
- Catullus
 – poem 47, 125
- Cavallo, Guglielmo, 97, 112
- Charles of Bourbon, King of the Two
 Sicilies, 182
- Chiurazzi foundry, 138
- Christie's, 79
- Cicero,
 – letter to Gaius Memmius (*Fam.*
 8.1), 110
 – letters, 101
 – on the Bay of Naples (*Att.* 2.8.2),
 18
 – on Lucius Marcius Philippus, 104
 – on Philodemus, 93, 93, 93 n. 16
 (*Pis.* 68-72), 94, 94 n. 19 (*Pis.*
 68), 124-125
 – on Piso Caesoninus, 94, 95, 109,
 124-125, 132
 – villas of Cicero, 99, 161, 164 n. 33
- Claudius Pulcher, Appius, 92, 103-
 104, 109
- Cleopatra, 117
- Cloisters, New York, 130
- Cochin, Charles-Nicolas, 153
- Comparetti, Domenico, 60
 – ownership of the Villa of the Pap-
 yri, 93-95
 – publication of Weber's plan with
 Giulio De Petra, 83, 182, 185,
 186
- Coralini, Antonella, 67 n. 16
- Cornelius Sisenna, Lucius, 9
- Costabile, Felice, 104
- Croce, Arrigo, 2
- Danāids, 84, 138
- Danāus, King of Argos, 84
- Dante
 – *Divine Comedy*, 144-145
- D'Arms, John H., 98
- Davy, Sir Humphry, 121
- De Franciscis, Alfonso, 92
- De Petra, Giulio, 61, 93
 – publication of Weber's plan with
 Giulio De Petra, 83, 182, 185
- De Simone, Antonio, 2 n. 8, 64, 69,
 72, 80, 91
- Demetrius of Phaleron, 105
- Demetrius Poliorcetes, 105
- Demosthenes, bronze bust (NM
 5467), 83, 107
- Demosthenes, bronze bust (NM
 5469), 86, 107
- Derrida, Jacques
 – *Archive fever*, 140, 154
 – idea of blindness, 139, 146
- Digby, John, 123
- Digital Roman Forum model
 (UCLA), 174
- digital reconstructions, 156-160, 170-
 179, 184-185, 187, 191-192
- Diels, Hermann, 96
- Dillon, Sheila, 61
- Diogenes Laertius, 110, 123
- Dionysios of Halicarnassus, 9
- Dionysiac ritual, 54-55
- Dionysus, 54, 55
- Dionysos/Priapus, bronze bust (NM
 5618), 86
- Doryphoros head, bronze (NM
 4885), 31, 83, 84, 86, 107
- Douglas, Norman, 122-123
- Drummond, William, 93
- Duke of Noia, map of, 3
- Eco, Umberto, 168 n. 53
- d'Elbeuf, Prince, 115, 142
- Elgin collection, 133
- Empedocles, 106

- Epicureanism
 – and the Villa of the Papyri, 60–61, 98–102, 122–123
- Epicurus, 101, 107, 110
 – *On Nature II (P.Herc. 993/1149)*, 96
- Epicurus, bronze bust (NM 11017), 86, 99, 107
- Esposito, Domenico, 23, 70
- Exeter, Marquess of, 133
- Filler, Martin, 167, 168
- Franck, Karen, 177
- Frascati
 – Villa of Galba, so-called, 40
- Freud
 – *Interpretation of Dreams*, 146
 – psychoanalysis and archaeology, 145–147
- Frick Collection, New York, 130
- Frischer, Bernard, 102
- Gabinius, Aulus, 95
- Gallavotti, Carlo, 103
- Garrett, Stephen, 130
- Gassendi, Pierre, 123
- George IV, King of England, 120
- Getty, J. Paul (1892–1976), 129–133, 165–168, 183
 – novel, *A Journey from Corinth*, 131–132
- Getty Center (Brentwood, California), 135, 136
- Getty Villa (Malibu, California), 84, 129–138, 165–170, 183–184,
 – decoration, 133–135, 165–166
 – reactions, 166–170
 – Machado and Silveti renovation, 135–137
- Giedion, Sigfried, 173, 173 n. 68
- Gigante, Marcello, 1, 16, 17, 105–106
- Goethe, 148, 153
 – *Faust*, 146
- Goldberger, Paul, 167
- Guadagno, G., 105
- Guidobaldi, Maria Paola, 64, 70, 71, 110
- Hadrian, 133
- Hamilton, Sir William, 148–149, 150
- Hayter, John, 120
- Hearst, William Randolph, 133
- Hellenistic ruler, bronze bust (NM 5596), 85
- Hemmerdinger, Bertrand, 96
- Hera, Borghese type, marble statue (also called Peplophoros statue; Herculaneum, inv. 4331/81595), 13, 48, 59
- Herculaneum
 – House of the Alcove, 35 n. 31
 – House of Aristides, 8, 9, 134
 – House of the Deer, 134
 – House of the Black Saloon, 78
 – House of the Inn, 8
 – House of the Relief of Telephus, 72, 186, 189, 191
 – House of the Stags, 35 n. 31
 – House of the Tuscan Colonnade (Casa del Colonnato Tuscanico), 41, 41 n. 60, 78
 – *Insula I*, 24, 59 n. 119
 – north-west *Insula*, 8, 20, 24, 191
 – Samnite House, 134
 – Villa of the Papyri, see Villa of the Papyri
 – Villa of Ponte di Riveccio, 17
 – Villa Sora, 17
- Hermarchus, 86, 107
- Hermes, bronze statue (NM 5625), 81, 87
- Herrmann, Paul, 66
- Hollis, Thomas, 151
- Hope collection, 133
- Horace, 80, 99, 126
 – *Ars Poetica*, dedicatees, 125
 – Horace's Villa, Licenza, 102
- Iacumino, Nicola, 4, 4 n. 15
- Jorio, Andrea, 1–2
- Knight, Carlo, 1–2
- Labriola, Maria, 51

- Langdon and Wilson Architecture
Planning, 165, 183
- Lansdowne, Marquess of, 132
- Lansdowne Herakles, 132-133, 166
- La Vega, Francesco, maps of, 3, 8
- Licenza
– Horace's Villa, 102
- Lie, Henry, 106
- Lippold, Georg, 98
- Livia, 86
- Longo Auricchio, Francesca, 104
- Lucius Varus, 111
- Lucretius, 126
– *On the Nature of Things*, 110, 123
- Lucus Feroniae
– Villa of the Volusii, 11
- Macchioni, Nicola, 53
- Machado, Rudolfo, 135
- McKay, Alexander, 162
- Maiuri, Amedeo, 4, 7
- Mammius Maximus, Lucius, 104
- Marcus Philippus, Lucius, 92, 98, 104
- Marcus, George E., 169
- Marie Antoinette, 133
- Marlborough, Duke of, 133
- Martorelli, Giacomo, 121
- Mattei collection, 133
- Mattusch, Carol C., 106-109
- Mazzocchini, Gian Antonio, 67 n. 16
- Meier, Richard, 136
- Memmius, Gaius, 71 n. 30, 92, 109-110
- Merleau-Ponty, Maurice, 158
- Metaponton
– Temple of Apollo, 134
- Moesch, Valeria, 61
- Mommsen, Theodor, 95, 97-98, 100
- Moormann, Eric, 91
- Mustilli, Domenico, 14, 90, 107
- Neuerburg, Norman, 133, 166, 183
- Neutra, Richard, 137
- Newcastle, Duke of, 133
- Niomedes III Euergetes, 106
- Nisbet, R.G.M., 97
- Noberg-Schulz, Christian, 158
- Nold, Christian, 160
- Nonius Balbus, Marcus, 105, 124
- Northumberland, Duke of, 133
- Octavius, Marcus, 92, 96
- Ostia
– Porta Romana necropolis, 134
- Paderni, Camillo, 116 n. 2, 117-118
- Pagano, Mario, 71 n. 30, 109-110
- Palazzo Reale (Royal Museum) at
Portici, 69, 82, 148
- Pamphilus of Amphipolis, 122, 122 n. 17
- Pan and the she-goat, marble sculptural group (NM 27709), 82, 87, 107
- Panathenaic Athena (or Promachos Athena), marble statue (NM 6007), 86, 100, 108
- Pandermalis, Dimitrios, 60, 98-101
- Panyassis, 106
- Pasquali, Giorgio, 95
- Paul I, Czar of Russia, 133
- Peplophoros, marble statue (also called Hera, Borghese type; Herkulaneum, inv. 4331/81595), 13, 48, 59
- Pergamon
– Sanctuary of Athena Polias, 40
- Pesando, Patrizio, 71
- P.Herc.*
– *P.Herc.* 336/1150 (Polystratus, *On the irrational contempt for popular opinion*), 96
– *P.Herc.* 817 (on the battle of Actium), 94, 104 117 n. 5
– *P.Herc.* 993/1149 (Epicurus, *On Nature II*), 96
– *P.Herc.* 1067, 104
– *P.Herc.* 1426 (Philodemus, *On Rhetoric book III*), 96
– *P.Herc.* 1475, 104
- Philetaerus of Pergamon, 105
- Philodemus of Gadara
– Epicureanism, 97-101
– works at the Villa of the Papyri, 109, 120-123

- and Piso Caesoninus, 93–95, 97, 109, 111–112, 124–125
- and the Villa of the Papyri, 93–95, 97–98, 99–102
- works
 - *Anth. Pal.* 9.412, 16
 - in Palatine Anthology, 93
 - *On Household Management*, 99
 - *On Music* 4, 121
 - *On Rhetoric* I, 99, 121
 - *On Rhetoric* II, 121
 - *On Rhetoric* III (*P.Herc.* 1426), 96
 - *The Good King according to Homer*, 106, 124
 - *Virtues and Vices*, 121
- Piaggio, Antonio, 118–120
- Pindar, 122
- Pliny the Elder, 107
 - on *asiatica luxuria* (*HN* 33.1.48, 34.34), 17–18
 - on Callimachus (*HN* 34.92), 54
 - on library decoration (*HN* 35.2.9), 107
 - on perfume (*HN* 13.1), 162
 - on the mathematical theory of art by Pamphilus of Amphipolis (*HN* 35.76), 122 n. 17
 - on papyrus (*HN* 13.76), 120
- Pliny the Younger
 - villas (*Ep.* 2.17; 5.6), 151, 161–162
 - reconstructions of Pliny’s villas, 156 n. 2, 164 n. 33
- Plotius Tucca, 105, 111
- Plutarch
 - on battle of Actium (*Vit. Ant.* 71), 117, 117 n. 4
 - on library of Pergamum (*Vit. Ant.* 58), 117 n. 4
- “Polykleitan” Amazons, 86
- “Polykleitan” athlete, bronze head (NM 5610), 87
- “Polykleitan” youth or “Polykleitan” Herakles, marble herm (NM 6164), 86, 87, 107
- Pompeii
 - Forum Baths, 134
 - House of Ceres, 57
 - House of the Cryptoporticus, 40, 57
 - House of the Dioscuri, 71
 - House of the Ephebe, 35, n. 31
 - House of the Epigrams, 57
 - House of M. Fabius Rufus, 31 n. 19, 33 n. 26, 35 n. 30, 43 n. 63
 - House of the Faun, 15
 - House of C. Julius Polybius, 69
 - House of the Labyrinth, 134
 - House of the Large Fountain, 134, 166
 - House of M. Lucretius Fronto, 41, 41 n. 60
 - House of Menander, 134
 - House of the Painters at Work, 35 n. 31
 - House of Pinarius Cerialis, 35 n. 31
 - House of the Silver Wedding, 26 n. 7, 57
 - House of the Trojan Sacellum (Casa del Sacello Iliaco), 30 n.19, 40
 - House of the Vettii, 71, 134
 - House VI 17 (*Ins. Occ.*) 41, 57
 - *Insula Occidentalis*, 58, 68
 - *Insula* VIII 2, 58
 - *Insula* IV, 134
 - Praedia Iulia Felix, 35, n. 31
 - Villa of the Mysteries, 11, 26 n. 6, 40, 56, 70, 78, 90
 - Villa of Diomedes, 90
- Pompejanum, Aschaffenburg, 130
- Pomponius Atticus, Titus 99, 110
- Poseidonax, 96
- Priapus/Dionysos, bronze bust (NM 5618), 86
- Pseudo-Seneca, bronze head (NM 5616), 87, 95, 107
- Ptolemy II, marble herm (NM 6158), 85
- Ptolemy II Philadelphus, 85, 105
- Pyrrhus king of Epirus, 105
- Pythagoras, 85, 106
- Quintilius Varus, 105, 111
- Rasmussen, Steen Eiler, 164

- Richter, Gisela, 85
 Rome
 – Golden House, 72
 – House of Augustus, 40, 40 n. 52, 57
 – Tomb of the Haterii, 162
 – Villa of Via Nomentana, 11
 Ruffo, Fabrizio, 72, 91
 Ruggiero, Michele, 14
- Sappho, 106
 Sardis
 – Imperial Bath Gymnasium complex, 168
 satyr, sleeping, bronze statue (NM 5624), 81, 87
 satyr, drunken, bronze statue (NM 5628), 87
 Sauron, Gilles, 60, 101-102
 Scagliarini Corlàita, Daniela, 67 n. 16
 Scatozza Höricht, Lucia Amalia, 2 n. 8, 104
 Schliemann, Heinrich, 147
 Schmidt, Martin, 178
 Scipio Africanus, 18
 Seleucus I Nicator, 85, 105
 Shakespeare
 – Antony and Cleopatra, 117, 117 n. 4
 Silvetti, Jorge, 135
 Simonides, 122
 Siro, 99, 105
 Stabiae
 – Villa Arianna, 12 n. 30, 15, 56, 186, 191
 – Villa San Marco, 71, 134
 Stazio, Attilio, 2
 Strabo, 80
- Taft, William Howard, 131
 Taylor, Lily Ross, 97-98
 Terzigno
 – Villa (6), 57, 66 n. 15, 68, 70
 Tilley, Christopher, 158
 Torre Annunziata
 – Villa A at Torre Annunziata (so-called Villa of Poppaea at Oplontis), 11, 30 n. 18, 56, 65, 69, 70, 72, 78, 134, 186, 189, 190
 Tringham, Ruth, 179
 True, Marion, 135
tryphé, 17-18
 Tybout, Rolf A., 71
- Usener, Hermann, 96
- Varius Rufus, 105
 Villa of the Papyri
 – Bourbon tunnels, 4-5, 29-33
 – Bourbon excavations, 141-142
 – Weber's plan, see Weber, Karl Jakob
 – "New Excavations" (Infratecna Excavations), 1-20
 – latest excavations (Archaeological Superintendency of Pompeii), 21-62
 – chronology, 14-18, 55-62
 – sculptural programme, 13-14, 79-88
 – Epicurean reading of the sculptural programme, 98-102
 – ceiling decoration, 38-42
 – wall paintings, 26-28, 35-37, 63-78
 – wooden furniture lined with ivory, 51-55
 – library, 115-127
 – ownership, 89-113, 123-126
 – Epicureanism and the Villa, 60-61, 98-102, 122-123
 – Hellenistic tradition and the Villa, 17-18, 38-41, 60-61
 – reconstructions
 – Getty Villa, see Getty Villa
 – digital reconstruction of G. Capasso, see Capasso, Gaetano
 – digital reconstruction of M. Zarmakoupi, 181-193
 Viollet-le-Duc, Eugène-Emmanuel, 185
 Vitruvius, 18
 Virgil, 99, 105, 111, 123,
 – *Aeneid*, 144-145, 146
- Wallace Collection, London, 130

- Walpole, Robert, 93
Warden, Sir Thomas Herbert, 131
Weber, Karl Jakob, 63, 69, 83, 85, 87, 182
– plan of the Villa of the Papyri, 2, 5, 14, 15, 29, 29 n. 17, 31, 44 n. 68, 57, 83, 84, 87, 133, 143, 151-153, 157-158, 182, 185, 188-189
Winckelmann, Johann Joachim, 81, 83, 118, 121-122, 149-150
Wojcik, Maria Rita, 14, 61, 63, 83 n. 6, 102-104
Woodsworth, William, 122
Yegül, Fikret, 168
Zanini, Paolo, 67 n. 16
Zeno of Citium, 86, 106, 107
Zeno of Sidon, 111